

Conference Proceedings



International  
Conference  
**SOCIOECOS**  
**2024**

**Climate Change, Sustainability  
and Socio-ecological Practices**

June 6-7, 2024  
Universidad del País Vasco /  
Euskal Herriko Unibertsitatea  
Bilbao, Spain

Benjamín Tejerina,  
Cristina Miranda de Almeida  
and Clara Acuña  
Editors

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Climate Change, Sustainability  
and Socio-ecological Practices

Benjamín Tejerina, Cristina Miranda de Almeida and Clara Acuña  
Editors







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## Foreword

The biophysical system sciences have responded quickly to the call of climate change. However, this situation contrasts with the late arrival of the social sciences in this field (Norgaard, 2018), manifesting a certain lack of “sociological imagination”.

Climate change has anthropocentric causes produced by socially organised activities rooted in a certain logic of production and consumption practices (Islam and Kieu, 2021). In that sense, the social sciences’ contribution lies in pointing out that its direct drivers are also embedded in broader social conditions, such as economic, technical, cultural, and governance systems, as well as social values, ideals, and material interests, which vary across geographic locations (Kais and Islam, 2018).

A major criticism of social science approaches to climate change is the dominance of individual-level analyses. Focusing on the individual level marginalises institutional, social, and cultural aspects, providing partial and restricted understandings of human behaviour and social change (Shove, 2010) and resulting in policy responses that leave social, political, and economic aspects understudied (Malm, 2016).

More recently, some social science contributions have pointed out that the dominant framework, including the official reports of the Intergovernmental Panel on Climate Change (IPCC) or the US National Academy of Sciences, depoliticise the discussion on climate change and the environment, and thus reinforce the socio-political and economic status quo. The post-political critique highlights how the scientific interpretative framework on climate change, including both the social and natural sciences, is partial and incomplete, leading to inadequate policy proposals by failing to analyse the value systems critically, power relations and institutional processes that have led to climate change (Brulle and Dunlap, 2015).

To analyse the social dimensions of climate change, the social sciences raise two distinctive and advantageous issues. First, sociology and the social sciences are well-equipped to examine the causes, consequences and possible solutions to climate change (Latour, 2021). They can add important insights to this phenomenon (De la Cadena and Blaser, 2018), reminding us that the forces driving global climate change are embedded in social structures and institutions (Haraway, 2016), cultural values and beliefs, and social practices (Kitcher and Keller, 2019). Second, a standard limitation of existing climate change analyses is to confine themselves to the dominant interpretative

framework, which argues that market-based policies are the only feasible option for reducing carbon emissions within the current global liberal political-economic system (Villavicencio, 2021). This latter aspect presents blind spots in societal responses to climate change and limits the breadth of alternative actions that can be imagined.

In international forums, a minimum consensus has been reached among participants, leaving most unsatisfied. Consensus is made practically impossible by what Rebecca Elliott (2018) defines as a “sociology of loss” – what some see as sufficient, others see as far from what is necessary. Within and beyond sociology, climate change research has problematised vulnerability, focusing on redressing its unequal distribution across gender, race, class and region. The position is not merely a question of social differences that interrelate with loss but also involves integrating autonomy and social solidarity in times of loss, generating sensitivities and mobilising resources. Two factors seem to limit awareness regarding the urgency of seeking alternatives. On the one hand, what may define our historical epoch as Anthropocene (Scranton, 2021) or Capitalocene (Moore, 2016), i.e. a surveillance capitalism embedded in the fabric of life that shapes the subjectivities of individuals beyond consumption (Illouz, 2019). On the other hand, there is the “Giddens paradox”, which states that since the dangers posed by global warming are neither tangible nor always visible in everyday life, many will not engage in action to redress them (Giddens, 2011).

Based on these aspects, this conference aims to analyse activities encompassing the socio-ecological practices characterised by ecological embeddedness (Morris and Kirwan, 2011; Whiteman and Cooper, 2000). Although the roots of this concept are to be found in economic sociology, its meaning is extended here to suggest that other practices of food consumption, mobility, ways of living, and the choice between essential consumer goods and the forms of relating to them can also be seen as increasingly embedded in natural or ecological processes. In doing so, we point out how the concept of environmental embeddedness could be operationalised in research practice to explore the ecological dimensions of many activities and practices of everyday life.

This international interdisciplinary conference strives to achieve the dual goal of extending the frontiers of current knowledge on socio-ecological practices related to the climate emergency and simultaneously improving (instead of just informing) these practices themselves. To this end, we gather academics and practitioners researching and developing socio-ecological practices “on

the ground” worldwide. We look forward to learning from experiences in various areas –from renewable energies to the arts—and from studies considering the perspective and expertise of multiple actors and stakeholders: state institutions, non-profits, civil society organisations, social movements, and the private sector.

## Scope and objectives

This conference explores socio-ecological practices’ trajectory, characteristics, and impacts in the context of climate crisis and emergency. It aims to showcase and deliberate on the latest challenges these practices pose and the practical solutions currently being implemented. Specifically, the conference will address the following questions:

- When, where, and under what conditions do socio-ecological practices occur?
- What are the characteristics of contemporary socio-ecological practices?
- Which actors are involved in these practices, and what types of interactions emerge from them?
- What are socio-ecological practices’ practical, symbolic, and legal effects?

This Book of Proceedings gathers all conference papers submitted punctually and in the correct format. It includes a diverse range of theoretical and empirical studies that examine socio-ecological practices across various domains such as social movements and politics, production, consumption, culture, arts, science, housing, care, education, solidarity with precarious groups, and civic engagement. The contributors hail from various disciplines, including social and physical sciences, humanities, architecture, arts, and design. A public roundtable as a pre-conference event also featured speakers engaged in socio-ecological practices across these varied fields.

All submissions underwent a rigorous double-blind peer review process, with a third reviewer consulted in select instances. This volume features conference papers in English, the conference’s official language, and Spanish. The organisation of texts is straightforward: they are sorted first by track and then alphabetically by the authors’ last names.

This volume contains the complete final Conference Program, detailing the track and session titles and the titles and authors of all papers presented. It also includes abstracts for the presentations by our keynote speakers: Dr Mario Blaser, Dr Paula Bruna Pérez, Dr Dr h.c. mult. Donatella della Porta, Dr Rebecca Elliot, Dr Michael Marder, and Dr Paola Mercogliano. For ease of access, abstracts of the oral presentations are conveniently located at the end of the book.

We would like to extend our acknowledgements and express our gratitude to the members of the conference's Scientific Committee: Dr Miguel Alexiades (University of Kent), Dr Elisenda Ardèvol (Universidad Oberta de Catalunya), Dr Iñaki Bárcena Hinojal (Universidad del País Vasco/Euskal Herriko Unibertsitatea), Dr Breno Bringel (Universidade Estatal de Rio de Janeiro, IESP-UERJ), Dr Esteban Castro (Newcastle University), Dr Noé Cornago (Universidad del País Vasco/ Euskal Herriko Unibertsitatea), Dr Liana Daher (University of Catania), Dr Sergio Henrique Faria (BC3 Basque Centre for Climate Change, UPV/EHU, and Nagaoka-Japan University of Technology), Dr Sari Hanafi (The American University of Beirut), Dr Pedro Ibarra Güell (Fundación Betiko, País Vasco), Dr Peter Kelly (Deakin University), Dr Dr hc Roger Malina (University of Texas), Dr Ezio Manzini (Polytechnic University of Milan, Elisava Barcelona School of Design, Jiangnan University, Wuxi, China, DESIS Network), Dr Daishiro Nomiya (Chuo University, Tokyo), Dr Sujata Patel (University of Hyderabad), Dr Dr hc mult Sarah Pink (Monash Data Futures Institute, Monash University), Dr Geoffrey Pleyers (Université Catholique de Louvain), Dr Cely Scalón (Universidade Federal do Rio de Janeiro), and Dr Benjamín Tejerina (Universidad del País Vasco/Euskal Herriko Unibertsitatea).

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Finally, we would like to highlight our gratitude to all the authors and participants who shared their research results at this conference, giving meaning to all the effort involved in organising it.

Compiling and publishing these papers represents the initial phase of an international collaborative effort. This endeavour will significantly contribute to building a vibrant academic community transcending national boundaries and disciplinary limits. We aim for this volume to stimulate a global dialogue among scholars, researchers, activists, policymakers, and citizens on how we can effectively address the urgent issues of our era while enhancing our field of study and expanding its societal influence. The conference will be an ideal platform for fostering this essential conversation.

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Bilbao, June 2024

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- **Contact for questions concerning the Call for Papers and for students grants:** the Conference Local Organizing Committee at [socioecos.conference2024@gmail.com](mailto:socioecos.conference2024@gmail.com)

## Guest Keynote Speakers

- Dr Mario Blaser, Departments of Archaeology, Anthropology and Geography Memorial University of Newfoundland-St John's, Canada
- Dr Paula Bruna Pérez, Ecological and Forestry Applications Research Centre CREAM-UAB
- Dr Dr h.c. mult. Donatella della Porta, Center on Social Movement Studies (Cosmos) Scuola Normale Superiore
- Dr Rebecca Elliot, London School of Economics
- Dr Michael Marder, Ikerbasque Professor Universidad del País Vasco / Euskal Herriko Unibertsitatea
- Dr Paola Mercogliano, President of the Italian Climatology Society Euro-Mediterranean Centre on Climate Change, Advanced Meteorology at the University of Naples-Parthenope, Horizon Europe AGORA project
- Dr Dr HC Roger Malina, University of Texas at Dallas, Leonardo Publications, MIT Press



## Conference Programme and Timetable

06/June/2024 Thursday

<b>8:30 AM</b> Hall (Ground Floor)	<b>Registration and Reception</b> Registration, distribution of conference materials and identification cards
<b>9:00 AM</b> Mitxelena Conf. Room	<b>Opening and Welcoming Session</b> Chair: Prof Benjamin Tejerina University of the Basque Country
<b>9:30 AM</b> Mitxelena Conf. Room	<b>Plenary Session 1</b> Prof. Dra. Dra. h.c. mult Donatella della Porta Centro de Estudios de los Movimientos Sociales-Cosmos, Scuola Normale Superiore <b>The Contentious Politics of Climate Change. Old and New Cleavage in Environmental Struggles</b>
<b>10:15 AM</b> Mitxelena Conf. Room	<b>Plenary Session 2</b> Dr Mario Blaser Memorial University of Newfoundland, Terranova-St John's, Canada <b>For Emplacement: Life Projects Beyond Re-embedding</b>
<b>11:00 AM</b> Mitxelena Conf. Room	<b>Debate 1</b> Chair: Prof Benjamin Tejerina University of the Basque Country
<b>11:15 AM</b> Hall (Ground Floor)	<b>Coffee Break</b>
<b>11:45 AM</b> Mitxelena Conf. Room	<b>Plenary Session 3</b> Dr Michael Marder Ikerbasque Research Professor, University of the Basque Country, UPV/EHU <b>Material Sustainabilities: rethinking sustainability from below</b>
<b>12:30 PM</b> Mitxelena Conf. Room	<b>Plenary Session 4</b> Dr Paula Bruna Ecological and Forestry Applications Research Centre CREAM-UAB <b>The Plantocene: Exploring an Ecocentric View through Art and Fiction</b>
<b>1:15 PM</b> Mitxelena Conf. Room	<b>Debate 2</b> Chair: Dr Susana Carro-Ripalda
<b>1:30 PM</b> Laboa Hall	<b>Lunch Break</b>



**06/June/2024 Thursday**

Lunch Break 1:30 PM  
Laboa Hall

**T1 Session 1**  
Track 1:  
Ecologist social  
movements  
on climate  
emergency.  
Politics and  
climate change  
  
3:00 - 5:00 PM  
Baroja Room

**T2 Session 1**  
Track 2: Social-  
ecological  
practices  
concerning new  
production and  
labour models  
on the verge  
of climate  
emergency  
  
3:00 - 5:00 PM  
Barandiaran  
Room

**T3 Session 1**  
Track 3: Social-  
ecological  
practices in  
living and  
consumption  
to fight climate  
emergency  
  
3:00 - 5:00 PM  
Oteiza Room

**T4 Session 1**  
Track 4: Socio-  
ecological  
practices for  
rewilding  
and nature  
preservation.  
Science and  
citizen science  
and the climate  
change  
  
3:00 - 5:00 PM  
Arriaga Room

**T6 Session 1**  
Track 6:  
The human  
dimension of  
socio-ecological  
practices in the  
age of climate  
emergency:  
Awareness,  
consciousness,  
wellbeing and  
care  
  
3:00 - 5:00 PM  
Elhuyar Room

Coffee Break 5:00 PM  
Laboa Hall

**T1 Session 2**  
Track 1:  
Ecologist social  
movements  
on climate  
emergency.  
Politics and  
climate change  
  
5:30 - 7:50 PM  
Baroja Room

**T3 Session 2**  
Track 3: Social-  
ecological  
practices in  
living and  
consumption  
to fight climate  
emergency  
  
5:30 - 7:50 PM  
Oteiza Room

**T4 Session 2**  
Track 4: Socio-  
ecological  
practices for  
rewilding  
and nature  
preservation.  
Science and  
citizen science  
and the climate  
change  
  
5:30 - 7:50 PM  
Arriaga Room

**T6 Session 2**  
Track 6:  
The human  
dimension of  
socio-ecological  
practices in the  
age of climate  
emergency:  
Awareness,  
consciousness,  
wellbeing and  
care  
  
5:30 - 7:50 PM  
Elhuyar Room

**T7 Session 1**  
Track 7: Social-  
ecological  
practices  
in culture,  
media and  
communication  
  
5:30 - 7:50 PM  
Barandiaran  
Room

Conference Dinner 9:00 PM

## 07/June/2024 Friday

<p><b>8:30 AM</b> Hall</p>	<p><b>Registration and Reception</b></p>			
<p><b>9:00 AM</b> Baroja Room</p>	<p><b>Plenary Session 5</b> Dr Paola Mercogliano Agora European Project; University of Naples; Italian Climatology Society <b>Agora. Advancing Societal Transformation for Climate Adaptation through co-creation, mutual learning and support to local communities</b> Chair: Dr Camilo Tamayo Gómez University of Huddersfield</p>			
<p><b>9:45 AM</b> Baroja Room</p>	<p><b>Plenary Session 6</b> Rebecca Elliot London School of Economics; Grantham Research Institute on Climate Change and the Environment; LSE Phelan United States Centre <b>For Emplacement: Life projects Beyond Re-embedding</b></p>			
<p><b>10:30 AM</b> Baroja Room</p>	<p><b>Debate 3</b> Chair: Dr Camilo Tamayo Gómez University of Huddersfield</p>			
<p><b>11:00 AM</b> Laboa Hall</p>	<p><b>Coffee Break</b></p>			
<p><b>T1 Session 3</b> Track 1: Ecologist social movements on climate emergency. Politics and climate change</p> <p><b>11:30 - 1:30 PM</b> Baroja Room</p>	<p><b>T2 Session 2</b> Track 2: Social-ecological practices concerning new production and labour models on the verge of climate emergency</p> <p><b>11:30 - 1:30 PM</b> Oteiza Room</p>	<p><b>T5 Session 1</b> Track 5: Socio-ecological practices in education and health in the climate crisis</p> <p><b>11:30 - 1:30 PM</b> Arriaga Room</p>	<p><b>T6 Session 3</b> Track 6: The human dimension of socio-ecological practices in the age of climate emergency: Awareness, consciousness, wellbeing and care</p> <p><b>11:30 - 1:30 PM</b> Elhuyar Room</p>	<p><b>T8 Session 1</b> Track 8: Art, technology, design, and climate crisis</p> <p><b>11:30 - 1:30 PM</b> Barandiaran Room</p>
<p><b>1:30 PM</b> Laboa Hall</p>	<p><b>Lunch Break</b></p>			

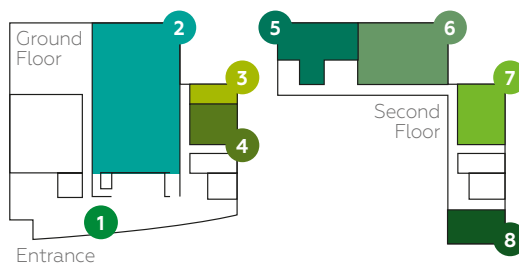


**07/June/2024 Friday**

<b>Lunch Break</b>				<b>1:30 PM</b> Laboa Hall	
<b>T1 Session 4</b> Track 1: Ecologist social movements on climate emergency. Politics and climate change  3:00 - 5:00 PM Baroja Room	<b>T3 Session 3</b> Track 3: Social-ecological practices in living and consumption to fight climate emergency  3:00 - 5:00 PM Oteiza Room	<b>T4 Session 3</b> Track 4: Socio-ecological practices for rewilding and nature preservation. Science and citizen science and the climate change  3:00 - 5:00 PM Arriaga Room	<b>T6 Session 4</b> Track 6: The human dimension of socio-ecological practices in the age of climate emergency: Awareness, consciousness, wellbeing and care  3:00 - 5:00 PM Elhuyar Room	<b>T8 Session 2</b> Track 8: Art, technology, design, and climate crisis  3:00 - 5:00 PM Barandiaran Room	
<b>Coffee Break</b>				<b>5:00 PM</b> Laboa Hall	
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<b>Closing Session and Farewell</b> Chair: Prof Benjamin Tejerina University of the Basque Country				<b>7:30-8:00 PM</b> Baroja Room	

**Bizkaia Aretoa**

- 1 Hall
- 2 Mitxelena Room
- 3 Barandiaran Room
- 4 Elhuyar Room
- 5 Oteiza Room
- 6 Baroja Room
- 7 Laboa Hall
- 8 Arriaga Room





## Conference Call for Papers

We invite proposals that explore socio-ecological practices in relation to the climate crisis in different areas: social movements; new production and labour models; living and consumption; rewilding and nature preservation; citizen science; education and health; the human dimension of the climate emergency, awareness, consciousness, wellbeing and care; culture, media and communication; art, technology and design; and legal aspects and politics. These areas constitute the conference tracks and are developed into -but not limited to- topics of interest, according to the following table:

Track	Topics of Interest (examples)
<b>1 Ecologist and social movements on climate emergency. Politics and climate change</b>	Greenpeace; Extinction Rebellion; Scientist Rebellion; Just Stop Oil; Vegetal Future; Ecologists in Action; Fridays for Future; Climate Justice; eco-feminisms; citizen science movements; anti-extractivism movements; eco-justice; main political debates; negationist movements; resilience, mitigation and resistance movements
<b>2 Social-ecological practices concerning new production and labour models on the verge of climate emergency</b>	Sustainable forms of energy, agricultural and industrial production; sustainable work; work-related social-ecological practices; agroecology; green energy companies; eco-based businesses and companies; greening practices in production
<b>3 Social-ecological practices in living and consumption to fight climate emergency</b>	Sustainable housing; sustainable cities; eco-markets; social practices in search for alternative energy sources; energy cooperatives and energy sovereignty; architecture and design for sustainable living and environments; biodiversity in rural and urban environments; urban nature; the ecological impact of alternative energy sources; the negative impact of windmills and solar plants on natural environments; eco-tourism
<b>4 Socio-ecological practices for rewilding and nature preservation. Science and citizen science and the climate change</b>	Socio-ecological practices of adaptation, mitigation, resistance, transition and resilience to the climate emergency; social practices for wildlife preservation; interspecies relationships; new forms of pastoralism; traditional ecological knowledge; nature-based social-ecological practices; social responses to natural and human-provoked disasters; the rights of plants and animals; legal aspects of nature; scientific aspects of climate emergency; citizen science-based science projects



Track	Topics of Interest (examples)
<b>5 Socio-ecological practices in education and health in the climate crisis</b>	Eco-pedagogies; eco-methodologies; eco- and animal-assisted pedagogies and therapies; ecological education; eco-centric education; eco-feminist approaches in pedagogy; eco-critical pedagogies; the impact of the climate crisis on health; planetary health-based practices
<b>6 The human dimension of socio-ecological practices in the age of climate emergency: Awareness, consciousness, wellbeing and care</b>	Awareness and sensitisation practices centred on the climate emergency; emotional and mental health effects of climate threats and ecological loss; tools and practices to deal with climate crisis worry, eco-anxiety, ecological grief, and environmental guilt; social practices of self and collective care; politics of life sustainability; climate crisis and ecological disaster-based displacement, climate refugees
<b>7 Social-ecological practices in culture, media and communication</b>	Climate emergency in cultural production (music, cinema, video, literature); cultural representations of climate emergency; climate emergency-based imaginaries; communicating climate crisis; social media-supported practices in the age of climate crisis
<b>8 Art, technology, design, and climate crisis</b>	Eco-art; art and climate emergency; art and energy transition; climate crisis-based images and representations; DIY and Fab Labs' responses to climate emergencies; design for reuse, repurpose, recycle, and upcycle—eco and bio design; sustainable design; eco-empathic design; creative data visualisation; artificial intelligence-based eco-imaginaries

We encourage the submission of papers drawing on theoretical, methodological and experimental approaches from diverse fields of study, such as the social sciences, physical sciences, humanities, and design.

## Official Language and Oral Presentation Guidelines

English is the conference's official language. Abstracts, papers, and oral presentations should be done preferably in English. We, however, accept a few abstracts and papers in Spanish. Oral presentations in Spanish are welcome, provided they are accompanied by a PowerPoint presentation that includes a translation into English.

All plenary sessions count with simultaneous English-Spanish translation; regular sessions will not have simultaneous translation.

Final instructions for oral presentations detailing time slots and available resources were sent out three weeks before the conference.

## Conference Proceedings

All accepted papers are published in the conference proceedings in digital format and in Green Open Access. The proceedings will be published with an ISBN issued by the University of the Basque Country Press under the Creative Commons licence and Digital Object Identifier (DOI). The proceedings book will be accessible for download from the conference website and other repository and academic platforms (Zenodo; UPV/EHU; ADDI; Academia and ResearchGate).

## Important Dates

Task	Deadline
<b>Deadline for submission of abstracts</b>	15 January 2024
<b>Notification of acceptance or rejection of abstracts</b>	31 January 2024
Payment deadline for authors and co-authors	Early bird fee From 31 January to 11 March 2024 (included)
	Full rate fee From 12 March to 30 April 2024 (included)
Deadline for submission of full texts	11 March 2024
Reviewers' comments	15 April 2024
Deadline for submission of revised full texts for the Conference Proceedings	30 April 2024
Guidelines for oral presentations and the conference programme sent to participants.	15 May 2024
Conference dates	6 and 7 June 2024

## Registration and Conference Fees

All participants must register according to their type of participation. Registration and payment must be made through the **conference platform**: <https://www.conftool.org/socioecos2024/>.

All authors and co-authors of oral presentations and publications (2 or more co-authors), must register on the platform (according to the categories provided) and pay the registration fees.

The conference author (presenter) fees include two lunches and refreshments at 4 coffee breaks, a conference kit and the publication of the conference proceedings in digital format.

All participants must register on the conference platform, depending on their type of participation. All presentations are face-to-face. Presentations by videoconference are not accepted.

The participation rates and costs are indicated in this table:

Types of participation	Reduced rate	Full fare
	From 31 January as of 11 March 2024	From 12 March as at 30 April 2024
<b>1) Authors and co-authors</b>		
• Attending authors (in Bilbao)	180€	220€
• Co-authors (non-attendees)	90€	110€
<b>2) Non-presenting assistants</b>		
• Postgraduate university students Some scholarships will be available on request. Write to: <b>socioecos.conference2024@gmail.com</b>		100€
• Other participants (attendees but non-presenters)	80€	100€
<b>3) Conference Dinner</b> (optional on Thursday evening, 6th)		25€

## Application and Selection Process

Abstracts and full papers, in both original and revised versions, must be sent exclusively through the **conference platform**, in two ensuing phases:

- **Abstracts:** Abstracts (500 words) will undergo a double-blind peer review process and will be selected based on academic excellence, relevance, and thematic fit to ensure focused discussion at the conference. Abstracts are due on **January 15, 2024**; acceptance/ rejection announcements will be sent out by **January 31, 2024**.
- **Papers:** Authors whose abstracts have been accepted can submit full papers (2,500 words + references) by **March 11, 2024**. All papers will go through a double-blind peer review process. Reviewers' comments and suggestions will be sent out before **April 15, 2024**. Revised papers are due on **April 30, 2024**; these versions will be published in the conference proceedings. In order to be included in the proceedings, papers must strictly follow the **guidelines** detailed on the conference website (Socioecos): [https://socioecos.org/wp-content/uploads/2024/04/GuidelinesApril7\\_CAMERA\\_READY\\_Proceedings.pdf](https://socioecos.org/wp-content/uploads/2024/04/GuidelinesApril7_CAMERA_READY_Proceedings.pdf).



## Keynote Speaker Abstracts



### Mario Blaser

Departments of Archaeology, Anthropology and Geography  
Memorial University of Newfoundland-St John's, Canada

### For Emplacement: Life Projects Beyond Re-embedding

**Abstract:** *The sociological imagination of the 1990s described globalization as modernization writ large, an inexorable process of disembedding life from the particularities of and ties to place, and of increasing dependence on "abstract systems" spread across time and space.*

*Today, globalization is being questioned, and we are told daily that the world is facing its consequences in the form of a crisis of planetary proportions. In the face of this, we are beginning to see the emergence of various calls to re-embed our lives in our places. In this talk, I will share some ideas from my forthcoming book, in which I invite readers to adopt a standpoint, informed by the experiences of what I call emplaced collectives (often simplistically labelled as indigenous communities), from which to evaluate these calls and to explore what it might take to become emplaced. This concept resonates with, but is not the same as, embedded, and in fact foregrounds some Gordian knots that are not necessarily within the purview of calls for re-embedding.*

*I will discuss how the concept has taken shape, how it helps illuminate perhaps little-noticed complexities of the so-called planetary crisis, and offer a way to respond to them through what I call life projects.*



## Paula Bruna Pérez

Ecological and Forestry Applications Research Centre CREAM-UAB)

### The Plantocene: Exploring an Ecocentric View through Art and Fiction

**Abstract:** *For over fifty years, we've known that our way of living leads to global ecological crises such as climate change, biodiversity loss, resource depletion, and pollution (Meadows et al., 1972). Despite this knowledge, the situation continues to worsen, pushing us toward dangerous limits for societal sustainability (Steffen et al., 2015). Why haven't we changed course?*

*Many authors suggest that our limitations lie in the way we perceive ourselves in relation to the world (Guattari, 2000; Haraway, 2016; Morton, 2016). To address this, we need to dismantle anthropocentrism and shift toward a broader worldview that allows us to explore new ways of ecological coexistence. Embracing non-human subjectivities, which offer different perspectives of reality, can be a powerful act in a society facing multiple crises.*

*But how can we approach non-human subjectivities given our human condition? To bridge this gap, I use a combination of scientific knowledge, speculative fiction, and artistic practice. This combination enables us to experience realities beyond the human perspective, providing significant potential to overcome prevailing anthropocentrism and to propose new ways of (co)existing (Bruna, 2019).*

*To challenge the human-centric focus of the Anthropocene, I introduced the concept of the Plantocene (Bruna, 2021), a fictional yet plausible geological era led by plants. Considering, for instance, the effects of photosynthesis on the atmosphere's composition, if we discuss the Anthropocene, why not a Plantocene? Furthermore, humans utterly depend on plants. Thus, the Plantocene challenges human dominance and offers a new lens through which everything appears differently.*

*Using the Plantocene as a framework, I develop my artistic practice. My projects aim to understand the environment and ecological conflicts from other "points of life" (Coccia, 2017). I consider this approach of learning alongside other species a political act toward ecocentric perspectives and a poetic response against the isolation imposed by consumerist capitalism.*

## References

- Bruna, P. (2019) Historias de los no humanos. La especulación artística como recurso para aproximarse a otras realidades. *Ecología política*, 57, 38-42.
- Bruna, P. (2021) *Arte y ecología política. Un viaje desde el modelo antropocéntrico a las realidades de los no humanos*. (Tesis Doctoral). Universidad de Barcelona.
- Coccia, E. (2017) *La vida de las plantas. Una metafísica de la mixtura*. Miño y Dávila ed.
- Guattari, F. (2000) *The three ecologies*. London and New Brunswick: Athlone Press
- Haraway, D. J. (2016) *Staying with the trouble: making kin in the Chthulucene*. London: Duke University Press.
- Morton, T. (2016) *Dark ecology. For a logic of future coexistence*. New York: Columbia University Press.



### Donatella della Porta

Center on Social Movement Studies (Cosmos) Scuola Normale Superiore

### The Contentious Politics of Climate Change. Old and New Cleavage in Environmental Struggles

**Abstract:** *Climate change has been a central concern for environmental movements, not only with alliances but also cleavages developing at local, national and transnational levels. In the transnational campaigns, activists from the global South have challenged some main mainstream environmentalist strategies as tamed and claimed them as north-centred. Concepts, like climate justice and environmentalism/ecology of the poors, have been used to point at global alternatives. Also, at local and national level, various forms of contention have developed, often from the recognition of emerging challenges.*

*At the cross-road of various intersecting crises (financial and health crises), Green Deal policies have cleaved the environmental movement between supporters of the green mainstream and critics of the greenwashing.*

*Recent processual developments in the analysis of contentious politics will be referred to understand these new cleavages. Illustrations from my ongoing research will be presented to single out success and failures in the building of alliances for the environment.*





## Rebecca Elliott

London School of Economics

### Loss, Letting Go, and the Social Life of Climate Change

**Abstract:** *Climate change involves human societies in problems of loss: depletion, disappearance, and collapse. The climate changes and changes other things, in specifically destructive ways. The talk offers a framework for reckoning analytically with the effects of climate change through the lens of loss: losses that can be compensated and those that cannot, losses that are resisted, mourned, or even desired. I will illustrate the intersections between loss and questions about value, limits, and memory, across different sites and cases: from flood insurance in the United States to heritage preservation in the United Kingdom. The talk will further contextualize this project in broader interdisciplinary moves towards developing understandings of “the social life of climate change.”*



## Michael Marder

Ikerbasque Professor- Universidad del País Vasco / Euskal Herriko Unibertsitatea

### Material Sustainabilities: rethinking sustainability from below

**Abstract:** *In this talk, I consider how the world of vegetation undergirds, makes possible and, indeed, sustains the thinking and the practices of sustainability. I argue that plants possess intrinsic value, irreducible to the instrumental rationality that often dovetails with discourses of sustainability. The meaning of the intrinsic value of plants lies not so much in what they are in themselves as in what they are for themselves, at the limits of human understanding. I then suggest that this vegetal perspective on the world, which puts into question the anthropocentric idea of truth, may join a cross-species and cross-kingdoms “community of values” with human environmental practices that would treat other living beings not as objects of concern but as partners in sustainable living.*



## Paola Mercogliano

President of the Italian Climatology Society Euro-Mediterranean Centre on Climate Change-Advanced Meteorology at the University of Naples Parthenope- Horizon Europe AGORA project

### **Agora. Advancing Societal Transformation for Climate Adaptation through co-creation, mutual learning and support to local communities**

**Abstract:** AGORA is a HORIZON Europe project (Grant agreement ID: 101093921) which started in January 2023 and will have a total duration of 3 years. This initiative supports the EU Mission on Adaptation to Climate Change through four main pillars. First, it will carry out four Pilots to create workshops and implement co-creation, co-design and co-implementation strategies in different countries: Spain (Zaragoza), Italy (Rome), Sweden (Malmö) and Germany (Dresden). Second, understanding stakeholders' needs and the climate change risks in each framework will make it possible to create better strategies. In addition, the project gathers interest from cross-disciplinary stakeholders who take the lessons learned and evaluate how to implement them in a different context. They are considered "followers"; currently, there are over 50 stakeholders in non-Pilot countries, such as Portugal. Third, AGORA promotes societal transformation to empower local communities, and to do so, it evaluates the need for learning tools to be developed. It will host workshops tackling pressing issues, such as disinformation, while creating digital tools where citizens can obtain valuable knowledge. These will include a Digital Agora, two digital Academies, and an app, which will be a challenging game that will allow stakeholders to be entertained and learn simultaneously. Finally, the project evaluates policies implemented in different countries to address climate change risks and design adaptation strategies through participatory democratic methodologies. Through a multidisciplinary, integrated approach, AGORA is a growing, dynamic, pan-European community that creates and shares advanced digital tools to enhance awareness. Informed citizens can actively participate and contribute to ensure safe and sustainable development. Hence, the project is the meeting point where citizens share knowledge, practices, expertise and needs, interacting with sciences to design and build a more resilient Europe through a living dialogue between local communities.



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**SOCIOECOS**

Climate Change, Sustainability  
and Socio-ecological Practices

# TRACK 1

## ***Ecologist and social movements on climate emergency. Politics and climate change***

*Greenpeace; Extinction Rebellion; Scientist Rebellion; Just Stop Oil; Vegetal Future; Ecologists in Action; Fridays for Future; Climate Justice; eco-feminisms; citizen science movements; anti-extractivism movements; eco-justice; main political debates; negationist movements; resilience, mitigation and resistance movements*



## The effectiveness of Extinction Rebellion's "Regenerative Cultures" for a Just Ecological Transformation: socio-ecological practices and prefiguration

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**Abstract:** *The dominant framework for combating global warming, defined by the IPCC's scientific communications and the development of new technologies and market-oriented solutions within the decision-making process of the Conferences of the Parties (COP), was found to be ineffective, resulting in a depoliticization of the climate crisis and the maintenance of the status quo. This "ecological transition from above", attributable to the principles of the green economy, is opposed by climate movements, such as Fridays For Future (FFF) and Extinction Rebellion (XR). These collective subjects promote an "ecological transition from below", oriented towards climate justice, which implies both the consideration of social inequalities linked to climate change and the intersectional dimension of social struggles, including workers', anti-racist and feminist issues (Imperatore and Leonardi, 2023).*

*Recognizing the fact that we live in a harmful system to both people and the natural world, Extinction Rebellion's activists encourage the implementation of socio-ecological practices linked to "regenerative cultures", which the purpose to create a healthy, resilient and regenerative community, in which people should be committed to changing the system by starting with themselves, others and the environment (XR Italy website). This paper aims to study in dept Extinction Rebellion's regenerative cultures and how this example of prefigurative politics, or prefiguration, (Boggs, 1997; Shoorsberg, 2023) can be considered "effectiveness" (Bosi, Giugni and Uba, 2016), trying to answer to one of the five prefiguration research challenges launched by Mygind du Plessis and Husted (2022). Starting with the hypothesis that the embodiment of regenerative cultures for XR's activists could have consequences for participants themselves, for the group and for actors outside the movement, I propose the articulation of three categories of effectiveness, referring to the three consequences just indicated: personal-biographical; on the group (or movement); towards external actors.*



*The empirical basis of the research work concerns 25 semi-structured interviews to Extinction Rebellion's activists and some direct observation experiences in their assemblies and mobilizations, on the occasion, for example, of the Climate Social Camp in Turin (July 2022) and the Word Congress for Climate Justice in Milan (October 2023).*

**Keywords:** *Extinction Rebellion, climate movements, regenerative cultures, prefiguration, effectiveness.*

## 1 Introduction

The dominant framework for combating global warming, inspired by the green economy's principles, is the "ecological transition from above", in which a key role is assigned to the Conferences of the Parties within the United Nations Framework Convention on Climate Change (UNFCCC). The inefficiency of intergovernmental climate policies established in this decision-making framework is a central issue for the mobilization platforms of climate movements, such as Extinction Rebellion (XR) and Fridays For Future (FFF), which promote a different vision for countering climate change, the "ecological transition from below" (Imperatore and Leonardi, 2023). These collective subjects adopt both conflictual mobilizations and direct social actions to achieve social change: the scope of the first is to put pressure on governments through climate strikes, roadblocks, actions to various corporate and government buildings and other civil disobedience actions. The second, instead of focusing on the state or other power holders' claims, concentrates on the direct transformation of specific aspects of society through actions (Bosi and Zamponi, 2015). According to Asara and Bertuzzi (2023), these "interstitial alternative actions" are aimed at changing the dominant economic and cultural structures by prefiguring different ways of living and relationships with humans and non-human beings, without directly opposing the dominant order.

The purpose of this paper is to explore the Extinction Rebellion's "regenerative cultures", one of the official principles of the movement which aims to transform the system by embodying a different way of being (XR Italy website). Practices linked to regenerative cultures could be understood as an example of prefigurative politics or prefiguration, defined for the first time by Carl Boggs (1997) as the embodiment, within the ongoing political practice of a movement, of those forms of social relations, decision-making, culture, and human experience that are the ultimate goal. As affirmed by one of my interlocutors:

“XR is a prefigurative movement: it not only wants to change the world but also wants to start manifesting [this change] ... Many activists are here because they are intimately interested in creating a new world. They are interested in prefiguring, they are interested in communities, they are interested in education, they are interested in these series of practices ... They cannot wait to explore these aspects.” (Interview to Paul XR).

In recent years, according to Schaarsberg (2023), scholars have reflected how activists are “being the change they want to see in the world” and have developed the concept of prefiguration to indicate how social change movements align the means of their changemaking practices with the end goals of their organizations. Despite much of the literature on prefigurative politics highlighting “doing” over “being”, a spiritual way of being as a form of political prefiguration offers us the possibility to “expand the toolbox of prefigurative politics from a narrow one – focused on organizational structures and movement building – to a much broader concept that also includes affective, embodied and spiritual experiences, in short, ways of being” (Schaarsberg, 2023, pp. 14-15). Effectively, not only our economic, political, and educational institutions, but also:

“The way we live together, articulate our emotions and manage conflict also need to be addressed (...) [many social groups] are helping their members to find constructive ways of supporting each other collectively when individual feeling of rage, distress and anxiety emerge (...) [connecting this effort] with non-violent communication methods and inclusive horizontal decision-making mechanism.” (Monticelli, 2022, p. 2).

This is the case with Extinction Rebellion’s regenerative cultures, detailed in the next paragraph (2). Successively, I analyse the question of the effectiveness of prefigurative practices connected to regenerative cultures, in terms of the impact of social movements on the life-course of the movement’s participants and the population in general (Bosi et al., 2016), trying to answer to one of the five prefiguration research challenges launched by Mygind du Plessis and Husted (2022). I have supposed three categories of impacts which could have a connection with the XR’ regenerative cultures: “personal-biographical”, “on the group (movement)” and “external (towards other actors)” (paragraph 3). In the last paragraph (4) there is a short conclusive consideration.

The empirical basis of the research work concerns 25 semi-structured interviews to Extinction Rebellion’s activists and some direct observation experiences in their assemblies and mobilizations, on occasion of the Climate Social Camp in Turin (July 2022) and the Word Congress for Climate Justice in Milan (October 2023).

## 2 Extinction Rebellion's regenerative cultures: definition and main attributes

Recognizing that we live in a harmful system, Extinction Rebellion's activists encourage the implementation of socio-ecological practices linked to regenerative cultures, aiming to create a healthy, resilient, and regenerative community, in which people are committed to changing the system starting with a change of approach towards themselves, others and the environment (XR Italy website). According to XR's perspective, the climate crisis is a consequence of the economic, political, and social model imposed by the extractive capitalism; therefore, it is fundamental to fight for social change. In this framework, the principle of regenerative cultures takes on a key role because "it allows us to rethink this system by reconnecting with ourselves, with people, with the community, and finally with the whole world. So, we can deconstruct all the mechanisms responsible for this situation" (Interview to Anne XR). Defining XR's regenerative cultures is a difficult task. According to one of my interlocutors, it could be described as:

"A culture of mutual care ... [which responds] to the need to take care of ourselves and our community, of those around us and also of the planet we live on ... seeking to increase the well-being within the movement, bringing this social change even outside." (Interview to Victoria XR).

This emphasis in considering broadly the concept of care is often highlighted by XR's activists: "across regenerative cultures, XR tries to practice the care not only of the environment and the Earth, but also in interpersonal relationships, in the group, and in the person" (Interview to Meghan XR). Taking into consideration the interviews with XR's activists and my experiences of direct observation during their mobilizations, assemblies and reunions (particularly on the occasion of the Turin climate social camp), I argue that regenerative cultures, representing a way of conceiving oneself, is a principle that implies both the embodiment of caring-oriented relationships (towards oneself, other human and nonhuman beings, and the environment as a whole) and the attempt to expand this care of relationships outside the movement, favouring a desirable social change.

In addition to this concept of care, other attributes are important for understanding regenerative cultures: facilitation, regenerative transformation of conflicts, and active listening, to mention a few. Specifically, "facilitation helps and supports the group in its process (not only decisional) for achieving the objectives established by the group" (Interview to Ariel XR). The best-known space of the facilitation work is "decision making and governance", characterized by meetings and assemblies in which the group discusses most of its needs. The principles of regenerative cultures influence the conduct

of assemblies, including check-in and check-out moments (before starting the discussion and after making the decision, to investigate the members emotional state), the gesture of silent applause when one agrees, and the taking of decisions using the method of consensus. Other spaces in which facilitation works are: "collective investigation", in which collective intelligence, often called brainstorming, emerge; "cohesion and celebration", to weave and strengthen bonds between participants; "emotional management", where latent discomforts and conflicts are addressed (XR Italy, 2021). Based on both the "nonviolent communication, articulated in observing, identification of feelings, recognition of needs, making demands" (Interview to Ariel XR) and the "regenerative circles of the Dominic Barter's reparative justice approach" (Interview to Paul XR), regenerative transformation of conflicts is a method for resolving tensions between activists within the movement: "if it is normal that in a large group there may be tensions, it is important to discuss with the objective of mutual understanding" (Interview to Damian XR). Finally, another regenerative cultures practice is active listening, which implies total listening to the other person. The listener does not intervene and does not interrupt the words of the person in front of him, focusing also on his emotions and non-verbal language: "there are exercises to learn the method of active listening ... which aims at a total understanding of the other" (Interview to Damian XR).

### 3 The effectiveness of Extinction Rebellion's regenerative cultures

The growing significance of prefigurative politics for activists and scholars is also reflected in the literature: the number of articles published each year, containing the word "prefiguration", has increased significantly since the turn of the century. According to Mygind du Plessis and Husted (2022), this proliferation is laudable but there are some questions with how prefiguration is currently deployed across academic disciplines:

"First, the literature often fails to account for the effectiveness of prefiguration as a political strategy. Second, it frequently subscribes to puritan ideals, which render the studied movements prone to failure. Third, it almost completely neglects to study examples of Right-wing activism. Fourth, it sometimes commits the fallacy of circular reasoning, whereby the premise and the conclusion of the argument overlap. Finally, it tends to portray prefigurative practices as particularly performative, vis-à-vis more strategic actions, without properly substantiating this claim." (Mygind du Plessis and Husted 2022, p. 218).

I'm now trying to connect my research on XR's regenerative cultures to the first of these five prefiguration research challenges, to learn the effectiveness of prefiguration. Considering that there are many ways of assessing effectiveness and most prefiguration movements deliberately circumvent conventional politics (Taylor, 2013), the challenge for researchers is to investigate these alternative assessments of effectiveness. Focusing on the impact of social movements "on the life-course of movement participants and the population in general" (Bosi, Giugni and Uba, 2016, p. 5), with starting from the hypothesis that the embodiment of regenerative cultures for XR's activists could have consequences for participants themselves, for the group and for actors outside the movement, I propose the articulation of three categories of effectiveness, referring to the three consequences just indicated: personal-biographical; on the group (or movement); towards external actors.

### **3.1 Personal-biographical effects**

According to some of my interlocutors, embodying regenerative cultures produces consequences for participants themselves, for example, in terms of changing ways of interacting, conceiving themselves, and developing more emotional intelligence: "[regenerative cultures] completely transformed and revolutionized my life (...) it changed the way I observe everything, especially myself (...) I developed more emotional intelligence" (Interview to Paul XR); Another interviewee affirms that "there have been changes in my relationships with family, and friends (...) People have started to recognize the characteristic of listening in me(...) I realized that I am able to give a name to my emotions" (Interview to Ariel XR). The embodiment of this culture allows participants to feel part of a community characterized by mutual support and to establish relationships among participants: "we have an idea of supportive communities within regenerative culture and civil disobedience (...) If we go to jail, there are people waiting for you with bread and nuts on your way out" (Interview to Sara XR); "we try to create a community [in which] every person feels better. We establish relational bonds that are difficult find outside this movement" (Interview to Victoria XR).

### **3.2 Effects on the group (movement)**

XR's activities are strongly influenced by regenerative cultures: "it is in everything we do" (Interview to Damian XR). The embodiment of this culture implies a horizontal management of power within the principles of sociocracy and – as described in the previous paragraph – other regenerative practices such as the transformation of conflicts and the facilitation of assemblies, which makes meetings very effective for decision making and allows everyone to take turns speaking without anyone dominating the discussion. Other care initiatives for

the movement's participants take place on the occasion of local and national regenerative cultures' moments, "where activists, without a specific purpose, meet to get to know each other better and recharge their energies" (Interview to Damian XR) and of civil disobedience acts, in which "a regenerative culture's group deals with activists' well-being during and after the action" (Interview to Paul XR) Particularly, XR's regenerative cultures' principle influences civil disobedience actions establishing both the circle "do, learn, rest, do" and the need for awareness:

"Regenerative culture serves to dictate the action timing: planning, implementation, and then we take some time to understand what went well and what went wrong, and a resting time with the idea that the activist does not immediately launch into another action." (Interview to Damian XR).

"We don't want someone going into action unconsciously ... activists have to act consciously, understanding that we are not here because it gives us adrenaline, but understanding that it is the only thing we can do in the context of nonviolence." (Interview to Sara XR).

### 3.3 External effects (towards other actors)

External effects of regenerative cultures towards other actors could be observed in several aspects. First, many social groups appreciate and have started practices related to this culture: "some long-standing movements have asked us to facilitate their meetings (...) Also Last Generation have adopted XR's regenerative cultures without modification (...) The facilitation is appreciated in cohousing, by Open Fields Association and utilized in many condominium meetings" (Interview to Damian XR). Other social collective subjects, such as "Fridays For Future, Mediterranean Association and trade union organizations asked for support in learning the technique of meeting facilitation" (Interview to Paul XR). The facilitation, which is a regenerative cultures' tool, has been adopted in the citizen's assembly of Bologna (Italy), where "people participating, who are ordinary citizens, appreciated the order with which the meetings were managed" (Interview to Damian XR). Although it is difficult to establish a direct cause-effect link between XR practices and what happens in society, it should be noted that numerous official facilitation courses are spreading in Italy. These courses are attended not only by XR activists, but also by ordinary people or participants from other social groups, who want to learn this technique and bring it within their organization.

## 4 Conclusions

I presented an analysis of XR's regenerative cultures, definable as a way for conceiving oneself which implies both the embodiment of caring-oriented relationships (towards oneself, other human and nonhuman beings, the environment as a whole) and the attempt to expand this care into relationships outside the movement, to bring out a desirable social change. The main attributes of regenerative cultures are a broad concept of care, the facilitation of meeting, the regenerative transformation of conflict and active listening, which I described in the second paragraph. Then, aware of the difficulty in establishing a direct cause-effect relationship between the movements' practices and what occurs in the rest of society, I tried to individuate three categories of effectiveness of regenerative cultures' practices: personal-biographical, in terms of changing ways of interacting, conceiving oneself, and developing more emotional intelligence; on the group (movement), referring to the management of power and conflicts, the facilitation of assemblies and caring-acts for XR's activists; and finally towards external actors, describing the interest regenerative cultures practices will have for other social groups and ordinary people.

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## Methodological appendix

Research design: This paper is realized through a qualitative research approach, including semi-structured interviews and direct observation experiences. The aim was to develop a case study on Extinction Rebellion's regenerative cultures, exploring key characteristics, meanings, and implications. By linking my research material with literature on "prefiguration and effectiveness", I have explored how prefigurative practices related to regenerative cultures can be considered "effective".

Data collection methods: The records of semi-structured interviews have been entirely transcribed and analyzed through qualitative research methods. I put these transcripts into a codifying system, called MAXQDA, then I coded the research material and extracted useful items for this paper.

Strategy and sample size: I selected a group of 25 privileged witnesses (XR activists) through snowball sampling to interview them with semi-structured interviews. In the article I reported some excerpts from these interviews, to which I referred under pseudonyms.

Place and time in which my fieldwork was conducted: The direct observation experiences were carried out in Turin (July 2022) and Milan (October 2023). Snowball sampling for interviews was practiced between November 2020 and February 2024. 13 interviews were conducted in the field during the two direct observation experiences just mentioned (ethnographic interviews), while the other 12 were conducted online, through a videocall system.

## Websites

- <https://cloud.extinctionrebellion.it/index.php/s/ibaqzpTwGNyLqWC>.
- <https://extinctionrebellion.it/>.

## Abbreviations

- **COP:** Conference of the Parties
- **FFF:** Fridays For Future
- **IPCC:** Intergovernmental Panel on Climate Change
- **UNFCCC:** United Framework Convention on Climate Change
- **XR:** Extinction Rebellion



## Biographical Notes

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# Unravelling Loss and Damage: A Discourse Analysis Across NGO's Positions

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**Abstract:** *This paper addresses the lack of an official definition to describe loss and damage (L&D) caused by climate change. This investigation takes into account the evolving landscape of the international climate regime, marked by a transition to a new era of multi-level, multi-actor and multi-sector climate governance. With the integration of non-state actors and the emergence of a “hybrid multilateralism” regime, we conduct an analysis of the term in the climate negotiations of the United Nations Framework Convention on Climate Change (UNFCCC) across NGO positions. We identify different perspectives, with the subsequent aim of drawing conclusions about similarities and differences, in order to understand the causes and implications for the implementation of an operational fund to address loss and damage.*

**Research questions:** *What is the position of NGOs in the different discursive approaches to Loss and Damage? What are the implications for the implementation of an operational fund?*

**Keywords:** *Loss&Damage, international climate regime, hybrid multilateralism, operational fund, discourse analysis*

## 1 Introduction

The idea of the need to establish a global mechanism to address material losses resulting from climate change first emerged in 1991 during the negotiations to create the UNFCCC. The Republic of Vanuatu, on behalf of the Alliance of Small Island Developing States (AOSIS), proposed the creation of an international insurance pool to compensate Small Island Developing States for damages suffered as a result of sea-level rise. This proposal, known as loss and damage (L&D), comprises, at the same time, the spectrum of climate change impacts that could not be adapted to and the international mechanism created to address them (Boyd et al., 2021).

The concept of L&D first emerged explicitly in 2007 at 13th Conference of Parties in Bali, Indonesia, which recognised the right of developing countries that are particularly vulnerable to the adverse effects of climate change to obtain aid

to finance the costs of adaptation. In the context of L&D, developing countries advocate for the establishment of a compensation fund (Roberts & Huq, 2015). However, liability and compensation for climate change have been a largely sensitive area in climate political theory, primarily due to its uncomfortable implications for international cooperation and political feasibility considerations (Hattori, 2021).

In the loss and damage area, there exists a double ambiguity characterised by a lack of epistemic consensus (uncertainty over the nature of the task) and strategic consensus (heterogeneous preferences) (Hall, 2017). Regime complexity and fragmentation exacerbates these ambiguities as it is more difficult to find common ground between actors operating in different regimes. Actors adopt the forms of ambiguity that they believe they will have the power to interpret in the future (Best, 2012).

As such, there is a lack of research on L&D policy concerning the conceptualization of the shift of the international climate regime towards a new era of climate governance characterised by the involvement of multiple actors, sectors and levels (Hale, 2016; Kuyper et al., 2018). This study aims to contribute to this research gap, through a comparative analysis of the discourse of L&D by NGO positions.

## **2 Perspectives on Loss & Damage**

Our analysis has revealed the emergence of three approaches to delineating the concept of loss and damage among diverse stakeholders. Firstly, there exists a perspective that interprets loss and damage as a means for enhancing risk management endeavours, with a primary focus on augmenting readiness and recuperative capabilities in the face of extreme climatic events. Secondly, an alternative conceptualization positions loss and damage within the realm of adaptation strategies, conceptualising it as a vehicle for dispensing humanitarian aid to mitigate the adverse effects of climate change. Lastly, a distinct viewpoint perceives loss and damage as emblematic of climate justice concerns, advocating for redress and recompense for the repercussions stemming from the activities of industrialised nations.

## **3 Evaluating Definitions in NGO Discourse**

At the COP 21, the climate regime broadened its agenda and marked a turning point. In the Paris Agreement (2015), the climate regime shifted from a top-down administration to a “hybrid multilateralism” that represents a breaking up of a

binary feature fundamental to the original developed versus developing (Annex I versus Annex II) countries, states (parties) versus non-state actors (observer organisations), and climate change versus other global sustainability problems (Kuyper et al., 2018). Non-state actors are formally included as contributors to the Agreement and hoped to raise the efficiency and effectiveness of the international agreement (Bulkeley, 2014; Hale, 2016; Jernäs & Lövbrand, 2022). Thus, this section discusses approaches to loss and damage by non-state actors.

ActionAid is an organisation that works on international development issues and has advocated for loss and damage through reports and submissions. In 2010, published for the first time a discussion paper regarding loss and damage. In the analysis, not only recognizes loss and damage as consequences arising when physical adaptation is not possible but also acknowledges that it can occur even when adaptation is theoretically feasible but financial and technical limitations hinder effective adaptation. Additionally, it underscores the significance of recognising not only public losses, such as infrastructure (roads, bridges, hospitals), and indirect public losses like reduced tax income, but also private losses and damages like the loss of life, agricultural land and livelihoods.

In May 2012, the organisation released a report emphasising that loss and damage extend beyond the limits of adaptation, affecting both human communities and ecosystems. ActionAid called for developed countries to provide financial support and technology to assist developing nations in investing in adaptation and disaster risk reduction. Furthermore, urged a discussion on mechanisms for rehabilitation and compensation guiding the precautionary principle.

A collaboration between ActionAid International, CARE International and WWF International released a report in 2013. The report reiterated the limits of adaptation while expressed disapproval of the inadequate mitigation effort of developed nations. It advocated for developed countries, in line with their legal obligations under the UNFCCC, to take into account the distinct needs and situation of nations particularly vulnerable to the negative impacts of climate change. The report asserted a dual legal and moral responsibility on developed nations to support affected countries in addressing damages, offering compensation and rehabilitating specific losses associated with climate change.

In 2019, in partnership with the Asia Disaster Reduction Network (ADRRN), the Climate Action Network of Southeast Asia (CANSAs), and with the backing of the Asia-Pacific Climate Change Research Network (ACCRN), ActionAid launched a report that redefined climate-induced loss and damage. This report, which frames loss and damage as “limits to adaptation,” was presented as a collaborative effort to address the impacts of climate change that are so severe that adapting to them becomes difficult or impossible. It argues that adaptation

efforts offer only limited assistance and result in the loss of crops, homes, land, and other vital resources within communities and advocates for recovery support and compensation.

The Loss and Damage Collaboration (L&DC) is a group of climate policy to support developing countries to address loss and damage. L&DC have published numerous reports and discussion papers on the subject. A 2022 L&DC report emphasises the different needs of loss and damage and adaptation. These needs include the ability to effectively plan for responding to ongoing climate impacts, measuring responses and implementing systems for providing financial assistance to affected individuals and communities in the need of rehabilitation.

A 2023 discussion paper titled “The Loss and Damage Finance Landscape”, jointly released by Heirich-Böll-Stiftung and L&DC, defines loss and damage as the harm that arise from the impacts of climate change that has not been or cannot be addressed through mitigation measures. This harm stems from a spectrum of climate change impacts and may manifest as both economic and non-economic losses. The paper underscores the need for new, balanced, and comprehensive approaches to address ongoing recovery, rehabilitation, and non-economic losses. It emphasises financial support for activities like active remembrance or memorialization programs. Crucially, unlike humanitarian assistance, loss and damage finance should be iterative, enabling and supporting longer-term recovery from climate impacts.

An NGO interviewed<sup>1</sup> conceptualises Loss and Damage as a combination of climate justice and cascading risk perspective, thereby showing that loss and damage were the result of insufficient mitigation and adaptation action. Pointing out that from a technical point of view, losses and damages reveal the limits of adaptation and from a political point of view, questioning which countries are responsible for losses and damages due to the lack of emissions mitigation.

Over time, non-governmental organisations have experienced a transformation in their advocacy strategies. Initially, their focus lay in advocating for the recognition of loss and damage as a critical issue. With this milestone achieved, their efforts have shifted towards delineating whose needs should be prioritised and who should be the beneficiaries of funding. Although some positions may remain unchanged, the success of advocacy endeavours has significantly impacted policy discourse on loss and damage. This shift underscores the importance of leadership within specific individuals and organisations, exemplified by the Climate Action Network, who consistently raise awareness and conduct in-depth analyses. Furthermore, the establishment of coalitions has played a pivotal role in advancing these advocacy efforts.<sup>2</sup> It is important to underscore that many of the larger NGOs are supporting the Least Developed Countries (LDCs) in their

negotiation processes, “they have been quite progressive and supportive” and “they have been at the forefront in supporting developing countries to move this agenda forward”<sup>3</sup>.

An NGO interviewed<sup>4</sup> emphasises the pressing need for precise definitions, particularly voiced by developing countries, especially LDCs. They express concern over the meticulous allocation of funds and advocate for a more operational and technically-oriented reporting framework. Furthermore, they stress the importance of delineating a clear boundary between adaptation and loss and damage to mitigate potential conflicts and discrepancies in reporting, thereby ensuring effective resource allocation. The interviewee suggests reframing the discourse from “climate-induced loss and damage” to “climate-associated loss and damage,” advocating for a pragmatic approach and underscores that the theoretical debate has geopolitical implications. Additionally, the success in advancing the discourse on L&D is attributed to the concerted efforts of civil society and developing countries.

## 4 Conclusions

The absence of a singular, universally accepted definition of L&D can be attributed, in part, to the inherently political and consensus-driven nature of the UNFCCC. Within this forum, reaching broad agreements is essential for effective decision-making. However, this very characteristic has paradoxically facilitated the establishment and approval of the L&D fund, despite the absence of a clear definition.

Our examination has revealed the existence of three primary approaches to defining L&D among stakeholders. In analysing the perspectives of NGOs, it becomes evident that their positions largely favour prioritising humanitarian assistance while also advocating for principles of climate justice. However, it is notable that these two positions are not mutually exclusive, as NGOs often recognize the interconnectedness of various approaches to addressing L&D.

Furthermore, our study underscores the significant role played by NGOs in shaping the discourse and governance surrounding L&D, particularly in advocating for the needs and priorities of LDCs. Their active engagement highlights the consolidation of a multi-actor international climate regime.

Ultimately, the governance of L&D is deeply influenced by the underlying assumptions and power dynamics of actors involved in the discourse. Recognizing and navigating these dynamics is crucial for formulating effective policies and mechanisms to address L&D.

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## Methodological Appendix

This article employs critical discourse analysis (CDA) framework to reveal the ontological and epistemological premises inherent in language (Pedersen, 2009). by integrating both literature review and semi-structured interviews, our research aims to provide a nuanced understanding of the complex discursive landscape surrounding Loss&Damage.

Situated within the constructivism paradigm of social sciences, CDA emphasises the significance of language as a fundamental component intricately woven into material social processes (Wodak & Meyer, 2001). This methodology acknowledges the relationship between language and societal structures, emphasising the active role of discourse within a given context.

The timeline of the analysis spans from 1990, marking the emergence of Loss&Damage considerations in climate negotiations, to 2022, when the associated fund was approved. The literature review encompasses an examination of submissions by countries, COP decisions, individual scientific publications and NGO reports. Concurrently, semi-structured interviews have been conducted. This study has been conducted from October 2023 to March 2024.

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## Abbreviations

- **ACCRN:** Asia-Pacific Climate Change Research Network
- **ADRRN:** Asia Disaster Reduction Network
- **AOSIS:** Alliance of Small Island Developing State
- **CANSA:** Climate Action Network of Southeast Asia
- **LDCs:** Least Developed Countries
- **L&DC:** Loss and Damage Collaboration
- **L&D:** Loss and Damage
- **NGO:** Non-Governmental Organisation
- **UNFCCC:** United Nations Framework Convention on Climate Change

## Biographical Notes

Irene Beltran serves as a Research Assistant at the University of the Basque Country (UPV-EHU), where she delves into the complexities of Loss and Damage and Climate Policy within the framework of the UNFCCC. Additionally, she holds a position of Technician in Circular Economy at Ihobe, the Public Society for Environmental Management of the Basque Government.

Elisa Sainz de Murieta serves as a Professor in the Department of Applied Economics at the University of the Basque Country (UPV-EHU) as well as a Research Associate at BC3 - Basque Centre of Climate Change. She has extensive experience in analysing the risks of climate change and adaptation policies in contexts of uncertainty. She has numerous publications in scientific journals and has contributed to the most recent IPCC report on impacts and adaptation.

## Notes

1. Interview of a member of an NGO on April 29.
2. Interview with an Academic Researcher on March 06, 2024.
3. Interview with a Policy Analyst of OECD on March 15, 2024.
4. Interview with a member of an NGO on January 31, 2024.

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## Climate Change and the Nation-State Curse

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**Abstract:** *Climate change is an uncontrollable phenomenon which cannot recognise national, class, ethnic, gender or geographical boundaries and hence cannot be tackled, or even comprehended, within the limits of a nationalist worldview. Yet, the international system is dominated by nation-states which are in turn imbued by the ideology of nationalism. Despite this, the relationship between climate change and nationalism has been largely unstudied until 2020. This presentation first identifies the key political obstacles to global climate action. For years, the pressures exerted by the fossil fuel lobbies hampered action by the main Western governments.*

*While there is a vast literature analysing these lobbies, this presentation explores a scarcely identified set of obstacles caused by the current division of the world into nation-states, powered by their own ideology – nationalism. Nationalism has become the dominant ideology of the contemporary world in tandem with the expansion of capitalism. It is therefore an ideology that it is impossible to ignore, nor we can pretend that it does not exist. But we must understand its limits, ---which will also help us to understand the apparently escapeless situation we may soon face.*

*This new approach begins with a question: if nationalism is the core ideology around which contemporary political relations turn, is it possible to involve it in the fight against climate change? I explore the possibility of emerging forms of green nationalism largely related to “non-stateless nations” where the environmental dimension has been accompanied by climate mobilisations. But it also relates it to a few “exemplary nation-states” where sustainability pervades political and social relations. The examples of these pathbreaking, trendsetting nation-states should, however, be placed against their major opponents, the “top polluting nation-states”. In conclusion, while riding the wave of nationalism may appear counterintuitive, it may only make sense if non-national solutions are simultaneously considered.*

**Keywords:** *Climate change, nationalism, planetary boundaries, Earth’s future*

## 1 Introduction

A powerful force since at least the French Revolution (Conversi, 2012b; Fehér, 1990; Keitner, 2007; McPhee, 2016; Poulsen, 2023; Rowe, 2013; Wallerstein, 1990), nationalism has exploded and expanded on the wings of capitalism () and, more recently, neoliberal globalisation (Conversi 2012a, 2014). Just as the pundits of neoliberalism preached the alleged cosmopolitan virtues of the “free” market, nationalism slowly built up and proliferated in multiple forms: peaceful, violent, subconscious, hot, exclusivist, everyday, imperialist, racist, or “banal” (Billig, 1995). Since the Cold War, we have been warned that nationalism was here to stay, expand and, eventually, rise like a phoenix from the ashes (Connor 1984; 1994). These predictions were not simply borne out of past historical experiences or already visible trends, but proved to be too benign, largely inadequate to assess nationalism’s all-pervasive impact. Many nationalism scholars initially stressed the constructive, positive and inclusive nature of nationalism (Calhoun, 1997; Smith 1996, 1998).

This paper observes that, while nationalism has remained deeply “grounded” (), it has rarely been connected to one of the most devastating crises of the contemporary world, climate change. The fact that every nation in the world will be affected by climate change is far too important to be dismissed by nationalism scholars – as well as by nationalists themselves. Therefore, it is very important to stress that most recent scientific research has confirmed the climate crisis as being on a broader poli-crisis spectrum, and thus particularly affecting the study of nationalism. As nationalism remains the foundational ideology of contemporary politics, we need to understand whether it can be utilised in the fight against climate change.

## 2 Studies before 2020

I underline how nationalism needs to be connected to one of the most devastating crises of the contemporary world, climate change, but that we cannot depend on nationalism studies scholars to do the job as this requires a stronger interdisciplinary vocation that has so far been absent within the field.

It is most surprising to know that, before 2020 (Conversi, 2020; Lieven, 2020), none of the major nationalism scholars had systematically considered incorporating climate change into their research, nor had they considered the relationship between the two, confirming a surprising inability to place their research within the perspective of contemporary (not to say future) trends and scenarios. Originally an interdisciplinary field in itself, and eventually a sub-discipline (), nationalism studies has remained deeply immune to

emerging trends. This is largely due to its conservative scholarly legacy, with a vocabulary and conceptual tools that have remained almost frozen for about 30 years, approximately since at least the publication of Michael Billig's "banal nationalism" (Billig, 1995). Nationalism scholars have thus appeared to remain largely unable to grasp the hard facts of a rapidly changing world.

This lack of knowledge, if not perduring ignorance, about a rapidly evolving and all-encompassing crisis that has been meticulously documented over 40 years or more (Zalasiewicz et al., 2015), reveals the deep academic conservatism and lack of vision prevailing in and beyond nationalism studies. While the crisis was already manifesting itself at various levels, a complete lack of attention to ongoing scientific research impeded the necessary understanding of the nationalism–climate change nexus while obstructing an adequate understanding of its highly complex dynamics.

Until 2020, not a single article or book had been published that systematically analysed or studied the complex multifaceted interconnections between nationalism and climate change (Conversi et al., 2022): for too long, the term "climate change" has remained almost taboo in nationalism studies, as well as the interdisciplinarily successful neologism *Anthropocene*, which was not mentioned once in any of the major nationalism studies journals before 2020 (Conversi et al., 2023).

Astonishingly, this visionless approach persisted while nationalism was increasingly revealing itself as one of the major obstacles in the global fight against climate change. Some forms of nationalism, such as "resources nationalism" (Koch, et al. 2019; Poncian et al., 2023; Rutland, 2022; Wijaya et al.) had emerged during the major international climate negotiations. At least since the Kyoto protocol (Conversi, Hassan and Posocco, 2023), nationalism as become visible as a motor of *delay* (Ekberg et al., 2022; Shue, 2023) and a motivator of *obstruction* (Edwards et al., 2023; Herranen, 2023; Holder et al., 2023; McKie, 2021; Moreno et al., 2023), affecting every single international negotiation process in different ways.

Additionally, when nationalism goes to war, the amount of CO<sub>2</sub> and other greenhouse gases released during combat operations dwarfs those produced in peace times; consider the gargantuan amount of all kinds of pollutants released into the atmosphere during bombing and other bellic attacks – particularly in Gaza (Neimark et al., 2024) and Ukraine (Hryhorczuk et al., 2024; ). In general, unrestrained forms of nationalism can both directly obstruct and debilitate international commitments and agreements (Conversi, 2020).

To add insult to injury, nationalism has often been accompanied by “developmentalism”, the modern obsession with national development and economic growth irrespective of the consequences in terms of human suffering, dislocation and environmental degradation (Mathai et al., 2023; Sachs, 2008), not to mention the long-term effects of climate change and transgressing other planetary boundaries (Rockström et al., 2009a; Rockström et al., 2009b). Due to the accompanying political obsession with business as usual (BAU) and classical developmental goals, nationalist policies have indirectly contributed to the release of vast amounts of greenhouse gases, leading to accelerated climate change (Connolly et al., 2020; Scheffran, 2023).

In turn, nationalism hasn’t featured or appeared in major collections or handbooks dedicated to the sociology of climate change (Dunlap et al., 2015; 2016a; 2016b). This reveals a worrying lack of intercommunication and exchange of information within disciplines. The problem thus doesn’t just concern nationalism studies, but the social sciences at large.

For many years, the pressures exerted by the fossil fuel lobbies hampered action by Western governments (Frumhoff et al., 2015; Lewandowsky et al., 2015; Oreskes et al., 2010; Washington et al., 2011). There is a vast literature analysing these lobbies and think tanks and their disruptive socio-political actions, including induced polarisation (Antonio et al., 2011; Brown, 2012; Brulle, 2020; Busch et al., 2021; Dunlap and Brulle, 2015; 2016a; 2016b; Dunlap et al., 2020; Dunlap et al., 2013; Dunlap et al., 2016c; Moreno, Kinn and Narberhaus, 2023). These are usually considered the key political obstacles to global climate action.

A second crucial, yet less studied, set of obstacles is caused by the current division of the world into nation-states, powered by their own ideology, nationalism, which has become the dominant ideology of the contemporary world, in tandem with the expansion of capitalism (Conversi, 2023a; ). It is therefore an ideology that remains impossible to ignore (Posocco et al., 2022), nor we can pretend that it does not exist or that it will magically vanish. At the same time, we need to fully comprehend its limits, which will also help us to understand the dead-end street situation we may soon collectively face.

Following the Covid-19 pandemic, there has been an upsurge of interest in unexpected health crises and in the way nationalist trends could manifest themselves during such crises (). Yet the intersection between the two is relatively weak in comparison to the much broader crisis that has been bubbling under the surface for over 50 years. Climate change has been recognised as “the most important issue now facing humanity” (Nyberg et al., 2022) and the greatest of all emerging crises at the gates of the new millennium (Conversi, 2020), up from merely “one of the greatest ecological and social challenges

of the twenty-first century" (Dietz *et al.*, 2020). Only 11 years earlier, Ulrich Beck had rhetorically asked, "How real is catastrophic climate change?" (Beck 2009, pp. 81-108). He even suggested that the crisis could be an opportunity to build a more cosmopolitan international order (Beck, 2016), while recognising that it largely resulted from the perverse relationship between neo-liberal globalisation and global inequalities (Beck, 2008). The link between climate change, liberal globalisation and global inequalities the three had indeed been previously explored in other streams of research (Conversi, 2012a; Moreno *et al.*, 2017). In fact, Beck's (naive) optimism largely resided in the fact that scientific research was not at that time sufficiently advanced to grasp the full picture of the tragedy at stake.

In just a few years, the overall scenario has become dramatically bleaker. Scientists all over the world have launched appeal after appeal and mobilised in unprecedented ways to steer humanity away from disaster, producing a series of interrelated warnings concerning humanity and the future of life on Earth (Ripple *et al.*, 2019). Even scholars of genocide raised the alarm bell by notifying that we may be entering an era of massive misery and crimes against humanity (Levene *et al.*, 2021; Zimmerer, 2015). Holocaust scholars have begun using the term "omnicide" to address the amplitude of the crisis (Levene, 2022). Warnings keep accumulating, one after another, from all areas and disciplines: freshwater crisis (Albert *et al.*, 2021); microorganisms proliferation (Cavicchioli *et al.*, 2019); collapse of Indigenous and local knowledge systems (Fernández-Llamazares *et al.*, 2021); pandemics and other mutually reinforcing health crises (Watts *et al.*, 2018); and so on.

Meanwhile, the call for action launched by Fridays for future (FFF) (Tomnyuk *et al.* 2023), Extinction Rebellion (XR) (XR 2019) and other well-informed groups has remained largely unheeded by central governments. In 2019, XR declared:

*"When government and the law fail to provide any assurance of adequate protection of and security for its people's well-being and the nation's future, it becomes the right of citizens to seek redress in order to restore dutiful democracy and to secure the solutions needed to avert catastrophe and protect the future. It becomes not only our right but our sacred duty to rebel. – (...) We hereby declare the bonds of the social contract to be null and void; the government has rendered them invalid by its continuing failure to act appropriately."* (XR 2019, 2-my italics).

According to Berglund and Schmidt (2020, p. 14), this rationale is firmly anchored in a liberal conception of the state. However, it is also worth noting that the primary appeal is to the "people's well-being and the nation's future", therefore incorporating a national, if not nationalist, dimension into public campaigns.

The message has now been clearly redefined by Waorani Indigenous leader Nemonte Nenquimo, co-founder of Ceibo Alliance and Amazon Frontlines: “This is my message to the western world – your civilisation is killing life on Earth” (Nenquimo, 2020). As indicated, such a dramatic forecast is currently substantiated by a vast amount of scientific research, particularly in the Earth sciences, where tackling the complexity of the balance of life on the planet has become a priority.

### 3 Planetary Boundaries (PB) versus National Boundaries

The concept of “planetary boundaries” (PB) has for the first time attempted to quantify and encapsulate the multiple interconnected environmental crises affecting the balance of life on Earth in nine dimensions, including climate change (Rockström, Steffen, Noone *et al.* 2009a; Rockström, Steffen, Noone *et al.*, 2009b). The concept of PB specifically helps to envisage the complex relationship between multiple cooccurring crises. I argue that it can yield promises in the social sciences and especially political science, including the study of nationalism.

Some studies have begun to address the importance of PB for governing complexity and devising new political strategies of governance. Yet no progress can be achieved without first considering how the concept of PB identifies human overconsumption and mass consumerism as a major disruptive force affecting life on Earth, well beyond the consumption of fossil fuels. In other words, what is currently happening is a “behavioural crisis driving ecological overshoot” (Merz *et al.*, 2023). The parallel notions of tipping points (Lenton *et al.*, 2008), tipping cascades (Sharpe *et al.*, 2021), regime shifts (Conversi *et al.*, 2015; Möllmann *et al.*, 2015; Rocha *et al.*, 2018), irreversible loss (Santana-Falcón *et al.*, 2023) and amplifying feedback loops (Vahedifard *et al.*, 2024), reveal how these multiple crises pose a growing threat to entire living systems, including human society. They are therefore essential to the foundation of a new, more open and interdisciplinary social science.

For instance, the concept of *social tipping points* (STPs), has emerged as a way to describe a “nonlinear processes of transformative change in social systems”, generally intended as positive transformations needed to achieve the goal of desired social change (Milkoreit *et al.*, 2018). In movements and mobilisations against climate change, such terminology serves to contrast the most horrific prospect of actual or “natural” tipping points occurring at the level of the Earth’s life balance. A considerable amount of social mobilisation is thus needed in order to avoid catastrophe. The “enemies” to be faced in the near future are opposite to popular environmental mobilisations – stasis, stationary politics,

BAU, conservatism and the continuation of everyday short-term politics as if nothing is wrong (the notorious “ostrich” approach). Before reaching such social tipping points, the “progress of this storm” (Malm 2018) keeps on gathering on the horizon and has begun to affect the lives of everyone, verging on irreversible anthropogenic tipping points. There is an almost symmetrical relationship between the two concepts of “tipping points”, one pitting humanity against nature and the other pitting humanity against those who are destroying nature. In comparison to most political leaders, Indigenous leader Nemonte Nenquimo (2020) seems to be much more in touch with scientific findings and more concerned about our immediate future than virtually every existing government.

#### **4 In a world deeply divided into nation-states, what emphasis can increase the saliency of these movements so that they have a true impact on political action, decision-making and governing? After twilight: Towards a Climate Change Turn in Nationalism Studies?**

The current system of international relations and the geopolitical division into “sovereign” nation-states has not so far been conducive to the progress needed on all fronts to fight the global poli-crisis emergency.

As mentioned, the incorporation of climate change and related crises into the study of nationalism began very late in 2020, but has proceeded rapidly since. Indeed, a new “climate turn” is now clearly identifiable (Conversi, 2023b). According to some authors, nation-states find themselves in a prisoner’s dilemma (Kekki, 2024), in which nationalism acts as a major obstacle to advancing mutual cooperation (Conversi, 2020; Karkour, 2023). Long ago, the work of international relations historian E. H. Carr (1892–1982) identified such vital limits by revealing the necessity to adopt new strategies, venues and world visions to face challenging times, while superseding the pervasiveness of nationalism (Karkour, 2023). Similarly, the phenomenologist and metaphysic philosopher Edith Stein (1891–1942) indicated the potential to illuminate cooperative strategies for acting towards the goal of a broader, international cooperative order (Kekki, 2024), which I elsewhere refer to as “survival cosmopolitanism” (Conversi, 2012b; 2020).

Yet, while nation-state nationalism has mostly played a largely obstructionist role in international negotiations (Ekberg, Forchtner, Hultman *et al.*, 2022), the same cannot be said about stateless nationalism (Friend, 2012). Recent research has highlighted the relatively avant-garde policies and attitudes prevailing among some “nations without a state”, such as Catalonia (Enguer



*et al.*, 2024), Scotland (Tutt *et al.*, 2024), Brittany (Kernallegenn, 2023), Corsica (Hau, 2022), Quebec (Teare, 2012), Wales (Jones *et al.*, 2016; Royles *et al.*, 2015) and Galicia (Maiz, forthcoming).

A “green nationalism” framework has thus been used to address sub-state level responses, identifying those forms of nationalism that have been particularly concerned with taking action on the , including the promotion of specific regional legislation (Conversi *et al.*, 2021; Enguer and Navarrete, 2024). This approach can yield further dimensions and offer new linkages by considering that non-human life is even more under threat than human life by the climate crisis (Biswas *et al.*, 2022). On the other hand, many Indigenous peoples and native communities have long been recognised as having a particular interest in the protection of the natural environment (Dove, 2006), while other studies have stressed their formidable commitment in fighting climate change (Etchart, 2017). This applies even more fervently and clearly to those exemplary communities that live outside the market system on the fringes of existing nation-states (Conversi, 2021).

Of course, it would be incorrect to claim that only stateless nations and communities are involved in these actions and policies. There are supranational organisations that have adopted some of the most advanced policies in this regard, particularly the European Union (Nayna Schwerdtle *et al.*, 2023). A similar pattern can perhaps be seen in some state-level policies recognisable as “exemplary nation-states”: Switzerland, Germany and most Scandinavian countries have long been considered path-breaking nation-states, providing advanced models of sustainability likely to be adopted elsewhere (Conversi and Posocco 2022; Posocco *et al.*, 2023). Some scholars have even suggested the notion of a green Chinese “ecological civilisation” emerging in the People’s Republic of China as a possible example of “green nationalism” (Arantes, 2023). On the other hand, such policies contrast with the extremely high levels of greenhouse gas emissions in China (Greenfield *et al.*, 2021): alongside the USA, China has correctly been identified as the “top polluting nation-state” at global level (Posocco and McNeill, 2023). Certainly, there is a huge space here for contradictory policies to emerge with various forms of greenwashing in the political arena (Posocco and Watson, 2022).

## 5 Conclusions

I began with a question: if nationalism is the core ideology around which contemporary political relations revolve, is it possible to utilise it in the fight against climate change? We have explored the possibility of emerging forms of “green nationalism” (Conversi, 2020; Conversi and Friis Hau, 2021), largely

related to “nations without a state” where the environmental dimension has been accompanied by climate action at various levels (Enguer and Navarrete, 2024). It also relates to a few “exemplary nation-states” (Conversi and Posocco, 2022), where sustainability pervades political and social relations. These examples of path-breaking, trendsetting nation-states should, however, be placed in the context of their (majority) opposites, the “top polluting nation-states” (Posocco and McNeill, 2023).

However, emerging concepts in the Earth sciences must be absorbed within social science. For instance, as humanity leaves its “safe operating space”, the literature on *planetary boundaries* may be rapidly expanding (Rockström et al., 2023), but it still hasn’t made sufficient inroads in the social sciences and humanities.

In conclusion, while riding the wave of nationalism may appear counterintuitive, it may make better sense when non-national solutions are simultaneously considered, whether in the form of local communities, religious groups or supra-state institutions. This is why a new framework of “Survival cosmopolitanism” remains a sine qua non by providing a global framework within which existing forms of nationalism can act – and interact.

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## Biographic note

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## The Militant Dispositions behind the Socio-Ecological Practices of Climate Activists in France and Italy

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**Abstract:** *Since its emergence in 2018, following the failure of transnational climate governance, the climate campaign has redirected its attention towards national governments, highlighting the necessity for state intervention to combat global warming. This shift prompts scrutiny of the socio-ecological practices adopted by climate activists in their everyday lives (e.g., dietary changes, waste reduction, and low-emission transportation). This study aims to explore whether and under what conditions climate activists adopt these practices, examining potential differences among activist segments and specific practices they prioritise. The paper draws on dispositional sociology and social movement studies. In particular, it builds on the radical habitus theory according to which prolonged participation in a movement generates dispositions that influence areas other than activism, such as private life and individual choices. Specifically, it is hypothesised that protest-related dispositions, originating from organisational membership and protest participation, influence climate activists' adoption of social-ecological practices. In methodological terms, the study is based on two protest surveys that were conducted during climate mobilisations in Italy (N=1160) and France (N=932) between 2021 and 2023. A number of socio-ecological practices including boycotting products, reducing purchases, buying second-hand products, giving up flying, changing diet and upcycling objects were included in the study. The results show that the adoption of these socio-ecological practices is driven by dispositions that emerge precisely in the process of militant socialisation and that difference between a diverse degree of radical habitus emerge in the two cases, Italy and France.*

**Keywords:** *Climate movement, socio-ecological practices, radical habitus, everyday life, militant socialisation.*

### 1 Introduction

The protest cycle against climate inaction emerged in 2018 in response to the failure of transnational governance on climate change has mobilised hundreds of thousands of people worldwide. Climate activists have adopted different

repertoires of contention, with school strikes and demonstrations emerging as the main vector of mobilisation (Wahlström *et al.*, 2019; de Moor *et al.*, 2020). Extensive analyses have been conducted on various aspects of this protest, including its social composition (della Porta and Portos, 2021; Lorenzini, Monsch and Rosset, 2021) and its frames (Svensson and Wahlström, 2021; Buzogány and Scherhauser, 2022). However, despite a few exceptions (Zamponi *et al.*, 2022; Alexandre *et al.*, 2021) one aspect that remains little explored is the interaction between the collective dimensions of protest and the socio-ecological practices of protesters.

A notable characteristic of this mass mobilisation revolves around its demands, increasingly focusing on climate justice and a return to state intervention to combat global warming (de Moor *et al.*, 2021). Based on this shift, solutions envisaging the empowerment of citizens as the carriers of the ecological transformation, that have been promoted for decades in Western countries to deal with greenhouse emissions and have been supported by the environmental movement (Diani, 1995; Ollitrault, 2008) are now marginalised by the new climate campaigners (Svensson and Wahlström, 2021). This contradiction raises questions: if governmental actions are considered as the main solutions to the climate crisis, what drives climate activists to adopt socio-ecological practices in their everyday lives? Does militant socialisation play a role?

Drawing from surveys conducted during protest events in Italy and France, the study investigates the extent to which climate activists incorporate socio-ecological practices into their daily life and examines the potential associations between these practices and channels of militant socialisation like belonging to an organisation and participating more or less frequently in climate protests. After describing the framework of the adoption of socio-ecological practices, I will explore potential interpretations of these findings through the lenses of radical habitus theories.

## **2 Social Dispositions related with Socio-Ecological Practices**

Research on general population samples has indicated that particular socio-demographic factors may impact the adoption of socio-ecological practices. These typically include possessing a high level of education, belonging to the middle or upper-middle classes, and enjoying substantial incomes (Koos, 2012; Stolle and Micheletti, 2013). Women are more inclined to adopt them compared to men (Koos, 2012; Stolle and Micheletti, 2006), although the reasons for this remain a subject of debate: Zelezny, Chua and Aldrich (2000) suggest that women are nurtured in the ethics of care, potentially influencing their pro-environmental behaviours, while O'Shaughnessy and Kennedy (2010) argue that

women actively create social change through ecological actions. Additionally, Stoddart and Tindall (2011) highlight women's desire to differentiate from dominant masculinity norms as a key factor in their environmental engagement. Age also plays a role: it is observed that some socio-ecological practices, especially those related with political consumerism, tend to be more adopted by people aged between 30 and 40 (Stolle, Micheletti and Berlin, 2010), while younger adults demonstrate more engagement in these practices compared to the youngest segments (Ward and de Vreese, 2011).

Several studies have more recently focused on the relationship between everyday ecologism and collective action. Most of them show that activists engaged with ecological practices tend to have high levels of commitment in political participation. For instance, de Moor and Verhaegen (2020) affirm that gateway effects on non-institutionalised forms of political action are stronger for those activists who are most engaged in lifestyle politics. Dubuisson-Quellier (2015) demonstrates that ecological practices can also be used as a recruitment channel for organisations and as a means of collective contestation.

Regarding the climate movement more specifically, Alexandre *et al.* (2021) conducted an analysis of climate activists in France, finding that while ecological practices are widespread, they are more prevalent among active movement participants than those peripherally involved as sympathisers. Zamponi *et al.* (2022) conducted a comprehensive quantitative study across 15 European countries on the ecological lifestyles of protesters who participated in two climate strikes in 2019. Their results reveal the widespread adoption of ecological practices such as boycotting, reducing air travel, changing diets, and reusing objects. Furthermore, they show that, as with collective political action, the ecological practices of climate protesters are driven by determining factors such as identifying as a woman, having a full-time job, and possess left-wing and libertarian values.

Therefore, empirical evidence suggests that involvement in social-ecological practices in daily life does not exclude collective political action. However, these investigations offer limited insights into social dispositions, especially those arising from militant socialisation, that may stimulate the adoption of these practices. Some of these elements have been explored by studies on general population samples that have demonstrated that being a member in a voluntary organisation increases the probability of adopting political consumption behaviours (Neilson, 2010; Neilson and Paxton, 2010; Crépault, 2013). However, these studies have two limitations: firstly, due to the generality of the sample, the segment of the militant population they examine is generally small, and therefore these studies only offer insights into the distinction between committed and uncommitted sub-samples, rather than addressing the variety

of activist profiles; secondly, they only consider boycott and buycott practices, which are often the only socio-ecological practices included in general social surveys such as the European Social Survey.

This paper aims to overcome these limitations and investigate whether factors such as organisational membership and prolonged participation in protests play a role in influencing a variety of social-ecological practices within a sample composed entirely of protesters with different levels of experience and commitment. Theoretically, the paper relies on the concept of *radical habitus* (Crossley, 2003). This concept builds upon Pierre Bourdieu's notion of *habitus* (Bourdieu, 1990), indicating how the prolonged participation in a social movement can generate dispositions that affect areas beyond activism, such as professional careers and lifestyle. Similar to the processes of socialisation observed in family and school settings, activists joining a movement become ingrained with particular behavioural norms that they perceive as acceptable, which they subsequently replicate across different social circumstances such as domestic practices, consumption choices, and daily routines. The radical habitus influences the individual's decisions much like other forms of habitus. Those acclimated to the movement's culture are more inclined to engage in specific political, personal, and professional endeavours due to their socialisation experiences (Crossley, 2003). Building on this theory, I contend that organisational membership and the frequency of participation in climate protests, as channels of militant socialisation, may determine a greater likelihood for climate protesters to adopt social-ecological practices in their daily life.

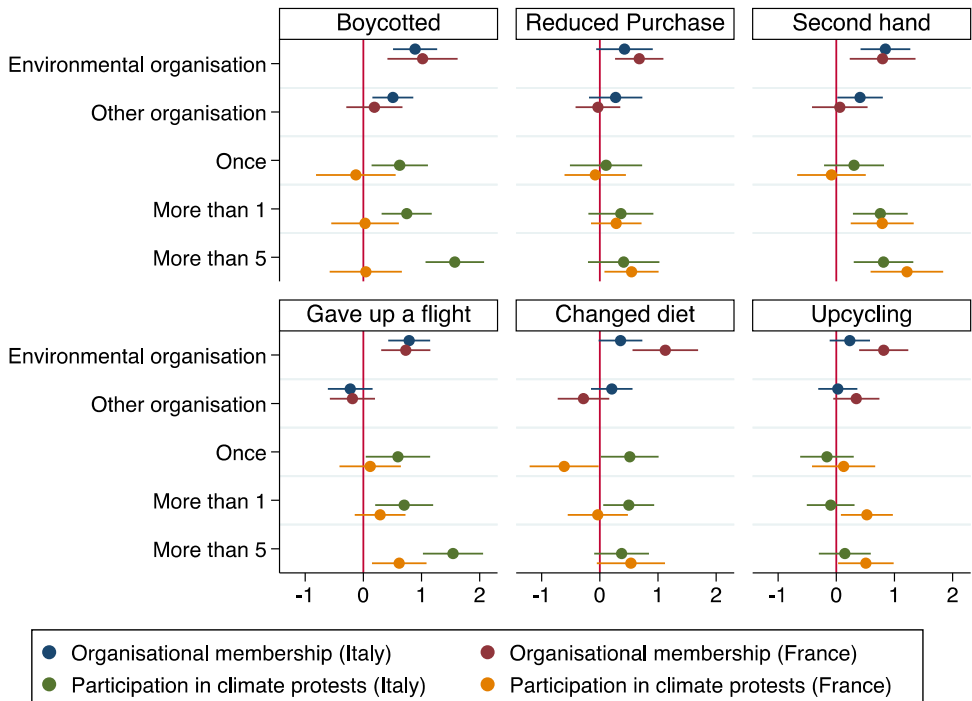
### 3 Two Forms of Militant Socialisation

Using two questionnaires conducted on participants in climate marches in Italy (N=1160) and France (N=932) (for further details on the survey protocol, see the Methodological Appendix), I examined whether membership in organisations and frequency of participation in past climate protests were associated with socio-ecological practices. The binary dependent variables analysed were boycotting products, reducing consumption, buying second-hand goods, giving up flying, changing diet and transforming objects instead of throwing them away (upcycling). Respondents were asked whether they had adopted such practices for environmental reasons in the last 12 months. Regarding upcycling, respondents were asked about the frequency of adoption, and the response categories 'never/rarely' and 'often/always' were aggregated into a binary variable. Table A2 in the Appendix shows the distribution of these practices in the two countries. Overall, the level of adoption of socio-ecological practices is higher in France than in Italy in four out of six practices (boycott, second hand,

giving up a flight, changing diet), while two of them are more adopted by Italian protesters (reducing purchase and upcycling).

I conducted logistic regressions in order to see possible associations between these socio-ecological practices and channels of militant socialisation. Specifically, I relied on two distinct independent variables: the first one was 'organisational membership' operationalised into three categories 'no affiliation', 'environmental organisation' and 'other organisation', while the second one was the 'frequency of participation in climate protests' operationalised in four categories 'never', 'once', 'more than once', 'more than five times'. In the first set of logistic regressions, 'no affiliation' served as the reference category for organisational membership. In the second set of logistic regressions, 'never' served as the reference category for participation frequency. Socio-demographic variables (gender, age, occupational status, class) were included as controls. Descriptive statistics for the variables used in the regression models are provided in the methodological appendix. Figure 1 displays the results of the logistic regressions.

Figure. 1 Impact of Organisational Membership and Frequency of Participation in Climate Protests on the Adoption of Social-Ecological Practices. Logistic Regressions.



Note: This figure was elaborated by the author using survey data collected during climate marches in Italy and France between September 2021 and March 2023.

For both independent variables a difference emerges between Italy and France. As regards Italy, being a member of an organisation (whether environmental or not) is positively associated with two socio-ecological practices, boycotting and buying second-hand goods, compared to the reference category 'no affiliation'. Furthermore, positive effects are noted with regard to giving up a flight (but only if the membership concerns environmental organisations). Having participated in more than one and more than five climate protests in the past, compared to the reference category 'never', positively correlates with the same three social-ecological practices. Having participated in only one protest in the past, on the other hand, increases the likelihood of boycotting, giving up flying and changing diet, but not of buying second-hand goods. In the Italian case, neither the reduction of purchases nor the upcycling of objects is significantly influenced by either of the two independent variables. In France, on the other hand, being a member of an environmental organisation has positive effects on the adoption of all socio-ecological practices, while being a member of any other organisation has no significant effect, compared to the reference category 'no affiliation'. Furthermore, in the French case, only having participated in more than five protests in the past has positive effects on the adoption of several social-ecological practices (reduced purchasing, second hand, gave up a flight, upcycling), while having participated in more than one protest has effects on buying second hand products and upcycling objects. No positive correlation is found for having participated only once to past climate protests, compared to the reference category 'never'.

It is possible to interpret these results in the light of Crossley's (2003) radical habitus theory. In both cases, the socialisation within the climate movement, through organisational affiliation and frequent participation in protests, indeed generates dispositions that correlate with a higher level of commitment in the everyday life, compared to the peripheral protesters who joined climate demonstrations for the first time or who were unaffiliated. However, the comparison between the Italian and the French case makes some differences emerging.

In the Italian case, the propensity on the part of activists to adopt certain socio-ecological practices increases after participating to one protest, compared to those who have never demonstrated before. Furthermore, this effect concerns protesters who are affiliated to any organisation (regardless of whether the organisation is expressly environmental or not) compared to unaffiliated. In a few words, the distinction operates between protesters who have begun to undergo militant socialisation compared to newcomers and unaffiliated ones. However, Italian protesters are generally less inclined to adopt all socio-ecological practices and this is a relevant fact. They mostly adopt practices that are connected with waste, such as reducing purchase and upcycling

objects rather than throwing them away, but adopt less other practices such as boycotting, buying second-hand, giving up flying. It is possible to interpret these results as the effects of a less consolidated militant socialisation, indicating an emerging radical habitus, typical of a recent movement. The climate strikes of 2019 in fact brought about an evolution in the Italian climate movement, which until then had remained relatively indistinct from the historical environmental movement and territorial mobilisations. In the Italian context, the 'structuring' force of militant socialisation does not uniformly extend to all levels, but rather appears to be correlated with an increasing degree of commitment within the movement.

In France, on the other hand, there is a different dynamic. Socio-ecological practices are more systematically adopted by all protesters, included newcomers and unaffiliated. The distinction operates within high levels of engagement in socio-ecological practices between those who have participated in numerous climate protests and are involved in environmental organisations compared to newcomers and unaffiliated. Intermediate categories (those who have participated only once to past climate protests and the members of non-environmental organisations) tend to not be distinguished in terms of practices to newcomers and unaffiliated. This suggests a more consolidated radical habitus within the French climate movement, in the sense that the adoption of socio-ecological practices is more deeply ingrained and systematic in the movement. It should be noted that the French climate movement was already well established in 2015 at the time of COP21 in Paris. Therefore, those who entered the movement at a later stage, outside the organisations, nevertheless have an impulse to align themselves with the ecological norm that comes from the 'structuring' force of the movement itself.

## 4 Conclusions

In this article, I have attempted to explore how socio-ecological practices, although no longer at the forefront of the claims of climate movement, remain deeply ingrained in the behaviour of climate activists. By investigating climate marches in Italy and France, I have addressed some of the gaps in the existing literature on social movements and socio-ecological practices. I have illustrated how militant socialisation, fostered through organisational membership and frequent participation in protest activities, significantly shapes the adoption of such practices.

Drawing from the insights of Nick Crossley, particularly his concept of radical habitus, I have highlighted the emergence of a learned disposition that emerges as individuals engage consistently in collective mobilisations. The influence

of militant socialisation is evident across all the socio-ecological practices examined, with notable distinctions between the Italian and French contexts. In Italy, a distinction emerges between protesters in different stages of collective engagement and those who have never demonstrated before and lack affiliations. Conversely, within the French context, socio-ecological practices are more widely diffused in the movement and the distinction significantly operates only between long-standing protesters who are affiliated with environmental organisations from newcomers or unaffiliated demonstrators in terms of their propensity to adopt socio-ecological practices, while no significant effects are associated with the fact of having a small experience in previous protests or being affiliated with a non-environmental organisation. Further investigation will determine whether these differences reflect distinct forms of radical habitus or variations in the construction of a shared radical habitus in contexts where the climate movement has developed at different times and in different ways.

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## Methodological Appendix

The paper relies on quantitative data collected through protest surveys, a method that consists of surveying participants during a protest (Walgrave and Verhulst, 2011; Van Stekelenburg et al., 2012). Protest surveys make it possible to collect information not only on participants who have experience in protest actions or who are affiliated with a social movement organisation but also on newcomers or participants who do not belong to any group and who occasionally decide to participate in protest. I selected five demonstrations in Italy between September 2021 and March 2022 and six demonstrations in France between March 2022 and March 2023 (see Table 1).

Table A1. Protest Survey in Italy and France

Demonstration	Cities	Participants	Email addresses	Respondents (response rate)
Climate strike, 24 September 2021	Florence	5000	465	209 (44,95%)
Climate strike, 1 October 2021	Milan	50000	660	288 (43,63%)
Climate Justice march, 2 October 2021	Milan	10000	711	446 (62,73%)
Anti-G20 march, 30 October 2021	Rome	10000	244	115 (47,13%)
Climate strike, 25 March 2022	Naples	5000	336	102 (30,35%)
<b>Tot Italy</b>			<b>2416</b>	<b>1160 (48,01%)</b>

Demonstration	Cities	Participants	Email addresses	Respondents (response rate)
Climate march, 12 March 2022	Paris	32000	743	490 (65,94%)
Rally, 23 September 2022	Paris	300	203	73 (35,96%)
Climate and peace march, 24 September 2022	Angers	200	94	32 (34,04%)
Climate march, 25 September 2022	Paris	2500	357	136 (38,1%)
Climate Strike, 3 March 2023	Nantes	700	272	116 (42,65%)
Climate march, Mar. 4 2023	Bordeaux	400	191	85 (44,5%)
<b>Tot France</b>			<b>1860</b>	<b>932 (50,1%)</b>

The research protocol specifically involved collecting the email addresses of protesters. Interviewers, trained to gather emails randomly, were strategically positioned at various points throughout the demonstration to ensure equal representation in the sample. Prior to submitting their email addresses, respondents were briefed on the research’s objectives and conditions, including guarantees of anonymity and data ownership. To comply with prevailing regulations, the survey excluded Italian children under 14 and French children under 15 years old. Emails were then transferred into Excel spreadsheets and stored securely in password-protected devices. Subsequently, all participants received a self-administered online questionnaire via LimeSurvey. A total of 1160 responses were gathered from Italian protesters, resulting in a response rate of 48 percent, while 932 responses were obtained from French protesters, resulting in a response rate of 50 percent. The survey comprised 72 questions categorized into five blocs: (1) access to the protest and affiliation; (2) repertoires of contention; (3) everyday ecological practices; (4) ideological orientations and values; and (5) socio-demographic characteristics.

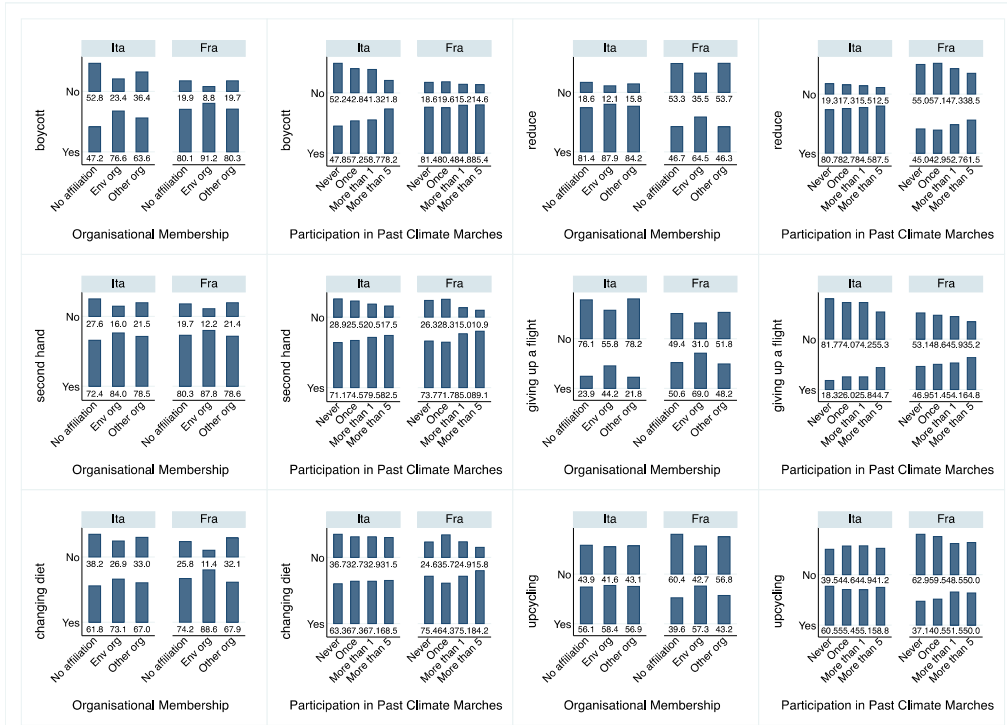
Figure 1 of the paper summarises the results of 24 logistic regression models, each of which was conducted on individual social-ecological practices (‘boycotting’, ‘reducing purchases’, ‘buying second-hand’, ‘giving up a flight’, ‘changing diet’, ‘upcycling products’). Organisation membership and frequency of participation in previous climate protests were used separately as independent variables. Gender, age, employment status and class were used as controls. A description of the variables used in the regressions is provided in Table 2.

Table A2. Descriptive Statistics of Variables used in the Regression Models

	Italy					France				
	Mean	S.D.	N	Min.	Max	Mean	S.D.	N	Min.	Max
Gender: Male (ref.)	.38	.49	909	0	1	.38	.49	902	0	1
Gender: Female	.58	.49	909	0	1	.60	.49	902	0	1
Gender: Other	.04	.20	909	0	1	.03	.18	902	0	1
Age_log	3.26	.42	908	2.64	4.41	3.29	.41	903	2.56	4.39
Employment: School student (ref.)	.24	.43	902	0	1	.11	.32	903	0	1
Employment: University student	.29	.46	902	0	1	.37	.48	903	0	1
Employment: Unemployed	.04	.19	902	0	1	.05	.22	903	0	1
Employment: Worker	.32	.47	902	0	1	.39	.49	903	0	1
Employment: Retiree	.03	.18	902	0	1	.06	.23	903	0	1
Class: Upper-middle (ref.)	.25	.44	876	0	1	.68	.47	816	0	1
Class: Lower-middle	.46	.50	876	0	1	.19	.40	816	0	1
Class: Working class	.12	.32	876	0	1	.06	.24	816	0	1
Class: Other	.17	.38	876	0	1	.06	.23	816	0	1
Organisation: No affiliation (ref.)	.37	.48	1100	0	1	.27	.44	807	0	1
Organisation: Environmental organisation	.30	.46	1100	0	1	.30	.46	807	0	1
Organisation: Other organisation	.33	.47	1100	0	1	.43	.50	807	0	1
Past climate protests: Never (ref.)	.18	.38	1136	0	1	.18	.39	797	0	1
Past climate protests: Once	.19	.39	1136	0	1	.16	.37	797	0	1
Past climate protests: More than one	.39	.49	1136	0	1	.37	.48	797	0	1
Past climate protests: More than five	.24	.43	1136	0	1	.29	.45	797	0	1
Boycotted	.61	.49	1059	0	1	.84	.37	728	0	1
Reduced purchase	.84	.36	1060	0	1	.52	.50	723	0	1
Second hand	.78	.42	1059	0	1	.82	.38	726	0	1
Gave up a flight	.29	.45	1059	0	1	.55	.50	709	0	1
Changed diet	.67	.47	1059	0	1	.76	.43	730	0	1
Upcycling	.57	.50	987	0	1	.47	.50	724	0	1

Figure A1 presents the percentage adoption of socio-ecological practices ('boycotting', 'reducing purchases', 'buying second-hand', 'giving up a flight', 'changing diet', 'upcycling products') according to militant socialisation channels in each Country.

Figures A1. Cross-tabulations



## Biographical Note

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## How Fridaysforfuture matters. Mobilisation for implementing socio-ecological practices

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**Abstract:** *In recent years, attention to the future of succeeding generations and, more broadly, the theme of environmental sustainability has garnered significant interest, especially among the young. They emerge as the primary drivers of a culture of environmental sustainability, urging everyone to reconsider their lifestyles and thought patterns responsibly. The goal is to close the human-environment divide and ensure a more livable future (Francesconi et al., 2021; Hayes and O'Neill, 2021).*

*The Fridays For Future movement is a collective force propelling this process of change. It aims not only at achieving sustainable and planet-friendly social, economic and public policies but also, at a cultural and widespread objective: fostering a culture of sustainability.*

*Through awareness-raising and mobilisation, the Fridays For Future movement appears to play a significant role in promoting bottom-up sustainability education. This serves as an engine for the spread of new cultural models based on a perspective that is respectful of limits, encourages care and responsibility towards the planet, and the promotion of a harmonious relationship with the environment (Kowasch et al., 2021).*

*In the outlined framework, this process of change seems to place the focus on the new generations. By promoting the implementation of actions aimed constructively at achieving the common good, they embrace the perspective of an anthropologically oriented and integral sustainable development, where everything is interconnected (Senatore and Spera, 2021).*

*By analysing the results of a campaign of narrative interviews with activists from the international Fridays For Future network operating nationally, the aim of this paper is to investigate the commitment and participation of the movement in implementing a new culture of sustainability. Therefore, the goal is to examine the narratives of the interviewees in order to trace the mobilisation strategies adopted in real and virtual places of social interaction, and to identify and outline the principles and ideals underlying the identity dimension of Fridays For Future, around which young activists build their environmental awareness efforts. Finally, the authors seek*

*to identify the concrete actions and their associated meanings in their commitment to cultural change that promotes environmental protection.*

**Keywords:** *Social movements, sustainability, environmental awareness, activism, Fridays For Future.*

## 1 Introduction

Environmental protection is a long-term objective: the results produced will be enjoyed by future generations in time and geographical parameters that cannot be defined in the present. Faced with such conditions of uncertainty, reflecting on the consequences that human behaviour has on the preservation of the planet and taking responsible action in this regard is often a difficult objective to achieve from both an individual and collective point of view.

Within this framework, young people have become actors and advocates of the desired change, associating themselves under the label of certain environmental movements, mobilising themselves, organising climate strikes, peaceful demonstrations, and local and global sustainability projects (Kowasch *et al.*, 2021).

In particular, the Fridays for Future (henceforth FfF) movement, which involves a large number of young activists worldwide, constitutes a significant vantage point with regard to the dynamics of a civil and political debate aimed at preventing and combatting the effects of climate change, while at the same time promoting the implementation of caring and protective behaviours for the environment declined both in terms of individual choice and collective action (Daher, 2020).

Indeed, the young activists claim the need to give a new definition to the concept of sustainability, understood as a model for a cultural transformation of society, based on the principle of imitating nature as a process of evolution and economic development, but above all of cultural change (Senatore, 2020); in their view, we cannot speak of environmental education without referring to a true ecological transition at the cultural level that emphasises new values, new behaviours, and new practices for safeguarding and protecting the environment.

Their identity dimension is built around the ideals of sustainability and climate justice and expresses its creative potential through modes of protest that characterise them, even physically, as a social and cultural movement online and offline. The movement has spread globally through two strategic modalities:

the occupation of urban space, with protest actions in the streets, which are essential to give visibility to the movement, and mass communication tools (Internet, Social media, etc.) that have supported the construction of local groups, scattered all over the world, but linked together in a virtual sense to share information on the organisation of events, strikes and physical mobilisations. The use of the Internet can be considered to be the key to the success of an environmental movement that has far surpassed the mobilisations of past decades.

Through their daily eco-sustainable practices, online and offline, the young activists of FfF – whose testimonies will be examined as an empirical case study – call for a radical change in recognising the structural conditions of ecological degradation, promoting an education for sustainability from below, which will act as a driving force for the dissemination of new cultural models based on a perspective that is respectful of the limits of the Planet and champions its care and protection.

## **2 Youth mobilisations for environmental sustainability between real and virtual places of sociality**

It is only in more recent times that we have seen the spread of environmental youth movements, including *Extinction Rebellion*, *Sunrise Movement* and *Fridays for Future* (henceforth FfF), which have triggered a new wave of activism, calling on everyone to responsibly reassess new lifestyles and ways of thinking, in order to restore the human-environment divide and ensure a more liveable future (Hayes and O'Neill, 2021; Pickard et al., 2022; Sloam et al., 2022).

With their protests, which initially took the form of demonstrations in the streets, activists call on everyone to take responsibility through concrete and immediate actions to find solutions for the care of the Planet in order to ensure a sustainable future (De Moor et al., 2020; Francesconi et al., 2021). FfF youth call on people and governments around the world to take responsibility (Boucher et al., 2021); they do this through weekly school strikes (every Friday) and global strikes (twice a year), both of which take place in public squares and on social media. FfF's collective action has spread globally by taking widespread networking forms, both in physical spaces – thanks to street demonstrations or other artistic practices such as flash mobs (Daher et al., 2022), which have given visibility to the movement – and through the use of online spaces, sharing information, not only to achieve greater resonance, but also for purely organisational purposes of events and protests (Belotti and Bussoletti, 2022).



Before the Covid health emergency, collective actions took place in the squares; later on, the sudden Covid-19 pandemic radically changed the scenario, and virtual spaces became the main places of protest, giving social media (Facebook, Instagram, Twitter) a crucial role as mobilisation tools and places of expression to keep demands alive and give continuity to the movement's activities. Due to the pandemic, the 'Friday strikes' were totally replaced by digital space, and the various forms of instant messaging have emerged as important vectors of mobilisations and the rapid dissemination of ideas and dissent (Leone and Della Mura, 2021; Senatore and Spera, 2021). In this regard, on the occasion of the fifth global strike on 24 April 2020, on social platforms, young activists organised a collective protest action in which all participants posted a photo with a creative and meaningful sign or banner summarising critical environmental issues, using the hashtag #climatestrikeonline and tagging the relevant local group.

Now that lockdowns and restrictions that put a stop to physical demonstrations have ended, FfF youth have returned to the streets to 'reclaim' their spaces. This was seen during the first post-COVID initiative launched by the movement on World Environment Day, 5th June 2020, when creative protest moments were organised in many cities across Italy. Since gatherings had to be avoided, shoes were placed in squares to represent people and demonstrate widespread participation. Although the importance of the media of FfF has become irreversible, protest in the streets and squares is still considered to be the most effective strategy to create empathy and engagement among participants, increase visibility in terms of problem diffusion, and create common and shared discourses (Fisher, 2019; Cologna *et al.*, 2021).

By triggering turmoil from below, expressed in mobilisation actions and awareness and information campaigns, the FfF movement thus acts as a spokesperson for the need to take individual and collective responsibility for the care of the common good, to work together for justice and human rights. It is precisely in these places, both physical and virtual, that young people, through cooperation and participation, insist on the need to raise society's awareness of the climate crisis more effectively, implementing active citizenship practices and developing a common identity that supports a culture of environmental sustainability and a harmonious relationship with the environment (Belotti and Bussoletti, 2022).

In the framework outlined, the cultural change our planet needs in order to face the future would seem to have at its centre the new generations, who by promoting the concretisation of actions in a constructive sense, embrace the perspective of an anthropologically oriented and integral sustainable development, in which everything is connected (Senatore and Spera, 2021).

### 3 Collective actions for practices to raise awareness of the culture of sustainability: the case of Fridays For Future

The focus on the future of the next generation and the issue of environmental sustainability has had a considerable impact mainly due to the FfF movement, which has called for entire populations to implement micro-responsible behaviour and actions, and for the global political-economic system to change course and be able to prioritise investment in the environment, climate change and sustainability at both political and economic levels (Belotti and Bussoletti, 2022).

We present here the results of a campaign of 45 non-directive interviews with activists of the movement of the international FfF network active on the national territory aimed at investigating the commitment and participation of the movement in the implementation of a new culture of sustainability. The aim of the survey was to analyse and understand the mobilisation strategies and processes adopted, in real and virtual places of social interaction, by answering the following research questions: What differences can be seen in the mobilisation actions before and after the pandemic? What are the principles and ideals underlying the identity dimension of the FfF, around which young activists build their environmental awareness actions?

Table 1 Sample composition

	Role	Gender	Age	Region
1	National Spokesperson	M	23	Aversa
2	Local contact person	F	24	Bari
3	Local member	F	18	Bergamo
4	Local member	M	20	Bergamo
5	Local member	F	18	Catania
6	Local member	F	19	Catania
7	Local member	M	19	Catania
8	Local member	F	22	Roma
9	Local member	F	23	Catanzaro
10	National Spokesperson	M	19	Roma
11	Local member	F	18	Cuneo
12	National Spokesperson	F	21	Roma
13	Local member	M	19	Gorizia
14	Local contact person	M	20	Gorizia
15	Local contact person	F	20	Gorizia
16	Local member	M	20	Messina
17	Local member	M	21	Messina
18	Local contact person	M	22	Padova
19	Local member	F	19	Palermo

	Role	Gender	Age	Region
20	Local contact person	M	24	Palermo
21	National Spokesperson	F	25	Pavia
22	Local member	F	18	Pavia
23	Local member	M	20	Pesaro
24	Local contact person	M	20	Pesaro
25	Local member	F	20	Pesaro
26	National Spokesperson	F	21	Pistoia
27	Local contact person	F	20	Rimini
28	Local member	F	19	Rimini
29	Local contact person	F	22	Rivoli
30	National Spokesperson	F	21	Roma
31	National Spokesperson	M	23	Torino
32	Local member	F	18	Sanremo
33	Local contact person	F	19	Sassuolo
34	Local member	F	22	Teramo
35	Local member	M	18	Teramo
36	Local member	F	22	Teramo
37	National Spokesperson	F	21	Torino
38	National Spokesperson	F	24	Torino
39	Local contact person	F	25	Treviso
40	Local contact person	F	24	Valtellina
41	Local contact person	F	25	Valtellina
42	Local member	M	25	Valtellina
43	Local contact person	M	21	Ventimiglia
44	Local member	M	20	Ventimiglia

Regarding FfF mobilisation strategies, it could be said that the pandemic crisis represented a pivotal moment, which created a clear distinction between before and after, in which different places and modalities for FfF protest action took shape. Before the pandemic, for both the national FfF group and the local ones in the various cities, protests in squares were the main mobilisation tool to put pressure on politics and on institutions. Squares were meeting places in which actions were created that were always peaceful, such as flash mobs, strikes, sit-ins, die-ins, lectures in the square, leafleting and collecting signatures (Leone and Della Mura, 2022), *the square is functional, because you meet people with whom you exchange opinions, listen to thoughts, learn, become aware [...] this spreads knowledge of the problem, education on the problem* (#12 National Spokesperson, F). For example, there was a collective protest action, a coordinated flash mob with a strong emotional impact, called *Con l'acqua alla gola* (with water up to your throat), which opened Climate Action Week, culminating in the Global Strike for Future on 27 September 2019. With this demonstrative action, which involved the installation of gallows in which activists stood with nooses around their necks on slowly melting blocks

of ice, the participants wanted to metaphorically show the devastating effects of melting glaciers and the consequent rise in sea levels, calling on politicians to take responsibility through drastic actions to tackle the climate emergency.

The analysis of the narratives shows that the action of the FfF movement is not only limited to the public expression of dissent but also to awareness-raising work, such as the implementation of projects with schools, *with one teacher we had a lasting collaboration and we spoke in a student podcast* (#7 Local Member, M), or other initiatives such as on the occasion of the 'Earth Day' where they started a collaboration with some bookshops in order to stimulate a strong emotional impact and shift the emphasis onto the importance of these issues, *we created reading corners in the bookshops reading some texts on the theme of the environmental crisis and displayed posters* (#8 Local Member, F).

However, the sudden pandemic crisis and the restrictions put in place by governments to contain the spread of contagion changed the places and the manner in which their actions took shape, *it was a blow [... ] we tried, however, to find strategies to be effective online as well, such as creating the #retornoalfuturo awareness campaign for a restart after the pandemic* (#5 Local Member, F), or other initiatives, such as #camettatour, which included live broadcasts every evening at 7pm with guests from the worlds of music, cinema, science and journalism to discuss the climate crisis and related issues.

Another important awareness-raising campaign launched by FfF activists is the 'Climate Clock', in order to raise awareness among citizens, leaders and the media, urging everyone to do their part. This campaign invites communities, schools, universities, museums, associations and businesses to display the 'Climate Clock', based on the calculations of the IPCC (Intergovernmental Panel on Climate Change) report, which introduced the crucial concept of the Carbon Budget (emissions), i.e. how much CO<sub>2</sub> we can still emit to avoid the worst consequences of the climate crisis.

From the interviewees' narratives, we can also trace one of the principles and ideals that underpin the FfF's identity dimension, around which young activists build their environmental awareness-raising action: the concept of climate justice. This term is used to indicate the fact that global warming is an ethical and political issue and not purely an environmental or climate one, thus linking the effects of climate change to concepts of justice – particularly environmental justice – and social justice, examining issues such as equality, human rights, collective rights and historical responsibility for climate change (Latini et al., 2021).

Therefore, the FfF movement claims climate stability as a non-exclusive collective good, to be preserved at all costs to avoid disastrous consequences for the most vulnerable countries and communities and future generations. In this sense, the reference is directed to MAPAs (*Most Affected People and Areas*), a term coined by activists to identify all those populations and geographical areas most affected by the climate crisis, which at the same time, are the ones that have contributed to the least extent to create it, *We are giving great importance to the issues of justice, rights, differences with respect to those who are most affected, we talk about climate, environmental, social justice and everything that is connected* (#10 National Spokesperson, M).

In this way, with their mobilisation and awareness-raising actions, the activists denounce a socio-economic model that generates inequalities and environmental devastation; they fight for choices destined to change the world, through which we can see ourselves on this planet, no longer as masters of a whole and separated from nature, but as an integral part, *in my opinion, before addressing any discourse we must recognise the environment as an integral part of us [...] for me it is a relationship of connection, of interdependence, because I myself feel part of the environment* (#28 Local Member, F). FfF's identity seems to revolve around this positioning: what differentiates FfF from the environmental/ecologist movements that preceded it is its ability to overcome the actions of individuals and rather relaunch a collective 'action plan'. Hence their famous slogan *System change, not climate change* (Belotti and Bussoletti, 2022).

## 4 Conclusions

The environmental crisis inevitably has human roots, presents itself as an ethical problem and calls into question our way of acting. From this perspective, the behaviour of most of us – and so in this sense our collective behaviour – is inadequate and superficial, neglecting long-term consequences; it is also greedy, implementing a short-term profit economy that contributes greatly to the socio-environmental crisis. Instead, action for the production of a common good would require a change of course aimed at building a renewed relationship between man and the environment (Morandini 2020).

In this hoped-for and epochal process of change, young people, claiming a necessary responsibility towards the planet, have now taken charge of the ecological issue and are clamouring for the involvement of individuals and institutions.

In drawing the conclusion of this short contribution, it emerges that the FfF movement aims not only at obtaining sustainable and planet-friendly social, economic and public policies, but also at a cultural and widespread objective: implementing a culture of sustainability (Francesconi et al., 2021). Hence the need to give a new definition to the concept of sustainability, based on a cultural shift in society.

Through their practices of resistance and awareness-raising, the FfF activists promote a new way of experiencing the natural environment, asking individual and collective subjectivities to radically change their habits in an environmentalist key and demanding a commitment from the institutions in defining effective policies to prevent and combat the effects of climate change, in accordance with the principle of climate justice, which is central to the movement's mission. This concept, which is the cornerstone of youth mobilisations in favour of environmental sustainability, constitutes not only an environmental or climate issue, but also an ethical and political one, through which young people invoke the indissoluble link between climate justice and social justice, thus reinforcing the idea of the pervasiveness of the crisis and widespread responsibility.

The demand/proposal of the FfF movement is clear and implicitly inspired by that behavioural ethic that takes into account the consequences of one's actions and collective behaviour. By claiming an ecological ethic or simply a necessary responsibility towards the planet, young people have now taken charge of the ecological issue and are clamouring for the involvement of individuals and institutions.

Resistance, assumption of responsibility and solidarity are emotions and actions that combine in the proposal of this global youth movement for environmental sustainability, which in its practices and expressions blends various themes underlying the protest; however, all of these are oriented towards the concrete achievement of the principle of equality among human beings and the fight against social injustice.

If today the climate issue seems reductive to exemplify the goals of these young activists, the environmental awareness of the different generations is central and aimed at building a culture of sustainability, based on the principles of care and responsibility, where the concept of sustainability is understood in extensive terms, enriched by pro-social meanings.

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## Methodological Appendix

By analysing the results of a campaign of 45 narrative interviews with activists from the international Fridays for Future network operating nationally, the aim is to investigate the commitment and participation of the movement in implementing a new culture of sustainability. Therefore, the goal is to examine the narratives of the interviewees in order to trace the mobilisation strategies adopted in real and virtual places of social interaction, and to identify and outline the principles and ideals underlying the identity dimension of Fridays for Future, around which young activists build their environmental awareness efforts. Finally, the authors seek to identify the concrete actions and their associated meanings in their commitment to cultural change that promotes environmental protection.

The questions that guided the survey were: what differences can be seen in the mobilisation actions before and after the pandemic? What are the principles and ideals that underpin the identity dimension of the Fridays For Future, around which young activists build their environmental awareness actions?

The interviewees were selected through reasoned and snowball sampling. The interview campaign was specifically aimed at spokespersons of the main national Fridays For Future group and the contact persons and members of the various local Fridays For Future groups located throughout the country.

The interviews were conducted online between October 2022 and March 2023.

## Data Sources

- [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM\\_final.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf)
- <https://fridaysforfutureitalia.it/mapa-e-giustizia-climatica/>



## Abbreviations

- **FfF** (Fridays For Future)

## Biographical Notes

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### Giorgia Mavica

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### Alessandra Scieri

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Her current research interests focus on the ethics of responsibility in young people, environmental issues and on several forms of protests, such as the international network of activist #Fridaysforfuture. Among her last publications: with Daher L. M., Mavica., and Cappello N., *Immaginare, esprimersi, opporsi. La creatività dei giovani nell'azione collettiva*, (FrancoAngeli 2022); with Daher L. M., Mavica G., *Basta false promesse! Conversazioni con i FridaysForFuture sull'etica della responsabilità a favore dell'ambiente* (FrancoAngeli 2024).

## Notes

1. This initiative dates back to 17 April 2020, when Italian activists wrote a letter to the government, also signed by scientists, experts and associations, for a post-coronavirus renaissance of the country based on seven points: relaunching the economy by investing in ecological reconversion, reaffirming the public role in the economy, achieving climate and social justice, rethinking the agri-food system, protecting health, territory and community, and promoting democracy, education and research.
2. The Climate Clock shows us two numbers: the one highlighted in red is the deadline, our 'target date', the time by which, at our current level of emissions, we will exhaust our carbon budget, which gives us a two-thirds chance of staying below the critical 1.5°C global warming threshold. The second number, in blue, is the lifeline, the percentage of the world's energy produced from renewable sources. The percentage of global energy from renewable sources is currently at 12.5 per cent and is increasing, but not fast enough. It also shows the figure currently pledged (still far from the target) and not yet allocated by the Green Climate Fund, the world's largest green climate fund, established in 2010 during COP16 on climate change to support the efforts of the weakest countries in responding to the challenge of global warming.
3. [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM\\_final.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf)
4. <https://fridaysforfutureitalia.it/mapa-e-giustizia-climatica/>



## Spanish Climate Change Adaptation Policies: A Comprehensive Analysis of Participatory Elements

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**Abstract:** *The urgency of addressing the impacts of climate change has underscored the critical need for effective adaptation policies. In this context, the incorporation of participatory elements in climate change adaptation policies plays a pivotal role in ensuring inclusivity and collaboration. This study presents a comprehensive analysis of participatory elements in Spanish climate change adaptation policies, with a focus on identifying the extent to which these policies incorporate participatory elements and highlighting potential gaps. Against this background, we conducted an analysis of participatory elements in Spanish climate change adaptation policies with Spain being one of the most vulnerable countries in the European Union (Rodrigo et al. 2023). We addressed the research questions of how well Spanish national climate change adaptation policies incorporate participatory elements and where we identify policy gaps. By scrutinizing participation mechanisms, policymakers can tailor policies to better address the needs and concerns of various stakeholders. The analysis facilitates the identification of best practices and case studies.*

**Keywords:** *Climate change adaptation, participatory elements, Spanish policies, stakeholder engagement, policy analysis*

### 1 Introduction

Adopting effective climate change adaptation policies is crucial for addressing the impacts of climate change and progressing toward climate resilience (European Environment Agency 2022). These policies play a pivotal role in mitigating climate-related hazards and vulnerabilities to minimize their adverse effects on communities, ecosystems, and economies. A special role in climate change adaptation policies is played by participatory elements that promote inclusive and collaborative approaches. Engagement with stakeholders and co-production are vital for the comprehensive development, implementation, monitoring, and evaluation of policies, particularly the effectiveness once they have been implemented during the occurrence of climate-change related risk events (Alemanno, 2015; Helbig et al., 2015).

At a global scale, there is a high focus on developing strategies and new policies in order to properly address and face force-majeure events derived from climate change impacts. The European Union (EU) created a comprehensive plan called "Green Deal" which focuses on supporting the development of policies from social, economic, transportation and many other areas supporting climate change adaptation (European Commission, 2019).

One of the latest reports from the EU Eurobarometer (European Union, 2021) shows that in 20 EU Member States in 2021 more than half of the citizens who responded the survey have modified their personal behaviours and day-to-day actions to fight climate change during 2020 and 2021. To this end, Spain was chosen as a case study. The methodology employed in this analysis involved two major steps: policy identification and policy analysis. A total of six climate change adaptation policies for Spain were selected for analysis, and a predefined set of criteria on participation was used to extract relevant information from these policies. The analysis was conducted using a Large Language Model Artificial Intelligence tool, which allowed for a dynamic exploration of policy documents to identify and extract relevant information.

The content analysis of the selected policies revealed a spectrum of participatory elements, including consultation mechanisms, instruments to promote participation, participation support, capacity building, transparency and information sharing, and monitoring and feedback. These elements were classified using Arnstein's ladder of citizen participation, which ranges from non-participation to citizen control.

The policies demonstrated a strong commitment to fostering partnerships and collaborations, incorporating public opinions, engaging stakeholders through consultation mechanisms, and ensuring transparency and access to information. While the analysis highlighted the robust and inclusive approach of the policies, it also identified the need for more comprehensive and effective mechanisms to engage local communities, and requirement for increased representation of vulnerable groups.

## 2 Methodology

The methodology implemented to evaluate policies in the specific context of Spain involved two major steps: policy identification and policy analysis. Given a large landscape of national policies, we relied on the Climate Change Laws of the World database by the Grantham Research Institute at the London School of Economics and Climate Policy Radar (2023) to identify climate change adaptation policies.

We looked at all Spanish climate policies containing the keyword “adaptation” (56 policies in total). We manually checked what kind of adaptation these policies are talking about and excluded those not related to climate change adaptation like, e.g., adaptation to new legislation or adaptation to innovative solutions (18 policies remaining). We excluded those policies where adaptation plays a minor role (13 policies remaining) as well as outdated policies (before 2020). We came up with having six climate change adaptation policies for Spain (see Table 1).

Table 1. Spanish Climate Change Adaptation Policies Selected for the Analysis

English title	Spanish title	Year
Spain's Adaptation Communication	Comunicación de Adaptación de España	2021
National Climate Change Adaptation Plan 2021-2030	Plan Nacional de Adaptación al Cambio Climático 2021-2030	2020
Long Term Decarbonisation Strategy 2050	Estrategia de Descarbonización a Largo Plazo 2050	2020
Law 7/2021 on Climate Change and Energy Transition	Ley 7/2021 de Cambio Climático y Transición Energética	2021
Spain's Integrated National Energy and Climate Plan for 2021-2030	Plan Nacional Integrado de Energía y Clima 2021-2030	2020
Spain's Recovery and Resilience Plan	Plan de Recuperación, Transformación y Resiliencia	2021

To analyse participatory elements in the selected policies, we developed criteria on participation, which covered stakeholder identification, consultation mechanisms, type of instruments to promote participation, supporting finance mechanisms, capacity building, transparency and information sharing as well as monitoring and feedback (see Table 2). To extract relevant information from the selected policies, we applied a Large Language Model (LLM) Artificial Intelligence (AI) tool. An LLM AI tool allows identifying and extracting relevant words, phrases, and topics beyond the constraints of predefined keywords in a more efficient manner (Chew et al., 2023). To ensure the accuracy and reliability of the collected data, we implemented a dual-validation approach by reviewing collected data by the authors.

Table 2. Policy Analysis Criteria

Criteria	Question	Options
Stakeholder identification	Which stakeholders are involved in the participatory elements of the policies?	1=local communities, 2=academia and research, 3=governments and decision makers, 4=civil society representatives, 5=citizens, 6=investors/economic actors, 7=media

Criteria	Question	Options
Consultation mechanisms	Which consultation mechanisms are mentioned?	1=surveys, 2=focus groups, 3=interviews, 4=workshops, 5=training sessions, 6=gamification, 7=online forums, 8=webinars and live streams, 9=interactive content, 10=personalized communication, 11=meetings, 12=public hearings, 13=participatory research, 14=civic hackathons, 15=online platforms, 16=mobile apps, 17=field data collection
Type of instruments to promote participation	Which types of instruments to promote participation are mentioned?	1=voluntary, 2=binding
Supporting finance mechanisms	Which supporting finance mechanisms are mentioned?	1=public, 2=private
Capacity building	Which capacity building mechanisms are mentioned?	1=training and education, 2=technical assistance, 3=organizational development, 4=resource mobilization, 5=networking and partnership, 6=information and knowledge management, 7=policy and advocacy, 8=monitoring and evaluation
Transparency and information sharing	Are there mechanisms to inform stakeholders about participation?	yes/no
	Are there mechanisms to inform vulnerable populations about participation?	yes/no
	Are there mechanisms for stakeholders to request and access information?	yes/no
Monitoring and feedback	How is the implementation of climate adaptation policies monitored and evaluated?	1=data collection and reporting, 2=performance indicators, 3=stakeholder engagement, 4=evaluation and review, 5=international reporting and accountability, 6=financial control, 7=cross-cutting themes
	Is there a system for stakeholders to provide feedback on policy effectiveness and implementation?	yes/no

Note: The policy criteria in the table were elaborated by the authors and validated by the members of the Horizon Europe AGORA project Work Package 4.

To classify participatory elements that we identified in the selected policies we relied on the Arnstein's ladder of citizen participation (Arnstein, 1969). The ladder consists of eight rungs, each representing a different level of citizen involvement, ranging from non-participation to citizen control. It offers a framework to grasp the full spectrum of citizen participation, aiding in understanding the varied demands for involvement. Moreover, it assists in conducting a more detailed assessment of participation dynamics, enabling a better understanding of responses from those in positions of authority.

## 3 Policy analysis

### 3.1 Content analysis

The policies highlight a diverse array of *stakeholders*, from governmental bodies at different levels to research institutions, civil society organizations, private sectors, communities, international organizations, financial institutions, energy system operators, societal groups like rural and aging populations, and local entities across different sectors. These stakeholders play critical roles in shaping policies, strategies, and actions. The efforts emphasize not only the need for engagement but also the necessity to tailor strategies, policies, and initiatives according to the specific needs and contexts of these stakeholders.

*Consultation mechanisms* reflect a multifaceted approach to engaging stakeholders and fostering participatory decision-making processes. The National Climate Council acts as a platform for proposing and recommending policies across critical areas such as climate science, adaptation strategies, and emission reduction initiatives. The Working Group on Impacts and Adaptation to Climate Change further amplifies this effort by coordinating national and regional adaptation strategies. Its technical groups, focusing on coastal adaptation and port strategies, exemplify a targeted approach to address specific challenges.

Mechanisms such as calls for tenders, participatory citizen projects, and taxation measures emerge as critical tools in driving renewable energy initiatives. These mechanisms prioritize diversity in participation by establishing support frameworks for citizen-led projects. Moreover, measures addressing bureaucratic hurdles and emphasizing training and capacity-building programs for local energy communities showcase a commitment to empowering diverse stakeholders. Lastly, information dissemination actions, employing innovative methodologies like participatory research, gamification, and design thinking, further reinforce the inclusivity and effectiveness of these mechanisms.

The *instruments* across the policies showcase a spectrum of approaches, from primarily voluntary mechanisms encouraging participation to a combination of binding obligations and voluntary initiatives. Voluntary instruments include for instance creating mechanisms for diverse participatory projects and capacity-building programs. Initiatives such as the Plataforma sobre Adaptación al Cambio Climático (AdapteCCa) serve as voluntary knowledge-sharing platforms, fostering collaborative learning and the dissemination of best practices as well as being an encouragement of voluntary action.

A combination of voluntary and binding instruments is, e.g., a mix of mandatory requisites and voluntary initiatives aimed at promoting gender equality and inclusion. The balanced representation in evaluation committees implies an obligatory step towards gender balance, whereas voluntary participation of experts and civil society representatives aims to include diverse perspectives. Binding instruments are, e.g., the establishment of a National Citizens' Assembly on Climate Change, along with recommendations for regional and municipal assemblies. This signifies an obligatory framework for structured citizen engagement, while emphasizing a binding obligation for cooperation and information sharing across public bodies and administrations.

There are varied *supporting finance mechanisms* across different policies aimed at aiding adaptation efforts. The policies highlight multilateral funding including both a blend of public and mixed private-public initiatives as well as a combination of domestic and EU instruments. They highlight a multifaceted approach aimed at not just securing funding but also ensuring meaningful engagement and impact within climate-related initiatives.

Among these instruments are national and regional funding opportunities, designed to allocate financial resources to encourage stakeholder involvement at regional levels. Additionally, initiatives such as the Next Generation EU fund and collaborations with the financial sector showcase a concerted effort towards mobilizing funds for climate-related endeavours. These initiatives prioritize both public and private investment, recognizing the pivotal role each sector plays in addressing climate challenges. Moreover, public resource allocation strategies specifically tailored for climate objectives are deeply embedded within national frameworks, reinforcing the significance of financial backing for participation in combating climate change.

*Capacity building* initiatives play a pivotal role in empowering stakeholders with knowledge, skills, and awareness across diverse sectors. Targeted training programs and workshops equip professionals with essential insights into climate risks and adaptation strategies, enhancing decision-making frameworks. In various sectors such as construction, initiatives focus on identifying necessary



qualifications and providing subsidies for professional requalification, underlining the importance of ongoing skill development. Additionally, cross-sectoral integration remains crucial, emphasizing the integration of climate goals into normative frameworks and planning processes to ensure coherence and effectiveness.

Stakeholders are *informed and engaged* in climate change adaptation through various channels like the AdapteCCa platform, workshops, consultations, and public feedback sessions. AdapteCCa serves as a crucial hub connecting government, scientists, planners, and stakeholders. Clear communication, translating technical information into understandable language and integrating gender perspectives for tailored strategies, involving diverse stakeholders in workshops are emphasized. Sessions are organized for stakeholders to contribute insights, emphasizing transparency and accessible tools for visualizing climate data and tracking progress across domains.

The implementation of adaptation policies undergoes rigorous *monitoring and evaluation* through a structured methodology known as Monitoring, Reporting, and Evaluation (MRE). This methodology is purpose-built to offer comprehensive insights, track progress, and report on adaptation measures' efficacy, evaluating impacts, vulnerabilities, risks, and adaptive capacity progress. The MRE system comprises various tools and processes tailored for effective monitoring and evaluation of adaptation actions: climate risk and adaptation reports, indicators, evaluation reports, territorial and social vulnerability monitoring, cross-border effects evaluation, gender integration and maladaptation prevention, cost-benefit analysis, and action-oriented approach.

Systematic observation systems, regionalized climate scenarios, and a knowledge management platform for adaptation are further tools to monitor adaptation progress, evaluate effectiveness, and foster coordination among sectors and policies to address climate change challenges comprehensively. Structured citizen participation is also possible via the National Citizens' Assembly on Climate Change as well as regional and municipal assemblies. High-level councils and working groups established within the Plan offer spaces for debate, advice, and monitoring involving government departments, private sector representatives, social agents, and civil society. Citizen participation platforms and innovation labs aim to involve citizens and stakeholders in policy development.

### 3.2 Arnstein's ladder of citizen participation

In this section, we present the results of placing participatory elements from the policies on the rungs of the Arnstein's ladder of citizen participation. The elements go from tokenism to citizen power, but mostly have the tokenistic elements of placation, consultation, and informing (also see Figure 1 for examples of identified participatory elements).

*Partnership:* The policies discussed focus on fostering partnerships among various organizations, stakeholders, and citizens to address climate change. One concrete example is the National Climate Council, which involves multiple departments, Autonomous Communities, municipalities, research institutions, social actors, and NGOs. This Council develops proposals and recommendations for climate change policies, emphasizing a collaborative approach. The policies encourage collaboration through forums and agreements between all stakeholders. The partnership level of citizen participation is highlighted, where citizens actively engage in decision-making. The policies also showcase collaboration between different administration levels and the private sector, with an adaptation of the legal framework for public-private collaboration.

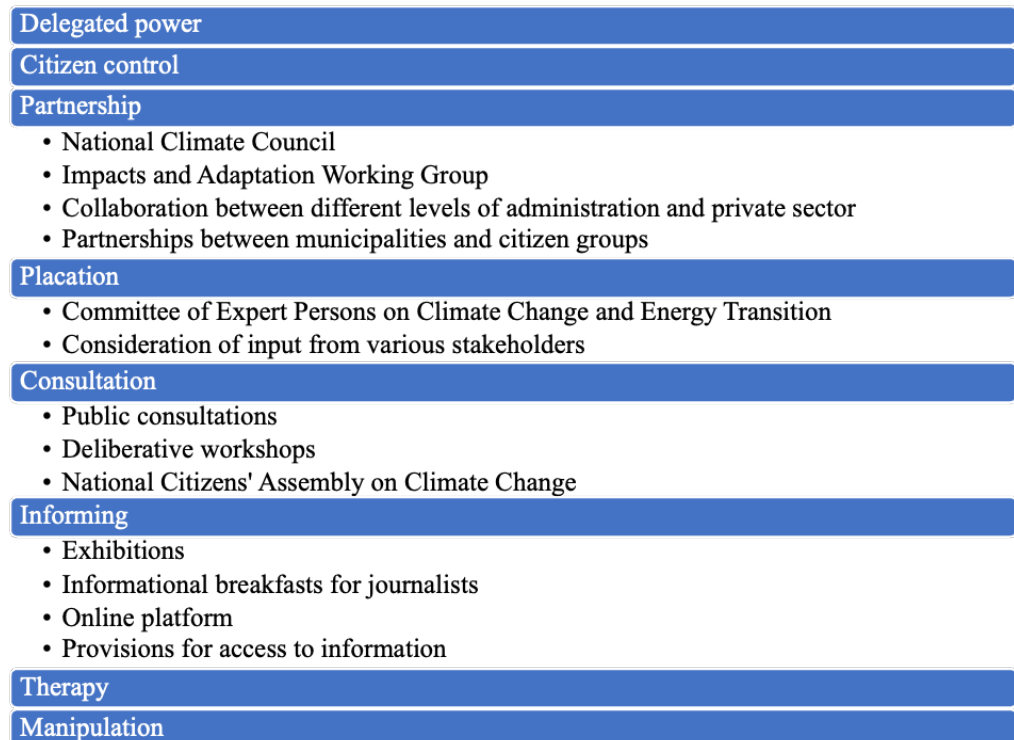
*Placation:* The emphasis on incorporating public opinions from the consultation process indicates a willingness to value stakeholder input and incorporate it into decision-making. The policies demonstrate placation by involving various stakeholders in the planning process. For instance, the Impacts, Risks and Adaptation Committee includes members from academia, NGOs, public management, and businesses, aiming to gather diverse perspectives and recommendations for the National Climate Council's advancement. This reflects a placation approach by incorporating expert opinions from different sectors. At the citizen level, the establishment of the Committee of Expert Persons on Climate Change and Energy Transition signals a move towards placation. While citizens have a degree of influence through recommendations, ultimate decision-making authority remains with the authorities.

*Consultation:* The policies underscore a consultative approach through various mechanisms aimed at engaging stakeholders and citizens in the decision-making process. E.g., the National Adaptation Plan for Climate Change 2021-2030 involved an extensive participatory process, receiving over 1500 comments from 182 organizations and individuals. The establishment of a National Citizens' Assembly on Climate Change further emphasizes a consultative approach. The use of innovative instruments like calls for interest and sectorial consultations further highlights the consultative nature of the policies. While the government may retain final decision-making authority, these mechanisms actively seek input and feedback from economic actors

and stakeholders, demonstrating a commitment to consultation throughout various stages of the planning process.

*Informing:* The policies demonstrate a strong commitment to the informing level of citizen participation through various communication initiatives and transparency measures. The policies ensure compliance with the Law on Access to Information, Public Participation, and Access to Justice in Environmental Matters. There is a commitment to develop and maintain a specific website for citizens to access updated information with a strong emphasis on the need to improve energy literacy and transparency in the energy system, aiming to make citizen activation a reality. The policies also include general measures to provide clear information to citizens about opportunities for participation, requirements, and fund management to ensure transparency and increase public awareness, empowering citizens with the knowledge needed to actively participate in decision-making processes.

Figure 1. Examples of Identified Participatory Elements



Note: The figure was constructed by the authors based on the examples of identified participatory elements in the policies following the Arnstein's ladder of citizen participation.

## 4 Discussion

The participatory elements in the analysed policies demonstrate a robust and inclusive approach that encompasses involvement, diverse mechanisms for participation, feedback and reporting, evaluation, and a commitment to supporting investment in climate and energy science and innovation. The policies reflect a comprehensive and collaborative approach to addressing climate adaptation, engaging a wide range of stakeholders and incorporating feedback and evaluation to enhance the effectiveness of adaptation measures.

However, there are still some gaps in the participatory elements of these policies. One of the identified gaps is the need for more comprehensive and effective mechanisms to engage and involve the general public, including local communities, in the adaptation planning process. While there are mentions of promoting the participation of all interested actors, there is a need for more specific details on how this participation will be facilitated and integrated into the decision-making processes. It would be beneficial to clearly articulate how feedback from stakeholders is incorporated into decision-making.

The policies do not indicate the existence of a systematic study of gaps and barriers to stakeholder participation. Furthermore, there is a gap in the explicit mention of mechanisms to ensure the representation of vulnerable and marginalized communities in the adaptation planning and decision-making processes. It is crucial to ensure that the voices of these communities are heard and considered in the development of adaptation policies. Additionally, there could be further exploration of intersectional approaches that consider the interconnected nature of various forms of inequality as well as addressing the perceived effectiveness.

## 5 Conclusion

In summary, while Spain has taken steps to promote participation in climate change adaptation, there is a need for more detailed and structured approaches to ensure the meaningful involvement of diverse stakeholders, including the general public and vulnerable communities, in the adaptation planning and implementation processes. Moreover, it is essential to consider that the effectiveness of engagement is greatly influenced by the actual implementation and practical application. Establishing transparent feedback mechanisms and demonstrating how stakeholder input has influenced policy decisions can enhance trust and participation.

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## Biographical Note

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## Notes

Data used in this publication is sourced from the 'Climate Change Laws of the World' interface for the Climate Policy Radar Database, <https://climate-laws.org> and made available under the Creative Commons CC-BY licence. The data in this database was sourced primarily from the Grantham Research Institute at the London School of Economics.

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## La construcción de la lucha contra el uso masivo de agrotóxicos y transgénicos como causa pública en Argentina. El caso del Grupo de Reflexión Rural y la campaña Paren de fumigar

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**Abstract:** Esta ponencia se propone, desde una perspectiva sociohistórica, aportar conocimiento sobre el proceso de construcción social de la lucha contra el uso masivo de agrotóxicos y transgénicos como causa pública en la Argentina. Se inscribe en el campo de los movimientos sociales y la acción colectiva por motivos socioambientales, y busca realizar un estudio diacrónico que evidencie el trabajo militante invertido en la construcción del tema como cuestión de agenda pública. Más específicamente, su objetivo es analizar la experiencia del Grupo de Reflexión Rural (GRR), focalizando en una de sus prácticas socioecológicas más novedosas: las campañas "Paren de Fumigar".

El GRR fue un colectivo conformado por activistas, académicos y profesionales de actividad sostenida durante unos de 20 años, que fue precursor en la lucha contra el uso de agrotóxicos y transgénicos en Argentina. De retórica fuertemente politizada, articuló su denuncia con la defensa de la soberanía alimentaria, la promoción de prácticas socioecológicas y un cuestionamiento radical al "modelo sojero" y "extractivista" que caracterizaría a la Argentina durante las últimas dos décadas. La campaña "Paren de Fumigar" se llevó a cabo en las provincias de Buenos Aires, Córdoba, Santa Fe y Entre Ríos, núcleo regional de la producción sojera. Allí confluyeron activistas, pueblos afectados y asociaciones profesionales para deliberar sobre las acciones necesarias para concientizar sobre el carácter nocivo de los agrotóxicos y enfrentar los efectos de la agroindustria. Siguiendo esas claves, invitaron a las comunidades a brindar testimonio e instaron a médicos rurales a generar evidencia sobre los efectos de las fumigaciones, relevando información clave para las denuncias judiciales presentadas y sus intentos de incidir en ámbitos legislativos y en el diseño de políticas públicas.

El trabajo sigue un diseño metodológico cualitativo basado en dos estrategias complementarias: relevamiento de fuentes secundarias

*(documentos, libros y material audiovisual del GRR, informes de las campañas y análisis de las redes y página web del grupo) y realización de entrevistas en profundidad, en particular a miembros del GRR y activistas de la campaña.*

**Keywords:** *Prácticassocioecológicas, movimientossociales, extractivismo, agrotóxicos, soja transgénica*

## 1 Introducción

En América Latina, durante las últimas décadas, los conflictos socioambientales se incrementaron al calor de las resistencias de diversos actores locales frente a las iniciativas extractivistas que, bajo la lógica del neoliberalismo global, propiciaron grandes corporaciones transnacionales con la anuencia e incluso el impulso de gobiernos de distinto signo. En Argentina, desde la segunda mitad de los noventa, una de las formas que adoptó el extractivismo se vinculó con la producción a gran escala de soja transgénica. Esto convirtió al país en uno de los principales exportadores mundiales del cultivo que, con cosechas y ganancias record, es una de las principales fuentes de ingreso de divisas del país. No obstante, la implantación del llamado “modelo sojero” conlleva graves consecuencias socioambientales, que van desde el riesgo sanitario por las fumigaciones o la contaminación de los suelos, hasta el desplazamiento violento de campesinos y la deforestación. Sin embargo, la gravedad de estas consecuencias no basta para explicar la gestación de colectivos en lucha, ni la instalación de la problemática como tema de agenda pública.

En este sentido, la presente ponencia se propone, desde una perspectiva sociohistórica (Offerlé, 2011; Noirel, 2011), aportar conocimiento sobre el proceso de construcción social de la lucha contra el uso masivo de agrotóxicos y transgénicos como causa pública en la Argentina, evidenciando el trabajo militante invertido en la instalación de la problemática. La investigación se inscribe en dos campos temáticos complementarios. Por un lado, el de los movimientos sociales y la acción colectiva (Tarrow, 1998; Melucci, 1999; Della Porta y Diani, 2011); con énfasis en los aportes de la sociología pragmática francesa sobre el compromiso militante y la construcción de denuncias y problemas públicos (Cefaï, 1996, 2011; Boltanski, 2000; Nardacchione y Acevedo, 2013). Por otro, el de los conflictos socioambientales en Argentina (Giarraca, 2006; Merlinsky, 2015); con especial atención a las resistencias contra el extractivismo sojero, incluyendo algunos antecedentes claves, aunque escasos, sobre colectivos y activismos de nuestro interés (Carrizo y Berger, 2014 y 2020; Leguizamón, 2016; Motta y Arancibia, 2016).



En este marco, el objetivo es analizar la experiencia pionera del Grupo de Reflexión Rural (GRR), en su doble condición de grupo intelectual y político, focalizando en una de sus prácticas socioecológicas más novedosas: la campaña "Paren de Fumigar". En cuanto a los objetivos específicos, se busca: a) caracterizar la experiencia del GRR, sus formas de organización, repertorio de prácticas eco-activistas, sentidos puestos en juego y vínculos con otros colectivos; b) analizar las campañas "Paren de fumigar" caracterizando las dinámicas, formas organizativas y actores implicados, y examinándolas como ámbitos de disputa por los saberes legítimos sobre las consecuencias del uso de plaguicidas y transgénicos; y c) indagar sus impactos, considerando el saldo organizativo gestado, así como la constitución de nuevos saberes movilizados para incidir en ámbitos judiciales, legislativos y en el diseño de políticas públicas.

## 2 Itinerario y características del GRR

El GRR fue uno de los precursores de la lucha contra el uso de agrotóxicos y transgénicos en Argentina. El grupo se gestó en 1996 desde el seno de la Secretaría de Agricultura de la Nación en rechazo a la decisión gubernamental de permitir el cultivo de soja transgénica. Integrado por activistas, académicos y profesionales (agrónomos, veterinarios, biólogos, etc.), se conformó como espacio de reflexión crítica e intervención sobre cuestiones socioambientales, en especial para alertar sobre las consecuencias de la producción y consumo de soja RR, cuando el tema aún no constituía una problemática de agenda pública. El eje de su argumentación era que la soja no constituía un simple cultivo sino un "sistema" sobre el cual se asentaba un nuevo modelo agrario de múltiples implicancias: implantación de agro-negocios, intereses corporativos transnacionales y subordinación al neoliberalismo global; concentración de la tierra y "commoditización" de la economía; expansión del monocultivo y deforestación de bosques; violencias sobre comunidades campesinas e indígenas, pobreza rural y desarraigo poblacional; uso de plaguicidas, contaminación del suelo, agua y propagación de enfermedades; consumo de alimentos transgénicos, efectos tóxicos e inseguridad alimentaria; complicidad del poder político y funcionalidad de las instituciones académicas, entre otras cuestiones relevantes.

El esfuerzo por conformar un colectivo que articulara intervención intelectual y política radical debe comprenderse en el marco de las *carreras militantes* (Fillieule, 2015) de varios de sus fundadores: el compromiso con el cambio revolucionario durante los sesenta y setenta; la cárcel y/o el exilio tras la dictadura de 1976, la crítica a la vía armada como medio de transformación social y el (re) descubrimiento de las prácticas agroecológicas; el retorno al país y el paso por la gestión pública en cuestiones ambientales y, finalmente,

la conformación del GRR. Con sus particularidades, este itinerario (seguido por referentes como Jorge Rulli, Gabriel Soler o Guillermo Gallo Mendoza) expresaba tanto las rupturas como las continuidades entre la militancia de los setenta y las nuevas formas de compromiso de los noventa, que implicaron una *reconversión* de discursos, saberes y prácticas (Poupeau, 2007) en que la lucha agroecológica ocupó un lugar clave.

El peso de estas trayectorias incidió sobre una dinámica organizativa escasamente institucionalizada y condicionada por el influjo del grupo fundador. En particular el liderazgo de Rulli, si bien le permitió al GRR ganar un rápido reconocimiento y reclutar nuevos activistas, también generaba tensiones por su estilo personalista y frontal. Ese estilo supo convivir con una dinámica abierta y horizontal evidenciada, por ejemplo, en la discusión colectiva de los documentos y publicaciones del grupo. También en base a relaciones horizontales y de colaboración con otros actores, el GRR se involucró en la gestación de tramas militantes más amplias como la Red Nacional de Acción Ecológica (RENACE), la Red de Alerta sobre Transgénicos (REDAST) o la Red por una América Latina Libre de Transgénicos (REALLT) (Velázquez García, 2003; Carrizo y Berger, 2014).

A partir del 2001, en un contexto social atravesado por la crisis y la emergencia de nuevas formas de acción colectiva, el GRR fue cobrando mayor envergadura por la incorporación de nuevos contingentes de activistas, varios con militancia social o política previa. Algunos aportaron una nueva agenda de contactos, sobre todo a nivel internacional, que le permitió al GRR acceder a fuentes de financiamiento de organismos ambientalistas globales (como la Sociedad Sueca para la Protección de la Naturaleza o Amigos de la Tierra-Internacional) que ampliaron su repertorio de prácticas eco-activistas destinadas a la denuncia y concientización. Ello se tradujo en la publicación de una serie de libros que abordaron diferentes dimensiones (económicas, ambientales, poblacionales, culturales) y escalas (local, nacional y regional) del "modelo sojero" (entre los primeros GRR, 2001, 2002 y 2003; Rulli, 2007). Asimismo, realizaron talleres, capacitaciones y debates en distintos ámbitos (universidades, asociaciones vecinales, centros comunitarios) y localidades del país, donde solían proyectar el documental "Hambre de Soja" dirigido por el documentalista Marcelo Viñas, quien luego se incorporó al grupo (Entrevista n° 8). A partir del 2004 pusieron en marcha el programa "Horizonte Sur" en Radio Nacional (con frecuencia en todo el país), que contaba con una columna semanal a cargo de Jorge Rulli (compiladas en Rulli, 2008), informes y entrevistas a activistas socioambientales, expertos y afectados por las fumigaciones. Además, en 2005, en contraposición al Primer Encuentro de Soja Sustentable organizado por el Fondo Mundial para la Naturaleza en la ciudad de Foz de Iguazú, que contó con la participación de distintas ONG ambientalistas para discutir sobre

el “cultivo responsable” de soja, el GRR organizó un Contra-encuentro junto con el Movimiento Sin Tierra -MST- de Brasil, el Movimiento Campesino de Santiago del Estero -MOCASE- y la Coordinadora Nacional de Mujeres Trabajadoras Rurales e Indígenas -CONAMURI-. Allí se reunieron más de 600 activistas para debatir sobre biodiversidad, semillas nativas, reforma agraria y soberanía alimentaria (Entrevistas n° 4 y 6).

### 3 La campaña ‘Paren de Fumigar’

Sin dudas, entre el repertorio de prácticas eco-activistas impulsadas por el GRR, una de las más importantes fue la campaña “Paren de Fumigar”, inspirada en campañas del activismo europeo ecologista y antiglobalización de las que había participado Javiera Rulli (Entrevistas n° 4 y 6). El grupo inició la campaña en 2006 y la promovió durante unos cinco años en pueblos afectados por el uso agrotóxicos de las provincias de Buenos Aires, Córdoba, Santa Fe y Entre Ríos, núcleo regional de la producción sojera. En efecto, junto con el GRR, por esos años participaron de la campaña numerosas asambleas de vecinos autoconvocados, colectivos ambientales, sociales y culturales de diversidad localidades de aquellas provincias. Muchos habían surgido de modo autónomo en los pueblos, mientras que otros emergieron al calor de las protestas. A su vez, mantuvieron vínculos fluidos e incluso algunos se integraron al GRR, y todos potenciaron su accionar, se incorporaron a una trama más amplia y cobraron mayor visibilidad durante la campaña.

En términos generales, el objetivo de la campaña era concientizar sobre los efectos nocivos de los agrotóxicos y promover una agricultura orgánica sustentable y popular. Allí confluyeron activistas, víctimas de las fumigaciones, profesionales del derecho, la salud y la comunicación, agrónomos, biólogos y científicos para deliberar asambleariamente sobre las acciones necesarias para enfrentar los efectos de la agroindustria. La idea central fue mapear las localidades afectadas, registrar las patologías existentes, apoyar la organización de grupos de resistencia local, conectar experiencias y visibilizar la problemática en el espacio público (Aiuto, 2009). Siguiendo esas claves, durante campaña invitaron a las comunidades a brindar su testimonio y a médicos rurales y expertos en salud a generar evidencia sobre las consecuencias del uso indiscriminado de plaguicidas, relevando información clave para las múltiples denuncias judiciales presentadas, así como para el intento de incidir en ámbitos legislativos y en el diseño de políticas públicas.

En cuanto a su repertorio de prácticas, la campaña se articuló en torno a varias líneas de acción vinculadas (Entrevista n° 9). Una de ellas fue la organizativa, buscando apoyar la protesta social en los pueblos afectados. La dinámica usual

era el contacto con activistas de la zona para la realización de talleres y charlas en clubes sociales, sedes sindicales o asociaciones de fomento. Allí, se escuchaban los problemas locales originados por la acción de los pesticidas -especialmente el glifosato-, se recogían testimonios y evidencias sobre sus efectos si las había (relevamientos de enfermos, análisis médicos, estudios de aire, agua y suelo) y se difundían los casos por los medios de comunicación, especialmente a través de "Horizonte Sur". También se brindaba información sobre la problemática, vinculando las situaciones locales con las consecuencias del "modelo sojero", y se aportaban recursos para organizar la movilización. En este sentido, como puede verse a través de las cartillas que repartían en aquellos encuentros, el GRR facilitaba a los pobladores una sistematización de derechos, normas y leyes que amparan a los afectados por la contaminación, las instituciones públicas que deben atenderlos y los pasos concretos para instrumentar denuncias una vez ocurridos los hechos. En particular, la información y pruebas a recabar (como registros, notas y fotos, o el tipo de estudios a solicitar -de aire, agua y suelo-); las formas de proceder ante las autoridades municipales o comunales, instancias judiciales competentes, policía y otras agencias estatales; así como la importancia de conocer y/o impulsar el trazado del límite urbano en cada localidad y su distancia de la línea agronómica. En cuanto a la salud, se recomendaban medidas preventivas y modos de minimizar los daños tras las fumigaciones, se advertía sobre consecuencias usuales y se insistía en la necesidad de concurrir a centros médicos especificando el tipo análisis médicos a solicitar. Finalmente, se recomendaban formas de organizarse colectivamente, la importancia de coordinar denuncias y difundirlas en medios de comunicación (GRR, 2009b).

Como se vislumbra, la movilización social de los instrumentos del derecho fue otra línea de acción específica durante la campaña, en la que los abogados del GRR y aquellos que se involucraron en las denuncias de los pueblos resultaron claves. Entre los recursos y estrategias jurídicas utilizadas, uno de los litigios usuales tuvo que ver con la reglamentación de las leyes provinciales de agroquímicos y el establecimiento de "zonas de exclusión" para las fumigaciones aéreas y terrestres. Es decir, con la realización de denuncias por incumplimiento de las ordenanzas locales que demarcan el trazado de la planta urbana y la distancia en metros que debe respetarse respecto de la línea agronómica, o bien con la movilización para reclamar ese trazado si aún no se había realizado.

En efecto, la movilización social de este saber experto fue una de las vías por las que se encauzó la protesta. Durante los años de la campaña, tanto el GRR como otros colectivos impulsaron numerosas presentaciones, denuncias y pedidos de intervención vinculados con los daños producidos por el uso de agrotóxicos sojeros. En esta línea, sin dudas un caso emblemático fue el fallo de la justicia cordobesa que en 2009 prohibió las fumigaciones con agroquímicos en las

cercanías del Barrio Ituzaingó Anexo. La lucha que desde inicios de los 2000 venían impulsando las “Madres de Ituzaingó” -querellantes en el juicio- ante los inusitados índices de cáncer y otras enfermedades graves en el barrio, siempre había sido apoyada por el GRR e inclusive inspiró los inicios de la campaña. Tras el histórico fallo, que probó el carácter nocivo de las fumigaciones masivas con agroquímicos, el GRR presentó una denuncia penal solicitando además una medida cautelar tendiente a “suspender y/o limitar la venta/o comercialización y uso de todos los agrotóxicos” hasta que se revisen todas las autorizaciones concedidas que no prosperó. Más allá de la suerte dispar de las denuncias presentadas, y de la dificultad de hacer cumplir incluso la legislación vigente, los abogados del GRR destacaban su importancia por la repercusión que tenían en los medios de comunicación, el dinamismo que le imprimían a la campaña y la concientización que generaban en la gente, convenciéndola del carácter nocivo de los plaguicidas (Fornari, 2009).

Por último, una tercera línea de acción identificable durante la campaña tenía que ver con la cuestión médica, tanto por la importancia de la atención de los afectados, como por el carácter estratégico que tenía la movilización social de este saber experto para construir evidencia sobre el carácter dañino de los pesticidas. Por un lado, durante la campaña se difundían medidas de precaución y modos de minimizar daños tras las fumigaciones y, dentro de las posibilidades, se asesoraba a las personas afectadas, conectándolas con profesionales y centros de salud de los pueblos. A su vez, la generación de evidencia sobre el carácter nocivo de los agroquímicos para la salud resultaba crucial para la protesta, de allí la importancia de la información que podían recabar los médicos de los pueblos durante su práctica y de contar con estadísticas y relevamientos epidemiológicos, aunque esto último fuera una tarea excesivamente costosa para afectados y activistas. En este sentido, los informes y estudios científicos realizados por médicos del GRR y otros cercanos a la campaña (Kazcewer, 2006; Oliva et. al 2008; Gianfelici, 2008, entre otros) fueron ampliamente movilizados por los activistas en sus luchas, en especial cuando necesitaban contar con pruebas sobre sus denuncias en los medios de comunicación, en la justicia -donde dichos estudios fueron frecuentemente adjuntados-, o cuando tuvieron ocasión de asesorar en ámbitos legislativos sobre temas ambientales (por ejemplo, creación o modificación de leyes y ordenanzas que regulan el uso de agroquímicos). En la misma línea, habría que agregar que, según los activistas, algunos medios de comunicación, programas o periodistas también fueron aliados estratégicos durante la protesta, e incluso fue usual que en las denuncias judiciales se adjuntaran investigaciones de este tipo. En este sentido, junto con la justicia y el conocimiento experto de médicos y científicos, algunos profesionales de la comunicación también fueron claves en el proceso de construcción de evidencia y legitimación de saberes sobre el carácter nocivo de los agroquímicos.

Las tramas militantes gestadas durante la campaña perduraron incluso más allá de la propia participación del GRR como su principal promotor, dando lugar a nuevas redes, como las de Médicos y Abogados de Pueblos Fumigados. Si bien el GRR persistiría en su intenso activismo ambiental durante varios años más, hacia 2011 abandonó la campaña, descontento con el excesivo énfasis reivindicativo que percibía en la emergencia de múltiples iniciativas que surgían de modo autónomo en los pueblos, ahora bajo el nombre "Paren de fumigar-nos". A su juicio, de ese modo la crítica política más radical que había impulsado la campaña terminaba diluyéndose en una discusión sobre los metros de los trazados urbanos respecto de las líneas agronómicas; lo cual, si bien alejaba las fumigaciones de los pueblos –reivindicación clave para los afectados–, dejaba intacta la discusión sobre el actual modelo extractivista basado en el monocultivo de la soja (Entrevistas n° 3, 4 y 6). En todo caso, efectivamente la campaña había actuado como un "semillero" para la protesta (Entrevista n° 9), contribuyendo a instalar en la agenda pública un tema hasta entonces prácticamente invisibilizado y, ciertamente, aún pendiente en la sociedad argentina.

## 4 Conclusiones

En este breve trabajo, sistematizamos las primeras conclusiones de una investigación más amplia centrada en la trayectoria del GRR y la Campaña "Paren de Fumigar", que busca mostrar el trabajo militante invertido en el proceso de construcción social de la lucha contra el uso masivo de agroquímicos y transgénicos como causa pública en la Argentina. Caracterizamos la experiencia pionera del GRR y analizamos la dinámica de la campaña, destacando sus principales objetivos, repertorios de acción y sus impactos en términos de concientización social, organización de la protesta, visibilización pública de la problemática e incluso sus repercusiones en ámbitos judiciales y legislativos. Para concluir, quisiéramos subrayar dos cuestiones vinculadas con esos impactos. Por un lado, la importancia del activismo socioambiental contra el uso indiscriminado de plaguicidas, y el rol pionero y articulador que en ese espacio cumplió el GRR. En este sentido, la campaña que el grupo impulsó, en tanto ámbito novedoso de autoorganización eco-activista, promovió la articulación de colectivos sociales antes dispersos, dejando como saldo organizativo una trama activista más amplia que facilitó la emergencia de nuevos grupos de carácter local y redes militantes. Y, por el otro, en tanto espacio donde se gestaron, validaron y/o movilizaron socialmente nuevos conocimientos sobre el carácter nocivo de los plaguicidas –expertos y profanos, gestados en espacios académicos y activistas, producidos por abogados, médicos, periodistas o a partir de los testimonios de afectados relevados– la campaña evidenció una vez más que la disputa por los saberes legítimos en torno al tema fue y es

uno de los aspectos claves en la lucha contra el uso masivo agrotóxicos y transgénicos en la Argentina.

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## Apéndice metodológico

En este trabajo hemos seguido un diseño metodológico cualitativo basado en dos estrategias complementarias: relevamiento de fuentes escritas y audiovisuales (documentos, libros, cortometrajes e informes de las campañas producidos por el GRR, análisis de las redes y sitio web del grupo) y realización de entrevistas en profundidad, en particular a miembros del GRR y activistas de la campaña. A su vez, siguiendo un enfoque metodológico que busca la valoración multi-agente de las prácticas socioecológicas analizadas, se entrevistan y rastrean vínculos y percepciones de estos activistas sobre otros actores, como habitantes de pueblos afectados por plaguicidas, expertos (científicos, médicos, abogados, ingenieros agrónomos), personal técnico de agencias estatales, entre otros. El trabajo de campo se realizó durante 2023 y 2024, estando aún en marcha.

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## Entrevistas realizadas por los autores

- Entrevista n° 1: Gabriel Soler, militante del peronismo en los setenta y exiliado en España, veterinario, fundador del GRR, 8/9/2023.
- Entrevista n° 2: Guillermo Folguera, militante de izquierdas, científico en el área de biología del Conicet, activista del GRR, 11/10/23.
- Entrevista n° 3: Clara Peña, activista del GRR, 23/11/23.
- Entrevista n° 4: Javiera Rulli, hija de Jorge Rulli, militante ecologista, graduada de Bióloga en Holanda, activista del GRR y coordinadora de la campaña, 26/01/24.
- Entrevista n° 5: Sofía Gatica, fundadora de "Madres de Ituzaingó" en Córdoba, 29/01/2024.
- Entrevista n° 6: Stella Semino, militante del peronismo en los setenta y exiliada en Dinamarca, activista del GRR, 1/02/24.
- Entrevista n° 7: Rubén Kneeteman, docente, activista del GRR en Entre Ríos, 1/02/24.
- Entrevista n° 8: José Antonio Fernández, activista vecinal, docente, participante de los talleres del GRR en Buenos Aires, 5/02/24.
- Entrevista n° 9: María Inés Aiuto, periodista, activista del GRR y coordinadora operativa de la campaña, 16/02/24.
- Entrevista n° 10: Lucila Díaz Ronner, abogada, activista del GRR, 5/3/24.

## Notas biográficas

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## Notas

1. La soja transgénica o RR (Roundup Ready) fue desarrollada por Monsanto (líder mundial en la producción de agroquímicos para la agricultura, hoy Bayer) y se comercializó por primera vez en los Estados Unidos. Se trata de una semilla genéticamente modificada para tolerar el herbicida comercial de la multinacional, Roundup, basado en el producto químico glifosato, que se complementó con la técnica de "siembra directa". La rápida difusión del llamado "paquete tecnológico", que generó un explosivo crecimiento de la producción de soja en el país, fue objeto de innumerables controversias por sus impactos ambientales, sanitarios y alimenticios. Su uso fue permitido en Argentina en marzo de 1996, durante el gobierno de Carlos Menem (1989-1999), mediante resolución ministerial n° 167/96, en base a estudios realizados sólo por Monsanto.
2. El grupo fundador estaba conformado por Jorge Rulli, Adolfo Boy, Gabriel Soler, Alfredo Galli, Guillermo Gallo Mendoza, entre otros.
3. Por entonces, entre otros, se sumaron Clara Peña, Stella Semino, Lilian Joensen, María Inés Aiuto, Lucila Díaz Rönner y Javiera Rulli. De la mano de ésta última (hija de Jorge Rulli), quien había residido en Holanda hasta su ingreso al GRR en 2004, se sumó un pequeño núcleo de activistas antiglobalización como Nina Holland, Anne Mayans y Anne Nock. También por esos años, a partir de los lazos conformados con activistas del interior del país, se fueron conformando "filiales" del GRR, por ejemplo, con Rubén Kneeteman en Entre Ríos o Gerardo Mesquida en Córdoba. El último

ingreso importante de militantes, generacionalmente más jóvenes -como Guillermo Folguera o Federico Aliaga, entre muchos otros-, se dio en 2008 tras el denominado “conflicto del campo”. Por entonces el grupo llegó a nuclear a más de 150 activistas (Entrevistas N° 3 y 4).

4. Entre las asociaciones que participaron mencionaremos al CeProNat (Centro de Protección de la Naturaleza), que coordinaba la campaña a nivel provincial en Santa Fe; a la Coordinadora Paren de Fumigar de la provincia de Córdoba; a las “Madres del Barrio Ituzaingó Anexo”, también de Córdoba, por la gravedad y repercusión pública de su caso; y a la Unión de Asambleas Ciudadanas, que nucleaba muchas asambleas vecinales vinculadas con la cuestión ambiental. Entre las localidades con grupos de base que se ligaron a la campaña pueden señalarse los 27 pueblos y ciudades cuyos testimonios fueron recopilados en Pueblos Fumigados. Informe sobre la problemática del uso de plaguicidas en las principales provincias sojeras de la Argentina que el GRR publicó en 2009 y le presentó a la Presidenta de la Nación de entonces, Cristina Fernández de Kirchner (GRR, 2009a). Ellos son: Los Toldos, San Nicolás, Trenque Lauquen, Bayauca y Chacabuco (Buenos Aires); San Lorenzo, Barrio Malvinas de Rosario, General Lagos, Las Petacas, Piamonte, Alcorta y San Justo (Santa Fe); Basavilbaso, Gilbert, Costa las Masitas, Líbaros y Rosario del Tala (Entre Ríos); San José de la Dormida, Colonia Caroya, Colonia Vicente Agüero, Marcos Juárez, Alta Gracia, Sinsecate, Cañada de Luque, Barrio Ituzaingó Anexo de Córdoba Capital, San Marcos Sud y Colonia Tirolesa (Córdoba).
5. Entre las normas que los abogados de la campaña aconsejaban para encuadrar las denuncias figuraban artículos específicos de la constitución nacional, del código civil y penal, la Ley Nacional N° 25.675 de Política Ambiental (2002) y normas de carácter provincial, municipal y comunal, entre ellas, las leyes provinciales de agroquímicos que regulan el uso de productos fitosanitarios. A su vez, dado que las intoxicaciones por plaguicidas no son fáciles de probar, recomendaban encausar las denuncias amparándose en el “principio precautorio” explícito en el art. 4 de la Ley 25.675; en la figura del “delito de peligro” del código penal vinculada con aquel y apelar al principio de inversión de la carga de la prueba. Es decir, según las palabras del principal asesor legal del GRR: “cuando Monsanto dice: ‘pruebe que nosotros intoxicamos’, lo que hay que responderles es: ‘no, pruebe usted que no intoxica’” (Fornari, 2009).
6. Por entonces, las “Madres de Ituzaingó” denunciaban que, de 5000 habitantes del barrio, 200 tenían cáncer. El caso tuvo gran repercusión mediática, apareciendo en las portadas de la prensa nacional. Luego, junto con otros colectivos, el grupo protagonizó importantes protestas que tras dos años evitaron la radicación de una empresa de Monsanto (hoy Bayer) en una pequeña localidad de Córdoba (Página/12, 12/1/09; Madres de Ituzaingó, 2009; entrevista a Sofía Gatica, 2024).
7. Entre las denuncias judiciales realizadas mencionaremos, por la gravedad de los casos, las presentadas por el GRR en Concepción del Uruguay y Gualaguaychú (Entre Ríos) en 2007, vinculadas con la enfermedad sufrida por Marta Cian y la muerte de tres niños de apellido Portillo. Al año siguiente, se modificó la ley provincial de

plaguicidas poniendo el acento en la protección de la niñez y el cuidado ambiental, aumentando las sanciones por incumplimiento e incluyendo un preaviso de 48hs antes de las fumigaciones. Por su parte, el asesor legal del GRR, Osvaldo Fornari, realizó importantes aportes en materia ambiental para la nueva constitución de Entre Ríos sancionada en octubre de 2008 (GRR, 2009).

8. Entre ellas, puede mencionarse el informe "Soja" del programa "La Liga", emitido en 2008 por Telefé y visto por millones de televidentes, donde no sin sensacionalismo se expusieron los daños mortales de las fumigaciones en Entre Ríos y sus consecuencias sobre la salud de un antiguo fumigador de la zona; o las notas del periodista Diego Aranda que durante esos años cubría conflictos socioambientales para el diario nacional Página/12.



## Root Causes: Socio-Ecological Controversies as Embodiment of the Ecologism/Productivism Cleavage

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**Abstract:** *This paper reports on a work in progress about the ideological theorisation of the political communities at stake in socio-ecological controversies. It presents preliminary findings on how socio-ecological controversies reflect and transform the structural cleavage between ecologists and productivists. Here, the concept of cleavage refers to a social, ideological, and organisational divide which is driven by social and political forces sustained over time. It allows for the investigation of the following questions: what are the characteristics of contemporary socio-ecological practices at the heart of such controversies? who are the groups engaged in these practices, and who are their opponents?*

*The chosen approach is defined by an in-depth, long-term analysis of the social actors taking part in socio-ecological controversies, both inside and outside state institutions. It uses an original theoretical framework rooted in the literatures on the Ecologism/Productivism cleavage in political science and on discursive typologies in environmental studies. These works are synthesized in three stages. First, the ideological categories proposed by 20 authors are summarised by compiling the diagnostic (problem identification), prognostic (goal setting), and motivation (values and beliefs) of each political or discursive current. Second, similar currents are combined and classified according to the two main categories of Ecologism and Productivism. Third, all the elements that are found on both sides of the cleavage are discarded in order to keep only the distinctive elements.*

*Four ideological ideal types are thus defined: bio-environmentalism and environmental justice on the ecologist side, and scientific industrialism and traditional industrialism on the productivist side. Content analysis of original qualitative data about two illustrative socio-ecological controversies from the resource-oriented region of Saguenay–Lac-Saint-Jean (Québec, Canada) seems to confirm the presence of the aforementioned ideal types in both cases. The data comes from documentary research in historical and media archives, as well as 20 semi-structured interviews with representatives from union, corporate, community, activist, and political organisations.*

*This research aims to shed light on the development of the Ecologism/Productivism cleavage in a context where it has not yet reached the stage of political representation with the election of green deputies. Studying both socio-ecological and anti-socio-ecological practices around salient issues makes it possible to consider movement-counter-movement dynamics (see Blais 2018) and to situate current debates in the struggle between wider political projects. This will hopefully allow researchers to “repoliticize” the discussion on climate change and the environment, thus improving interest aggregation and policy proposals, by pointing out that the forces driving—and resisting—such crises are embedded in broader social structures.*

**Keywords:** *Political cleavage, productivism, ecologism, social movements, green political thought*

## 1 Introduction

In this age of polarisation, socio-ecological controversies are among the political controversies forming critical moments around which alliances—or oppositions—that are likely to be reproduced beyond the initial issue are formed (Raymond and Feltham, 2014). I start from this premise to explore how socio-ecological controversies reflect and transform a structural cleavage rooted in antagonistic interests, ideas, and organisations. Specifically, I explore the following questions: what are the characteristics of contemporary socio-ecological practices at the heart of controversies? who are the groups engaged in such practices, and who are their opponents?

This paper reports on a work in progress about the ideological theorisation of the political communities at stake in socio-ecological controversies. To start with, I will review the literature on the causes of these controversies and ground my theoretical framework in political science cleavage theory. Next, I will provide a critical synthesis of existing research on the *Ecologism/Productivism* (hereafter E/P) cleavage in political science and on discursive typologies in environmental studies. This section will also compare data from two illustrative cases. In conclusion, I will discuss the potential contributions of my research to shed light on the way socio-ecological controversies reflect and transform the E/P cleavage beyond the partisan arena where it is generally studied. I will additionally highlight the importance of studying “both sides” of controversies to better understand the political environment in which socio-ecological practices evolve.

## 2 Literature Review

Recent studies on socio-ecological controversies, across all disciplines, focus mainly on material, discursive, and institutional factors in the short term to explain social mobilisation against political-economic elites. The few papers looking at long-term structural mechanisms also focus on conflicts between civil society and elites (Rainbow 2006; Barbier and Nadaï, 2015; Deuffic and Banos, 2020; Laurent and Merlin, 2021; Le Meur and Muni Toke, 2021; Massé, 2021).

All these studies neglect the conflicts arising within civil society itself. Moreover, they tend to lack nuance in their understanding of opposing groups. My approach, which grasps socio-ecological controversies through the lens of political cleavage theory and environmental studies, is therefore characterised by an in-depth and long-term analysis of the actors involved both inside and outside state institutions.

## 3 Theoretical Framework

Precisely, cleavage theory (Lipset and Rokkan, 1967) explains social phenomena through the structuring of political communities around critical lines of conflict on a macrohistorical scale. It refers to a three-dimensional divide:

Table 1. The Three Dimensions of a Structural Cleavage.

Dimension	Definition
<b>Social</b> (Persico, 2014) or empirical (Bartolini, 2000)	Empirical references in terms of the social categories instigating the modernisation process or affected by it; whose interests are being advocated for?
<b>Ideological</b> (Persico, 2014) or normative (Bartolini, 2000)	Values and beliefs signalling the self-awareness of the relevant social categories through a sense of collective identity; what problems, objectives, and motivations are being identified?
<b>Organisational</b> (Bartolini, 2000; Persico, 2014)	Explicit mobilisation of social categories by political actors through institutions and organisations; who is "bringing the cleavage to life"?

Although the initial conceptualising of cleavage theory took very little account of environment-related divisions (Persico, 2014), political scientists now trace the emergence of a cleavage between *Ecologism* and *Productivism* in the second half of the 20<sup>th</sup> century. The acceleration of industrial production, economic globalization, and the ecological crisis begin to be challenged by some social groups that are adversely affected by these modernisation processes and coming into conflict with some other social groups that instigated such processes or benefit from them (Lowe and Rüdig, 1986; Frogner, 2007; Martin, 2007; Persico, 2014; De Coorebyter, 2015; Boy, 2021).

Combining the literature on the E/P cleavage in political science (Horowitz, 1972; Lowe and Rüdig, 1986; Buttel and Flinn, 1976; Andersen, 1990; Frogner, 2007; Martin, 2007; Dalton, 2009; Persico, 2014; De Coorebyter, 2015; Boy, 2021) with that on the different relationships between nature, technology and society in environmental studies (Pearce, 1993; Dobson, 1996; Hajer, 1998; Clapp and Dauvergne, 2011; Martínez-Alier, 2014; Theys, 2014; Audet, 2016; Cronon, 2016; Gobby, 2019; Næss, 2021) makes it possible to sketch out an in-depth analysis of the political communities that I expect to be at odds in socio-ecological controversies. Generally, political scientists provide more detail on the social dimension of the cleavage, whereas environmental scholars mainly deal with discourses that fall under the ideological dimension. The organisational dimension occupies a similar place in both corpuses. As part of a bigger research project, this paper focuses on the ideological dimension and the (re)production of collective identities by social actors.

## 4 Results

Firstly, a review of the literature on the E/P cleavage in political science and on discursive typologies in environmental studies revealed 53 categories from which I have compiled the answers to the following questions: what problems are being denounced? what objectives are being put forward? what values are being conveyed? These questions defining the ideological dimension of any structural cleavage coincide with the main framing processes of social movements, i.e. diagnostic, prognostic, and motivation (Benford and Snow, 2000). Secondly, the combination of repetitive or similar currents produced four ideal types: *Ecologism—bio-environmentalism*, *Ecologism—environmental justice*, *Productivism—scientific industrialism*, and *Productivism—traditional industrialism*. Thirdly, the dismissal of response elements found on either side of the E/P cleavage gives a result of 31 characteristics specific to Ecologism (across all currents) and 10 characteristics specific to Productivism (across all currents). This does not imply that both sides of the cleavage, as well as their different variants, can be reduced to these 41 diagnostic, prognostic, or motivational elements; rather, it means that any other element *is not sufficient* to distinguish between Ecologism and Productivism. Moreover, given my abductive approach, other categories could be identified as the research progresses.

Subsections 4.1 and 4.2 present the specific characteristics of each side of the E/P cleavage and their various currents, then illustrate and “put the theoretical literature to the test” through field examples related to two socio-ecological controversies. These controversies took place in the historically resource- and industry-oriented region of Saguenay—Lac-Saint-Jean in Québec, Canada. The four ideal types appear with relatively equal frequency in both cases.



## 4.1 The Ideological Dimension of Ecologism

In the scholarly works I reviewed, political scientists see Ecologism as a single bloc, while environmental specialists distinguish several trends. These trends can be grouped into two main currents which I refer to as *bio-environmentalism* and *environmental justice*. Their ideological dimension can be identified by the following elements:

Table 2. Specific Characteristics of Ecologism and Its Currents as Found in the [Political Science](#) and [Environmental Studies](#) Literatures.

Ecologism in general	
<p><b>Diagnostic</b></p> <ul style="list-style-type: none"> <li>• Human alienation from nature (Cronon, 2016; Næss, 2021)</li> <li>• Increased rates of production (Martin, 2007; Persico, 2014)</li> </ul> <p><b>Prognostic</b></p> <ul style="list-style-type: none"> <li>• Limited or declining population growth (Pearce, 1993; Clapp and Dauvergne, 2011)</li> <li>• Zero or declining economic growth (Andersen, 1990; Pearce, 1993; Hajer, 1998; Boy, 2021)</li> </ul> <p><b>Motivation</b></p> <ul style="list-style-type: none"> <li>• Opposition to the myth of progress (De Coorebyter, 2015)</li> <li>• Recognition of the intrinsic value of nature (Pearce, 1993; Dobson, 1996)</li> <li>• Traditional ideals, especially rural ones (Horowitz, 1972)</li> <li>• Weak or very weak substitutability of natural capital (Dobson, 1996; Theys, 2014)</li> </ul>	
Bioenvironmentalism	Environmental justice
<p><b>Diagnostic</b></p> <ul style="list-style-type: none"> <li>• World population growth (Martínez-Alier, 2014)</li> </ul> <p><b>Prognostic</b></p> <ul style="list-style-type: none"> <li>• Minimal use of resources (Pearce, 1993)</li> <li>• Preservation of significant natural heritage (Dobson, 1996)</li> </ul>	<p><b>Diagnostic</b></p> <ul style="list-style-type: none"> <li>• Adverse impacts on human health (Martínez-Alier, 2014; De Coorebyter, 2015; Gobby, 2019)</li> <li>• Colonialism (Cronon, 2016; Gobby, 2019)</li> <li>• Ecological injustices and climate debt (Martínez-Alier, 2014; Gobby, 2019)</li> <li>• Institutions of power (Hajer, 1998; Gobby, 2019)</li> <li>• Globalisation (Martin, 2007; Clapp and Dauvergne, 2011; Persico, 2014; Audet, 2016)</li> <li>• Harmful effects of science, techniques, and technologies (Horowitz, 1972; Hajer, 1998; Martínez-Alier, 2014; Boy, 2021)</li> </ul> <p><b>Prognostic</b></p> <ul style="list-style-type: none"> <li>• Struggle against all forms of domination (Martínez-Alier, 2014; Gobby, 2019; Næss, 2021)</li> <li>• Democratic and participatory social organisation (Hajer, 1998; Theys, 2014; Audet, 2016; Gobby, 2019)</li> <li>• Fair use and sharing of resources (Clapp and Dauvergne, 2011; Theys, 2014)</li> <li>• Localism (Clapp and Dauvergne, 2011; Theys, 2014)</li> <li>• Preservation of irreversible and vulnerable natural capital (Dobson, 1996)</li> <li>• Reclaiming of forgotten knowledge and practices (Audet, 2016)</li> </ul>

<p><b>Motivation</b></p> <ul style="list-style-type: none"> <li>• Perception of the natural environment as unique and fragile (Cronon, 2016)</li> <li>• Recognition of the rights and interests of the non-human world (Pearce, 1993; Martínez-Alier, 2014)</li> <li>• Reverence and moral obligations towards nature (Pearce, 1993; Martínez-Alier, 2014)</li> </ul>	<p><b>Motivation</b></p> <ul style="list-style-type: none"> <li>• Autonomy and self-sufficiency (Andersen, 1990; Audet, 2016)</li> <li>• Global perspective (Horowitz, 1972; Theys, 2014)</li> <li>• Perception of the natural environment as favourable and fertile (Cronon, 2016)</li> <li>• Social justice (Clapp and Dauvergne, 2011; Martínez-Alier, 2014; Persico, 2014; Næss, 2021)</li> <li>• Solidarity, interconnection, and symbiosis between humans and other species (Persico, 2014; Næss, 2021)</li> </ul>
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By way of illustration, Excerpt A in the box below shows the ideological dimension of bio-environmentalism as identified in the literature regarding the prognostic elements of preservation of the significant natural heritage\* and the motivational element of the perceived fragility of the environment\*\*. It also contains the motivational element related to the very weak substitutability of natural capital\*\*\* which characterises Ecologism in general. In Excerpt B, one rather finds the ideological dimension expected of environmental justice in the prognostic elements linked to the reappropriation of forgotten practices and knowledge\* as well as the motivational element of social justice\*\*.

Box 1. Examples of the Ideological Dimension of Ecologism in the Field

<p>Excerpt A on the controversy surrounding the Québec government's creation of protected areas for the woodland caribou (2005-2017):</p> <p>"(...) university researchers have shown that <b>certain areas south of the northern limit in Lac-Saint-Jean have a very high irreplaceability index***</b>. In other words, they have no equivalent north of the limit. The same logic applies to the woodland caribou. Some of the critical habitats identified (...) are south of the northern limit. Here again, <b>their protection is not interchangeable*</b> with areas to the north. If conservation nucleus are not established in these areas, <b>the caribou risk disappearing from there**</b> (...)" (Op-ed "La limite de la limite"; my translation from French)</p> <p>Excerpt B on the controversy surrounding Hydro-Québec's projected hydroelectric harnessing of the Ashuapmushuan River (1977-2007):</p> <p>"Aurélien Gill, Band Chief of the Montagnais [Innu] of Pointe-Bleue [Mashteuiatsh], summarized the meeting for us. 'The Hydro-Québec people (...) told us that they had not yet done any in-depth studies on wild game species and <b>the social impact of the project***</b>' (...) Chief Gill specifies that <b>the efforts made (...) to encourage Pointe-Bleue families to take up trapping again could be wiped out by the project*</b>." (News report "Aménagement de la Chamouchouane"; my translation from French)</p>
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## 4.2 The Ideological Dimension of Productivism

Similarly, to their analysis of Ecologism, the political scientists whose writings I have examined tend to conceive of Productivism as a single block—except for one author (Andersen, 1990). He and environmental specialists distinguish between two main currents which I refer to as *scientific industrialism* and *traditional industrialism*. Their ideological dimension can be identified by the following elements:

Table 3. Specific Characteristics of Productivism and Its Currents as Found in the [Political Science](#) and [Environmental Studies](#) Literatures.

Productivism in general	
<p><b>Diagnostic</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul> <p><b>Prognostic</b></p> <ul style="list-style-type: none"> <li>• Economic growth (Lowe and Rüdig, 1986; Pearce, 1993; Dobson, 1996; Hajer, 1998; Clapp and Dauvergne, 2011; Persico, 2014; Theys, 2014; De Coorebyter, 2015; Audet, 2016; Cronon, 2016;)</li> <li>• Technical and technological innovation (Horowitz, 1972; Lowe and Rüdig, 1986; Pearce, 1993; Hajer, 1998; Clapp and Dauvergne, 2011; Martínez-Alier, 2014; Persico, 2014; Theys, 2014; De Coorebyter, 2015; Audet, 2016; Cronon, 2016; Boy, 2021)</li> </ul>	
Scientific industrialism	Traditional industrialism
<p><b>Diagnostic</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul> <p><b>Prognostic</b></p> <ul style="list-style-type: none"> <li>• Harmonious human control over the environment (Andersen, 1990)</li> <li>• Support for workers in transitioning sectors (Audet, 2016)</li> </ul> <p><b>Motivation</b></p> <ul style="list-style-type: none"> <li>• Perception of the natural environment as hostile (Cronon, 2016)</li> <li>• Weak substitutability of natural capital (Pearce, 1993; Dobson, 1996; Theys, 2014)</li> </ul>	<p><b>Diagnostic</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul> <p><b>Prognostic</b></p> <ul style="list-style-type: none"> <li>• Absolute human control over the environment (Andersen, 1990)</li> </ul> <p><b>Motivation</b></p> <ul style="list-style-type: none"> <li>• Individualism (Cronon, 2016)</li> <li>• Perception of the natural environment as rebellious (Cronon, 2016)</li> <li>• Strong substitutability of natural capital (Dobson, 1996; Theys, 2014)</li> </ul>

By way of illustration, Excerpt C in the box below shows the ideological dimension of scientific industrialism regarding the prognostic element of “harmonious” control by human beings over nature\*. It also contains the prognostic element of economic growth\*\* that characterises Productivism in general. In Excerpt D, one rather finds the ideological dimension of traditional industrialism regarding the motivational element linked to the strong substitutability of natural capital\*. It also shows the prognostic element of economic growth\*\* that characterises Productivism in general.

## Box 2. Examples of the Ideological Dimension of Productivism in the Field.

Excerpt C on the controversy surrounding Hydro-Québec's projected hydroelectric harnessing of the Ashuapmushuan River (1977-2007) :

"**Sustainable development\*** means that you can develop the economy, **create jobs\*\***, and at the same time protect the environment. **You must be able to reconcile these things\***. (...) That's why I said yes to the Ashuapmushuan project, because it's going to **create economic development\*\***, by building dams, and it's also going to protect the environment." (Interview no. 12; my translation from French)

Excerpt D on the controversy surrounding the Québec government's creation of protected areas for the woodland caribou (2005-2017):

"People took to heart the defence of their forestry territory. And, as I was saying, they weren't necessarily against the woodland caribou, but they wanted to **save their forestry industry\*\***. (...) the industry was our livelihood. So we had no choice. (...) Can we exploit the forest on **the assumption that there are places where the caribou might prefer to go\*?**" (Interview no. 13; my translation from French)

## 5 Conclusions

This paper presents preliminary findings on how socio-ecological controversies reflect and transform the structural cleavage between *Ecologists* and *Productivists* (the E/P cleavage). My approach is defined by an in-depth, long-term analysis of the social actors taking part in such controversies, both inside and outside state institutions, using an interdisciplinary theoretical framework rooted in the literatures on the E/P cleavage in political science and on discursive typologies in environmental studies. I have identified four ideological ideal types that should be considered as a continuum: *bio-environmentalism* and *environmental justice* on the ecologist side, and *scientific industrialism\** and *traditional industrialism* on the productivist side. The data presented seem to confirm their presence in both socio-ecological controversies under study.

In short, I hope to offer a more complex understanding of the ideological dimension of the political communities at odds in socio-ecological controversies. It should be stressed that the aforementioned ideal types are intended to facilitate analytical work rather than provide an exact description of reality. I will therefore continue to go back and forth between theoretical expectations and empirical observations so that they inform each other throughout this project.

Furthermore, by prioritising the protest arena, my research aims to shed light on the development of the E/P cleavage in a context where it has not yet reached the stage of political representation with the election of green deputies to the National Assembly. Studying both socio-ecological and anti-socio-ecological practices around environmental issues, including the climate question, makes it possible to consider movement-counter-movement dynamics (see Blais 2018) and to situate current debates in the struggle between broader social projects.

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## Methodological Appendix

To synthesise the theoretical corpus mentioned in Section 2, I proceeded in three stages. I first summarised the typologies proposed by the 20 authors whose work I examined in a table compiling the answers given to a series of questions (each row) by all the political or discursive currents identified (each column), according to the following model:

Table 4. Template Used to Summarise the Ideological Dimension of Various Currents.

	Current A	Current B	Current C	...
What problems are being reported?				
What are the objectives?				
What values are conveyed?				

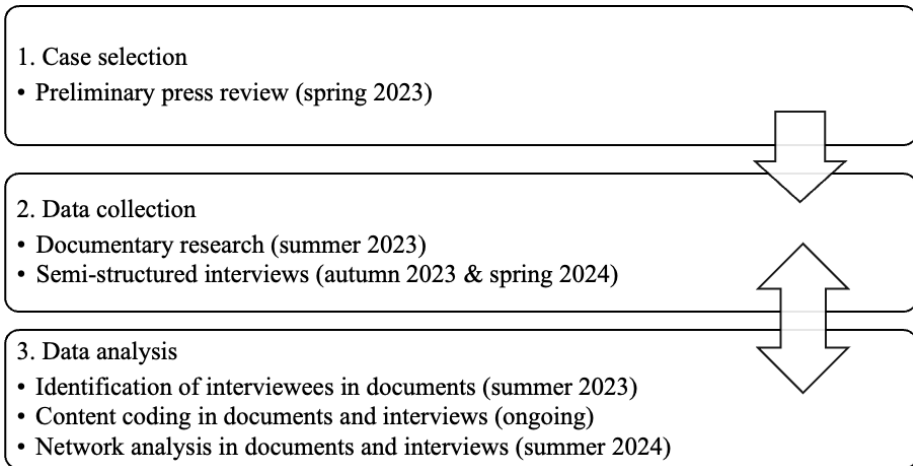
These questions correspond to the symbolic framing processes of social movements (Benford and Snow, 2000). I then combined, in another table, the currents that were repeated or had the same characteristics across the different typologies, classifying them according to the two main categories of Ecologism and Productivism. To obtain an operational grid, I finally removed all the elements that were found on both side of the E/P cleavage and kept only the distinctive elements.

I use the typology thus developed during the qualitative analysis of the main groups involved in two socio-ecological controversies (phase 3 in the figure below). This enables me to identify the elements that bear witness to the ideological dimension of the ecologist and productivist communities. The cases studied took place between 1977 and 2017 in the historically resource- and industry-oriented region of Saguenay–Lac-Saint-Jean in Québec, Canada.

Specifically, I am in the process of carrying out a content analysis of the actors' discourses using coding software to associate units of meaning with the framework categories outlined in Section 4, or to bring new categories to light. I adopt an abductive approach based on a back-and-forth between theoretical expectations and empirical observations, so that they inform each other. This data processing aims to reconstruct the actions and positions of relevant

organisations in relation to the cleavage under study. The data comes from documentary research in historical and media archives, as well as 20 semi-structured interviews with representatives from union, corporate, community, activist, and political organisations.

Figure 1: Summary of the Empirical Research Design.



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## Biographical Note

Julie Levasseur is a third-year PhD candidate in political science at Université de Montréal, Canada. She received a bachelor's degree in literary and feminist studies from Université du Québec à Montréal and a master's degree in French-language literature from McGill University. Her academic interests include critical, discourse, and social movement studies; as such, her thesis examines the ideological and organisational dimensions of socio-ecological controversies in peripheral Québec. She currently works as a research assistant for a comparative project on the intersection of ecological struggles with student, labour, and land protection movements, which is led by Prof. Pascale Dufour and funded by the Social Sciences and Humanities Research Council of Canada. Julie Levasseur also sits on the scientific committee of *Saha* and occasionally reviews books for *Liberté*. Her recent publications include two translations of 19<sup>th</sup>-century feminist essays in *PrefiX* (2024).



## Notes

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1. I refer to each side of the cleavage by the term most common in the literature among Environmentalism/Developmentalism (Horowitz, 1972), Environmentalism/Laissez-faire (Buttel and Flinn, 1976), Ecologism/Industrialism (Lowe and Rüdiger, 1986), Green Politics/Industrialism (Andersen, 1990), Nature/Human (Martin, 2007), Ecologism/Productivism (Frogner, 2007), Environmental Policy/Economic Development (Dalton, 2009), Ecologism/Productivism (Persico, 2014), Environment/Economy (De Coorebyter, 2015), and Ecologism-Degrowth/Productivism (Boy, 2021).
2. The theoretical ideas developed in sections 4.1 and 4.2 are based on discussions and work carried out by Pascale Dufour (principal investigator), Sophie Van Neste (co-investigator), François Tanguay, Louis Massé, Noémie Jaouen and me as part of the research project “Que font les luttes écologistes à la protestation sociale? Analyse comparée multi-échelles au Canada et en France”. All claims and errors, as well as empirical data, are my own.
3. I combine the concept of bio-environmentalism (Clapp and Dauvergne, 2011) with those of cult of wilderness (Martínez-Alier, 2014), declinist and naturalistic view of environmental history (Cronon, 2016), units of significance conception of environmental sustainability (Dobson, 1996), and sustainable development as bio-economy and sustainable degrowth (Theys, 2014).
4. I combine the concept of environmental justice (Martínez-Alier, 2014; Gobby, 2019) with those of deep ecology (Næss, 2021), anti-ecological modernisation (Hajer, 1998), irreversible natural capital conception of environmental sustainability (Dobson, 1996), ecocentric and localist pole of the ecological transition (Audet, 2016), sustainable development as a multi-dimensional development strategy (Theys, 2014), social greens (Clapp and Dauvergne, 2011), and declinist and Indian [Indigenous] vision of environmental history (Cronon, 2016).

5. I combine the concept of scientific industrialism (Martínez-Alier, 2014) with those of post-industrialism studied (Andersen, 1990), ecological modernisation (Hajer, 1998; Theys, 2014), shallow ecology (Næss, 2021), critical natural capital conception of environmental sustainability (Dobson, 1996), technocentric and interventionist pole of ecological transition (Audet, 2016), declinist and interventionist vision of environmental history (Cronon, 2016), and institutionalist environmentalism (Clapp and Dauvergne, 2011).
6. I combine the concept of traditional industrialism (from industrialism; Andersen, 1990) with those of progressive vision of environmental history (Cronon, 2016), market liberalism (Clapp and Dauvergne, 2011), total capital conception of environmental sustainability (Dobson, 1996), sustainable development as sustained growth (Theys, 2014).



## Challenging Europe: How AntiEU Parties Use Opposition to Environmental Protection as a Way to Confront with the EU

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**Abstract:** As part of its commitment to enhancing overall well-being, the European Union (EU) has pursued ambitious goals regarding the protection of the environment and a more resource-efficient economy. In this context, the EU has implemented policies and rules in various areas, such as waste management, climate, nature and biodiversity, and air quality, among others. The EU's ambitious goal of achieving climate neutrality by 2050 and its requirement for countries to develop strategies to reduce greenhouse gas (GHG) emissions have likely impacted citizens' perceptions of European policies and forced political actors to advocate for environmental protection even when they may prefer to pursue economic growth-oriented policies. Given the EU's strong commitment to environmental protection, Eurocritical parties have been using this EU strategy to advance their own climate and environmental agendas as a means of challenging the EU and gaining support from those who are negatively affected by or opposed to the changes implemented to achieve the European Green Deal (EGD).

Given that the extent to which political parties employ this strategy in European-level elections has not been fully investigated, and considering the significance of this phenomenon in the context of the upcoming European elections scheduled for next June, this paper explores the extent to which challenger political parties have identified a new approach to confronting the mainstream positions of the EU by adopting anti-environment stances. We investigate this phenomenon in the context of the 2009, 2014 and 2019 European Parliament (EP) Elections by examining the prominence given to environmental issues in party manifestos and the pro- or anti-environmental protection positions articulated in their European electoral programs. Our findings indicate that challenger parties, namely those with more Eurosceptic tendencies, are also more likely to express anti-environmental positions in their European manifestos. In contrast, parties with more Europhile leanings either omit environmental issues from their manifestos or even appear to adopt a more environmentally friendly stance, despite potentially

*holding different positions in their national manifestos. This suggests that environmental issues have emerged as a relevant factor in electoral competition, strategically employed by political parties in their campaigns, and emphasized differently depending on the potential electoral gains in multi-level settings. This research offers a novel perspective on the role of environment in political competition and contributes to understanding how parties can challenge the EU's environmental agenda in their quest to confront the EU.*

**Keywords:** *EU, European elections, environmental policy, political parties, Euroscepticism.*

## 1 Introduction

In the complex landscape of European multi-level governance, electoral dynamics vary significantly across different tiers of government, compelling political parties to adopt nuanced strategies tailored to the distinct contexts of subnational, national, and European elections.

The EU, having grown in influence, now holds greater importance in the lives of European citizens not only because national and subnational legislation of EU members must align to the European legislation, also because the EU has come into ruling on issues that transcend borders and, especially after Covid-19, has contributed to advance in the process of political integration (Tesche, 2022). Nevertheless, EP Elections have been and predictably will continue to be seen as second-order national elections (Reif and Schmitt, 1980) because citizens perceive there is not much at stake. This implies that parties seeking to mobilize and attract voters in European elections will underscore supra-national issues in order to shift to domestic concerns. Many times, voters, confronted with the difficulties of assessing parties' performances and competences in the complex multi-level institutional settings, would just take their cues from the national level to make their choices at inferior and superior layers (Reif and Schmitt, 1980).

Citizens are better at understanding national politics than the distant and complex EU polity in which their elected representatives are then grouped in transnational party families with diverse interests. Nevertheless, as the EU is becoming more pivotal in citizens' lives, there seems to be a more fluid "issue contamination" between the different electoral arenas what according to some authors implies that national elections might be becoming more Europeanized (Jurado and Navarrete, 2021; Pannico and Costa Lobo, 2023). Consequently, the "second-orderness" of European elections would be a matter of degree that varies between elections, time, place and individuals (Cabeza, 2018). This

impacts also on parties' electoral strategies, because the more prominent the EU and the more citizens aware of the impact of the policies decided in Brussels, the more incentives parties have to address EU issues to attract voters. This dynamic is comparable to that leading some regionalist parties to steadily focus on environmental and climate policy to challenge the central authority of the state in subnational elections (Conversi and Friis Hau, 2021; Enguer and Navarrete, 2023). This is driven by the growing significance of environmental issues in the political agenda at the subnational level, as evidenced by the particularly proactive role that regional parliaments have been adopting regarding it (Galarrraga, Gonzalez-Eguino and Markandya, 2011; Jordaan *et al.*, 2019).

This research explores the role of environmentalism in political competition at the EU level, demonstrating how Eurocritical parties have found the environment to be a key issue in challenging the EU.

## 2 The EU and the environment

Recent studies have shown an increase of prominence of transnational issues among the main topics in the 2019 European Elections and point to the mobilizing effect of these topics that transcend national politics as one of the reasons behind the unexpectedly high turnout (Braun and Schäfer, 2022). In their analysis of the 2019 EP Elections, Daniela Braun and Constantin Schäfer (2022) found that citizens who attributed greater importance to climate change and environment were significantly more likely to participate in the European elections. In their opinion, this mobilizing effect of green issues would suggest there is a sense of political urgency to take care of climate change, as well as a sign of how the "green wave" became more salient during the campaign to the EP Elections. The relevance of green politics also in European Elections would be the result of the increased concern about the environment but also to new dynamics in electoral competition as green parties become more important in their national arenas. Green issues perceived as a potential electoral threat for some parties or as a potential electoral opportunity (Spoon, Hobolt and De Vries, 2014) are becoming more salient in the public debate and, consequently, parties that have traditionally avoided addressing green issues find incentives to take positions in order to attract voters in pursuit of representation.

More specifically, the environmental and climate policy was initially perceived as "a mere side-product of economic integration" (Biedenkopf and Delreux, 2023, p.418). However, with the increasingly noticeable effects of global warming, European environmental and climate regulations have evolved into a more intricate and ambitious framework. Thus, while the 1990s are generally regarded as a period of limited progress in EU climate policy and governance,

particularly marked by the blockade by member states against a carbon/energy tax proposed by the European Commission (EC), the 2000s witnessed a progressive politicization of the issue, exemplified by the implementation and later revision of the Emissions Trading System (ETS), a key policy measure creating a European carbon market for GHG emission allowances (Dupont *et al.*, 2024). Despite a slight halt in this trend experienced in the context of crisis and austerity that characterized the first half of the 2010s, the same logic previously described was able to be resumed and intensified from the second half of the decade, especially materializing in the adoption of the EGD by the EC in 2019 (Gravey and Moore, 2018). By generally targeting climate neutrality in all member states by 2050, this standard adheres to a progression of policies and legal frameworks whose gradual adoption over the last decades has consolidated them as a source of pride for the EU.

In such a context in which environmentalism is becoming more intertwined with EU identity, it is important to analyse how parties have adjusted their electoral strategies at the EU-level. Euro-critical parties have traditionally focused on constitutive issues to confront with the EU (Braun, Hutter and Kerscher, 2016), this is, they emphasize their criticism toward the EU polity over other more policy-related issues. Nevertheless, as the EU regulatory framework includes more policy areas, it is reasonable to expect that those parties who have outstand for their confrontational position against the EU polity have increasingly more incentives to also discuss policy-related issues, especially those more salient in domestic politics. In this regard, we understand that environmental politics play an important role in the strategy of parties contesting European integration and they will downplay or emphasize their stances on the environment depending on the electoral arena in which they are competing and the domestic concerns of their likely voters.

### **3 The relevance of party manifestos**

In their manifestos, parties express their issue priorities and set their positions on the political topics and conflicts that are more important for them. This implies that they, sometimes, give more or less prominence to some topics depending on what is more convenient for their electoral strategy. For this reason, we consider that what parties write in their manifestos is representative not only of the policies they want to implement, but also of the topics parties consider could be used to mobilize and attract voters. Similarly, we expect that this strategy of highlighting some issues or topics in their manifestos as part of their electoral campaign implies that absences are also equally telling. Parties can decide to skip topics that can be too controversial, divisive or simply that could distract attention from their main issue of political competition. This does

not imply that parties have no stances on a certain topic, it could also mean that they selected to not equally emphasize all of their policy positions as a way to help voters to have clearer choices or to be able to choose among the party menu based on the topics that are more relevant for them. Then, parties tend to put more emphasis on the issues they “own” while de-emphasize those in which they show a position that can be disadvantageous during the campaign (Dolezal et al., 2014).

Scholars have paid attention to how parties strategically reflect their policy stances and issue attention in their manifestos (see Braun 2023). Party manifestos can be considered as a central source of information on what a party stands for, but it has a clear disadvantage though: its asynchrony with the electoral campaign. As some scholars have pointed out, issue competition is a bottom-up process in which political actors respond to citizens’ policy concerns (Green-Pedersen and Mortensen, 2010; Klüver and Sagarzazu, 2016; Baumann, Debus and Gross, 2021). Nevertheless, electoral manifestos are published weeks or months before the election. Thus, these texts serve to set the main goals for the upcoming term but parties are confronted with the challenge of being tied by their programmatic goals as expressed in their manifestos and foreseeing the issues and conflicts that might be relevant during the eventual electoral campaign. This implies that, in their manifestos, parties try to set the topics in which they hold positions that are less likely to force them to get into contradiction during the campaign and, at the same time, are important enough to attract voters.

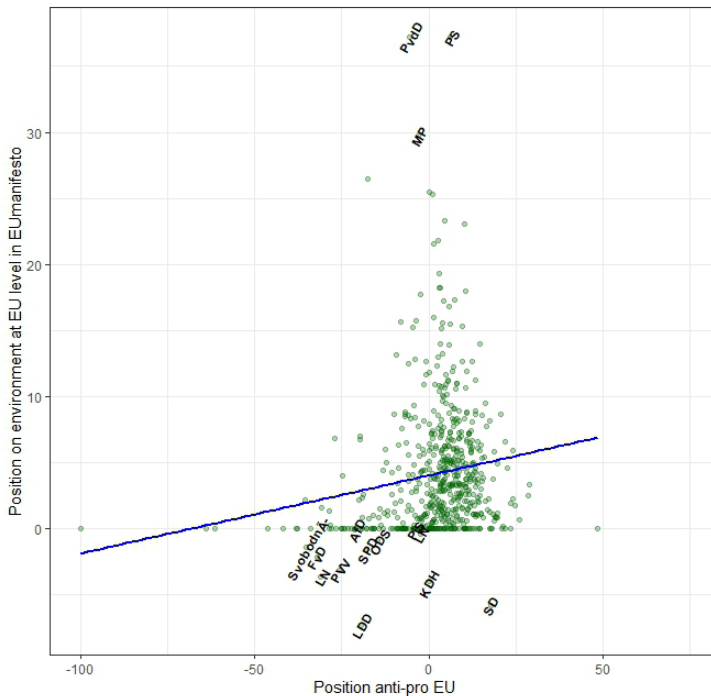
Based on the role of manifestos as one of their tools for electoral strategy, we theorised that the growing regulatory framework that comes from the EU in relation to the environment will move Eurocritical parties to use the environment to confront with the EU and that this can be observed in their manifestos.

#### **4 The relationship between attitudes towards EU integration and positions on the environment in Euromanifestos**

Our analysis explores the relationship between environmentalism and stances on the EU based on what parties expressed in their Euromanifestos (Carteny et al., 2023) and, therefore, we correlate and calculate linear associations between parties’ scores on the pro-anti EU dimension as well as the share of positive quasi-sentences over the share of negative sentences about the environment at the EU level (see Methodological Appendix). The obtained results are depicted in Figure 1 and support our theoretical expectation because they

reveal a noteworthy correlation between a more negative view of the EU and more negative mentions of the environment.

Figure 1. Parties' Positions on Environmental Protection at the EU Level by Position on European Integration.



Note: Linear regression line in blue. This figure was elaborated by the authors using secondary data available in Euromanifesto Study (years 2009, 2014 and 2019).

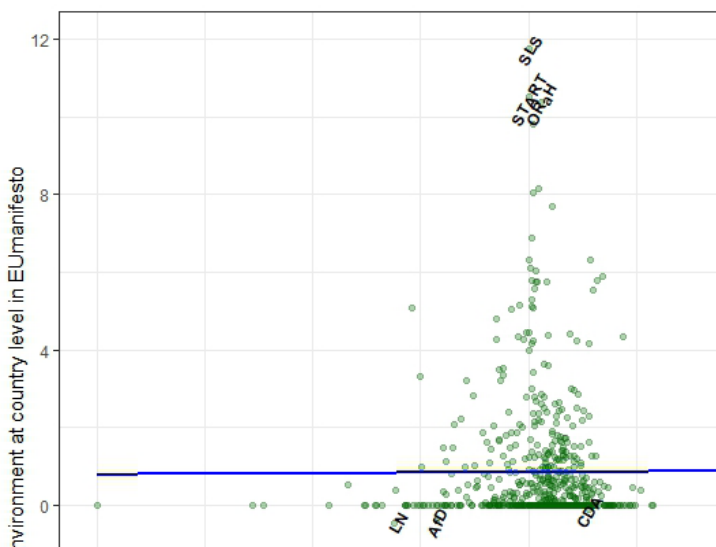
As shown, parties exhibiting a greater proportion of negative mentions in relation to the environment have also a more negative view of EU integration. This is relevant because the number of parties that present a more positive view of EU integration in their Euromanifesto is more than double the number of parties that show a more critical view of EU integration, but to this smaller group belong all the parties with a negative discourse about the environment at the EU level. The sole exception is the Social Democrats in Ireland who talk more negatively about the environment at the EU level in their Euromanifesto while being a more pro-EU integration party. Conversely, among the more pro-environment Euromanifestos we find the soft-Eurosceptic Party for the Animals from the Netherlands (*PvdD*) and the Swedish Greens (*Miljöpartiet de Gröna*). The latter is a party that during years actively opposed EU membership (Burchell 1997) and even demanded a new referendum on this matter, an idea



that was only abandoned in 2008 (Jozwiak 2008). These parties, however, have softened their opposition towards EU integration as the EU was increasing its regulation on environmental issues to the point that in 2019 the Swedish Greens were no longer among the group of the Eurocritical parties based on their Euromanifesto.

The fact that parties opposing the EU or simply Eurocritical emphasize in their manifestos their positions towards protection of the environment suggests that this issue has become a new dimension of political competition that is used to confront with the EU because it has gone too far in the environmental regulation or because it is not sufficiently ambitious (which will be the case for the *PvdV* and the *Miljöpartiet* before 2019). Parties critical of the EU will be more likely to incorporate mentions criticising environmental protection in their manifestos as a way to challenge the EU in a policy domain that is becoming one of its hallmarks. This is even more evident when comparing with the positions on environmental protection at the country level as shown in their Euromanifesto (see Figure A.1. in the Appendix). In contrast to what happens when referring to the EU level where the positive trend between environmentalism and pro-EU integration stances is clear, there is no correlation at all between stances on the environment at the national level as referred in their Euromanifesto and support for the EU.

Figure 2. Parties' positions on economic growth versus environmental protection by position on European integration



Note: Regression discontinuity design. 95% confidence intervals. This figure was elaborated by the authors using secondary data available in Euromanifesto Study (years 2009, 2014 and 2019).

Finally, we explore whether this relationship holds when analysing political stances from a more qualitative perspective. Thus, we use the Euromanifesto Project's coders' assessments to determine whether the parties defend economic growth over environmental protection and test whether these stances are associated with positions on EU integration (see Figure 2). While we could not identify a clear trend, using a regression discontinuity design we found that for Eurocritical parties, the more radical they are against the EU, the more they support economic growth over environmental protection. However, and to our surprise, from these qualitative assessments, it is revealed that Europhile parties also exhibit a significant inclination toward prioritizing economic growth over environmental concerns.

Given that in the analysis of the quasi-sentences of the Euromanifesto, parties supporting the EU were less negative on the issue of environmental protection, we can deduce that they are less likely to campaign on the environment at the EU level because it could be understood as a way to challenge the EU mainstream position. Thus, they are more willing to avoid controversial stances about the environment in their manifesto for the European Elections. Conversely, those more Eurocritical are willing to explicitly use the environment in their Euromanifestos as a way to confront the EU by holding a clearer negative position on this issue in their electoral programs for the EP Elections.

## 5 Conclusions

The EU's environmental goals do not only shape policies but have also become a focal point for political manoeuvring. Using data from parties' Euromanifestos on the 2009, 2014, and 2019 EP Elections, this study unveils a pattern where Eurosceptic parties are more likely to adopt anti-environmental positions in their manifestos as a way to challenge and confront with the EU. On the other hand, Europhile parties either downplay environmental issues or even embrace a more environmentally friendly stance. This approach highlights the complexity of the interplay between environmental concerns and political strategies, showcasing how parties strategically emphasize or de-emphasize environmental agendas based on their perceived electoral gains. As Eurocritical parties strive to challenge the EU, they employ the environment as a strategic instrument for both opposing the union and forging alliances. This research provides a new outlook on the complex interplay between environmental priorities and party competition within the EU.

In our perspective, the debate on environmental protection and climate policy will become even more relevant at the European-level electoral competition. This is primarily because the discourse on the EU polity is losing strength in

favour of issues related to policies, and those parties that have traditionally opposed the EU are compelled to take positions on matters such as environmental protection, which have become integral to European identity.

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## Methodological Appendix

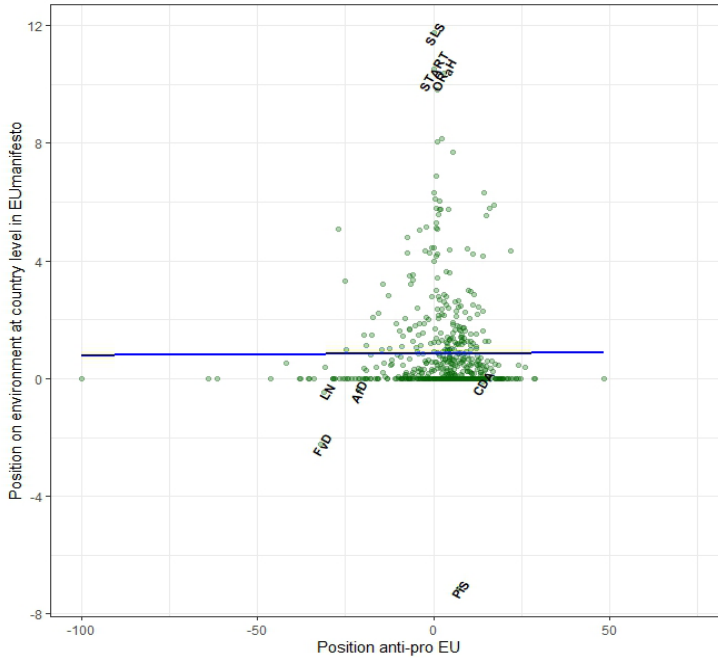
To study the extent to which Euro-critical parties make their stances on the environment more or less prominent in their political campaign to the European Elections, we use the data from the *Euromanifesto Study* (Carteny et al. 2023). This dataset contains information about the percentage of quasi-sentences coded in different categories that integrate the different party programs to the European Elections (Euromanifestos). Each Euromanifesto is unitized and every quasi-sentence is classified in one of nine domains and its subcategories following a coding scheme similar to the one of the *Comparative Manifestos Project*. The unitization of the texts is described in Carteny et al. (2023). For the

elections of 2009, 2014 and 2019 the Euromanifestos dataset includes also information about the percentage of quasi-sentences referred to “Environmental protection” and distinguishes between positive (for) and negative (against) mentions of environmental protection at the national, European and undefined levels. In order to obtain positional measures from the share of quasi-sentences, we deduct the share of negative quasi-sentences referring to “Environmental protection” at the EU level (*per\_v2\_501b*) from the share of positive mentions of the same domain at the same level (*per\_v2\_501a*). Thus, positive (negative) values indicate that the Euromanifesto contains more (less) quasi-sentences that present the environmental protection at the EU level in a positive than in a negative way. While this is not clearly a positional score – i.e. it does not explicitly says where the party stands regarding environmental policies -, it provides valuable information about the extent to which parties talk about it in their Euromanifestos, suggesting there are incentives to take stances on this policy dimension.

We follow a two-fold strategy and include another dependent variable which is parties’ positions on the continuum from environmental protection versus economic growth. The original variable “*environ*” runs from (1) Environmental protection to (10) Economic growth but we reverted the scale so higher number would indicate a more pro-environment position. This variable is rather qualitative as it is the result of Euromanifestos’ coders’ assessment.

Our main independent variable is parties’ anti-pro EU positions which is measured as the sum of pro-EU integration codes minus the sum of integration-sceptic codes (*pro\_anti\_EU* variable in the Euromanifestos dataset. See Carteny et al. 2023). This way, negative scores are associated with parties holding Euro-critical stances in their Euromanifesto against positive scores that identify parties in favour of more EU integration.

Figure A.1. Parties' positions on environmental protection at the national level by position on European integration.



Note: Linear regression line in blue. This figure was elaborated by the authors using secondary data available in Euromanifesto Study (years 2009, 2014 and 2019)

## Data Sources

Carteny, Giuseppe, Reinl, Ann-Kathrin, Braun, Daniela, Popa, Sebastian A., & Schmitt, Hermann (2023) European Parliament Election Study 1979-2019, Euromanifesto Study. *GESIS, Cologne. ZA5102 Data file Version 3.0.0*, <https://doi.org/10.4232/1.14120>.

## Biographical Notes

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## Placial Thickness in Social Movement Coalitions: The Case of Ex-GKN for Future

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**Abstract:** *Alliances between climate activists and workers at the grassroots level are growing but remain marginal even though they may prove critical for climate change mitigation and a just transition. Our paper looks at the exemplary case of a coalition between metalworkers who were formerly part of the automotive industry and the Italian branch of the climate justice organization Fridays for Future. We argue that the coalition formed as a part of process of placial thickening where placially thick coalitions are those with high levels of shared values, identity, and ideas or solidarity. Place is typically not accounted for in coalition typologies and, unlike space, place emphasizes shared meaning that can only be arrived at from the participants within the space. Thus, placial thickness can change over time as participants' views change.*

*Through interviews of coalition partners and participant observation of coalition events, we argue for the importance of placially thick coalitions in establishing and deepening climate consciousness and actions across greater numbers of sectors and segments of the population. Furthermore, the case study demonstrates the critical role of solidarity within inter-movement or inter-sector coalitions where shared values, identity, and ideas require development.*

**Keywords:** *Climate justice, coalitions, place, environmentalism, labour*

### 1 Introduction

There are a variety of coalitions built with and for social movement organizations and collectives (Andretta, 2012) in order to achieve a range of aims and objectives these generally relatively resource-/power-poor actors have (Diani, 2013, p. 151-2). For one, organizations within the same movement can form *intra-movement coalitions* (Chironi and Portos, 2021). However, there are often problems that multiple movements all want to address. In those cases, movements form *inter-movement coalitions* with organizations and activists from other movements (Adam, 2017). These are sometimes in the literature referred to as 'cross-movement coalitions' (Staggenborg, 2013). Movement organizations, especially on the local level, often find themselves



in coalitions with non-movement actors who are all working toward (roughly) the same goal. With the movement-centered approach we are taking here, we can refer to these as *extra-movement coalitions* (Phillips, 1991). The differences presented here relate to the types of actors involved.

Table 1. Basic Typology of Movement Coalitions

	<b>Coalition Partners</b>		
	Orgs in movement X	Orgs in movement Y	Non-movement orgs
Orgs in movement X	Intra-movement	Inter-movement	Extra-movement

However, we can ‘typologise’ coalitions not only regarding the actors, but also the ‘level’ of interactions between them. Some have used the spatial metaphor of thin and thick to describe different types of coalitions, even though not including social movement organizations. For example, a government can form a “wafer-thin coalition” (Boswell and Corbett, 2016) in relation to the size and governing rules of parliament. Elsewhere, coalitions have been described as being thin when ties are non-hierarchical, broadly distributed, and flexible (Bennett, 2003). Thus the ‘shape’ or ‘structure’ of these coalitions are horizontal and their connections aren’t ‘solid’, fitting in to the spatial dimension of the understanding of coalitions. Although the metaphor about the ‘depth’ of the interaction implies a spatial dimension, as we can see uses of thin coalitions also relate to those that are “ephemeral” (Earl, 2016, p. 384), “fleeting...sporadic and unstable” (Pastor, 2010, p. 253), whereas thick coalitions “represent long-term repeated interactions” (Storper *et al.*, 2015, p. 160). Here, the depth of interaction is predicated on a temporal dimension. Thin coalitions don’t last as long as thick coalitions, and so the depth serves as a measure of time. In this paper we want to introduce another way of looking at coalitions, both regarding their typology and their processes. We believe that beyond the spatial and temporal dimensions, coalitional depth can be thought of *placially*.

Place is often contrasted with space as being a location of meaning alongside a physicality. Dourish (2006) argues that place is the persistent social meaning formed about the setting in which the interaction takes place. Regarding the placial dimension, coalitions can be thin or thick relative to the shared meaning they have. This relates strongly to the homogeneity of values, identity, and political culture. However, even without a high level of homogeneity, a high level of solidarity could also constitute a thick coalition regarding the placial dimension. Whereas the Venn diagram between values, identity and political culture has much shared space, solidarity bridges gaps through putting aside differences for the sake of others. True solidarity is not fighting for mutual goals

for different reasons but for fighting for other's goals or for other's reasons. Thus, a thin coalition placially speaking is a collaboration between social movement organizations and activists where there are few shared values, a wide range of identities and political culture, and limited levels of solidarity. Here, coalition participants come together even if they don't 'speak the same language' and they do so because they are pursuing shared ends often from different perspectives or purposes.

Placially thick coalitions would have shared values, political culture, and/or identity; or they would have a strong sense of solidarity where participation in the coalition is about supporting the goals of others. It is likely that coalitions, particularly smaller ones, would be thick placially because many coalitions are formed to benefit from aggregate numbers and resources while minimizing conflict or expansiveness of concerns which may appear as a product of heterogenous values or political cultures.

Table 2. Typology of Movement Coalitions Intersecting Space, Time, and Place

		Coalition Type	
		Thin	Thick
Dimension of categorization	Spatial	Small in number; Non-hierarchical; Structurally Flexible	Large in number; Hierarchical; Structurally rigid
	Temporal	Short-term; Infrequent contact; Unstable	Long-term; Frequent contact; Stable
	Placial	Diverse values; Variety of identities; Variety of political cultures; Low solidarity	Shared values; Shared identity; Shared political culture; High solidarity

The relationship between the different dimensions of coalition-types is unsurprisingly connected, even if inversely. That is, thick placiality may correspond to thin spatiality in that focusing on shared values and identities may reduce the number of participants. The split within the First International is a case in point. If there are new splits with every disagreement, then increased placial thickness leads to spatial thinness. Temporality may be more likely when there is thick placiality because it is likely to have less substantial disagreements. As discussions shift from shared interests to divergences or as certain actors enter or exit the coalition, these dimensions can change.

Elements of the coalitions themselves, whether temporal, spatial, or regarding the actors, also affect the placial 'life' of the coalition. Interactions between actors are partially structured by the past of a coalition – or the lack thereof; they are informed by their numbers or relative strength alongside its structure. Indeed, different *interpretations* of these elements may affect the relations between the actors. Is the coalition *understood* as being for a short amount of time? Is there an *expectation* that the coalition would or should be bigger or smaller, more hierarchical or less hierarchical? Perceptions of these characteristics affect the placial depth of the coalition because people act and react to the coalition and its actors based on this understanding.

To bring this understanding of a coalition's placial depth to life, this paper explores a case study of the ex-GKN for Future a coalition formed between metalworkers of a (former) drive shaft manufacturing plant and local and national environmental movement organizations, particularly Fridays for Future. In this paper we will first introduce the case study to give the reader a better understanding of the context for the construction of the coalition. We will then proceed by explaining the methodology used to gain the actors' own perspectives. From there we will present the case study and highlight the importance of solidarity in this particular example.

## 2 EX-GKN for Future

The ex-GKN factory is in the industrial area of Campi Bisenzio, a small town in the outskirts of Florence, in Italy. The large auto parts plant, which produced driveshafts, shut down in 2021 as the company aimed to move production to developing countries. The 422 workers in Florence were informed about the closure of their plant via email on the 9<sup>th</sup> of July 2021. On the very same day, the workers called a large assembly in front of the factory's gate, inviting all people sympathetic to their situation to participate and express their solidarity. Here, Fridays for Future showed their support and subsequently formed a coalition with the workers. The aforementioned assembly was the beginning of the occupation of the plant, and of a permanent mobilisation that, as of late February 2024, is still ongoing after almost three years. In the short term, the factory occupation prevented the owners from removing the equipment, thus providing the workers with greater bargaining power in their attempt to save their jobs or at least receive decent compensation as part of the settlement for the closure. Later, it became the site for the collective elaboration of a plan of reindustrialization that envisages an eco-compatible future for the factory and its "social integration" with the surrounding territory.

### 3 Ex-GKN for Future and Placial Thickness

The placial thickness between the workers and the environmentalists is something that developed over time. It could be marked by a number of moments and indicators. First, the birth of a coalition started as an act of solidarity. Then, this act translated into trust and continued communication. This communication led to the development of shared understanding, and this shared understanding really manifested into an alignment of values.

When the workers found out that their factory was being closed, they called for support from across civil society. While historically environmental organisations demanded more from workers class mobilisations than they gave, in this instance Fridays for Future participated from day one. This was an act of solidarity. Fridays for Future had no direct shared interests based on their specific concerns regarding climate change. At the time, Fridays for Future could not have known of the possibility in promoting environmentally friendly production as a consequence of providing support. Essentially, Fridays for Future's participation was not about themselves but an act of support for others.

Some perceived a substantial shift in the way in which Fridays for Future (FFF) in Italy had engaged with others. One FFF activist said, "Consider that at the beginning Fridays for Future considered themselves the most brilliant and all decisions were taken autonomously" (Interview no. 2). But this changed, leading not only to the formation of coalitions but once in which solidarity played a central role. Such an act of solidarity endears oneself. It breaks down walls of skepticism that could have otherwise existed between the two movement actors. This is not how they generally viewed coalition experiences. Both the workers and environmentalists felt that the coalition that formed was particular. One worker described the level of solidarity between the two as a the "great novelty" of the coalition. "The convergence has made it possible that you come to 'my' event today, I'll come to yours tomorrow" (Interview no. 1). According to some of the activists, this shift was not done just out of a good will but rather through changes in the context under which they organized. In particular, the COVID pandemic was described as a reason for this perceived shift: "after the pandemic, they understood that they cannot [do everything on their own], they have co-decide with other movements" (Interview no. 2).

While engaging in solidarity, the two sides began to be affected by the politics of the 'other side' of the coalition. This is what the convergence truly meant. First it was a label and then it became a reality. It could be found in diverse ways. For one thing, they began organizing big joint events together campaigning for multiple things at the same time. "Do we want to organise a big event? We

do it! Such as in Rome, or the Climate Camp in Venice [in September 2022]" (Interview no. 1). Though partially a kind of simultaneous act of solidarity, it reached a point where these otherwise identity and culturally diverse activists began to internalize each other's points of view (Interview no. 1).

One worker expressed his own 'personal growth' in relation to the political change he experienced as a result of the coalition. Solidarity brought him in touch with Fridays for Future and Fridays for Future brought him in into personal contact with other environmentalists, some of whom were fighting local fights. Prior to these personal interactions, the workers could not sympathize with these struggles in the same way (Interview no. 4). In many ways, this first started with a way in which many of the workers thought about their own workplace through the environmental lens. As they interacted more with the environmentalists, they began to see that their (former) work manufacturing drive-shafts as part of the problem. Workers also began to see the possibility of continuing their profession as metalworkers but in line with environmental objectives (Interview no. 6 and Interview no. 1).

Where it first started as a focus on jobs in an economy seemingly turning toward sustainable development that incorporates environmental concerns. But as these interactions within the coalition continued, they became part of their own desires and demands for the future plan of the factory that they are 'occupying'. This is what occurred with the new production plan the workers came up with after meeting with experts and academics. They decided to entirely reshape their production, albeit with the restrictions of not being able to profitably produce driveshafts due to contractual restrictions within the industry. The workers faced a need to redesign their production but they credit their cooperation with environmental activists and the solidarity they showed as key to that process. Rather than support the fossil fuel reliant automotive industry, they decided to try and reshape their industry to worker opened and operated solar power, sustainable and ecologically-sound battery, and electric and manual cargo bike production. As one worker said: "The solar panels? This has been the fruit of a work of convergence, of our contacts with other groups" (Interview no. 4).

Environmental consciousness also affected individuals amongst the metalworkers and how they thought about their personal lives. They began to change their habits and thought differently about everyday matters that add up to having significant environmental impact. Though in our data collection we were primarily interested in obtaining information about collective and organizational impacts of the interactions between struggling workers and environmentalists, our interviewees could not help but notice these more personal affects (Interview no. 5). This was not an isolated incident of personal

behavioral change, but the personal quickly became collective even in matters such as these. Beyond attempting to reshape the future of their production, the affects of these more individual behaviors added up to changing their policies onsite (Interview no. 1).

At some level, the issues became felt as inseparable. Though this was still not true for the wider community and culture outside of the ex-GKN workers, they explained their rationale to outsiders. During one even in which they invited other struggling and successful workers struggles and cooperatives to share their experiences, though it focused on climate change, they still included the concern in the title of the event: Workers Conference, Assembly of Trade Unions and Climate Activism. To them, excluding the issue of climate and climate activists became unthinkable particularly in relation to workers struggles, but they explained their rationale to others as a necessity (Interview no. 3).

Even as they struggle for workers' rights, and advocated for rights of all workers, not only for their own futures, they still viewed this struggle within the context of climate breakdown. They understood that these objectives had to be fought as a common goal (Interview no. 1). But the workers don't see this as a one-way learning process. They also feel that the environmentalists have grown in their own knowledge and understanding of the workers' conditions and concerns (Interview no. 4). While they joined the workers' call for solidarity from some basis of compassion, the bonds strengthened throughout the course of the coalition, creating a placially thick coalition.

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## Methodological Appendix

Our data come from an inventory of qualitative sources<sup>1</sup>. First, we have conducted semi-structured interviews with six workers of the ex-GKN, and we have participated as observers at the national meeting of all Italian "recovered factories", meaning factories that were acquired by the workers after having been dismissed by their owners, becoming examples of "reindustrialization from below" and "self-management of the workers". The event was held on 18<sup>th</sup> June 2023 at the ex-GKN plant, and eloquently titled "Workers' Conference, Assembly of Trade Unions and Climate Activism". The introductory speech of the Conference, held by one of the metalworkers, was transcribed and analyzed for this article. In addition, other interviews were held with five members of the local chapter of Fridays for Future, two representatives of local environmental struggles, and a trade unionist of the public transport sector. Qualitative interviews are used to gather basic empirical data on the ex-GKN case and to give voice to its protagonists (della Porta, 2014) helping us to reconstruct their visions, their intentions, and the effects of their interactions.

## Data Sources

### List of interviews

- MM, Florence, 26/01/2023
- FI, GKN, Campi Bisenzio (Florence), 18/06/2023
- DD, GKN, Campi Bisenzio (Florence), 18/06/2023
- GB, GKN, Campi Bisenzio (Florence), 18/06/2023
- AT, GKN, Florence, 30/09/2023

- MP, GKN, Florence, 30/09/2023
- DS, GKN, Speech at the “Workers’ Conference, Assembly of Trade Unions and Climate Activism”, Campi Bisenzio (Florence), 18/06/2023
- TM, ex activist of Friday For Future (FFF), Florence, 27/01/2023
- AL, FFF, Florence, 30/09/2023
- GD, FFF, Florence, 30/09/2023
- DE, FFF, Florence, 30/09/2023
- PL, FFF, Florence, 30/09/2023
- ST, Comitato No Aeroporto, Florence, 30/09/2023
- FC, Mondeggi Bene Comune, Florence, 30/09/2023
- AN, Cobas (Union), Florence, 30/09/2023

## Abbreviations

- **FFF:** Fridays for Future

## Biographical Notes

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Daniela Chironi is Assistant Professor in Political Science at the Scuola Normale Superiore, in Italy, and Adjunct Professor for the Master of Political Science at the James Madison University in Florence. Her research and published articles focus on the connections between social movements and political parties, the electoral consequences of economic inequality, and protest, with specific reference to feminism, environmentalism, and the political participation of young people. She is among the authors of the recent book *Resisting the Backlash: Street Protest in Italy* (Routledge, 2022). Her areas of interest are social movements, political parties, comparative politics, inequality, gender and generations.

## Notes

1. All empirical materials are listed in Appendix 1.





## Strategic and Generational Changes in Social Movements against Climate Change

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**Abstract:** *Human activities developed during the Anthropocene are driving the planet into a critical situation that requires urgent collective action. The degradation of living conditions on the planet has given rise to various social movements. The anti-nuclear movement, the peace movement, the environmental movement, the alter-global movement, the movement for global justice, can be considered precedents and precursors of the social discourse and mobilization in favor of a change in our lifestyle in accordance with the limitations of the planet, which is the focus of today's climate mobilization. Three elements stand out in the social mobilization against the climate emergency: 1) the protagonism of the younger generation; 2) the construction of a new collective identity based on a discourse that integrates the role of nature, animal life and the relationships between human and non-human interactions; and 3) the impact on daily life, the political dimension, the governance and the global policies.*

*In any case, there are other previous mobilizations and collective actions related to climate change, such as the movements of resistance to neoliberalism (Almeida and Pérez Martín, 2023), mobilizations against extractivism (Bebbington and Bury, 2013), environmental conflicts (Cuenca et al., 2022), alternative movements around "good living" and the philosophy of life of indigenous communities (Acosta, 2012). All of them can be understood either as part of the same mobilization or they can be separated according to some specificity, although they present numerous points of encounter and intersectionality. In addition, it is of interest movements that claim for the recognition of legal rights to rivers, plants, animals, which will remain in the background of this communication.*

*The objective is twofold: 1) the change in the composition of the activism of the new groups against climate change in generational terms; and 2) to analyze the different strategies, from the most classical mobilization to civil disobedience, deployed by the social organizations that constitute the movement, and the interpretative frameworks of the climate change movement.*

**Keywords:** *Social movements, climate change, generational change, social mobilization, actions and strategies*

## 1. Introduction

The social movement against climate change is central to the growing public awareness and demand for action against global warming and environmental degradation. The 1960s and 1970s were characterised by the foundation of the environmental movement (Carson, 1962). During the 1980s, awareness of global warming increased thanks to several studies carried out by different research institutes, including NASA, which was presented to the U.S. Senate (Hansen, 1988)<sup>1</sup>. Throughout the 1990s a global social and public response took place and the first treaties were signed (Gore, 2006). In the 2000s, popular movements and direct action grew (McKibben, 2007). Youth-led movements took centre stage and the first Global Climate Strikes<sup>2</sup> was held in the 2010s (Thunberg, 2019).

Along with social movements, the role of scientists in monitoring the effects of global warming, which since 1988 has been carried out by the Intergovernmental Panel on Climate Change<sup>3</sup> (IPCC), and the signing of international treaties such as the Kyoto Protocol<sup>4</sup> (1997), the Paris Agreement<sup>5</sup> (2015) and the successive Conferences of the Parties (COP), the United Nations Climate Change Conference that are held periodically, COP28, the last one held in Dubai, stand out.

In this context, three aspects are of interest to us to discuss: 1) the emergence of a new generation of climate activists; 2) the strategic multiplication of protest against action and/or lack of action in the face of the climate emergency, and the multiplication of political approaches to coping with climate change.

## 2. Recent background

The 2010s witnessed a rapid and sudden rise in youth-led climate movements. Among the most prominent of these were *Fridays for Future* (FFF) and *Youth Climate Strike*. These movements represented a significant shift in climate activism, as younger student generations. This organised movement began in August 2018, after 15-year-old Greta Thunberg<sup>6</sup> and other young activists sat in front of the Swedish parliament every school day for three weeks, to protest against the lack of action on the climate crisis.

The primary goal of FFF is to put political pressure on leaders and nations to take immediate and meaningful action to combat climate change. They demand adherence to the Paris Agreement and that global warming be limited to under 1.5 degrees Celsius.

The *Youth Climate Strike* in the U.S. was inspired by Thunberg's actions and calls for the U.S. government to take concrete action on climate change, including the implementation of the Green New Deal, a halt to all fossil fuel infrastructure projects, and the declaration of a national emergency on climate change. Students across the globe began to engage in their own Friday protests, and the mobilizations quickly spread to hundreds of cities worldwide<sup>7</sup>.

In 2017 *Sunrise Movement* is created in the U.S. by a group of young activists. It defines itself as the climate revolution, "we are a movement of young people fighting to stop the climate crisis and win a Green New Deal (...) we will force the government to end the era of fossil fuel elites, invest in Black, brown and working-class communities, and create millions of good union jobs. We're on a mission to put everyday people back in charge and build a world that works for all of us, now and for generations to come"<sup>8</sup>.

*Extinction Rebellion (XR) or Scientist Rebellion* "is a decentralised, international and politically non-partisan movement using non-violent direct action and civil disobedience to persuade governments to act justly on the Climate and Ecological Emergency"<sup>9</sup>. The group was founded in 2018 in the UK by Roger Hallam, Gail Bradbrook and Tamsin Omond, "on 31st October 2018, British activists assembled on Parliament Square in London to announce a Declaration of Rebellion against the UK Government. The next few weeks were a whirlwind. Six thousand rebels converged on London to peacefully block five major bridges across the Thames. Trees were planted in the middle of Parliament Square, and hole was dug there to bury a coffin representing our future. Rebels super-glued themselves to the gates of Buckingham Palace as they read a letter to the Queen"<sup>10</sup>

*Futuro vegetal (Vegetal Future)* is a civil disobedience and direct collective action that emerged in 2022 to fight the climate crisis by adopting a plant-based food and agriculture system. They act to change the world and their tactics are aimed at raising awareness among the population as a whole that a critical point has been reached as humanity and of the intergenerational violence of institutional policies in the face of the climate crisis<sup>11</sup> Their actions are characterised by a high symbolic content such as attacks on political party headquarters, against the Spanish Congress of Deputies (Madrid) or famous works of art such as the throwing of jars of soup over Leonardo da Vinci's *La Gioconda* in the Louvre Museum by members of the *Riposte Alimentaire* group on Sunday 28 January 2024.

### 3. The generational change or new kids on the block

There is no doubt that the leading role in the mobilisations of recent years has been taken by young students and activists who, in many cases, are facing their first experiences of political mobilisation. In a few other cases, some activists have briefly passed through several collectives or combine their membership of several organisations. A first characteristic of the current moment is that while each movement has its distinct origins and leadership, they frequently collaborate and support each other, forming a unified front in the global call for climate action. It is possible to affirm that there is, at least among several of these collectives, an interconnectedness.

The second characteristic is that these groups, although they have different origins and leadership, show a great capacity to influence the media, with a news coverage over long periods of time. At the same time, the use of media such as social networks and the Internet multiplies their penetration in a wide range of social sectors.

There are important elements of continuity with previous mobilisation campaigns, but there seems to be a greater emphasis on forms of civil disobedience compared to previous mobilisations. On the other hand, in contrast to demands of a global character and appeals to political and non-state actors, the demands are oriented towards political actors (de Moor, De Vydt, Uba and Wahlström, 2021, p. 623).

As for the composition of FFF protesters, at least in Europe, it is not a mobilisation of rich kids, “rather, despite some cross-national differences, we noted that about half of the surveyed activists self-identified as lower/working or lower-middle classes. (...) Our evidence suggests a strong heterogeneity and a forging of alliances across social classes were important elements of how FFF unfolded” (Della Porta and Portos, 2023, p. 36).

A recent study on the discursive frameworks of the emerging environmental movement and its virtual impact points out that although there are clear continuities with previous mobilisations, FFF has entailed changes in traditional discourses around climate change (Belli, Revilla, Sánchez and Puyod, 2022, p. 1), highlighting the emphasis on three specific aspects: climate emergency over sustainability, the shift from individual ecological behaviours to the need for systemic transformations, and radical egalitarianism (Belli, Revilla, Sánchez and Puyod, 2022, p. 16).

Other research has pointed out that “we do see some first signs of the normative framework developed by *Fridays for Future* penetrating the political

debate and even the judiciary system (...) Such a powerful normative shift in our understanding of climate change has the potential to trigger far-reaching social change through changes of policies, laws, business practices and individual behaviours" (Spaiser, Nisbett and Stefan, 2022, pp. 13-14).

## 4. Between strategic choices and political subjectivities

The emergence and proliferation of youth activist organisations mobilising to stop climate change have become spaces of political socialisation and the emergence of new political subjectivities. In relation to the *Australian Youth Climate Coalition* (AYCC) Hilder and Collin have argued that:

how youth-led organisations frame 'youth' and the issue of climate change is important for evolving youth political subjectivities, especially for young people who may not already see themselves as 'political' or 'activist' (Hilder and Collin, 2022, p. 796).

While in many countries' climate activism has led to a certain renewal of environmentalism, elsewhere it has experienced a strong politicisation. The emergence of collectives such as those mentioned above (*Just Stop Oil* (JSO), *Futuro Vegetal*, *Sunrise Movement* and *Extinction Rebellion*) have incorporated new strategic formulations into the climate change movement's repertoire of actions. For example, while XR has a very decentralised and autonomous network structure, *Just Stop Oil* is positioned between the local and the national, and *Sunrise Movement* has a more centralised structure.

The political content also differs from case to case. On the one hand, the most global discourse is found in FFF, accompanied by an emphasis on the role of the state and political actors. On the other hand, XR, *Futuro Vegetal* and JSO are known for their direct action and disruptive tactics (sit-ins, blocking bridges and roads, actions in museums and on famous artworks), while SM uses direct protest, but tries to influence policy, especially in support of the Green New Deal. The same difference can be found in the political message of these groups.

Urgency and rapid action to curb the effects of climate change is a common strategic nexus, although the emphasis varies from political action (FFF), to renouncing fossil resources (JSO), to achieving a Green New Deal at the US level, to a drastic change in food (*Futuro Vegetal*).

In contrast to climate denialism (Dunlap and McCright, 2011), these movements also propose a strong politicisation, albeit in the opposite direction, of the nature, causes and responses to global problems. New concepts have

crystallised through their struggles. Among the most relevant is that of climate justice, which attempts to underline that climate change disproportionately affects the most vulnerable communities. Local communities in rural areas, peasants, indigenous groups are very often suffering the most dramatic effects of climate change, which raises the need for a reordering of relations between different countries and geographical areas, between the North and the South.

A new political battlefield is building around the role of science and experts in relation to climate change. Most of the groups analysed place science at the centre of the debates:

The scientific evidence is unequivocal: climate change is a threat to human wellbeing and the health of the planet. Any further delay in concerted global action will miss a brief and rapidly closing window to secure a liveable future (JSO).

We are fighting for what science demands - government action that actually meets the scale, scope and urgency of the climate crisis (SM).

Even the scientific world has mobilised in favour of climate change:

We are scientists and academics who believe we should expose the reality and severity of the climate and ecological emergency by engaging in non-violent civil disobedience. Unless those best placed to understand behave as if this is an emergency, we cannot expect the public to do so. Some believe that appearing 'alarmist' is detrimental - but we are terrified by what we see, and believe it is both vital and right to express our fears openly.

And yet, a growing number of citizens in both the North and the South vote for organisations and political parties that openly deny climate change, actively work against regulatory measures to address climate change impacts, and mobilise for governments of all types and colours to maintain the *statu quo* or postpone the adoption of mitigation and adaptation measures. The steady rise of these political organisations and the discourse against climate change has been increasing in recent years in countries such as the United States, the United Kingdom, Brazil, Argentina, Chile, India, China, Portugal, Spain, Poland, Italy, France, Germany, Finland, etc.

## 5. Conclusions

As Dietz and Garrelts (2014) point out, numerous activists and actors from different social sectors are engaged in struggles against the causes and perpetrators of global warming and for a socially just approach to climate change mitigation. The rapid growth of these mobilisations has led to a certain generational renewal in different parts of the world. However, some differences persist beyond the great diversity of forms and relevance of the movement at the national level.

From the activists' point of view, there has been a growing increase in the number of young people and women in the mobilisations prior to the Covid-19 pandemic. This has made it possible to speak of an 'intergenerational clash', insofar as the discourse on the consequences of climate change affects not only current generations but also future generations. The same has happened with the 'intersectional clash' with the emergence of women's organisations mobilising against climate change, such as *Gender CC-Women for climate change*<sup>12</sup>. The proliferation of peasant organisations, rural populations and indigenous communities that have been affected by modernisation, development or commodity extractivism projects has been common territory in recent decades and has resulted in the proliferation of social conflicts.

From the point of view of demands for 'climate justice', it is possible to identify three main sectors: a first sector, more radical in its approaches, advocates 'distributive and procedural justice', as the current crisis is due to capitalist structures leading to a crisis of the political and economic system; a second sector is identified as 'ecological modernisation' to point out that environmental problems can be solved politically, economically and technologically within the context of current institutions and power structures; and a third sector points to the 'processes of institutional learning and political reforms' as a way in which the system can be renewed through advances in more environmentally friendly climate technology (Garrelts and Dietz, 2014, p. 2).

The increasing politicisation of climate change has placed science and experts at the centre of both debates about causes and the adoption of mitigation and adaptive measures. Climate change policies are ' beholden to science' as they draw on the problem-solving and legitimising means proposed by experts. In this context, the organisations analysed adopt and politicise proposals coming from the field of natural and social sciences, feed and provide new evidence to institutions and policy actors, and contribute to spreading awareness of climate change issues among citizens.

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## Methodological Appendix

Using a multi-agent qualitative methodology, we explore the discourse and narratives of environmental organizations such as *Fridays for Future*, *Youth Climate Strike*, *Greenpeace*, *Ecologistas en Acción* (Ecologists in Action), *Extinction Rebellion*, *Sunrise Movement*, *Earth First!*, *Just Stop Oil*, *Amigos de la Tierra* (Friends of the Earth), *Futuro Vegetal*; Green-Equo parties; specialized media such as *Climática* and *Lamarea.com*; public and private organizations such as *Fundación Biodiversidad* (Biodiversity Foundation), *Climate Leadership Group* C40, *Climate Action Network*, *350.org*, *IHOBE*, *Naturklima-Fundación Guipuzcoana de lucha contra el cambio climático* (Naturklima-Guipuzcoa Foundation for the Fight against Climate Change); associations of related companies such as *Aclima-Basque Environment Cluster*; and civil society participation such as *Asamblea Ciudadana por el Clima* (Citizens' Climate Assembly).

## Data Sources

The information comes from 10 interviews with activists from environmental organisations that form part of the environmental movement with varying degrees of seniority and permanence, and a high degree of commitment. Documents, declarations and positions of the most relevant environmental organisations in Spain and the Basque Country in recent years on climate change have been monitored. A considerable part of the information comes from a systematic analysis of the discourse on the websites and portals of the most representative environmental organisations. In addition, the opinions of members of green or environmentalist political parties, companies whose activity is related to the climate, political decision-makers and public managers related to the environment, technicians and experts on climate change, as well as associations linked to consumption, have also been gathered.

## Abbreviations

- **AYCC:** Australian Youth Climate Coalition
- **COP:** Conference of the Parties – UN Climate Change
- **FFF:** Fridays for Future
- **IPCC:** Intergovernmental Panel on Climate Change
- **U. S.:** Senado de los Estados Unidos
- **XR:** Extinction Rebellion

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## Biographical Note

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## Notes

- 1 Aquí se puede encontrar el testimonio presentado el 23 de junio de 1988 por James Hansen director del Goddard Space Institute de la NASA ante el Senado de U. S. sobre los efectos del calentamiento global: [https://www.sealevel.info/1988\\_Hansen\\_Senate\\_Testimony.html](https://www.sealevel.info/1988_Hansen_Senate_Testimony.html). Consultado el 30 de abril de 2024.
- 2 [https://en.wikipedia.org/wiki/School\\_Strike\\_for\\_Climate](https://en.wikipedia.org/wiki/School_Strike_for_Climate)
- 3 <https://www.ipcc.ch/>
- 4 <https://digitallibrary.un.org/record/250111?ln=es&v=pdf>
- 5 <https://www.un.org/en/climatechange/paris-agreement>
- 6 She held a sign that read «Skolstrejk för klimatet» (School strike for climate).
- 7 On March 15, 2019, an estimated 1.4 million students in 112 countries around the world joined Thunberg in the Friday strikes. On the same day, the Youth Climate Strike organized protests in over 100 U.S. cities. Subsequent strikes occurred in May and September of the same year, with the September event being one of the largest climate rallies ever held.
- 8 <https://www.sunrisemovement.org/about/>
- 9 <https://rebellion.global/about-us/>
- 10 <https://rebellion.global/about-us/>
- 11 <https://futuravegetal.org/>
- 12 Véase <https://www.gendercc.net/home.html>.



## Unpacking Environmental Activism in the UK: A Comparative Analysis of the Groups Extinction Rebellion and Just Stop Oil

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**Abstract:** *In response to the increasingly urgent need to address the existential threats posed by climate change and environmental degradation, grassroots movements have emerged as significant agents of change. This research focuses on two prominent groups in the United Kingdom: Extinction Rebellion (XR) and Just Stop Oil (JSO). Through a comparative analysis, this study explores and assesses the role of these groups, examining their objectives, strategies, impacts, and challenges within the broader context of environmental activism and social movements. The research addresses a combination of qualitative methodologies. First, a comprehensive review of literature, academic research, news articles, and official documents has been conducted to gather background information and insights into the formation and trajectory of XR and JSO. By employing content analysis approaches, this study identified key themes, discourses, and motivations driving these groups' activism. Thus, it helped to comprehend how XR and JSO mobilise public opinion and engage with policymakers. Second, traditional qualitative methods including participant observations and seventeen semi-structured interviews have been utilised to gain a deeper understanding of the organisational structures, decision-making processes, and strategic planning of XR and JSO.*

*Drawing on social movement theory and collective action frameworks, this research identified the factors contributing to the success or obstacles faced by these groups. It also examined how XR and JSO navigate issues like diversity, inclusivity, and potential tensions arising from different ideological orientations within their movements. Findings for this research suggest that XR and JSO differ in their fundamental approaches. XR focuses on disruptive civil disobedience, organising large-scale protests and acts of non-violent resistance, aimed at gaining public attention and influencing policy. In contrast, JSO predominantly targets the fossil fuel industry, engaging in direct action campaigns including blockades and protests specifically aimed at disrupting oil extraction and transportation. This comparative analysis aims to shed light on the differing impacts and challenges associated with these approaches.*

*By examining the wider societal responses to XR and JSO, this research evaluated whether these groups have effectively shifted the public discourse around climate change and environmental justice. Additionally, this study explored the challenges and potential conflicts that arise when grassroots movements interact with governmental and corporate entities. Through an interdisciplinary lens, this research aims to contribute to the fields of environmental sociology, social movements, and political science, while also offering practical insights for policymakers seeking to engage with these groups and address pressing environmental issues.*

**Keywords:** *Environmental activism, grassroots movements, Extinction Rebellion, Just Stop Oil, climate change*

## 1 The case of Extinction Rebellion and Just Stop Oil

### 1.1 Extinction Rebellion

In their own words, Extinction Rebellion (XR) is a transnational environmental movement that aims to prevent the negative consequences associated with the climate crisis including loss of biodiversity, deforestation, and social collapse. The organisation strives for political change to implement legislation that helps mitigate carbon emissions and towards concepts of environmental integrity (Slaven and Heydon, 2020). Also, the group aims to promote three main demands: 1) that governments “tell the truth” about the severity of the climate emergency, 2) that greenhouse gas emissions be reduced to net zero by 2025, and, 3) that citizens are involved in the creation of policies to address climate change (Extinction Rebellion, 2024). The movement draws attention to the potential consequences of inaction, including the extinction of numerous species and the collapse of ecosystems, emphasising the need for immediate, radical change.

They attempt to achieve these demands through various forms of non-violent civil disobedience in order to disrupt daily life and capture mass media attention. They employ collective actions including protests, road blockades, and occupations of public spaces to force governments and corporations to confront the climate emergency. XR’s tactics aim to create a sense of urgency and promote dialogue about environmental issues, for example, some members block roads to glue themselves to buildings, with a total of over 480 members being arrested during protests in the year 2021 (BBC, 2022). The structure of this initiative is to build individual autonomous groups across numerous countries, with each group being situated and responsible for specific geographical districts, and in charge of ensuring internal cohesion for their group and area

(Smiles and Edwards, 2021). This loose and decentralised network has been hailed as one of the leading causes for the group's massive expansion and growth in such a short time frame (Varhese, 2019).

Furthermore, this decentralised strategy has also allowed numerous autonomous collectives to be created including *Doctors for XR*, health professionals who organise protests promoting the negative health effects of climate change, *XR Youth*, activists born after 1990 who focus on climate justice, and *Christian Climate Action*, a religious XR's Christian faith wing (Gayle, 2019; Speare-Cole, 2019). Although all groups are working towards the same end goal, each faction or wing can direct their resources towards a specific and localised target, allowing the overall organisation to tackle numerous different areas simultaneously.

Since XR's formal launch in 2018, thousands of people have participated in the group's collective action protests, with 60,000 people participating in the organisation's biodiversity march on Earth Day in 2023, appropriately labelled by the group as 'The Big One' (Limb, 2023). Not only do the protests receive large numbers of participants, but they also receive prominent media coverage from transnational news media outlets (Taylor, 2020). Research that has explored XR's structure and tactics, has highlighted the efficiency of the organisation's civil disobedience strategies for encouraging new members of the initiative, suggesting a recruitment snowball effect from their protests (Hayes et al, 2020). However, some of the methods utilised by the organisation have come under criticism for not being effective at promoting the message and change they are trying to achieve (Stuart, 2022).

Some critics argue that their aggressive tactics alienate the public and undermine their cause (Hayes et al, 2020). Detractors claim that their demands, particularly the goal of achieving net-zero emissions by 2025, are impractical and unrealistic, given the economic and technological challenges involved. Additionally, XR has been criticised for its lack of diversity in terms of social class, ethnicity, and perspectives, potentially limiting the movement's effectiveness and inclusivity. Other critics have stressed that the methods deployed by XR can attract effectively new members and media attention, however, they have failed to appeal to policymakers who have the power and ability to implement the changes the organisation is protesting for (Gunningham, 2019). Other criticisms against this group include issues regarding unrealistic timescales for demands to be implemented that have also potentially damaged the validity and public perception of the organisation (Smoke, 2019).

Nevertheless, XR has been successful in raising awareness about the climate crisis and pushing the issue higher on the political agenda. Their direct tactics and collective actions have sparked discussions in multiple countries and compelled governments to declare climate emergencies. By amplifying the voices of climate scientists and activists, XR has forced global debates about the necessity of taking immediate action to prevent catastrophic environmental consequences. Nonetheless, the movement's long-term impact is still uncertain, as achieving their ambitious goals requires widespread systemic changes, international cooperation, and social movements' transnational efforts.

## 1.2 Just Stop Oil

In their own words, Just Stop Oil (JSO) is a multifaceted and dynamic coalition of groups working together to ensure that the UK government commits to ending all new licenses and consents for the exploration, development, and production of fossil fuels in the UK (Just Stop Oil, 2024). It has emerged as an environmental advocacy group with a powerful force in the social global movements for sustainable energy and environmental justice. Comprising a diverse array of individuals, including environmentalists, scientists, activists, and concerned citizens, JSO is united by a shared commitment to raising awareness about the detrimental impacts of the oil industry and advocating for an urgent shift towards renewable and sustainable energy alternatives.

This environmentalist group was formed on 14 February 2022 and began protesting at English oil terminals in April 2022 (Ball, 2022). The group advocates for non-violent direct action and civil resistance, adopting a strategy of widespread social disruption. This approach mirrors the tactics employed by climate activist groups including Fridays for Future, Extinction Rebellion, and Insulate Britain, with a distinct emphasis on targeting cultural institutions and sports mega events as focal points for protest.

At its core, JSO is driven by a profound recognition of the urgent need to address the environmental, social, and economic consequences of our dependency on fossil fuels. With a steadfast belief that the continued extraction, production, and consumption of oil contribute significantly to climate change, environmental degradation, and social injustices, the group aims to mobilise individuals, communities, and policymakers towards sustainable and responsible energy practices.

One of the primary objectives of JSO is to disseminate knowledge and raise public awareness about the ecological and social ramifications of the oil industry. Through a variety of engaging campaigns, educational initiatives, and outreach programs, the group endeavours to empower individuals with

information that enables them to make educated choices and advocate for policies that prioritise environmental sustainability. Also, as expressed in previous paragraphs, this group addressed non-violent civil resistance as a method of collective action. In their words, they stated that civil resistance is a powerful way for people to non-violently demand their rights, freedom, and justice (Just Stop Oil, 2024). The group stresses that when people wage non-violent civil resistance, they use different tactics including strikes, boycotts, mass protests and disruption to withdraw their cooperation from the state. Interrupting mega-events related to sports (Formula 1 races, Premier League Football matches, or Grand National Horseraces) and delivering direct actions of protesting inside museums (targeting well-known pieces of art) have been their trademark strategy of direct action.

Educational initiatives organised by JSO include workshops, seminars, and informational campaigns aimed at shedding light on the environmental impact of oil extraction, transportation, and refining processes. By providing accessible and comprehensive information, JSO seeks to bridge the gap between scientific research and public understanding, fostering an informed and engaged citizenry. In addition to educational initiatives, the group actively engages in direct research to deepen its understanding of the environmental challenges posed by the oil industry. Collaborating with experts, conducting studies, and compiling data, JSO strives to present evidence-based arguments that resonate with a wide audience. From their perspective, this approach not only strengthens the group's advocacy efforts but also positions it as a reliable source of information in the broader environmental movement.

To amplify its message and mobilise public support, JSO employs a variety of communication channels, including social media, traditional media, and community events. Through compelling storytelling, visual campaigns, and interactive platforms, the group seeks to capture the public's attention, encouraging a broader discourse on the need for systemic change in energy consumption patterns. In that regard, the group's advocacy extends beyond awareness campaigns to develop direct and disruptive collective actions. Also, recognising the need for tangible impact, JSO organises peaceful protests, demonstrations, and civil disobedience actions to draw attention to specific oil-related projects and advocate for a swift transition to renewable energy sources (Gayle, 2022). These activities aim to disrupt the status quo, create contested counter-public discourses, and put pressure on corporations and policymakers to reconsider their commitments to fossil fuels.

Furthermore, JSO is dedicated to holding oil companies accountable for their environmental practices. Through targeted campaigns, direct actions, and strategic advocacy, the group works to expose instances of environmental harm,

lobby for stricter regulations, and encourage divestment from fossil fuels. By directly engaging with corporations and financial institutions, the group aims to catalyse change from within, promoting ethical and sustainable practices in the oil industry. Thus, collaboration is a cornerstone of JSO's approach. The group actively seeks partnerships with other environmental organisations, policymakers, and affected communities to build a collective and inclusive movement for change. By fostering alliances, sharing resources, and amplifying the voices of marginalised communities impacted by oil-related activities, the group aims to create a powerful and unified front against the environmental injustices perpetuated by the oil industry.

Importantly, this group recognises the significance of offering viable alternatives to fossil fuels. JSO actively supports the development, implementation, and promotion of clean energy technologies and solutions. Through advocacy for renewable energy policies, energy efficiency measures, and innovation in sustainable technologies, the initiative contributes to shaping a future where clean energy sources play a central role in powering societies. By combining environmental advocacy, education, activism, research, and collaboration with other environmental groups to address the urgent challenges posed by the oil industry, JSO strives to create meaningful change at local, national, and global levels. In short, with a holistic and multifaceted approach, the group envisions a world where sustainable energy practices prevail, and the harmful impacts of fossil fuels are relegated to the past.

## **2 Environmental Activism in the UK, A Comparative Approach**

XR and JSO have both played significant roles in shifting the public discourse around climate change and environmental justice. After analysing all the qualitative data and the interviews, it becomes clear that XR and JSO are two environmental groups that share a common goal of combating climate change and promoting sustainability. However, they differ significantly in their fundamental approaches and strategies. As expressed in previous paragraphs, XR is known for its disruptive civil disobedience tactics aimed at raising awareness and influencing policy change. The group organises large-scale protests and acts of non-violent resistance to draw public attention and demand action on the climate crisis. XR's approach is characterised by blocking roads and bridges, occupying public spaces, and engaging in acts of civil disobedience, all designed to disrupt the status quo and force governments to take immediate action. The primary objective of XR is to bring about transformative change by provoking a sense of urgency in the public, governments, and corporations. By creating disruptive scenarios and causing



inconvenience and economic disruption, XR aims to capture media attention and foster a public discourse about the climate crisis. The group believes that traditional methods of lobbying and peaceful protests have been insufficient in addressing the urgency of the environmental crisis.

On the other hand, JSO takes a more targeted approach in its campaigns by focusing on the fossil fuel industry, particularly oil extraction and transportation. This group believes that direct action is necessary to prevent further extraction and combustion of fossil fuels. JSO engages in blockades, protests, and divestment campaigns to disrupt the operations and profitability of oil companies. The group aims to accelerate the transition to renewable energy sources by directly challenging the fossil fuel industry's power and influence. While JSO may also employ civil disobedience tactics, their campaigns are more specific and aimed at hindering the fossil fuel industry's ability to function rather than emphasising broad societal disruption. This approach seeks to create pressure on oil companies and policymakers by directly confronting the source of the climate crisis: the extraction and consumption of fossil fuels.

Both XR and JSO have succeeded in shifting the public discourse around climate change and environmental justice by creating a sense of urgency and demanding immediate action. Their approaches have been effective in mobilising public support and inspiring individuals to take a stand against the destructive practices that contribute to environmental degradation. By adopting disruptive tactics and targeting specific industries, these groups have gained public attention and successfully framed the climate crisis as an issue of social, economic, and environmental justice. Furthermore, by organising mass protests, engaging in civil disobedience, and involving diverse communities, XR and JSO have generated a collective movement that transcends traditional boundaries and brings together individuals from all walks of life. This has helped to broaden the public discourse around climate change, making it a mainstream concern and paving the way for policy changes and societal shifts.

When XR and JSO interact with governmental and corporate entities, several challenges and potential conflicts may arise. One of the main challenges is the resistance and opposition they may face from those entities. Governments and corporations often have vested interests in the status quo, especially when it comes to industries such as fossil fuels. After analysing the data, we have identified five main challenges. The first challenge is regarding how to deal with political resistance. Governments may view disruptive protests and acts of civil disobedience as a threat to social order and stability. They may respond with measures to suppress or criminalise these actions, leading to clashes and conflicts between environmental activists and the authorities. This can result in arrests, legal battles, and strained relations. The second challenge is about

how to fight against economic interests. Corporations within the fossil fuel industry have immense economic power and influence. They may resist efforts by JSO to disrupt their operations or fight against policy changes that could harm their profit margins. This conflict of interest can lead to confrontations and opposition, both in the public sphere and in legal and regulatory arenas.

The third challenge is around how to control negative media narratives against the group and opposite framing of the activists' actions by oil-supported media. Both XR and JSO rely on public attention and media coverage to amplify their message and effect change. However, mainstream mass media can sometimes portray them negatively or downplay their concerns, shaping public perception and potentially hindering their efforts. The fourth challenge is in relation to creating good dialogue and negotiations between the parts. Engaging in meaningful dialogue and negotiations with governmental and corporate entities can be complex and challenging. The differing priorities, values, and methodologies of the two sides can make finding common ground difficult. There may be a lack of trust and willingness to engage, which can hinder progress in addressing environmental concerns. The final challenge is how to face and win legal battles. Both organisations may face legal challenges when dealing with powerful entities. Corporations may seek legal action to protect their interests or to deter activists, while governments can use legislation to restrict or suppress their activities. Legal battles can drain resources, hamper momentum, and create tensions between activists and the legal system.

Navigating these challenges requires strategic planning, effective communication, and persistence on the part of both XR and JSO. Building alliances with other organisations, social movements, and grassroots initiatives garnering public support, and using various advocacy tools can increase their chances of influencing policy and effecting change. Despite conflicts, successful collaborations between activists and governmental or corporate entities are also possible, leading to positive outcomes for the environment and society as a whole.

## Conclusions

In conclusion, the findings reveal distinct differences in the fundamental approaches of XR and JSO. While XR focuses on disruptive civil disobedience to garner public attention and influence policy, JSO primarily targets the fossil fuel industry through direct action campaigns aimed at disrupting oil extraction and transportation. Also, both XR and JSO have succeeded in shifting the public discourse around climate change and environmental justice by creating a sense of urgency and demanding immediate action. Their approaches have

been effective in mobilising public support and inspiring individuals to take a stand against the destructive practices that contribute to environmental degradation. By adopting disruptive tactics and targeting specific industries, both groups have gained public attention and successfully framed the climate crisis as an issue of social, economic, and environmental justice.

Furthermore, through the organisation of mass protests, participation in civil disobedience, and the inclusion of diverse communities, XR and JSO have fostered a collective movement that transcends conventional boundaries, uniting individuals from diverse backgrounds. This concerted effort has expanded the public dialogue on climate change, transforming it into a mainstream concern and laying the groundwork for policy reforms and societal transformations. Consequently, as XR and JSO engage with governmental and corporate entities, they confront five primary challenges: navigating political resistance, combating economic interests, managing negative media portrayals propagated by oil-backed outlets, fostering constructive dialogue and negotiation with their antagonist, and effectively navigating legal disputes to secure victories.

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## Biographical Notes

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## Challenging Development and Politicising Climate at Multiple Scales: The Climate Justice Coalition in Türkiye

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**Abstract:** *The urgency of the climate and ecological crises is increasingly being addressed by different actors at different scales. Social movements are among them, highlighting the inadequate steps taken by political and economic leaders worldwide to prevent a catastrophic scenario for humanity and the planet. Many are committed to providing solutions and proposing alternatives (Nulmann, 2022). What kind of social-ecological practices are adopted and promoted by climate movements? What conditions facilitate the emergence of specific types of social-ecological practices and what are their effects? How can activism relate to the political sphere when it challenges political and economic systems? These questions will be addressed by building upon recent insights from social movement studies and political ecology perspectives.*

*Climate movements are diverse, as are their responses to the problem of global warming and its causes. Some are reformist and “dutiful”, while others are more revolutionary (O’Brien et al., 2018). The purpose of this paper is to discuss the case of the Climate Justice Coalition, which was formed in Türkiye in 2021 after COP 26 in Glasgow, where people participated in an alternative summit to seek solutions that were missing from world leaders. It uses empirical data from field research, including interviews with climate activists in Türkiye and beyond, conducted between 2020 and 2022. The paper addresses the network’s anti-development and anti-extractivist stance, and its multi-scale strategies – building partnerships and solidarity networks at the local level while, at the same time, using the transnational sphere to interact with climate activists from other countries.*

**Keywords:** *Climate justice, activism, environmental movements, grassroots climate politics, political ecology*

### 1 Introduction

The urgency of the climate and environmental crises is increasingly being addressed by different actors at different scales, mostly in a depoliticised, science-based way. The Climate Action Tracker in December 2023 (CAT, 2023)

assessed that despite promises, governments have not made sufficient efforts in their policy action and goals since COP26 in Glasgow. Moreover, even with the current targets, the world is on track to warm the planet up to 2.7°C by 2100, or up to 3.4°C in the worst scenario. The World Meteorological Organisation (2024) has also warned that 2023 was the warmest year on record, making the climate crisis “the defining challenge that humanity faces”. While states have clearly failed to deal effectively with the climate crisis, social movements are mobilising worldwide to prevent the scenario of a likely catastrophe. A growing number of movements are challenging mainstream climate policies, highlighting the false solutions and unfulfilled promises of politicians and many business leaders. At the same time, a lot of activist groups are also committed to providing solutions and proposing alternatives (Nulmann, 2022). The landscape of climate activism is further differentiated by the range of solutions proposed and the ways of relating to the political sphere and the state (O’Brien *et al.*, 2018). It is in the field of social movements that the mainstream, depoliticised perception of climate change and the consensus on ways out of the crisis are increasingly challenged and problematised.

Climate activism has been on the rise in Turkey for more than a decade, as it has in many other contexts (Baykan, 2013; Şahin, 2014). It has repeatedly criticised the Turkish government’s reliance on coal and inaction on climate change. Türkiye was one of the last countries to sign the Kyoto Protocol and the Paris Agreement. Its climate policies have often been criticized by environmental groups and activists. Efforts to curb climate change have been viewed with suspicion by Turkish governments as a “threat to development enthusiasm” (Şahin, 2019, p. 177). After 1992, only those changes that did not directly contradict the priorities of the neoliberal development model were introduced (Turhan *et al.*, 2016). The leaders’ ambitions to catch up with the West are reflected in the development model, which prioritises mega-projects, infrastructure investment and transport - energy-intensive sectors of the economy. Dependence on coal has also prevented policymakers from actively engaging in energy transformation. This paper focuses on one of the most recent and radical actors mobilising society for a holistic transformation – the Climate Justice Coalition (tr. *İklim Adaleti Koalisyonu*) which was born out of the alternative, global social gathering during COP26 in 2021 in the capital of Scotland. This platform is significant for its explicit stance on the need to politicise climate and ecology issues and to broaden the scope of the discourse and practice. It stressed the need to replace neoliberal developmentalism with an alternative as a way to address the current era of polycrises, with the climate crisis at the forefront.

Using the fieldwork data and secondary sources, I argue that new actors, such as the Climate Justice Coalition in Türkiye explicitly politicise climate and the

environment, which sets them apart from many other Turkish climate activists who push for ambitious climate policies but do not openly discredit the dominant economic and political paradigm favoured by the main governing political parties since the country's adoption of neoliberal policies in the 1980s. The Climate Justice Coalition, thus, approaches climate change as a much wider sphere of concern, similarly to the climate justice networks that protested the official COP negotiations. The engagement with local struggles also adds new issues to the conceptualisation of climate justice in Türkiye, such as the critique of sustainable development or the more recent discussion of ecocide and accountability for environmental degradation or pollution.

## **2 Politicization of Climate - Climate Justice Coalition as a New Actor in Climate Activism**

The mainstream politics of climate change assigns a primary role to nation states and their negotiations at the UN's climate summits. The hegemonic discourse of science-based and technocratic solutions to global warming constitutes the core of the post-political arena, where alternative knowledge, imaginaries or strategies for overcoming the crisis are severely restricted (e.g., Swyngedouw, 2011). The climate policy field, in Pierre Bourdieu's sense, sets limits on the kind of actors whose voices count and are taken into consideration. The depoliticisation of the climate issue has become the taken-for-granted narrative, where science is a legitimising tool in strategising action to "transition away from fossil fuels in energy systems", as the COP28 in the United Arab Emirates in 2023 concluded in a controversial statement (UNFCCC, 2023).

While the scientific "hyper-consensus" on the origins and mechanisms of climate change represents a major step forward in our understanding of the polycrisis of our time, it limits the possibilities for broad discussion, policy ideas and the search for transformative solutions (Armiero et al., 2023, p. 21).

The lack of inclusiveness in the UN climate change process has been prompting responses from civil society for many years. In November 2021, while the official COP26 negotiations of government representatives were taking place in Scotland, the People's Summit for Climate Justice hosted simultaneous discussions and workshops for environmental activists from around the world. The result of this grassroots mobilisation was the Glasgow Agreement, which aims to "take back the initiative from governments and international institutions by creating an alternative vehicle for action". (Glasgow Agreement, 2021). Alongside the months-long preparations for the COP in November 2021, activists from Türkiye joined other groups gathered at the counter climate summit which became a space for the expression of alternative views,

perspectives and visions that were not included in the official talks. The Climate Justice Coalition, which was institutionalised as an umbrella network in the aftermath of the COP26, expressed its critique of the UN climate narrative and the “the fiasco summit of the states” in providing a true understanding of the crisis:

“Ecological destruction cannot be reduced only to the climate crisis, and the cause of the climate crisis cannot be reduced to carbon emissions alone. The cause of ruptures in life cycles, threatened ecosystems, extinct species is, basically, the economic-political regime we are in” (The Ecology Union [tr. Ekoloji Birliđi], 2021).

The Coalition, which brings together anti-capitalist, mostly grassroots ecological groups, trade unions, professional organisations and individuals in Türkiye, was thus a direct outcome of the People’s Summit and the willingness to make a more sustained effort at the local level. In December, just after the end of COP26, the Coalition published the manifesto and announced its formation and soon developed into a wide network of over 70 groups contesting state-led developmentalism and extractivism, which are seen as the main drivers of climate and ecological destruction in the country and beyond.

Although the Coalition criticises the state’s “obsession” with economic growth, profit-driven development projects and mega-constructions without considering the environmental costs, some of its members do not rule out participating in the policy-making process at some point. There have already been attempts to influence and rethink some policies, such as energy and mining, through parliamentary debate. Other members, however, do not see the possibility of working with the state in the current highly unequal power relations.

### **3 Broadening the discourse and action on climate change**

Another factor that distinguishes the Climate Justice Coalition is its attempt to broaden the understanding of climate as a political problem. The politicised conceptualisation of climate justice sets the network apart from earlier climate movements and groups in Türkiye, such as the “Climate Network” (tr. İklim Ađı) and similar recent initiatives involving environmental NGOs, which exhibit more expert-oriented and “dutiful” form of activism (O’Brien et al. 2018).

In addition to debating priorities and strategies, the Coalition began its activities by focusing on energy. One of its first campaigns was “Exit from Coal” (tr. Kömürden Çıkış). It centered on the coal dependency of Türkiye, where more



than 1/3 of electricity comes from coal-fired power plants. They prepared a report that assessed the environmental and health impacts of thermal power plants and proposed a scenario for energy transition (Climate Justice Coalition, 2022). Such reports stem from the need to counter hegemonic discourses with empirical data and other forms of knowledge coming from grassroots communities and activists.

Many members of the Coalition have repeatedly contested the ruling Justice and Development Party's sustainability discourse, which they perceive as a false solution or a strategy to divert peoples' attention from the lack of real interest in changing the essence of the status quo. They publish a lot on their social media on the local social problems and environmental degradation in regions of large-scale state-related projects, such as mines, mega dams and hydroelectric power plants, transport infrastructure, polluting factories showing the other face of the "sustainable development".

An important concept for the Coalition is ecocide, which has become an increasingly important framework for discussing environmental degradation. It was used, for example, in the report assessing the situation in the regions affected by a huge and devastating earthquake in the south-eastern parts of Turkey in February 2023. The members of the coalition, with Ecology Union playing a prominent role, collected evidence on the mismanagement of the waste disposal process, which resulted in water, soil and air pollution, the dumping of rubble (including dangerous chemical substances) on agricultural land, vineyards or natural areas, and much more. The report concludes that the demolition and salvage operations have not only "impeded recovery in earthquake zones", but also prioritised profit over human and ecosystem health (Climate Justice Coalition, Ecology Union 2024). As some activists from the movements argue, ecocide should be a legal tool, recognised in the legal system, to enable the accountability of entities responsible for the degradation of the environment.

The Climate Coalition works on the issues most relevant to the Turkish context, such as the fossil fuel sector, deforestation and extractive projects, and fills the concept of climate justice with many locally derived meanings. It makes connections between climate crisis and the environment, which is understood by the coalition members in political terms, setting them apart from large environmental NGOs that define their scope of work more narrowly and do not contest the dominant framework of neoliberalism. At the heart of the climate justice debate is a critique of mainstream development discourse and practice, and the search for climate-friendly and people-centred alternatives.

## 4 Forging multi-scale solidarities and knowledge

Choosing the appropriate and effective scale for exerting influence is a challenging and controversial task in climate activism. On the one hand, there are a multitude of urgent local problems that deserve attention, on the other hand – the movement needs to have ambitious goals and visions in order to have a transformative power in the context of unequal power relations (Cederlöf and Loftus, 2023, p. 51). New actors in climate activism, such as the Climate Justice Coalition, are simultaneously rooted in local and transnational landscapes. They are reaching out to communities in rural territories or urban spaces across the country, while organising to forge solidarities and exchange knowledge and practices across the borders and a variety of socio-political contexts. They are in close contact with climate activists from other countries, which is why the Coalition's International Relations Working Group has been set up.

One of the first local campaigns organised by the Turkish Coalition was aligned with the global movement – the Climate Justice Caravan. As one of the persons engaged in the event recalled:

“The idea of making series of events in the form of a caravan came from an international organization, Climate Justice Coalition Internationally during international meetings. Talks were held and at the beginning of 2022 it was proposed to organize a caravan. Internationally, they were interested in the long run caravan, to visit and to highlight the ecological destruction in some places as well as to connect with people that are susceptible and impacted by the climate change.” (Interview, Climate Justice Coalition member, 30.07.2022)

In Türkiye, the caravan campaign sought to bring attention to the coal issue and called for a coal phase-out. Activists travelled for a few days, setting off from Istanbul, and held protests against coal-fired power plants, discussed the issues and perspectives with the media, ran social media events and made direct connections with local groups and environmental organisations to show their support and solidarity. In many places where local struggles were taking place, people talked about losing their agricultural lands to “development” and mentioned health problems related to environmental pollution.

Their way to advance climate justice resonates with what Salena Tramel (2018) has called convergence as political strategy:

“We bring together movements from around the world to gather power for systems change – indigenous movements, communities most affected by climate change, unions, racial justice groups, youth

movements, agroecologists, farmers, NGOs, grassroots movements, feminist movements.” (iklim Adaleti Koalisyonu, 2023)

While convergence strengthens the voice of activists, it also faces many problems with different goals, priorities and agendas. However, the strategy of seeking common ground with other movements is in line with the Glasgow Agreement of the People’s Summit. In Türkiye, it unites over 70 groups working in the environmental field who share the need for more radical change as a way out of the crisis. Such a stance also has its limits, as the Coalition is not willing to accept institutional members who have close ties to “the capitalist vision,” as one interlocutor admitted.

## 5 Conclusions

The Climate Justice Coalition in Türkiye deals with the pressing issues of ecological degradation, linking climate change to the dominant development paradigm that prioritises profit and economic gain over environmental and human concerns. It also deconstructs the paradigm of sustainable development as a false narrative. The Coalition works closely with the transnational networks that have protested official state-led climate negotiations and the UN climate politics. Transnational cooperation, although difficult in many ways, amplifies the voices of groups like the Turkish coalition and helps building the common front resisting capitalist modernity. In its actions and discourses there is a lot of critique of the status quo and a willingness to rethink the society-nature relations and propose new narratives. The question, however, what exactly are the alternatives is still open. It can be seen as an ongoing process of looking for the seeds of alternative organization of politics, society, and economy, but one which sees environment not as a separate field to be governed or protected, but deeply intertwined with other issues. The possible answers and scenarios incubate at the interaction between actors at the multiple scales, between the demands of local communities which experience the effects of climate and environmental changes directly and the activists communicating with each other at the global level.

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## Methodological Appendix

The paper is based on field research conducted in various parts of Türkiye (and in the diaspora) between 2020 and 2022, which included semi-structured interviews with climate and environmental activists and experts, participation in some protests, events and meetings. Besides, I have analysed secondary sources, such as the documents produced by the climate and environmental movements available at their websites and in social media.

## Biographical note

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## Notes

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**SOCIOECOS**

Climate Change, Sustainability  
and Socio-ecological Practices

## **TRACK 2**

### ***Social-ecological practices concerning new **production** and labour models on the verge of climate emergency***

*Sustainable forms of energy, agricultural  
and industrial production; sustainable work;  
work-related social-ecological practices;  
agroecology; green energy companies; eco-  
based businesses and companies; greening  
practices in production*



## **Estrategias adaptativas espacio-temporales para la implementación de proyectos arquitectónicos en áreas de sacrificio producto de la actividad extractiva en Chile.**

### **El caso del conflicto entre Andacollo y la minería a gran escala**

Angie Astorga Romero

Arquitecta y Designer

**Abstract:** *La extracción de minerales y recursos metálicos es esencial para la civilización moderna, pero esta dependencia conlleva un alto costo humano y ecológico para los territorios y sus habitantes. A nivel mundial, muchas comunidades están luchando por proteger sus tierras, aire, agua y otros recursos que se ven afectados por la extracción y su impacto ambiental. Los proyectos mineros, las represas, la deforestación y otras actividades antropogénicas generalmente operan bajo normativas laxas, lo que ha llevado a la economía global a depender de una cadena de producción que abarca desde la extracción hasta la eliminación, externalizando los impactos hacia las poblaciones locales e invisibilizándoles de la vista de los consumidores finales.*

*Los conflictos ambientales son una consecuencia inherente de la industria extractiva, con más de 3.800 casos en todo el mundo hasta la fecha. La contaminación resultante tiene un costo humano significativo, con una de cada seis personas en el mundo muriendo por problemas relacionados con la contaminación, una cifra que triplica las muertes por VIH y es quince veces mayor que las muertes por violencia. En el caso específico de Chile, se han identificado 27 zonas "saturadas o latentes" donde los niveles de contaminantes superan el 80% de las normativas de calidad ambiental, lo que significa que más del 50% de la población del país vive en áreas contaminadas.*

*Esta situación genera una vulnerabilidad multidimensional, que se manifiesta en el alto grado de fricción entre la actividad minera y los asentamientos humanos ya existentes. Esta problemática se aborda desde tres perspectivas interconectadas: la infraestructura natural (relacionada con el medio ambiente), la infraestructura humana (vinculada a la sociedad) y la infraestructura productiva (ligada a la economía).*



*Un ejemplo ilustrativo de este conflicto se encuentra en Andacollo, una comuna en Chile que alberga a más de once mil habitantes y enfrenta una importante contaminación de sus recursos naturales debido a la mega minería que opera cerca del área urbana. A pesar de la disponibilidad de recursos metalúrgicos, Andacollo no ha experimentado un crecimiento positivo y su población se ha visto obligada a migrar debido a la vulneración de sus derechos.*

*Para abordar esta compleja problemática, se utiliza un enfoque socioecológico, a través de una tesis de diseño por investigación. Este enfoque se complementa con análisis espaciales y temporales mediante cartografías para identificar áreas críticas y determinar el momento y lugar adecuados para la intervención. Estas metodologías permiten la creación de propuestas arquitectónicas y la identificación de actores involucrados en diversas etapas del proyecto. Las acciones resultantes se pueden adaptar a diferentes escalas, desde niveles locales hasta comunitarios o urbanos, y se planifican teniendo en cuenta la relevancia de ciertas acciones y actores a medida que avanza el proceso evolutivo del proyecto.*

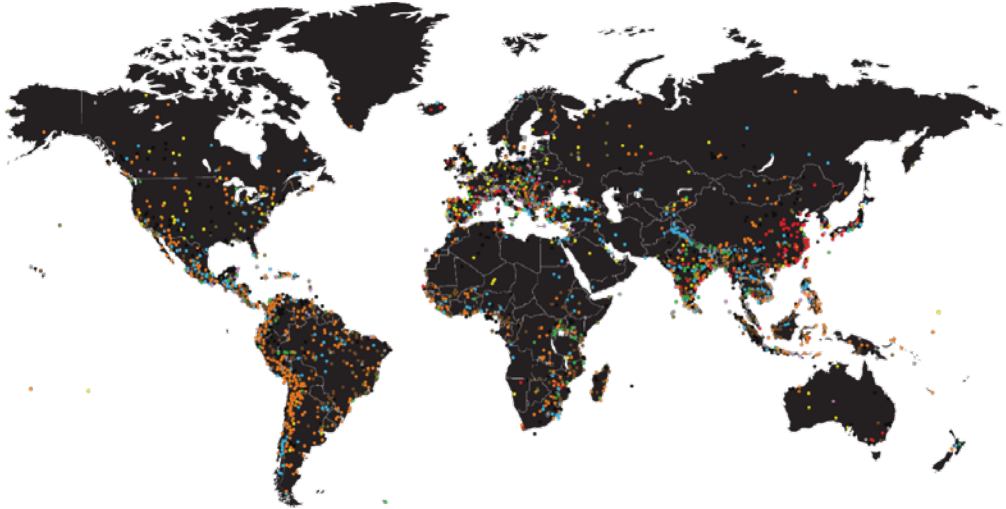
*En última instancia, los desafíos de la extracción sostenible son una respuesta a la evidente necesidad de abordar la contaminación y la vulnerabilidad multidimensional en los territorios explotados.*

**Palabras clave:** *Extractivismo, regeneración, vulnerabilidad multidimensional, estrategias adaptativas*

## **1. Introducción. Fracturas en el Paisaje: Impacto de la Minería en Andacollo, Chile**

El paradigma extractivista global, caracterizado por la explotación de recursos naturales a gran escala, ha generado una serie de conflictos ambientales, sociales y económicos a nivel mundial (Figura 1). Este modelo, influenciado por el neoliberalismo, ha permitido la penetración del capital extranjero en países subdesarrollados y en desarrollo, exacerbando la desigualdad y la vulnerabilidad de las comunidades locales (Harvey, 2005).

Figura 1: Mapa mundial de conflictos ambientales. Fuente: Proyecto EJATLAS, Instituto de ciencias y tecnología ambiental (ICTA), Universidad Autónoma de Barcelona (UAB). Dibujo: Elaboración propia.



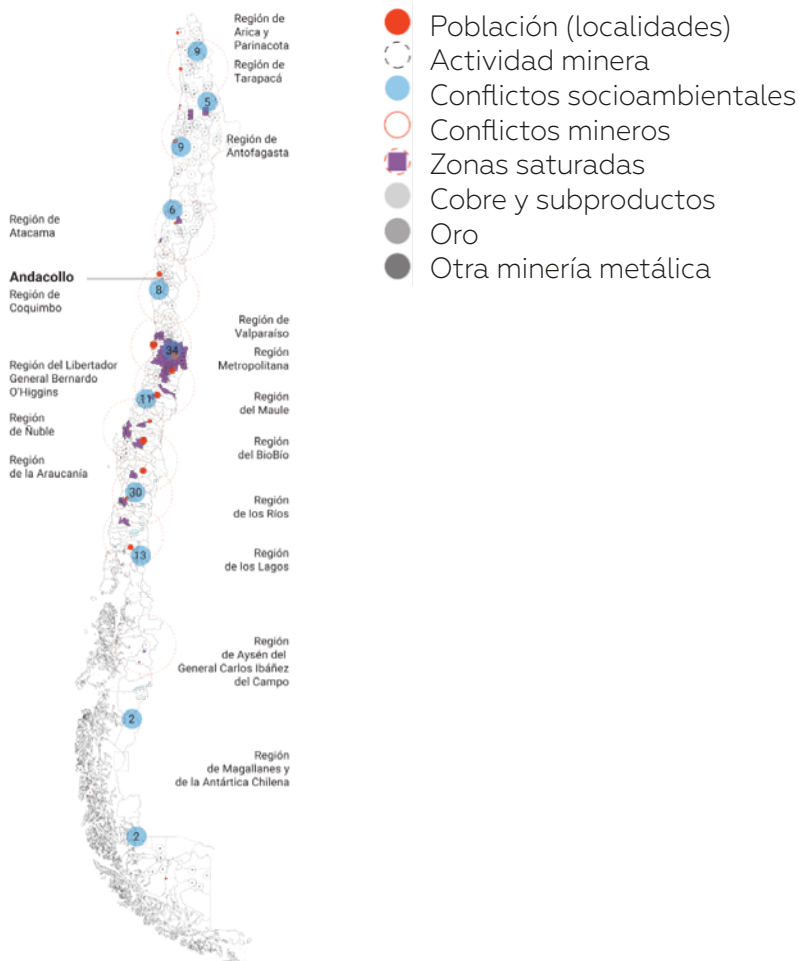
- Nuclear
- Extracción de minerales y metales de construcción
- Gestión de residuos
- Biomasa y conflictos por la tierra
- Combustibles fósiles y justicia climática
- Gestión del agua
- Infraestructura y ambiente construido
- Turismo recreación
- Conflictos por biodiversidad / conservación
- Conflictos industriales o servicios

En América Latina, la extracción de minerales y combustibles fósiles ha sido especialmente conflictiva, con más de 1.400 casos registrados de conflictos ambientales relacionados. Las comunidades más afectadas suelen ser las pobres e indígenas, que carecen de poder político para acceder a la justicia ambiental (EJOLT, Чаяя & Perfil, s. f.). Países como Perú, Colombia, Brasil, Argentina y Chile lideran las exportaciones de minerales, pero la actividad minera no controlada ha generado graves impactos sociales y ambientales, así como violaciones a los derechos humanos, dando lugar a persistentes conflictos socioambientales.

Chile, específicamente, enfrenta desafíos significativos derivados de la actividad minera, que constituye un pilar fundamental de su economía. Sin embargo, esta actividad no está exenta de controversias. Más del 80% de las faenas mineras en Chile están relacionadas con conflictos socioambientales documentados

(Figura 2). Las comunidades afectadas luchan por derechos como un ambiente libre de contaminación, acceso al agua y a la salud (SONAMI, 2023). Además, la falta de regulación y fiscalización post-cierre de faenas mineras deja un vacío en la protección ambiental y social (Ferrer, 2018).

Figura 2: Mapa minero de Chile, conflictos socio-ambientales y zonas de saturación.  
Fuente: Mapa minero de Chile, Sociedad Nacional de Minería. Mapa de conflictos socio-ambientales, Instituto Nacional de Derechos Humanos (INDH). Dibujo: Elaboración propia.

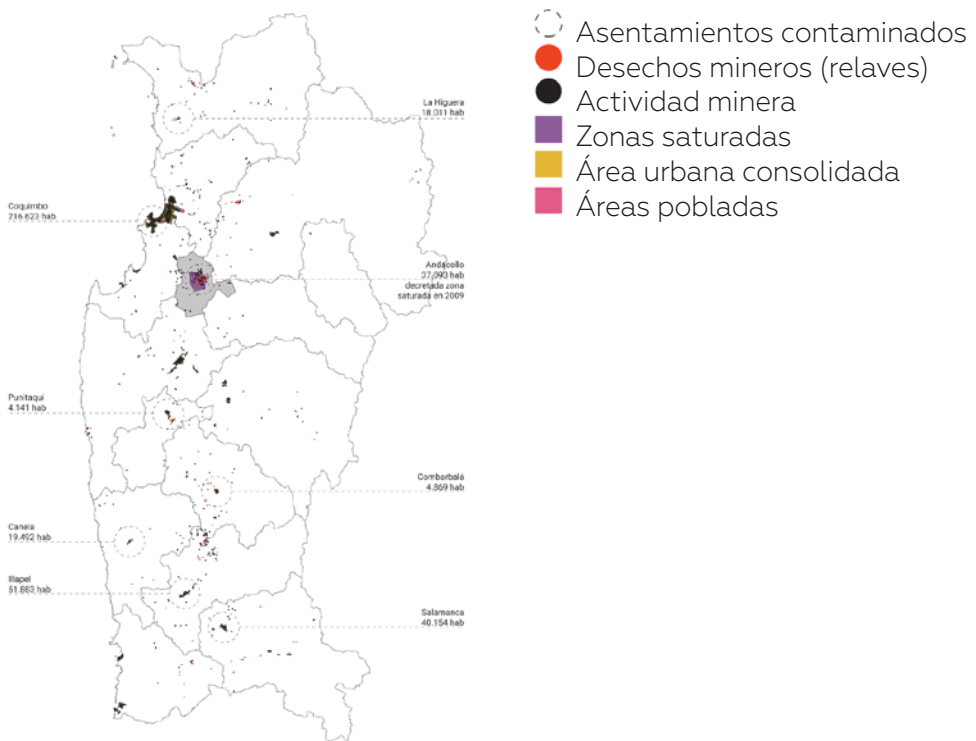


La legislación ambiental en Chile busca controlar el impacto ambiental de la minería, con instrumentos como el Sistema de Evaluación de Impacto Ambiental (SEIA). Sin embargo, la efectividad de estas regulaciones es cuestionada, especialmente en lo que respecta al cierre y rehabilitación de faenas mineras (USAID, 2000). Los conflictos mineros en Chile revelan la complejidad de las

relaciones entre el Estado, las empresas mineras y las comunidades locales, evidenciando a menudo la falta de equilibrio de poder y los intereses parciales en juego (Ocmal, Schorr, 2019).

La región de Coquimbo, en particular la localidad de Andacollo, se encuentra inmersa en una compleja red de vulnerabilidades socioeconómicas, ambientales y geográficas (Figura 3). Rodeada de actividades extractivas, la ciudad experimenta altos niveles de contaminación sin remediar, generando conflictos entre la población y las empresas privadas (Börgel, 1983). La falta de infraestructura hídrica adecuada y la mega sequía silenciosa agravan la situación, afectando la disponibilidad de agua tanto para consumo humano como agrícola (Los Vilos, 2019).

Figura 3: Asentamientos humanos y actividad minera (incluidos contaminantes). Región de Coquimbo. Fuente: Datos obtenidos de plataforma GEOHUB litoral, Infraestructura de datos Geoespaciales (IDE Chile) en conjunto con QGIS. Dibujo: Elaboración propia.



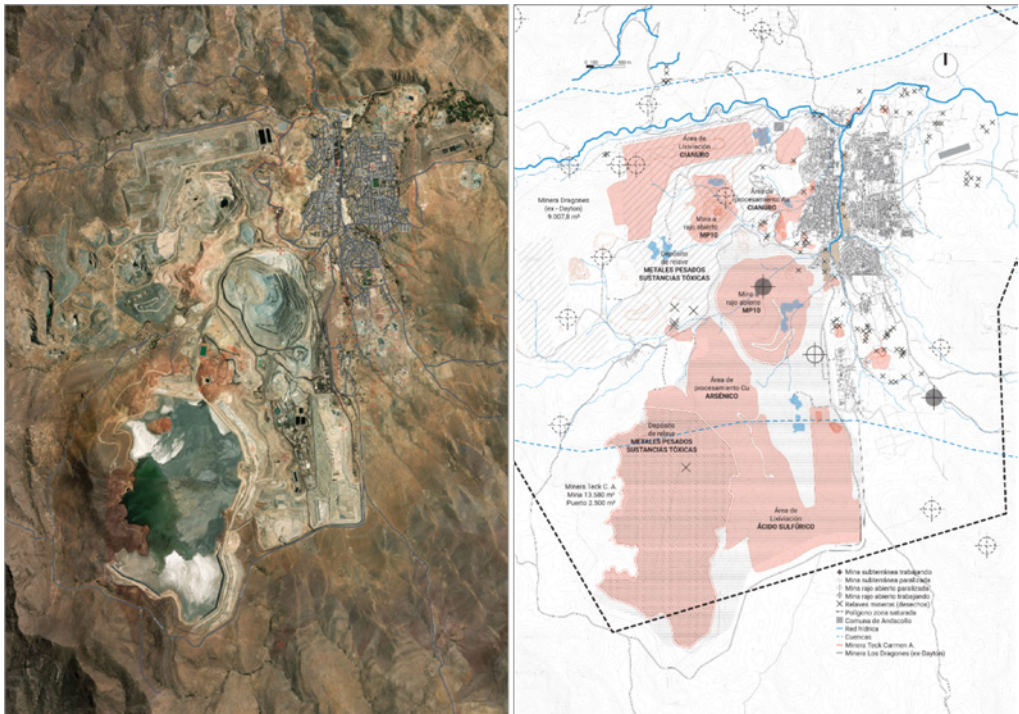
Dando cuenta de lo anterior, el clima semiárido y los impactos naturales, como la desertificación y la erosión, aumentan la vulnerabilidad de la región (Siit, s. f.). La actividad antrópica, incluida la industria minera, ha contribuido significativamente a la degradación ambiental, agotando los recursos

naturales y contaminando el aire y el agua (Casale et al., 2011). Esto ha llevado a una disminución de la población debido a migraciones forzadas en busca de mejores condiciones de vida y oportunidades (Chardon, 2002). La segregación socioeconómica es evidente, con altos niveles de pobreza y una distribución desigual de los recursos (Pouchucq Marinkovic et al., 2017).

A pesar de albergar mineras de gran escala, Andacollo presenta tasas significativas de pobreza multidimensional, lo que sugiere una desconexión entre la riqueza generada por la industria y el bienestar de la población (CASEN, 2017).

La actividad minera en Andacollo, centrada en la extracción de cobre y oro, genera una serie de contaminantes que afectan tanto al medio ambiente como a la salud de la población. Entre estos contaminantes se encuentran el ácido sulfúrico, mercurio y cianuro, que comprometen la calidad del aire, suelo y agua (Herbert, 2006). Esta contaminación es especialmente preocupante dada la escasez de agua en la región (Figura 4).

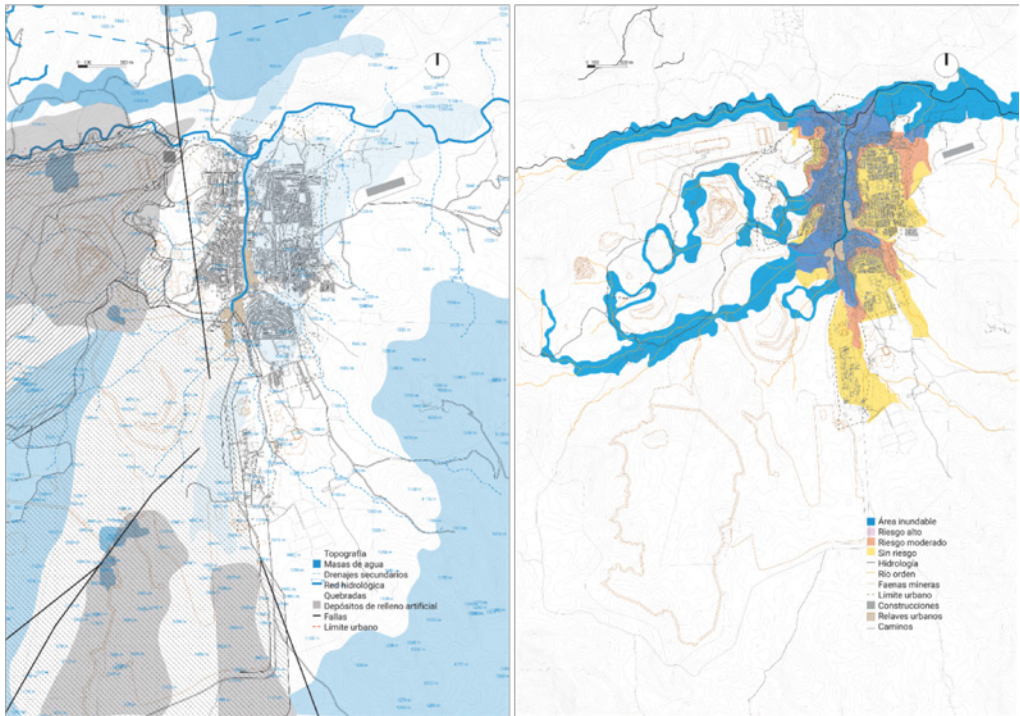
Figura 4: Fotografía satelital de Andacollo, región de Coquimbo, Chile. Fuente: Visualizador Mapas Minería abierta y Cartografía sistema productivo minero en el territorio de Andacollo. Fuente: Datos de SERNAGEOMIN y GEOHUB Litoral trabajados en QGIS. Escala gráfica. Dibujo: Elaboración propia.





La infraestructura natural se ve gravemente afectada por la actividad minera, con consecuencias adversas para los ecosistemas locales. La calidad del agua, suelo, vegetación y aire se ven comprometidos, lo que afecta la salud de los ecosistemas y las comunidades locales (Cassin & Locatelli, 2020). En el ámbito humano, se observan impactos negativos en la salud de la población, así como disminución de fuentes laborales y precariedad en infraestructuras básicas, lo que afecta la calidad de vida de los habitantes (Pouchucq et al., 2017) (Figura 5).

Figura 5: Cartografía geomorfológica y de conflictos ambientales de Andacollo.  
Fuente: Datos de SERNAGEOMIN y GEOHUB Litoral trabajados en QGIS. Escala gráfica.  
Dibujo: Elaboración propia.



Mitigar el impacto de la contaminación minera requiere recursos significativos. La descontaminación de áreas afectadas por actividades industriales como la minería puede requerir inversiones considerables, resaltando la magnitud del problema (Ministerio de Medio Ambiente, 2022). La falta de planificación adecuada ha llevado a problemas sociales y económicos, como la disminución de fuentes laborales, afectación a la agricultura y estancamiento del desarrollo urbano.

La investigación sobre desastres naturales y antrópicos revela una interacción compleja entre eventos catastróficos y la dinámica de transformación espacial del planeta. La erosión del suelo, la sedimentación hídrica y la desertificación,

exacerbadas por factores naturales y acciones humanas como la explotación minera y la agricultura intensiva, representan pérdidas económicas y sociales significativas. En contraposición, proyectos innovadores como el Big U en Manhattan y Oceanix City proponen infraestructuras resilientes para enfrentar los efectos del cambio climático, destacando la necesidad de estrategias adaptativas y sostenibles. Además, el enfoque panárquico emerge como una perspectiva integral para la gestión del paisaje, reconociendo su complejidad y promoviendo la coevolución armoniosa de los elementos humanos y naturales.

El estudio de los sistemas socioecológicos subraya la posibilidad de crisis debido a diversas interacciones, realimentaciones y amplificaciones. La panarquía y los sistemas adaptativos complejos (SAC) ofrecen herramientas conceptuales para comprender la adaptación y evolución de sistemas naturales y sociales. La ecología del paisaje, las Soluciones basadas en la Naturaleza (SbN) y la fitorremediación son enfoques clave para abordar desafíos en la recuperación de áreas degradadas por la actividad minera, promoviendo la restauración de ecosistemas degradados y la mitigación de impactos ambientales y sociales.

## 2. Formulación de la Investigación

La creciente demanda mundial de recursos naturales ha impulsado el aumento de las actividades extractivas en Chile, generando conflictos al establecerse en zonas urbanas densamente pobladas como Andacollo. Esta situación, marcada por la falta de regulación adecuada, conlleva consecuencias sociales, ambientales y económicas negativas. La proximidad de las operaciones extractivas a los asentamientos urbanos afecta la percepción de los espacios habitables, comprometiendo la inversión y el desarrollo económico, y generando tensiones sociales y pérdida de confianza en las autoridades y la industria.

El objetivo general fue explorar estrategias de regeneración territorial en Andacollo desde una perspectiva adaptativa socioecológica. Los objetivos específicos incluyen investigar los efectos de la industria extractiva, estudiar estrategias para disminuir la vulnerabilidad ante la actividad minera, explorar formas de integrar sistemas sociales, económicos y ambientales, e investigar estrategias para fortalecer las capacidades internas de la población y promover la resiliencia socioecológica. Se plantea una hipótesis proyectual que destaca la necesidad de implementar infraestructuras mixtas para resguardar los ecosistemas y promover un futuro resiliente en Andacollo.

Para abordar lo anterior, el ensayo propone un enfoque alternativo en la evaluación y planificación urbanística para disminuir la vulnerabilidad multidimensional en Andacollo. Se establece un marco metodológico que

organiza los métodos de investigación y diseño, guiando el desarrollo de estrategias de regeneración territorial adaptativa evolutiva y socioecológica. La elección del modelo metodológico más apropiado dependerá del contexto específico y los objetivos de cada proyecto, destacando la necesidad de una adaptación flexible para abordar los desafíos únicos que enfrentan las zonas afectadas por la actividad minera en Chile.

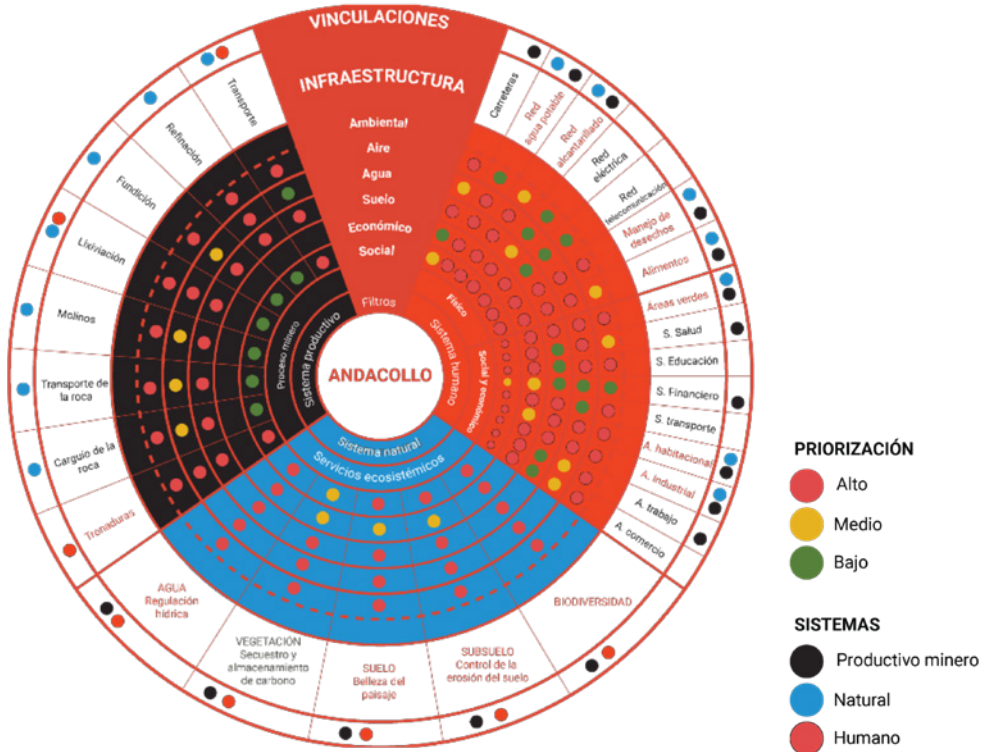
La búsqueda por vinculaciones permite establecer relaciones formales entre los desafíos sociales, económicos y ambientales en Andacollo (Figura 6), lo que resulta aplicable en diversos casos de estudio. Además, la búsqueda espacio-temporal a través de representaciones cartográficas facilita la identificación de áreas críticas de conflicto en el territorio, permitiendo la implementación de estrategias adaptativas en diferentes zonas afectadas.

La rehabilitación de áreas degradadas por la actividad minera requiere considerar aspectos ecológicos y sociales. Estrategias como la creación de hábitats coherentes y funcionales, los bordes y límites en la ecología del paisaje, la movilidad de especies a través de corredores y conectividad, y la configuración de un mosaico de hábitats son fundamentales para promover la recuperación del paisaje.

La resiliencia socioecológica desempeña un papel crucial en la implementación de estrategias adaptativas, permitiendo la absorción de perturbaciones y la adaptación a cambios ambientales. Fases como el reconocimiento, procesos, estructurales, funcionales y de estabilización son esenciales para garantizar intervenciones efectivas y duraderas.

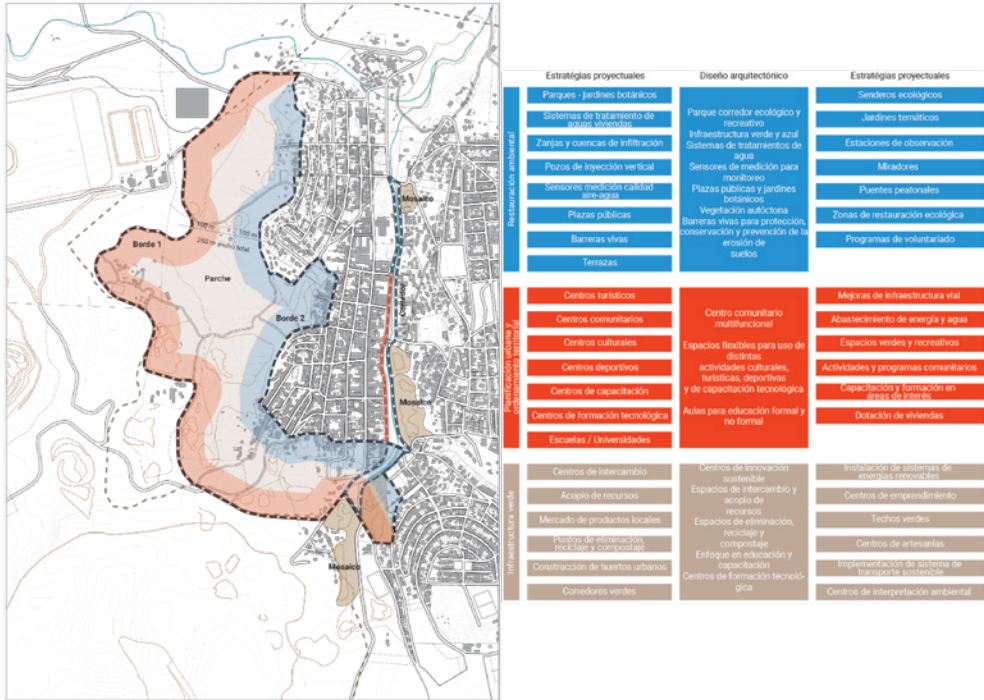


Figura 6: Esquema de relaciones entre servicios ecosistémicos de Andacollo. Dibujo: Elaboración propia



Un marco de planificación integral es fundamental para definir estrategias adaptativas evolutivas que aborden desafíos presentes en el territorio y aseguren intervenciones coherentes y sostenibles a lo largo del tiempo. La regeneración de ecosistemas, la adaptación evolutiva y la integración de infraestructuras humanas y naturales son elementos clave en este proceso (Figura 7).

Figura 7: Principios de ecología del paisaje implementados en caso de estudio, Andacollo. Dibujo: Elaboración propia.



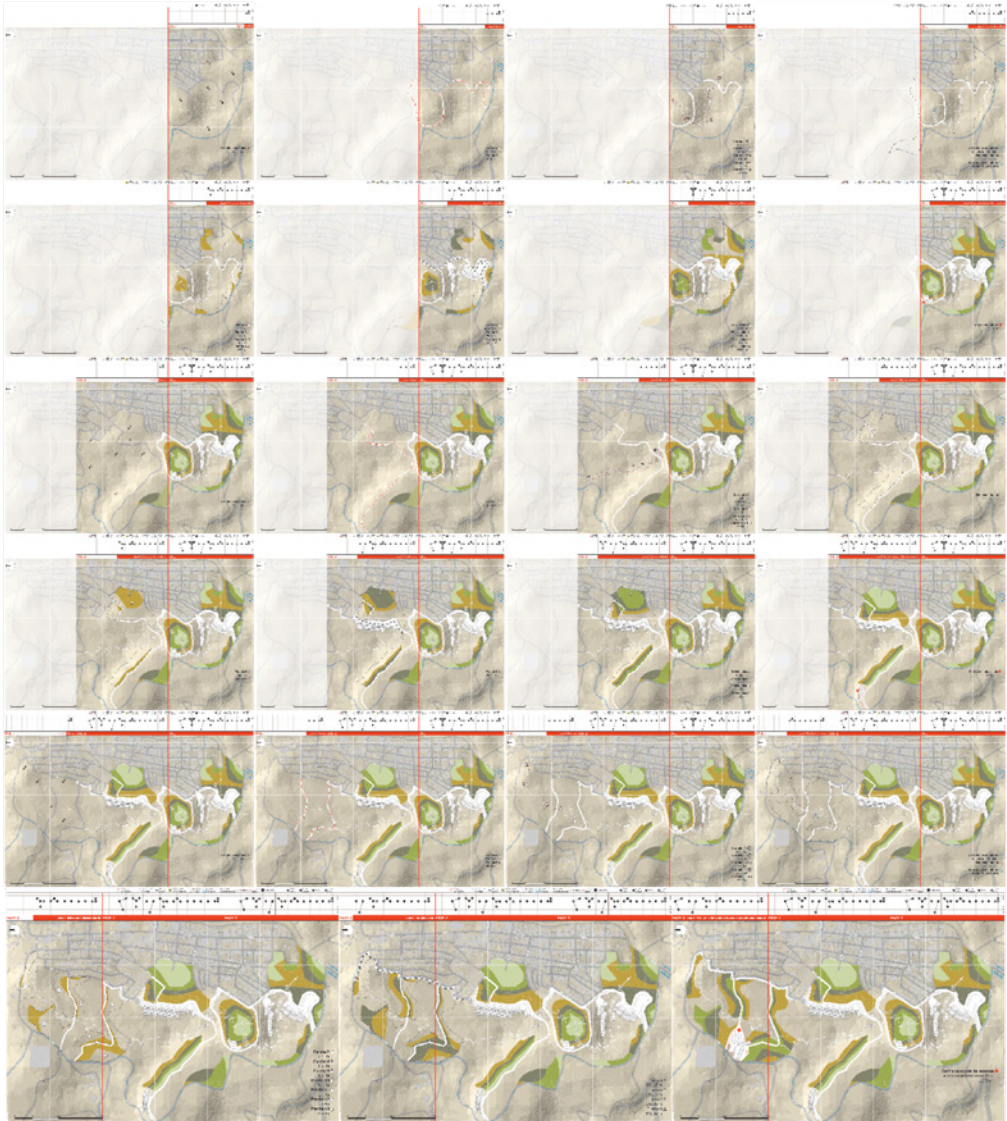
Esquema 1: Estrategias proyectuales y diseños arquitectónicos para la implementación de proyectos arquitectónicos estratégicos. Dibujo: elaboración propia.

La identificación de operaciones territoriales, acciones espacio-temporales y agentes activos es crucial para el diseño y ejecución de estrategias sostenibles y resilientes que promuevan la recuperación efectiva de áreas degradadas (Esquema 1).

En el contexto de la recuperación de áreas afectadas por la actividad minera, se requiere un enfoque multidimensional que aborde tanto las necesidades humanas como las naturales. Estrategias específicas que aborden la restauración de ecosistemas naturales, mejoras en infraestructura urbana, diversificación económica y participación comunitaria son fundamentales para revitalizar territorios degradados como Andacollo.

La gestión de sistemas y el enfoque panárquico emergen como estrategias complementarias para abordar la complejidad de la restauración en territorios afectados por la actividad minera. Estas estrategias ofrecen un marco holístico y adaptable que guía la restauración de manera integral, permitiendo la interacción entre elementos naturales y humanos (Xu & Marre, 2018) (Figura 8).

Figura 8: Vista en planta de implementación evolutiva de estrategias Fase 1, 2 y 3. Escala gráfica. Dibujo: Elaboración propia.



El enfoque panárquico se estructura en etapas clave: reorganización, conservación, liberación y crecimiento (Xu & Marre, 2018). Estas etapas facilitan la adaptación continua y sostenible de los proyectos arquitectónicos, asegurando su flexibilidad y escalabilidad a lo largo del tiempo (Xu & Marre, 2018). La reorganización promueve la adaptabilidad y resiliencia en territorios degradados, permitiendo que los proyectos arquitectónicos se ajusten a las dinámicas cambiantes del entorno.



La conservación, por su parte, asegura la preservación de los recursos naturales y culturales, promoviendo la sustentabilidad y el bienestar comunitario a largo plazo (Xu & Marre, 2018). Mientras que la liberación busca emancipar a las comunidades afectadas, fortaleciendo su autonomía y calidad de vida (Xu & Marre, 2018). Esta combinación de estrategias contribuye a la regeneración física y social del territorio, promoviendo la sostenibilidad y el bienestar a largo plazo (Xu & Marre, 2018) (Figura 9).

Figura 9: Vista comparativa. Ejemplo de fases de reorganización, conservación, liberación y crecimiento a nivel temporal. Dibujo: Elaboración propia.



La recuperación de áreas de sacrificio involucra a diversos actores que desempeñan roles cruciales para el éxito de los proyectos. El sector público, representado por entidades gubernamentales y reguladoras, es fundamental en la elaboración y aplicación de regulaciones ambientales que garanticen prácticas más responsables en la industria minera (Perez & Smith, 2018).

El sector privado, incluyendo empresas mineras, aporta recursos financieros y experiencia técnica esenciales para la implementación de soluciones de mitigación y recuperación (Jones & Brown, 2019). Mientras que las organizaciones no gubernamentales supervisan y defienden los intereses de las comunidades locales y el medio ambiente, contribuyendo a la transparencia y al cumplimiento de las normativas (García et al., 2020).

La sociedad civil, representada por las comunidades locales, participa activamente en la toma de decisiones, asegurando que los proyectos se alineen con sus necesidades y aspiraciones (López & Rodríguez, 2017).

El Gobierno de Chile, a través del Ministerio de Minería y su Servicio de Evaluación Ambiental, establece regulaciones que obligan a las empresas mineras a incluir componentes de cierre y post-cierre de faenas en sus proyectos, asumiendo así la responsabilidad de la gestión a largo plazo (Gobierno de Chile, 2020). La Resolución de Calidad Ambiental (RCA) incorpora un “margen de protección” que permite la implementación de proyectos de recuperación y mitigación en zonas afectadas por la minería (Sánchez et al., 2019). Es esencial comprender la magnitud de los impactos ambientales y sociales causados por la actividad minera, así como las necesidades de las comunidades locales (Wang & Wu, 2018).

La inclusión de estos proyectos en la RCA garantiza su cumplimiento y seguimiento, además de posibles compromisos financieros por parte de la empresa minera (García & Martínez, 2017). El acceso a fondos adicionales a través de programas gubernamentales puede respaldar la implementación de soluciones sostenibles (Rodríguez & Díaz, 2020). En el caso específico de Andacollo, Teck CDA tiene prevista una inversión anual significativa en su plan de post-cierre para la recuperación de la zona (Teck CDA, 2020). La combinación de esfuerzos públicos y privados, junto con la participación de la sociedad civil, es fundamental para abordar de manera integral los desafíos asociados con la actividad minera en áreas de sacrificio (Smith & Pérez, 2019).

### 3 Conclusiones

La extracción minera, fundamental para el progreso humano, tiene impactos significativos en el medio ambiente y la sociedad (Pouchucq Marinkovic et al., 2017). Sin embargo, las regulaciones deficientes a menudo permiten que estos impactos se desplacen hacia comunidades locales, generando una desconexión entre la producción y sus efectos nocivos (Herbert, 2006).

La interacción entre sistemas naturales y humanos crea vulnerabilidades multidimensionales en la infraestructura natural, humana y productiva (Teck Carmen, 2020). La investigación basada en un enfoque panárquico y socioecológico puede ofrecer estrategias adaptables y resistentes a perturbaciones futuras, integrando tanto aspectos naturales como humanos del territorio degradado (Pouchucq Marinkovic et al., 2017).

La participación activa de la comunidad en la toma de decisiones, mediante la investigación basada en el diseño, puede aumentar la aceptación y el compromiso con el proyecto (Herbert, 2006). Estrategias de regeneración territorial con una perspectiva adaptativa socioecológica a largo plazo pueden identificar áreas críticas y asignar recursos de manera eficiente (Cassin & Locatelli, 2020).

La colaboración entre actores públicos, privados, ONG y la comunidad local es esencial para el éxito de estas estrategias a largo plazo (FUNSAD, 2002). La gestión a largo plazo de las áreas afectadas, con compromisos financieros y programas de monitoreo, garantiza la sostenibilidad (Cassin & Locatelli, 2020). La implementación de programas gubernamentales puede proporcionar fondos adicionales para apoyar las iniciativas de recuperación y mitigación (Pouchucq Marinkovic et al., 2017).

Aunque la aplicación de estrategias adaptativas en áreas de sacrificio enfrenta desafíos considerables, su capacidad para elevar el bienestar de las comunidades afectadas y avanzar hacia la sostenibilidad ambiental la posiciona como un campo de investigación y acción esencial en la actualidad.

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## **Nota bibliográfica**

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Su motivación fundamental sigue siendo la visión de un futuro en el que las comunidades afectadas por la explotación territorial encuentren soluciones y se genere conciencia sobre los desafíos del desarrollo sostenible.



## Energy with Social Embeddedness and Democratic Participation in Spain: the Case of the Cooperative Som Energia

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**Abstract:** *In recent years, citizen-led initiatives promoting renewable energy production and consumption, particularly cooperatives, have emerged in Spain and neighbouring countries. These initiatives seek to secure fairer and more affordable energy prices and demonstrate a commitment to environmental protection and social activism. They are grounded in cooperativism, self-management and socio-environmental sustainability principles, aiming to contribute to a more socially equitable economy within the energy sector.*

*This paper analyses the case of Som Energia, Spain's first renewable energy cooperative, which boasts significant membership and production figures. It explores Som Energia's organisational structure and practices for democratising its action. The objective is to contrast the linkage of this structure and its functioning in the social and ecological embeddedness of energy production and consumption. The research aims to elucidate the cooperative's role in fostering sustainable socio-ecological practices and its impact on social inequalities.*

*Key findings indicate that the Som Energia model facilitates the energy transition by promoting renewable energy production and certified commercialisation. Decision-making processes within the cooperative reflect principles of direct, deliberative and representative democracy, ensuring robust internal governance. Additionally, tools for collective learning and territorial engagement aid in community-building, information dissemination, and the creation of shared knowledge.*

*Ultimately, this research contributes to understanding the potential of citizen-led renewable energy initiatives in promoting sustainability and equality within society.*

**Keywords:** *Cooperativism, renewable energy, democratic participation, social embeddedness, ecological embeddedness*

## 1 Introduction

In recent years, Spain and other neighbouring countries have seen a notable increase in citizen-initiated projects to generate and consume renewable energy, primarily through cooperatives. These initiatives seek to ensure more equitable and affordable access to energy compared to the conventional market. At the same time, they are committed to environmental preservation and adopt management models rooted in the territory through activism and citizen participation strategies based on the principles of cooperativism and self-management. The development of capitalism and its effects on the growth of energy consumption, the deterioration of the environment and the erosion of social ties have prompted response strategies based on alternative social practices in the context of control of the energy market by large companies. These social practices often claim to promote environmental, social, and economic sustainability and equity in all its facets.

Analyzing these practices from the perspective of their *social embeddedness* and *ecological embeddedness*, as well as their nature as *collaborative collective action*, is crucial to understanding their impact on the *democratisation of energy access*. In modern capitalism, the economy has become segregated from social and cultural practices, leading to a dominance of market relations detached from social ties, which generates a *social disembodiedness* of the economy (Polanyi, 1989 [1944]). At the same time, economic systems have acted on the premise of the Earth's unlimited natural resources, leading to *ecological disembodiedness* or alienation from the economy with global consequences (Spash, 2018; Whiteman and Cooper, 2000). In this context, *collaborative collective actions*, such as those driven by the cooperative social economy, tend to develop transformative social practices that can serve as models for social change (Aliende, Castelló, and Llopis, 2022).

This text presents the first stage of a case study on *Som Energia*, Spain's first renewable energy cooperative, which has experienced remarkable growth in recent years. *Som Energia* has over eighty thousand members and one hundred and twenty thousand contracts, producing around sixty-three-gigawatt hours per year. More than one hundred people form the staff of this organisation, which generates over eighty million euros a year and is spread across all Spanish Autonomous Communities (mainly Catalonia, but also Madrid, Valencia, Andalusia, Aragon, Euskadi, and Nafarroa).

The paper focuses on its organisational structure and functioning, as well as the political dimension of the socio-ecological practices promoted to foment equality and achieve a more inclusive society. Thus, this study analyses how the socio-ecological practices promoted by this cooperative contribute to the social embeddedness of energy production and distribution.

Concerning the methodology, information has been collected based on exploring and analysing public secondary sources –specifically, documentary and audiovisual material available on the cooperative’s website and other online platforms. In addition to this, participant observation of some of the cooperative’s Local Group meetings has been included.

The following sections address the political dimension of the project and its relationship to the ethical values and democratic principles promoted by the cooperative. They also address the challenges it faces in keeping its democratic values and principles alive as the number of members and the volume of economic activity grows.

## 2 The pre-eminence of socio-political criteria for energy transition

The emergence and rapid growth of the cooperative *Som Energía* since its establishment in 2010 is a phenomenon of remarkable relevance in the Spanish energy scene. The cooperative, self-defined as a social movement, primarily aims to change the socio-energy system in the long term. According to its statutes, *Som Energía* is committed to carrying out the necessary activities to promote information, training, and defence of a new energy model based on energy efficiency, the development of renewable energies, and the defence of the rights of consumers and users (Som Energía, 2022a). Likewise, the cooperative publishes and maintains a code of ethics in defence of its commitment to environmental sustainability, cooperativism, equity, and training, as well as establishing guidelines for conduct based on trust, participation, and respect, with a zero-tolerance policy towards corruption (Som Energía, 2020). This can be seen in their meetings: during a Local Group meeting, in a conversation related to price competition, it was highlighted that the cooperative focuses on activist actions rather than commercial strategies and the application of the code of ethics to one of its members was also reported. It is, therefore, a political project because of its transformative nature, which places democratic functioning at the heart of the organisation.

The origin of *Som Energía* is attributed to three global and three local factors (dianiaTV, 2012). The former includes climate change, the depletion of energy resources such as oil, and the insecurity of supply, while the latter consists of the promotion of cooperative work, support for the local and rural economy, and democratising the energy model. The cooperative aims to address the challenge of the transition to an energy model based on renewable energies with a democratic approach that involves citizens as agents of change and facilitates their control over this process. Thus, *Som Energía* aims to face the challenge of

promoting the transition from a model based on fossil and polluting energies to one based on renewable energies (*ecological embeddedness*). Moreover, it considers that this challenge must be faced democratically, turning citizens into proactive agents of the change of energy model and facilitating, in this way, the recovery and citizen control of this process (*social embeddedness*). In this way, the proposal of this cooperative makes electricity consumption something that goes far beyond the private sphere of the domestic sphere and turns it into a political issue, in need of civic involvement and public deliberation, which is to say that socio-political aspects prevail over strictly economic criteria in the operation of the cooperative.

*Som Energía* generates renewable energy and commercialises electricity from renewable sources. However, it does not participate in long-distance transmission or the high, medium, and low-voltage distribution network, which are monopolised by entities such as *Red Eléctrica Española* and the companies associated with the *Asociación Española de Compañías Eléctricas* (Riutort, 2015: 126).

The cooperative prioritises local generation and distribution projects, encouraging community participation and minimising environmental impact. These projects are financed exclusively by members' contributions, guaranteeing the cooperative's financial autonomy and strengthening its independence to promote its projects. Members, therefore, play a central role in the functioning of the cooperative: on the one hand, they contribute financial resources, knowledge and working hours, and on the other, their criteria and opinions are essential in the processes of debate and deliberation. Membership is obtained with a contribution to the social capital of one hundred euros, and this gives the right to vote in the General Assembly, which gathers all the members and is the maximum organ for decision-making in the cooperative. Therefore, *Som Energía* is an association of members whose main objective is to obtain a solution to their energy needs and develop their economic and socio-political principles through a project of shared ownership and democratic and transparent functioning; it behaves as a *collaborative collective action*.

### **3 A participatory organisational structure**

The organisational structure of *Som Energía* has been built to prioritise the participation of its members and guarantee democratic functioning. It consists of three normative social bodies made up of members: the General Assembly of Members, the Governing Council, and the Auditors, as well as the Work Team and the Local Groups.

The General Assembly meets annually and is the cooperative's highest decision-making body, convening the entire membership base to express its will. In line with the values of cooperativism and under the principle of direct democracy, each member has one vote, irrespective of their contributions to the organisation. The General Assembly's responsibilities include evaluating the cooperative's management, approving the criteria for developing and financing new projects, and appointing the members of the Governing Council and the Auditors.

The Governing Council, elected by the members to implement the guidelines set by the Assembly, comprises between five and nine members for a maximum of four years. It acts as the governing body, representing the organisation internally and externally. Its positions are voluntary and unpaid. The board appoints the coordinator of the Work Team and oversees its management. The members also organise themselves into committees to coordinate with the Work Team.

The Work Team is entirely made up of salaried workers and oversees administrative activity, service management, and member attention. The Team divides its work into four main areas: marketing, generation, social impact, and cooperative activity. Each area works with self-managed teams and cross-cutting common services.

Finally, the Local Groups are self-managed groups led by the members, acting at a local level. They collaborate in dissemination and training activities and promote the cooperative's territorial rooting. They act as links between the cooperative and society, organise events, and transmit needs and demands to the central operative nucleus of *Som Energia*.

## 4 Some initiatives to institutionalise the democratic spirit

One of the crucial challenges facing *Som Energia* lies in the possible conflicts and repercussions arising from the increase in the number of members, as well as the volume of economic activity and organisational complexity, which may affect the maintenance of a democratic, participatory structure committed more to socio-political values than to strictly economic criteria. Riutort (2015: 148) stresses that a cooperative combines a business project with an associative one, requiring a balance between both aspects. There is a risk of commercial logic supplanting democratic principles if there is a deficit in the effective participation of members or if the technical-administrative structure prevails over the political one. Maintaining this balance implies a challenge of organisational development to which *Som Energia* responds by creating

spaces, structures, and projects for dialogue and consensus. In any case, the effective participation of the members is also essential to maintain the balance between the condition of the association and the condition of the company found in all cooperatives.

Apart from the General Assembly and the Governing Council, *Som Energia* has an extensive network of Local Groups that foster interaction and deliberation and complement the formality of the Assembly. These groups provide a wide territorial presence. In addition, the cooperative promotes two additional initiatives to maintain democracy and address the tensions generated by growth and complexity: the *Escola* [School], an annual meeting that encourages the exchange of ideas on the energy transition and the functioning of the cooperative, and *Participa*, an online platform for discussions and the formation of working groups. These initiatives reflect *Som Energia's* commitment to its democratic identity, even in a context of growth and organisational complexity often considered incompatible with the democratic demands of associative entities.

Together with its structure and functioning, *Som Energia* also promotes reflexive activities in which the members participate. So, a participative diagnosis has been recently carried out to evaluate and strengthen the participation of the members in the cooperative. The study –developed in collaboration with the Governing Council, the Work Team, and the cooperative *Altekio*– counted with the participation of the members and the Local Groups, as well as 6,700 answers to a survey addressed to the members (*Som Energia*, 2022b).

The results of the diagnosis confirmed support for the cooperative orientation and the fight against the energy oligopoly but also pointed to the need to deepen certain aspects:

- Cooperative awareness. It was identified that the rapid growth of the cooperative had led to a need for more awareness of the cooperative model among some members. A welcoming process was suggested for new members and employees to familiarise them with the organisation.
- Raising awareness of climate change beyond the energy transition and reducing the entry fee, especially for disadvantaged groups, to increase the participation of younger people.
- Intensify energy information among the population. Given the widespread misinformation on energy promoted by the oligopolistic energy model, developing more dissemination and training actions was necessary. It was recommended that guidance and training be provided to Local Groups and that they collaborate with them in administrative procedures to promote energy communities.

- Strengthen the feminist perspective and social inclusion. Training activities on ecofeminism, care, and gender roles were proposed, as well as facilitating the participation of women and non-binary people in the cooperative.

Based on these results, seven needs were identified and discussed at the 2023 General Assembly (Som Energia, 2023). These included diversifying the forms of participation, decentralising decision-making, and improving the proposal-making process. Five courses of action were proposed, including the intensification of dialogue with the Local Groups, the implementation of what has been called *Gran Conversa* [Great Conversation] as a process of deliberation between the members, the Work Team, and the Governing Council, and the reinforcement of the *Participa* platform, to improve its usability and achieve more agile participation.

## 5 Conclusions and Research Agenda

With the work developed so far, we have verified that the statutory structure and the operational flows of *Som Energia* are designed to guarantee the *social embeddedness* of the production and distribution of energy. We have witnessed the application of zero-tolerance concerning the principles contained in its code of ethics and the promotion of self-evaluation activities that keep the democratic impulse alive despite the growth in size and complexity of the cooperative. The description of its organisational structure and system of functioning allows us to conclude that *Som Energia* develops a *collaborative collective action* that works for the *social embeddedness* of economic activity, such as producing and distributing energy. Hence, it aims at the *ecological embeddedness* of the economic activities.

In the agenda of issues to be developed in the subsequent phases of this research, the sources of information have yet to be expanded (basically by conducting interviews) to focus the study on the production and consumption relations promoted by this initiative, as well as on the values, motivations, contradictions, tensions and conflicts involved in the socio-ecological practices of renewable energy consumption, giving a voice to the different agents involved.

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## Methodological Appendix

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## Nurturing Resilience: Local Civil Society Advocacy for Equitable Access to Water Resources in Moroccan Draa Oasis

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**Abstract:** *To address the current water scarcity situation in the Draa Oasis in southeastern Morocco, civil society plays a crucial role in advocating for equitable access to water resources, especially in the context of climate change affecting the country in the last years. This situation caused difficulties in accessing water for traditional farmers engaged in subsistence agriculture. Based on an interdisciplinary approach, the study uses “ecological rift” to examine the role of local civil society in defending the rights to water at the oasis level.*

*The collected qualitative data revealed that awareness of water scarcity in the oasis region led civil society and small-scale farmers to challenge the environmental destruction caused by the expansion of watermelon agriculture and the growth of desert tourism. Each of these sections points to the fact that the role of local civil society is to protect the oasis area from socio-spatial destructions.*

**Keywords:** *Civil society, climate change, oasis area, watermelon agriculture, stress water*

### 1 Introduction

The oasis area in Morocco emerged as a focal point for addressing the critical challenge of managing scarce water resources over time. This area copes with persistent need to navigate the complexities of water scarcity due to its arid climate and increasing demands on its water supply. The management of the latter is based on inherited social arrangements that are constantly updated and renovated in line with the social and ethnic transformations occurring in the oasis societies. However, the Draa Oasis (southeastern Morocco) has experienced significant ecological changes in the past two decades, losing more than a fifth of its area (22%) dedicated to subsistence agriculture (Ait Lamqadem *et al.*, 2017). In contrast, there has been an expansion of destructive agricultural activities, namely, water-intensive watermelon agriculture and the growth of desert tourism. Both contributed to ecosystem degradation. In this context of intense exploitation of water resources and land misuse, one could

notice the emergence of a discourse advocating for the right to fair access to water and the preservation of water resources for future generations (Sobczak-Szelc, 2023; Sánchez, 2022).

Water is not only a vital resource, but it also serves as the basis of social organization due to the characteristics of oasis societies. As a matter of fact, the nature of the relationship that humans set up with water and land defines the nature of social organization as a whole (Ait Hamza and El faskaoui, 2010). Therefore, the level of social change can be measured by examining the relationship between humans and water in their complex relation (Berger *et al.*, 2021). The shift in the human-water relationship has negatively influenced social relationships, as water has transformed from a communal supervision that regulated social interactions, into an individual benefit. Thus, the discussion of scarcity does not solely address its quantity but also the irrational management of this vital resource (Farzad *et al.*, 2020). These transformations in the socio-spatial context have drawn the attention of local civil society activists to advocate the right of oasis residents to ensure equal access to and the sustainable use of water resources. Moreover, new farming practices within the oasis have had drawbacks on the ecosystem, such as water stress, pesticides and chemical fertilizers that affect biodiversity and cause damage to the environment. Therefore, this study aims to examine the dynamics of local civil society in the oasis societies to preserve natural resources. Similarly, this paper will present the farmers' perception about the socio-environmental transformation that their oasis has undergone.

## 2 Towards an environmental civil society

Considering the role of the agricultural sector in the Moroccan economy, which contributes to around 15% of the GDP and creates 40% of employment opportunities; it is notable that agriculture contributes to environmental destruction through excessive groundwater use. Irrigated agriculture, which overuse between 75% and 87% of groundwater, prompt a discourse on water preservation coupled with the discourse on water security, particularly in relation to food security (Farzad *et al.*, 2020; Ouraich and Tyner, 2018). These environmental and ecological conditions urge civil society to intervene in monitoring water usage and where it is exploited, particularly in arid areas such as oasis spaces in which water is considered a socio-vital element. At this point, addressing environmental degradation becomes imperative, as it has caused ecological transformations and produced socio-spatial vulnerability in oasis societies (Liu *et al.*, 2016).

In Morocco, in the two last decades, there has been a significant civil society dynamic that the country has known after the increasing democratic process in the political scene in the first decade of 21<sup>st</sup> century (Sater, 2007). This includes individuals advocating for human rights, women's rights, Amazigh cultural rights, and independent journalism. This suggests that civil society actors are increasingly inclined to participate directly in the political process by establishing political entities, indicating a desire for more direct involvement in shaping the political landscape. The evolving relationship between civil society and the party system adds a layer of complexity to the political dynamics in Morocco, making it a subject of considerable interest and scrutiny.

In its broad sense, civil society refers to the sphere of social life that distinguishes itself from state institutions and governmental bodies. Simultaneously, it serves as a link between these institutions and the social sphere (Dalton, 2014; Van Dijck, 2017). Its overarching goal is to enhance the quality of public life by advocating for positive change and influencing decision-making processes (Gemmill and Bamidele-Izu, 2001). Civil society has become a force agent for democratic decision-making that reflects individuals' interests. At this level, civil society is contingent on individuals and the roles they perform in evaluating and criticizing mechanisms of action and working at different levels to promote justice by subjecting the "uncivil" space to civil space and demanding reforms, as well as monitoring their implementation (Kaldor, 2003). Civil society opposes political society and the world of economic production or the market system because it allows individuals to work together to create a public sphere that defends individuals' interests through voluntary associations, social movements, and unions (Dalton, 2014).

Based on these cosmopolitan meanings, civil society encompasses diverse fields of intervention, actors, and institutions. By the same token, civil society also allows advocacy against the dominance of the state (Sater, 2007; Alexander, 2006, p.43). Therefore, to effectively confront contemporary societal transformations and their associated risks, civil society shifted its focus to environmental issues. It has moved from an external position in the relationship between society and the state to formulate a global vision that enables strategic positioning in response to state-implemented policies. In this context, climate change continues to be a critical issue demanding attention from civil society, governments, and their representatives, given the risks posed to communities, resulting from rapid environmental destruction and industrial growth. However, low environmental awareness and the lack of material resources often isolate the work of civil society from public policies, impeding the deployment of its capacities and experiences (Heidi *et al.*, 2018).

The role of environmental civil society, and sometimes protest movements, is to advocate for changing situations that threaten communities or groups of individuals and to defend their interests (Atia and Herrold, 2018; Baker *et al.*, 2021). With the increasing threat of ecological change, environmental issues have gained growing public attention in recent decades. This has led environmental civil society to adopt human rights and environmental discourse, both in its global and local formulations (Nordfeldt and Dahlström, 2023). Therefore, civil society can be viewed from the perspective of pluralism and diversity, coupled with directed action towards specific goals, where individuals and groups, aim to achieve public interest. However, this work is often characterized by tension and conflict with its institutional and independent figure (Mann *et al.*, 2022, p.10). This condition generates a paradoxical situation regarding the boundaries of civil society in its relationship with the political and economic spheres. Such a relationship confronts individuals with political and economic decision-makers, particularly in societies that have not yet accumulated a civic and democratic culture, as in the case of Moroccan society.

As a result, environmental civil society is often viewed with suspicion by authorities and groups of interests, as they are perceived -by civil society actors- as a threat to the environment. In this context, the local can provide form and significance to the global as it unveils approaches to address local environmental problems in relation to comprehensive global environmental issues (Castells, 2008). This occurs through the sharing of problems, proposals, and solutions to tackle them in the environmental reality. This is also a challenge for environmental civil society in its advocacy efforts to be a proactive force as well as in monitoring the management of natural resources (Sawhney *et al.*, 2007), particularly when these resources are scarce, limited, and at risk of disappearance, such as water resources.

There is a close and intricate interconnection between social problems and ecological issues that necessitates an integrated approach. The challenges faced by environmental civil society give rise to social phenomena related to the management of natural resources and equitable access to these resources (Johannsen, *et al.*, 2016). Because of this interconnection between environmental and social aspects, environmental issues are seen as matters that can transform into a civil and/or protest movement when sustainable and renewable use of natural resources is not guaranteed. This situation can combine local issues with global problems by taking on both universal environmental forms and addressing local social demands.

Studies focusing on environmental topics assert that environmental destruction can cause water insecurity, including injustice and inequity that contribute to variations levels. The latter leads to social conflicts when natural resources are

dominated and controlled by select groups and private individuals. From an eco-political perspective, attention is given to the effects of capitalism and modernity on ecological concerns (Pellow and Brehm, 2013). This perspective links inequality to ecological damage since only the capitalist class profits from the gain of the overexploitation of natural resources. This occurs due to the domination of the land and means of production, allowing, thus, the accumulation of profits while disregarding the equilibrium of the ecosystem (Foster et al., 2010, p.47).

Consequently, the focus was directed solely toward entities advocating for the right to water, specifically those actively participating in the protest movements. This concentration was particularly significant in the context of issues surrounding the supply of drinking water in the region and impact of watermelon farming about supply groundwater.

### **3 Local civil society speaking water**

We can identify two starkly opposing opinions that reflect a division within the structure of oasis societies regarding the acquisition of water and the right to benefit from it. The first faction encompasses residents of “Kasour” (small rural communities) who are traditional farmers engaged in subsistence agriculture. They assert that water should remain under the control of the collective community representation of the “Douar” (rural village) and/or the “Ksar.” In contrast, the second group believes that water should be linked to land ownership, particularly by investors in watermelon agriculture and desert tourism. Consequently, this conflict appears to garner support from civil society for the first group, advocating for the right to preserve water and to distribute natural resources according to the needs of the residents and their subsistence agriculture. Conversely, the second group, supported by local authorities to promote investment and generate added value surplus, uses groundwater from the mountains overlooking the oasis, as its water reservoir. This poses a fundamental problem for civil society, as it regards oasis water resources as a collective ownership and a public right, contrary to the investors that defend private ownership perception of the land.

Focus group discussions brought together traditional farmers of various ages and civil society activists showed that the problem that oasis facing is the drop of water level, because of their location at the bottom of the Draa Valley. The second element is watermelon agriculture, as it is practiced on the borders of these oases, located at the foothills of the mountains. This implies that, as watermelon agriculture spreads and expands, traditional subsistence farming within the oases experiences a gradual decrease. In view of recurrent drought

periods, residents have struggled to secure the financial resources needed to dig wells, leading to a deterioration in their agricultural situation. However, wells are not readily available, and farmers are unable to dig them independently due to a lack of material resources. Affording this endeavor is challenging without the assistance of NGOs working in the region. Consequently, traditional farmers contend that working in agricultural cooperatives presents challenges related to prioritization and arrangements regarding the allocation of water resources and the location of wells. This is, for instance, the case of the village of Bono near M'hamid Al Ghazlan.

Considering the current condition of water scarcity in the oasis area, civil society charges the responsibility directly on local authorities and supervisors of the ministries of agriculture and water. This is attributed to the encouragement of exploitation of collective lands for growing watermelon. In recent years, the oasis condition has rapidly deteriorated to an irreversible stage, posing a significant challenge to restore it to its normal situation, at least ten years ago. As civil society exhausts its efforts to defend the oasis and protect natural resources, the discourse about it has become "hackneyed," as one civil society activist, pronounced.

These issues have compelled local civil society to confront those contributing to the deterioration of the oasis area, particularly in the domains of tourism and watermelon investments. The primary focus has been on addressing the water problem, coupled with efforts to raise awareness about the significance of the oasis area and the environment, particularly within educational institutions (Talanow *et al.*, 2021). However, in parallel, the official discourse remained unchanged due to the lack of political decisions that would take action to halt the accelerated deterioration of the oasis area. Indeed, this dynamic encourages investors to increase their interests through the heightened destruction of natural resources. This reproduces the principles upon which the capitalist production system is founded, where the pursuit of interests often comes at the expense of intensifying environmental degradation. The second factor not only poses a fundamental threat to the production system but also risks social life (Clark, 2011).

There is an ecological equation in the minds of civil society actors, as well as traditional oasis farmers. According to this equation, any groundwater pumping for watermelon farming is perceived as depriving large segments of small farmers from the same possibility of benefiting from this water by an equal amount. The methods of resource exploitation give rise to a series of problems that can be categorized as *environmental violence* (Radonic, 2015), further legitimizing the advocacy for water rights and their sustainability for future generations.



## 4 Conclusion

Civil society activists in the oasis have been actively engaged in monitoring water usage and identifying areas affected by watermelon exploitation desert tourism. They strive to raise awareness about the significance of water conservation and prudent management, especially in vulnerable communities like those in the Draa region's oasis communities. Through collaboration with local communities, they emphasize the consequences of environmental degradation and its impact on water resources. The increasing scarcity and rapid destruction of natural resources, mainly the groundwater, have created a multidimensional fragile situation that has given rise to a clear social conflict over these resources and over the ways by which they are to be managed in a society that is based on scarcity.

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## Methodological Appendix

The study employed an ethnographic approach to explore the oasis region, utilizing various strategies to navigate the fieldwork area after establishing contact with civil society activists and local farmers. Primary data collection focused on the challenges of watermelon production in the oasis, representing a central issue. Subsequently, spatial mapping was conducted to analyze the impact of water scarcity on residents' livelihoods. This facilitated numerous focus groups with civil society members, each comprising 6 to 8 participants (totaling more than 10 focus groups).

Afterwards, four (04) focus groups were conducted with farmers residing in the Draa oasis (Ktaoua and Mhamid Lghazlan), and the represents of local communities. Despite initial reluctance from watermelon agriculture investors to participate in interviews with strangers, individual interviews were successfully facilitated with the assistance of a trained facilitator.

The fieldwork was conducted between May and August 2022, comprising several phases and supported by my assistant, who is a resident of the oasis and a fellow PhD student. It's commendable that he made a significant effort to engage with oasis women and facilitate focus groups with them. This demonstrates dedication to ensuring diverse perspectives are included in the study, enriching the research findings with a more comprehensive understanding of the community's dynamics.

## Biographical Note

The author is a Professor of Sociology at Moulay Ismail University, with a diverse research portfolio reflected in his publications. His recent work addresses pressing environmental issues, notably "Climate Change and Socio-Spatial Vulnerability in Oasis Societies," (2024). He also explores the intersection of violence and gender, particularly in understanding strategies of resistance to defend sexual identity "Defending One's Sexual Identity: Obscenity as Strategies of Resistance," (2022). Additionally, his scholarship extends to theoretical domains, such as Georg Simmel's theory of space and its role in social "Goerg Simmel's Theory of Space: Space as an A Priori Condition of Social (Re)Construction," (2021). Recognizing his academic merit, he received a post-doctoral scholarship at Bordeaux University in France via the ATLAS program, supported by the Arab Council for the Social Sciences and Fondation Maison des Sciences de l'Homme (FMSH) in Paris. Further, he has been financially backed by the Fund for Global Human Rights, contributing to his research on critical perspectives of human rights issues and collective action strategies in the Arab region.

## Notes

1. The "Ksar" (plural: Ksour) represents a unique form of human settlement, housing diverse groups and ethnicities within its fortified walls. Throughout history, these groups have come together to defend shared interests, notably the management of vital resources such as water and land.

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## Cultivating Sustainable Tourism? A Case Study on Socio-ecological Practices through Volunteering in Organic Farms in France and Quebec

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**Abstract:** *Woofing gives the opportunity to volunteers to help organic farmers in exchange for accommodation, food, and knowledge sharing. This paper explores how these exchanges could lead to socio-ecological practices. To address this question, it draws upon the sociology of work and tourism, as well as feminist literature on care ethics. The study is based on original ethnographic fieldwork in which the researcher herself participated in woofing, along with conducting 36 qualitative interviews with hosts and volunteers.*

*The results firstly demonstrate that woofing offers an alternative approach to tourism that fosters a sense of belonging among volunteers, who are predominantly young, urban, and educated individuals. Secondly, it appears that woofing occurs within work organizations that resist the productivist model and are grounded in ideals of mutual help and conviviality. Lastly, the study reveals that hosting and caring for woofers tend to fall more heavily on hostesses as woofing also tends to attract more women volunteers. This underscores one of the challenges of socio-ecological practices, which appear to perpetuate certain power dynamics, as the sustainability of life continues to be predominantly viewed as a feminised concern.*

**Keywords:** *Political sociology, volunteer tourism, organic farms, care, ethnography.*

### Introduction

The World-Wide Opportunities on Organic Farms (WWOOF) association offers volunteering stays on organic farms through a web platform where volunteers assist organic producers, referred to as *hosts* by the association, with their daily tasks in exchange for food and accommodation. Established in 1972, the association initially took the form of paper advertisements before transitioning into a digital platform that now operates in 130 countries. The WWOOF associations were established in Canada and France in 1985 and

2007, respectively<sup>2</sup>. While farms must be organic to join the platform, they are typically small, family-owned enterprises, therefore belonging to peasant agriculture. Volunteers, known as *woofers*, are typically expected to work around 5 hours a day, 5 days a week, according to the association's guidelines. This non-commercial exchange in organic farming offers an alternative approach to tourism, particularly relevant given the polluting and rapidly expanding nature of the tourism industry (Lenzen et al., 2018).

How might woofing exchanges lead to socio-ecological practices? Socio-ecological practices are characterized by ecological embeddedness (Whiteman and Cooper, 2000) and encompass practices related to work, travel, and consumption. This paper aims to demonstrate how woofing fosters such practices while providing critical insights into power dynamics among actors. It will first outline the theoretical framework and methodology before presenting the results, which are divided into three sections: the alternative approach to travel, the mutual help within work organizations, and an observation on gender dynamics through woofing.

## 2 Theoretical framework et methodology

Research on woofing primarily regards it as a form of farm tourism (McIntosh and Campbell, 2001; Chabot, 2019), therefore a "civic agriculture" (Holtwick, 2016) that challenges traditional work boundaries (Guthman, 2017; Erbs, 2018). In this analysis, three areas of literature are drawn upon: sociology of tourism and volunteering, sociology of (peasant) labor, and feminist literature on care ethics and practices.

Firstly, literature on tourism shows that alternative ways of doing tourism looking to harm less environment and local communities develop themselves starting from the 1970s, especially volunteer, ecological and humanitarian tourism (Wearing, 2001; Butcher, 2002; Mostafaneyzad, 2016; Honey and Frenkiel, 2021). Research on volunteer tourism indicates that individuals "seek alternative goodwill experiences and activities" (Benson, 2015) while sometimes incurring significant costs for hosting organizations, particularly in humanitarian contexts (Delpierre, 2017). Combining critical literature with classic and contemporary research on the sociology of work enables us to observe the effects of mutual help exchanges within peasant labor, as well as the inequalities in tasks among participants (Sanghera, 2018; Simonet 2018). This research argues that through woofing, participants demonstrate their shared vulnerabilities, drawing from feminist literature on care<sup>3</sup> ethics and practices (Tronto and Fischer, 1990; Laugier, 2015; Puig de la Bellacasa, 2017).

To operationalize this theoretical framework, an ethnographic methodology was employed to capture the practices and discourses that constitute woofing experiences. The fieldwork, conducted between 2019 and 2020, involved a six-month immersive ethnographic investigation on four different farms - two in France and two in Quebec. This investigation included participating in tasks and becoming integrated into the familial or collective work structures. Additionally, 24 qualitative interviews were conducted with volunteers and 12 with hosts across both regions. Furthermore, documentary analysis was conducted to comprehend the political context of peasant agriculture within which woofing practices take place.

## 3 Results

### 3.1 An alternative way of doing tourism

Firstly, woofing represents an opportunity for travel, from locations but as well social contexts. In the interviews with volunteers, critical discourses about mass tourism were prevalent. Volunteers want to (re)connect with the exploratory spirit of traveling, undermined by touristic industries and the *conformism experiences* that they carry (Christin, 2017). Maryse, one of the interviewees from Quebec, for example mention that she prefers to feel that she “belongs” to the place visited than “looking down from above<sup>4</sup>”. As for Yasmine, she insists on that feeling of legitimacy that working through woofing in Quebec gave her, as a French volunteer:

“I find that through work it’s really interesting to meet people, and also for legitimacy because I find that tourism in itself isn’t very legitimate, so I found it interesting to give of myself to the place where I was, so I wasn’t just visiting (...), in the sense that you’re just enjoying the place without bringing your own touch to it, and I find it much more rewarding for you to work for five hours and then be able to go and visit.”

(Interview with Yasmine, volunteer in Quebec and in France, 19/01/2019)

This quest for a sense of belonging or legitimacy epitomizes this alternative approach to tourism, aiming to minimize environmental impact and resist consumerism.

Furthermore, for hosts, accommodating volunteers from diverse backgrounds provides an opportunity for a *motionless journey* (Lelièvre, 2023), as Cédric explains:

"How do you combine this desire, this need to be sedentary, to start a family, to settle down for a while, and this visceral need to travel, to meet new people, you say to yourself 'damn, this is going to put me into a wall (...)'! It's really helped me a lot, and that's exactly what we do today: we welcome interns, we welcome woofers, we welcome tourists, we welcome schools (...) and without moving we manage to travel."  
 (Interview with Cédric, associate in Champ-Paître, France, 14/04/2019)

For hosts who often have traveled extensively before settling on the farm, hosting volunteers offers a way to continue experiencing new cultures, easing the sense of confinement often associated with farm work.

Ultimately, tourism has historically originated from an *ideal of distinction* (Mowforth and Munt, 2008) associated with the upper class. The analysis of volunteers' sociological profiles is anchored in this paradigm, with a predominant representation of urban, young individuals<sup>5</sup> from upper and middle-class backgrounds. While the association does not furnish specific data on social class, interviews with volunteers reveal a notable trend: out of 24 cases, only 3 were from working-class backgrounds. Additionally, nearly all volunteers hold higher education diplomas, with only two exceptions. This suggests that woofing is predominantly practiced by individuals from privileged backgrounds, despite being cost-free. However, it is worth noting that woofing remains unpaid, and certain needs such as transportation and hygiene products are not covered. Regarding travel patterns, domestic stays accounted for one-third of woofing stays in Canada before COVID-19, increasing to two-thirds afterward. In France, domestic stays have remained stable and represent two-thirds of all woofing stays. Even if they remain within their own country, woofing offers a social change of scenery for urban young people such as Mei, a young woman from Montreal, who described her experience just two hours' drive from the city as "exotic"<sup>6</sup>. These findings suggest that if the desire for discovery and experiencing a change of scenery is central to tourism, woofing offers a less polluting means of travel through its moral economy based on hospitality and reciprocity (Nakagawa, 2017).

### 3.2 Woofing as part of alternative work organizations

Woofing practices embody an alternative to mass tourism, which is viewed negatively by most volunteers, as discussed earlier. They encapsulate ideals of mutual help fostering a sense of *conviviality* leading to "replace technical value with ethical value" (Illich, 1973, p. 28). In a brief historical context, from the late 19th century and particularly in the 1950s, agricultural modernization policies compelled peasants to integrate into the capitalist division of labor (Araghi, 2000), eroding the autonomy and causing the fading of the traditional



family peasant model (Mendras, 1978). Consequently, certain practices, such as mutual help within families, colleagues, or friends, became *deviant* (Nicolas, 2007). Nevertheless, peasants continued to disrupt the capitalist work model (de Crisenoy, 1974), as observed during the fieldwork, with farms adopting alternative organizational structures to the prevailing productivist paradigm. Furthermore, it was noted that relationships among workers, and even with non-human entities such as plants or animals, were characterized by care practices towards one another, despite occasional adjustments driven by economic imperatives (Lelièvre, 2021).

Firstly, woofers accomplish various tasks and then feel less alienated by the work. They keep an autonomy on the agency of time as Maryse explains:

"I remember working and then saying to myself, let's say I was mowing grass, and then mowing grass at some point you've done the trick, and then me repetitive work you know I find it quickly alienating there, and I find it 'argh', it annoys me but I know I'm mowing, and then I say to myself 'eh I'm fed up, but in fifteen minutes I can stop' (...) so it's really fun not to say to yourself 'ok, I'm obliged to do it.'"  
(Interview with Maryse, volunteer in Quebec, 27/09/2019).

The interviews with volunteers also reveal that motivations for joining the farm vary, with recurrent instances of work-related suffering reported by at least half of the interviewees. Working on the farm provides an opportunity to (re) connect with meaningful work, where the tangible effects of one's actions are visible, breaking up with a "professional culture that cuts itself off from the lived world" (Gorz, 1988, p. 113). Lola, who has volunteered for a month on a farm in the South of France, elaborates:

"Seeing the product of one's work (...), how much the earth gives us and how much, the products, well all the work, all the labor behind it, a simple vegetable in fact, a simple salad, or a potato, it's impressive, so I admit that since then I've never eaten potatoes in the same way [laughs]! But clearly it's not just a euro, it's really a whole... energy, work, and it's the earth!"  
(Interview with Lola, volunteer in France, France, 30/01/2019).

She elucidated the process through which she discovered the extensive labor concealed behind "a simple vegetable" and the profound impact it had on her realization. Such experiences of work exchange can reconstruct the connection between production and consumption (Mincynthe and Doberning, 2016) that has been undermined by the processes outlined above. In short, those experiences of woofing perform *community economies*, defined by Julie Gibson

and Katherine Graham “space of decision making in which we negotiate our interdependence with other humans, other species, and our environment” (2013, p. 103). The acknowledgment of interdependence is evident through the attraction of volunteers and other helpers, as well as in the relationships cultivated with plant and animal entities.

### 3.3 Caring roles and feminized responsibility

Finally, woofing predominantly involves women, whether as volunteers or among hostesses primarily responsible for reception duties. Notably, both the French and Canadian associations acknowledge that women comprised 60 and 62 percent of their volunteers respectively in 2019. Board members of both associations confirm that this overrepresentation of women has remained stable over the years. This underscores the observation that women appear to be more inclined towards undertaking caregiving roles, reflecting a concept of *gendered generosity* (Mostafaneyzad, 2013).

Additionally, some hosts express a preference for hosting women, as indicated by Cathy, who has hosted woofers on her Quebec farm for six years: “we like having girls over, I think they’re more meticulous with vegetables, in the preparation of vegetables, it’s more meticulous.” The fieldwork reveals that women volunteers tend to be more engaged in the daily life of the farm and the family. Moreover, all four instances of hiring after woofing, as detailed throughout the thesis, were for women. This suggests that women often *anticipate* needs, a characteristic of care (Molinier, 2006), and demonstrate an ability to become “irreplaceable” in their roles (Lelièvre 2023). Furthermore, they are adept at assisting with hosting other volunteers, as Mei explains when discussing the tasks she undertook during her two-month woofing experience on a Quebec farm:

“I did customer service at the market, and then various tasks, and then the longer I was there, the more I had a somewhat... unofficial role of when the woofers arrived, well to integrate them into the farm you know, and then to... make sure they were well received, but they were well received anyway, but a little more, to make them feel good or things like that, so that’s a role I took on, eventually after spending quite a bit of time there.”

(Interview with Mei, volunteer in Quebec, 14/05/2020)

This “little more” effort is often assumed by women, and Mei will be joining the farm as a seasonal worker the following summer. Woofing could potentially serve as a pathway for women to enter the agricultural profession, particularly in contexts where they are still underrepresented in the field<sup>8</sup>.

Regarding hosts, rural sociology has demonstrated that when farms open up for tourist activities, it tends to increase the domestic workload for women (Giraud, 2004; Francoeur, 2023). Woofing hosting is no exception: in all four farms surveyed, it was mostly women from the family or work collective who assumed domestic tasks related to my presence: showing the room and the facilities, explaining how to clean laundry, how to cook, etc. While this practice provides an opportunity for urban individuals to (re)connect with rural areas and farm work by experiencing a “way of life, mostly familial” (Woofing Charter in France, 2020), it disproportionately burdens women with welcoming them. This underscores one of the central challenges of care for our damaged world: how to address shared vulnerabilities of people and the planet without reinforcing existing inequalities?

## 4 Conclusion

The paper presents several key findings regarding how woofing can contribute to socio-ecological practices while also addressing power dynamics. Firstly, woofing practices are rooted in critical perspectives on mass tourism, emphasizing the importance of giving back to the countries or communities visited. They occur on peasant farms with work organizations predominantly based on conviviality and offer a less polluting and damaging form of tourism, challenging capitalocentric ideologies (Gibson-Graham, 2011). Additionally, the analysis of volunteers’ social profiles reveals that woofing tends to attract young, urban, middle/upper-class individuals who have the privilege of free time and are not restricted by money. Therefore, the paper advocates for more localized volunteering exchanges that genuinely foster socio-ecological practices, while acknowledging that the social-exotic experience comes at the cost of the host’s labor. Furthermore, the paper highlights the disproportionate burden of caring duties on women, both as hostesses and volunteers. This resonates with the recognized inequality of women being disproportionately tasked with domestic responsibilities and nurturing others (De Wilde and Parry, 2022), within a context of gender division of labor in agriculture (Barthez, 1982). Focusing on care is not about *venerating* “feminine values” but rather recognizing the essential role of activities vital to daily *sustainability of life* (Puig de la Bellacasa, 2017, p. 161). It calls for a reconsideration of work organization and tourism structures by prioritizing care and shared vulnerabilities, with a keen awareness of power relations among actors.

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## Methodological Appendix

The research, conducted in 2019 and 2020, employs an ethnographic approach aimed at understanding the role of woofing in agricultural production and social reproduction on farms. To achieve this, I joined the WWOOF association in France and Canada and selected two family farms and two collective farms in France and Quebec for comparison, not only across countries but also in terms of work organization. I employed three different methods to collect data: firstly, documentary analysis provided insights into the political context of peasant and organic agriculture in both settings; secondly, immersive stays on farms for six months yielded approximately 1200 hours of observations of agricultural tasks, learning experiences, and communal living dynamics; and finally, interviews (n=56) were conducted with volunteers (24), hosts (12), collective actors in the agricultural sector (16), and members of the French and Canadian WWOOF associations (4).

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## Abbreviations

- **WWOOF:** World Wide Opportunities On Organic Farms

## Biographical Note

Agathe Lelièvre (PhD in Political Science, Associate researcher) is a political science researcher affiliated with the Centre Universitaire Rouennais des Études Juridiques (CUREJ) at Université de Rouen Normandie. Her doctoral research investigates free labor in peasant agriculture through volunteer networks, exploring the significance of this labor force in contexts of structural fragility within these production modes. She has recently published articles in journals such as *Travail et Emploi* (2021) and *Lien social et Politiques* (2023), focusing respectively on care practices in agriculture and autonomous food redistribution practices in Quebec, co-authored with Laurence Bherer. Currently, she continues her research on the roles and appropriations of care within work organizations.

## Notes

1. The author thanks the anonymous reviewers for their valuable feedback. Correspondence should be directed to Agathe Lelièvre at [agathe.lelievre@umontreal.ca](mailto:agathe.lelievre@umontreal.ca).
2. In 2019, WWOOF Canada hosted 4,762 volunteers and 851 hosts (including 562 volunteers and 160 hosts in Quebec), while WWOOF France had 14,813 volunteers and 1,863 hosts.
3. Joan Tronto and Berenice Fischer define care as follows: "On the most general level, we suggest that caring be viewed as a species activity that includes everything that we do to maintain, continue, and repair our 'world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web." (1990, p. 40).
4. Interview with Maryse, volunteer in Québec, Québec, 27/09/2019.
5. From the statistics provided by the association, it is evident that woofing primarily attracts young individuals, with the most represented age group being 18-35.
6. "dépayasant" in French, Interview with Mei, volunteer in Quebec, 14/05/2020.
7. Interview with Cathy, co-owner of the Inspir'action farm, Québec, 22/08/2019.
8. Womens constitute only a quarter of farm managers in France (Mutuelle Sociale Agricole, 2022) and one-fifth in Quebec (Statistics Canada, Census of Agriculture, 2021).



## Adapting to the Uncertainties of 'Desert Viticulture' in the French Pyrénées-Orientales

Tania Roser Berthet

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**Abstract:** *This paper is based on ethnographic fieldwork in the Pyrénées-Orientales department in the south of France, an area that has been experiencing drought since 2021. The general aim of this project is to examine the adaptations that farmers are making locally to socio-ecological upheaval, in order to contribute to research into bottom-up solutions to climate change. Here, we are focusing in particular on winegrowing. To achieve this, we employ an inductive methodology to document not only farmers-led experiments, but also their perception of this practice and its future viability. Observations and sixteen semi-structured interviews were carried out with winegrowers who had set up organic, biodynamic and/or natural vineyards in different parts of the department, in order to obtain a diversity of profiles. An exact transcription and qualitative analysis of these interviews were carried out afterwards.*

*This research falls within the field of environmental anthropology, which aims to explore the relationships between human societies and their environments. In the practice of wine-growing - a socio-ecological practice because of its cultural component and its deep ecological embeddedness - emotional and sometimes spiritual attachments arise that go beyond the paradigm of agricultural productivity, tracing other relationships with plants. These non-productive relationships with plants, which some anthropologists are endeavouring to describe (Laplante and Brunois-Pasina 2020), are important, even necessary, if we are to consider the sustainability of socio-ecological agricultural practices.*

*This disconcerting drought situation, far from plunging the winegrowers into immobility, is giving rise to a dynamic of rallying around climate issues. Anxiety about uncertainty is accompanied by a certain relativism about the control that humans can exert over the vines, outlining a paradigm in which uncertainty can be both a fatality and an opening up of possibilities. For example, there could be the possibility of taking better account of non-productive relationships with living beings, or of making winegrowing not a modern scalable activity that can be reproduced on a large scale (Tsing 2012), but an activity in which the local ecological context is as decisive as the human will, if not more so. For some, growing*



vines as a monoculture is seen as a practice to be overcome, as they are experimenting with diversified systems. The choice between different innovations relating to agricultural techniques such as planting, grafting, fertilisation, pruning or winemaking techniques, remains fairly diverse, but there is still a concern to support what the vine itself expresses, and the living world around it. Rejecting the productivist viewpoint imposed from outside, the winegrowers embrace a more global approach in which winegrowing is a practice that re-creates biodiversity and in which humans are seen as a force that modifies ecosystems, among many other forces.

**Keywords:** Ecological winemaking, climate change, drought, human-plant relationships, uncertainty

## 1 Introduction: winegrowers facing the local effects of climate change in the Pyrénées-Orientales

The Mediterranean basin has been identified by the Intergovernmental Panel on Climate Change as a hotspot for global warming: documenting farmers' adaptations can be of great help to imagine the future of other regions. In the Pyrénées-Orientales, a French department bordering Spain (see Figure 1), winegrowing is practised in severe drought conditions. During this study, I took interest in the concrete proposals that local winegrowers had devised and implemented. The purpose of this was to take an open-ended, ethnographic approach to all possible forms of adaptation.

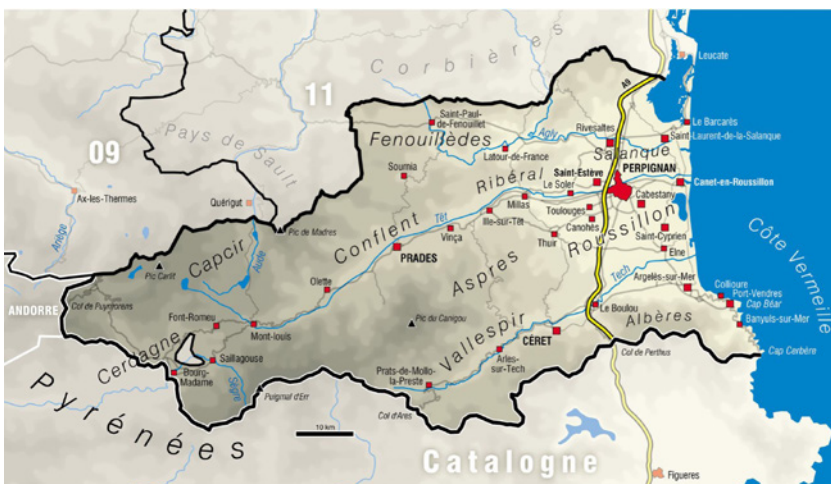


Figure 1. Carte des Pyrénées-Orientales © Graphithèque – stock.adobe.com  
Available at: <https://www.actualitix.com/carte-pyrenees-orientales.html>

The local consequences of climate change on winegrowing are numerous and sometimes imperceptible. Nevertheless, the study carried out between November 2023 and January 2024 shows that the absence of water is currently the biggest threat. Since the spring of 2022, no useful amount of rain has fallen: Eric, a winegrower who has lived in the north of the department for twenty years, points out that “the warnings have been around for 40 years. So it’s nothing new. It’s just more precise (...) Ultimately, I’d say this year, last year. I’d say we’ve been in the middle of it for 2 years” (Interview no. 9).

The drought is causing anomalies in the vines. Plant mortality is increasing, despite the predominance of grape varieties that are resistant to dry climates. Pablo, recently settled on the coast, commented: “we’re talking about extreme conditions, we don’t know if the vines are going to live (...) here the vines are suffering altogether” (Interview no. 3), while Marc, one of his colleagues, even maintains that “the long-term future of the tool is under discussion” (Interview no. 1). What’s more, planting is complicated, if not impossible, during a drought, so the renewal of ageing vines is compromised. Beyond survival, plants undergo sudden changes in their vegetative cycle, losing vigour and becoming generally more fragile. For example, winegrowers observe a severe shortening of the winter rest period (i.e. between the loss of leaves and the arrival of new buds), as well as stoppages in grape ripening during the summer. The upheaval in local ecosystems caused by climate change is having an impact on vines: thirsty boars are ravaging some vines in search of water, while many trees are dying and rivers are running dry.

## 1.1 The collective as a strength in the face of uncertainty

Despite their concern and grief, the winegrowers who took part in the study do not feel paralysed by the situation. Many expressed their determination, and sometimes, the acceptance of the eventual disappearance of their activity in this region. Eric noted that “there’s still plenty of space to try things out and to try and transform these solar constraints, the lack of water, to transform them by despising them, if I dare say a little, that’s it, it’s bringing disregard into it” (Interview no. 9). Farming is all about working with the hazards of the climate. Alexia, a young winegrower, puts things into perspective: “We’re going to adapt, we’re going to find things and then if our terroir is no longer suitable, after a while, to be able to make wine, that’s the way it is, that’s life. So, what can you do?” (Interview no. 11). Letting go doesn’t stop them from taking an active role in the situation: “It’s also interesting because you have to rack your brains to come up with solutions” (Interview no. 5), retorts Léa, who shows a great willingness to experiment with new techniques, and to share the outcome with others. Indeed, some of them feel the need to rely on collectivity to face these uncertain times<sup>1</sup>. In a village at the back of the department, winegrowers have

been organising themselves for some twenty years to share equipment, know-how, and challenges. Matthias is one of them, and he explained that “these can be really difficult times when you’re on your own, and the group also really helps you to see things together, to find solutions, that’s one of the strong mechanisms, I think, of the collectivity.” (Interview no. 15).

Between concerns for the future and determination to deal with it, “a very different, sometimes even welcoming, relationship with uncertainty” is taking shape here, as Mariani and Roser (2024) suggest. Although the challenge has taken on a different dimension today, with the drought threatening the possibility of continuing growing vines, the winegrowers interviewed continue to deal with local conditions and experiment with techniques adapted to each situation.

## **2 Adapting to drought: a diversified vineyard**

The first of the adaptations I’d like to talk about here is a response to the uncertainty inherent to agriculture: diversification, whether in terms of terroirs<sup>2</sup> or agricultural production. As Julie says, “all we can do is what farmers have always done, which is not to put all our eggs in one basket” (Interview no. 8). In the first case, diversity in terms of terroir is both a strategy for dealing with the vagaries of the weather, but also a simple desire to make wines with a distinctive taste, in a department rich in different soils. On the other hand, polyculture, that is to say diversification in terms of agricultural production, is more often directly mentioned as an adaptation to climate change. Matthias and Clara, a young couple in the Agly valley, have chosen to be winemakers and beer brewers, and they plan to diversify even more their production with beekeeping, arboriculture and growing aromatic plants. For them, taking up this challenge as soon as they set up, is a way of working towards a resilient farming system.

### **2.1 Preserving the traditions of winegrowing in a dry climate**

In terms of farming techniques, it is important to stress that local winegrowing has always been prone to drought. Traditional methods that address this problem already exist. On the Vermeille Coast<sup>3</sup>, the “xadic”, a small local pickaxe, is used to work around the vine stock to direct water towards the roots, as the local saying goes, according to Jean: “a dig of ‘xadic’ is worth two rains” (Interview no. 6). Rouvellac (2021) explains that the water drainage system on the steeply sloping plots, consisting of dry stone walls demarcating the terraces and canals (“peus de gall”, literally rooster’s feet, and “agulles”, diagonal canals, see Figure 2), was built in the 18th and 19th centuries to remedy the erosion caused by a

dry climate punctuated by intense rainfall. The erosion phenomenon was later accelerated by the use of chemical weed killers. Repairing and maintaining these structures also appears to be a way of perpetuating tradition while limiting erosion and hence the deterioration of the vineyard, anticipating the onset of longer droughts and more intense weather events.



Figure 2. Vineyards on the Slopes of Banyuls-sur-mer, with their Water Drainage System Consisting of Low Stone Walls and Canals (2023). © Tania Roser Berthet

## 2.2 Technical adaptations to vine growing

When it comes to vine cultivation, it is possible to distinguish two aspects on which winegrowers are working to create the conditions for greater resilience: work on the plant itself, and work on the plot, i.e. everything that surrounds the vine. They are looking for a vine that is stronger, healthier, more resilient to drought, rooted in a balanced environment where it needs less human intervention, therefore, a vine that is more autonomous.

“There’s a logic that plants impose for those who love plants” (Interview no. 9): for Eric, it’s a question of accompanying the vine rather than controlling it. For some years now, soft pruning, also known as physiological pruning, has been

adopted by certain winegrowers. Pablo asserts that it is one of the “techniques that are most respectful of the plant, and the healthier the plant, the better it can withstand water stress (...) it implies respect for the sap flow” (Interview no. 3). In practical terms, as Léa, who was trained in this technique, explains, it’s a question of “keeping the vine arm extended, (...) as the vine is a liana, (...) the higher it is, the more energy it sends out” (Interview no. 5). Some also allow the rootstock<sup>4</sup> to develop its root system in the soil before hand-grafting the grape variety they wish to grow. The adaptation of plant material could also make a difference: some think that it would be interesting to recover old rootstock varieties, or grape varieties that are more resistant to drought, with the idea of “bringing up” grape varieties grown further south or rediscovering pre-phylloxera autochthonous grape varieties.

Adaptation of the vine alone is not enough, since its resilience depends as much, if not more, on its living environment. From this second aspect, the first lever concerns what happens underground: the life of microorganisms, fungi and other living beings that structure the soil through their interactions, making it porous and permeable to water. “It’s the bane of viticulture to have compacted soils” (Interview no. 14), states Noah, an organic viticulture adviser. Most of the winegrowers interviewed plough at shallow depths - when the plot allows ploughing at all - in order to preserve the soil structure. Some plough in the traditional way, using animal traction. To improve soil life, particularly by adding organic matter and preventing erosion, one of the methods widely used in organic farming, and which the winegrowers are trying to implement in this area, is to implant cover crops. By sowing mixtures of several species between the rows of vines, these plant cover crops, also known as green manures, fertilise the soil and encourage microbial life. However, they are a real technical challenge in such dry climates. In spite of all its positive effects on biodiversity, cover crops can compete with the vines for water, which can considerably weaken them. To compensate for this, and because water is becoming increasingly scarce, the plant cover is destroyed in spring and left on the soil to feed it with organic matter and keep it moist. Others opt for spontaneous grassing, pulling up only certain species by hand: cover crops are a substantial investment of time and money, and are not accessible to everyone, nor is it feasible in all plots.

With the same concern to leave room for biodiversity around the vines and in the soil, some are experimenting with agroforestry, which involves growing trees alongside the vines (fruit trees in particular, or carob trees, a local drought-resistant species). This practice is the subject of much debate, with some people arguing that it is not viable in these climatic conditions. In the Albères massif, Victor defends agroforestry as a means of recreating resilient ecosystems over the long term, while accepting the phenomenon of competition between vines and trees:

“There may be some competition next to it. But maybe that tree will give you a much more beautiful vineyard, say from 3-4 metres away (...) There’s also that, let’s say, biodiversity around you, it can be so beneficial that you say well then, should I be tolerant and leave a little bit for your neighbour who’s a bit greedy but he gives you something else? (...) Nature, in fact, has no limits, but on the other hand, it’s capable of giving things on the side, because it’s thanks to the tree that we’re going to store carbon, we know that perhaps it needs water, (...) the tree is going to bring back humidity too, it’s going to bring back water (...) Not water perhaps from the sky, but it’s water that’s regenerated, that’s going to turn back into dew and humidity.” (Interview no. 12).

All these technical adaptations, only some of which I have presented here, are complementary and cannot have positive effects on the resilience of the vines on their own. “You realise that no matter how you turn all the problems on their head, the crux of the matter is really the lack of water. Without water, these adaptation levers will be useless” (Interview no. 5) outlines Léa. I’m now going to focus on the more fundamental aspects of the response of human societies to climate change: the relational and emotional aspects, which underlie the political aspect of small-scale winegrowing against the industry of wine.

### 3 Knowing, understanding, and working with vines through nonscalable winegrowing

“Here, the terroirs are quite complicated to get to know and understand:” the terroirs of this region are rich and very diverse, which is Eric, who has over twenty years’ experience asserts that “not everything is true everywhere, it’s very difficult to draw general conclusions” (Interview no. 9). In fact, the adaptations to climate change described above are always implemented according to the means available, the plot of land and the state of the vines: “Each plot of vines is different, each story. (...) So you have to judge everything for each vine, ask yourself a different question, and then your intuitive side takes over” (Interview no. 2) explains Lou, a winegrower from Banyuls-sur-mer. This diversity makes winegrowing an activity that is particularly “embedded in its ecology”, tracing the contours of an ecology of attention focused on a detailed knowledge of the vines. My interlocutors are winegrowers who have chosen these ecologies, that of the land and that of their minds. They illustrate what Anna Tsing calls *non-scalable activities*: going against the grain of the homogenisation<sup>5</sup> and mechanisation of viticulture, they sketch out a diversity of practices, know-how and relationships to the living world that prevent each of their viticultures from being reproducible and expandable identically, and therefore ultimately, industrialisable.



### 3.1 A diversity of relationships with vines

The heterogeneity and *nonscalability* of these winegrowing activities is based on transformative relationships, a diversity of relationships to the vine, but also between humans. For many, the social dimension of wine, what this drink does to people and how it connects them, was a driving force in choosing this activity.

“And then there’s a relationship, there’s a relationship to the vine, between the vine and the winemaker that’s different too. There’s a connection, really. There’s really a connection that’s made, which means that it gives more scope to the job too, to what we do, it’s more nourishing on a purely spiritual level, it’s much more nourishing to work like that” (Interview no. 8).

For Julie, working biodynamically means forging relationships with the vines, but also being aware of terrestrial and cosmic influences that go beyond the interaction between humans and vines, and which can be expressed in the wine. For others, making natural wines, or rather allowing wines to stand on their own without sulphur, means giving wine the opportunity to bear witness to the relational history that constitutes it and offering humans a “speculative mode of exploring the possible”, as argues Mariani (2021).

Far from limiting themselves to a productive relationship with the vine, winegrowers are responding to the ecological crisis by forging bonds of trust, spiritual, intimate, and emotional bonds with the vine. Although I have only just scratched the surface of the diversity and depth of these bonds, I want to emphasise just how vital they are in imagining new futures for winegrowing, futures that are resilient and unique.

## 4 Conclusions

Laplante and Brunois-Pasina (2020) wrote:

“taking the singular life of plants seriously is a way of liberating thought or finding new or old ways that plants have of enabling us to do things differently when we listen to them rather than maintaining a deafness when we seek to domesticate or control them, both in practice and in thought”

Their words echo the discussions I've had with the winegrowers. I often found this sense of listening to plants in their words, as well as a desire not to dominate them but to work with them, giving them back a certain autonomy. The adaptations deployed aim to take their singular life seriously, by making them more resistant to drought and resilient, therefore allowing them to express themselves in the land and in the wine, but also by strengthening human resilience when plants don't take the expected path.

Nurturing each other, technical, economic, relational, political, emotional and spiritual issues come together, as we start to consider socio-ecological adaptations of winemaking to climate change. A shift towards non-productivist visions is emerging, a desire to recreate the communities that the industrialisation of agriculture, the result of the modern paradigm, has weakened. Creating bonds, with the vine and between people, opening up spaces to welcome uncertainty and, at the same time, letting external things have an influence on humans and their agriculture, is here a form of radical adaptation.

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## Methodological Appendix

This fieldwork was conducted between November 2023 and January 2024, in the Pyrénées-Orientales, a south-east french department. The methodology employed for this fieldwork is relative to a qualitative ethnographic study. 16 semi-directive interviews were conducted: 15 with local winegrowers and 1 with a winegrowing consultant.

The semi-directive interviews were conducted with an interview grid regarding general thematic on the subject of climate change and winemaking, with the scope of it being general enough to collect data of different forms of adaptations. The thematic were the following, with a series of questions detailing each one: personal history that led to winemaking, description of the characteristics of their work and their vineyards, perceived local impacts of climate change, experimentations and adaptations to the situation, perception of risk and uncertainty.

The interviewees were contacted through a snowball sampling. To ensure a diversity of profiles, interviewees were picked in different parts of the department (along the coast, in the mountains at the back of the department and in the hills of the Roussillon plain), of different ages and gender. All of them practise ecological winemaking, because the aim of the study was to explore all forms of adaptation to climate change within people producing agricultural alternatives, but there is a diversity of practises between ecological, natural, and biodynamic winemaking. All the interviewees were anonymised during the analysis of the data, therefore the names used in this paper are fictional.

The other method employed during this fieldwork was observation. Observations were conducted while walking through the vines to examine their aspect, their state in a drought period, and their evolution through the weeks, which enabled a better understanding of the issues at stake and to add relevant questions about the vines during the interviews. Walks in the vines with winegrowers and watching them at work, allowed a deeper understanding of technical aspects and motivated them to talk about their relationship with the vine while they were in contact.

The analysis of the data began with a complete transcription of the 16 interviews. It was then followed by an inductive thematic analysis using tables to dissect the interviews. Finally, the interpretation puts in perspective the data with a more general perspective on the alternatives to industrial agriculture, introducing some considerations on the roots of adaptations to climate change.

## Biographical Note

Tania Roser Berthet is currently doing a PhD between the University of Vic (UVic-UCC) and the Muséum National d'Histoire Naturelle in Paris, where she was a contractual researcher. Her work focuses on women in agroecological winegrowing in Catalonia and Occitania. Her broader research interests are the production of agricultural alternatives to the modern and industrial model, and the intersection between feminism and agroecology, with a sociological and anthropological perspective.

## Notes

The author wishes to thank Léo Mariani, for the opportunity he's given me for conducting this study and for the freedom accorded in the fieldwork, and also for the theoretical contribution and discussions we've had and which have enriched this article. The financial support of Abeille Assurances for the fieldwork conducted in 2023 is gratefully acknowledged. Correspondence should be directed to Tania Roser Berthet at [taniaroser@proton.me](mailto:taniaroser@proton.me).

1. According to rural sociologists, the strongly communitarian and family-based dimension of agriculture has gradually given way to various forms of organisation (family farming, corporate farming, subsistence farming) following the upheavals of the capitalist system and globalisation: Hervieu and Purseigle (2009) argue that "these upheavals include the development of a more capitalist form of agriculture, the presence of non-agricultural producers, new forms of capital ownership, the increase in salaried employment and the individualisation of the profession". This is why it seems important to highlight the perseverance and emergence of collective dynamics.
2. There are many debates about the definition of terroir, but here we will use the notion of terroir as used by our interviewees, referring to a specific location in the department that combines climatic factors, a surrounding ecosystem and a particular type of rock in the soil, creating a combination of conditions that influence the wine.
3. The Vermeille Coast encompasses the last four coastal communes before the Spanish border, with their characteristic wine-growing landscape: Cerbère, Banyuls-sur-mer, Port-Vendres and Collioure. In the second half of the 20th century, winegrowing flourished with the advent of cooperatives producing large quantities of sweet wine, according to Rouvellac (2013).

4. The need to graft varieties onto American rootstocks arose after the phylloxera crisis. The 19th century was marked by an invasion of this insect, accidentally introduced from the United States. The crisis was finally overcome by the adoption of grafting plants onto resistant American varieties. Today, plants are often bought from specialists who use machines to carry out the grafting, producing what are known as Omega plants.
5. Anna Tsing (2012) defines *scalable* projects as follows: “scalable projects are those that can expand without changing (...) Scalability is possible only if project elements do not form transformative relationships that might change the project as elements are added. But transformative relationships are the medium for the emergence of diversity. Scalability projects banish meaningful diversity, which is to say, diversity that might change things.” *Scalability* prevents diversity; conversely, *nonscalable* projects are always subject to the possibility of change through their transformative relationships. Winegrowers, integrated into these webs of transformative relationships, take account of this possibility and the uncertainty that comes with it.



## **Emprendimiento de las personas migrantes: apuntes teóricos acerca de la experiencia de construcción del ecosistema social en Tenerife (Canarias)**

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**Resumen:** Este trabajo constituye el informe preliminar de la investigación-acción sobre el proceso de construcción del ecosistema que conforma la actividad emprendedora de las personas migrantes afincadas en Tenerife. Al tratarse de una investigación en pleno desarrollo, en las páginas que siguen se presentan los resultados de la fase de la revisión bibliográfica. El objetivo principal de esta primera reflexión persigue trazar un marco teórico capaz de relacionar las conceptualizaciones acerca del trabajo, el medio ambiente y las migraciones. Se trata de una línea del pensamiento que sitúa a los procesos de adaptación laboral de las personas migrantes en una perspectiva más amplia. Las migraciones, entendidas hasta ahora dentro del paradigma económico o político, cobraron un nuevo sentido junto con la investigación desde la perspectiva de los derechos humanos sobre la crisis medioambiental. Desde esta nueva perspectiva los desplazamientos humanos se pueden contemplar como adaptación a los cambios sociales complejos. En esta adaptación se despliegan los procesos de una nueva sostenibilidad social que se hace visible en la construcción de un sistema de inserción laboral a través del emprendimiento de las personas migradas o diversas reinversiones de la actividad laboral.

El punto de partida de este artículo son los estudios que afirman que el trabajo es el eje central de la relación entre la humanidad y la naturaleza, ya que se refiere tanto a los recursos naturales como a la sociedad que se organiza en torno al aprovechamiento de éstos. A continuación, se añaden al binomio trabajo y medio ambiente, los estudios sobre las migraciones. Se observan dos tipos de relaciones: las establecidas a partir de la redefinición de los factores de empuje, que se refieren a las migraciones como resultado de la crisis socio ambiental y, por otro lado, las relaciones que describen el emprendimiento y las nuevas asociaciones como formas de adaptación de las personas migrantes a la crisis actual. Las primeras, resultado del giro en la investigación sobre las migraciones climáticas, demuestran que los movimientos migratorios son uno de los resultados de las políticas neoliberales implantadas en los países del sur global.

*La segunda de las relaciones entre las migraciones y la crisis medioambiental se observa a partir de los estudios que describen las respuestas de las personas migrantes al desarraigo, tras perder su medio natural y social. Entre éstas se mencionan la construcción de las nuevas formas del tejido social (redes sociales, imaginarios), las nuevas cadenas de empleo, y los nuevos imaginarios sobre la ciudadanía.*

*Es esta síntesis la contribución más específica de este trabajo, que añade que la crisis medioambiental es un proceso paralelo a la descomposición social y que las nuevas asociaciones sociales que generan las personas migrantes son una dinámica de la respuesta a la triple alienación que sufre este colectivo: desarraigo del lugar, de la pertenencia social, y de la actividad humana.*

**Palabras clave:** *Migraciones ambientales, trabajo, ecología integral.*

## 1 Introducción

De entrada, hay que señalar que las discusiones que abordan al mismo tiempo estas tres cuestiones – el trabajo, la crisis medioambiental y las migraciones –, son muy recientes. La desvinculación de cualquier asunto social de la problemática de la crisis medioambiental, es un contexto de investigación social muy generalizado, a pesar de que las apelaciones para cambiar estas epistemologías comenzaron ya en los años noventa con la publicación de la obra de Bruno Latour *Nunca fuimos modernos* y siguen repitiéndose de forma cíclica (Islam, 2021; Funtowicz y Rawetz, 2000; Gómez y Taeli, 2015, Rifkin, 2014).

Este trabajo recoge el desafío señalado, presentando, en el primer capítulo, las perspectivas ampliadas sobre los vínculos entre el trabajo y la naturaleza; en el segundo, resumiendo estos estudios que describen las relaciones entre las migraciones y la crisis medioambiental; y, por último, aclarando que las cuestiones como migrar y trabajar forman parte de un ecosistema complejo de la vida humana en sociedad. En este ecosistema, que tiene raíces biológicas y que parte de un medio natural, hay una esfera intermedia entre la naturaleza y los productos de la civilización. Esta esfera intermedia se refiere a los procesos de asociación y organización humana y creación de nuevas interpretaciones acerca de las oportunidades vitales, cuestiones que resultan imprescindibles para el funcionamiento de cualquier proyecto relacionado, como el levantamiento de una fábrica, o la formación de un sindicato. Son estos vínculos y redes sociales, entendidas como argamasa que media en la conversión de la naturaleza en productos de trabajo, las que moldean a los sujetos, las que constituyen la clave de la cuestión social y las que urge a poner en valor para poder hablar de la ecología integral (Ghillini, 2020).

Esta apuesta por revertir el orden de los imperativos que organizan nuestra forma de entender las relaciones entre la sociedad y los derechos de la naturaleza, consiste en poner en el foco el fortalecimiento de los sujetos de las normas prescindiendo a la vez de promulgación de nuevos derechos sin la capacidad de revertir ninguna situación, como nos recuerda Aparicio (2023). Y es que, de acuerdo con el autor mencionado, la estructural fragilidad de los derechos de la naturaleza es la muestra del flagelo de los sujetos y de las formas sociales que nos sostienen. Se trata del flagelo ejercido por las políticas neoliberales que, en su lógica de perseguir la plusvalía, acaban por igual con los recursos naturales y sociales.

Por último, en esta tarea de visualizar la importancia de la cuestión social de la naturaleza, resulta de gran interés recordar aquí estos trabajos que denuncian que los ciclos de vida de las personas han quedado supeditados a los ciclos de mercado y reclaman poner en valor todas estas prácticas que, sin ser lucrativas, resultan imprescindibles para asegurar la supervivencia humana. En este sentido, este trabajo se suma a los trabajos sobre la "sostenibilidad de la vida" que reivindican poner en el centro de cualquier estudio social el valor de la vida humana y el cuidado de las personas en el sentido amplio, en el sentido que arguye que trabajar por el bien común es lo que mantiene la vida (Magliano y Arrieta, 2021; Lagareta, 2014, Bosch, Carrasco y Grau, 2005).

En el caso de este estudio, el punto empírico que dio pie a las búsquedas teóricas reseñadas, ha sido la observación de nuevas formas de colectividad entre las personas migradas en Tenerife. Aunque en este trabajo no se hablará de este proceso, ya que las dimensiones de este texto apenas permiten reseñar el marco teórico, conviene señalar los hechos más significativos. Se trata de un proceso observado desde 2019. Año que coincide con la formalización de la *Asociación Social Solidaridad Venezuela* en Tenerife (Islas Canarias) y la consolidación de su apuesta de promover, potenciar, y concienciar sobre la acción voluntaria y el tejido asociativo de las personas migradas. A la vez, surgen iniciativas parecidas y sus alcances permiten hablar de un giro en las dinámicas asociativas de las personas migrantes. Las asociaciones comienzan a crear e impartir cursos y talleres modificando y adaptando, al mismo tiempo, la temática a sus intereses. En cuanto a este último rasgo, se observa que las acciones anteriores, centradas sobre todo en los temas de la sensibilización cultural, ceden un lugar a los temas más específicos que guardan una estrecha relación con la inserción laboral de las personas migrantes y con la autogestión de los recursos necesarios. Entre las acciones destacan: curso sobre la homologación de títulos extranjeros, certificado digital, reclamación de cumplimiento de los derechos de las personas migrantes, cómo realizar el empadronamiento o lograr el bono gratuito para residentes, acciones de ayuda asistencial, entre otras.

En el mismo período surgen otras entidades como la *Asociación Migrantes Emprendedores*, y varios de los líderes entran en contacto con la Organización Internacional de las Migraciones y sus programas de capacitación. En líneas generales, se trata de un proceso de emancipación de las entidades lideradas por las personas migrantes que a su vez exhibe microprocesos de construcción de nuevas conexiones sociales. Entre estas acciones nos interesan las que se refieren a la reconstrucción del tejido social implicado directamente con el empleo. Todas estas acciones han sido observadas o incluso compartidas directamente por la autora de este trabajo. Ha sido durante este proceso de observación participante cuando surgió la necesidad de interpretar los cambios presenciados desde una teoría que atestigua las conexiones de lo ocurrido con las causas estructurales de las migraciones, resaltando el carácter adaptativo de las nuevas actividades asociativas de las personas migrantes.

En lo que sigue, este estudio presentará marcos teóricos que desvelan implicaciones profundas de las dinámicas de creación de empleo. La primera parte destaca el valor social del trabajo y su relación con la construcción de sujetos sociales emancipados y, a la vez, garantes de la gestión equilibrada del medio, sea ambiental o social. La segunda parte destaca que las migraciones son una de las consecuencias de la crisis medioambiental y sus esfuerzos para reconstruir las condiciones de un trabajo digno; además de ser un esfuerzo adaptativo, también es un esfuerzo para revertir las dinámicas sociales cómplices de la situación actual.

## 2. El trabajo como cuestión social de la naturaleza

De entrada, hay que señalar que, entre los estudios sobre la crisis medioambiental, los referentes al empleo son los menos frecuentes y suelen centrar su atención en la degradación de las condiciones de trabajo (Escribano, 2023). También han calado los trabajos que denuncian las pseudoprácticas ecologistas desarrolladas por las grandes empresas que consisten en etiquetar sus prácticas de siempre con nuevos rótulos, como *empleo verde*, *transición verde* o, incluso, *pacto verde*, (Escribano, 2023; Carraau, 2023). En relación con esta tendencia, los mismos estudios informan que las normativas que regulan los llamados empleos verdes, aseguran los derechos laborales de los colectivos cada vez más reducidos.

Por otro lado, destacan los estudios que conciben el trabajo como una de las actividades humanas más completas. Este conjunto de estudios describe el trabajo como los modos de aprovechamiento de los recursos y una argamasa que organiza a los seres humanos en relación al medio ambiente (Rifkin, 2014; Shiva, 2012; Latour, 2007; Ostrom, 2000; Riechman y Buey, 1998). Desde

esta perspectiva se aprecia que el empleo es el mecanismo que asegura la supervivencia de la sociedad, no en términos económicos sino humanos. Pues sólo a través de este mecanismo se forman importantes vínculos sociales, interpretaciones de la realidad e imaginarios sobre el futuro. De acuerdo con Bosch, Carrasco y Grau:

Desde esta nueva colocación, podemos intentar decir qué es el trabajo. Para ello nos sirve recuperar la idea de trabajo antigua, anterior a la industrialización y al capitalismo: una idea de trabajo transistémica, no identificable con el empleo de una sociedad capitalista. Desde esta perspectiva, el trabajo en sentido amplio es una actividad que se desarrolla de manera continua y que forma parte de la naturaleza humana. De hecho, entendemos el trabajo como práctica de creación y recreación de la vida y las relaciones humanas (Bosch, Carrasco y Grau, 2005: 9).

De este modo, Aparicio (2023) inserta la cuestión del trabajo en los derechos de la naturaleza, es decir, un marco global que reconoce la interdependencia entre los humanos y la naturaleza y de todos los sistemas que se puedan desarrollar a partir de las relaciones devenidas entre éstos. Según este autor, adoptar los derechos de la naturaleza permitiría reconfigurar el conjunto de los derechos y, sobre todo, terminar con la separación del derecho clásico entre sujeto y objeto, Estado y mercado, individuo y comunidad, comunidad y su medio ambiente. La reconfiguración que reclama este autor debería incorporar el reconocimiento de la importancia y de la complejidad de la vida comunitaria, de la reciprocidad de los contactos entre los que conforman comunidades y de su dependencia del medio de vida. Este nuevo escenario de triangulación del concepto de la naturaleza lleva a este autor a pensar en el medio ambiente como un espacio común. El trabajo, en este ámbito de lo común, aparece como la actividad vital que más interdependencias exhibe.

A partir de esta nueva puesta en escena de la noción del trabajo se configuran dos ramas de pensamiento. Por un lado, destacan los trabajos que entienden el trabajo como argamasa del tejido social. Por otro lado, se profundiza sobre el trabajo como una actividad constitutiva de los sujetos. En cuanto a la primera acepción, el nuevo orden social que se comprende a partir de la globalización, reivindica la renovación de los vínculos humanos:

La democracia de la tierra proporciona una opinión alternativa del mundo en la que los seres humanos son parte en la familia de la tierra. Comenzamos a ver que estamos conectados unos a otros a través del amor, la compasión, la responsabilidad ecológica y la justicia económica, que sustituyen avaricia, consumismo y competencia como objetivos de la vida humana (Shiva, 2004).



También desde esta perspectiva se analizan cuestiones acerca del decrecimiento y la sociedad convivencial (Latouche, 2007). Para los defensores de esta perspectiva, el trabajo, como proyecto común, crea lazos de solidaridad y constituye procesos alternativos a los procesos de descarte, expulsión o de obsolescencia programada de los empleados actuales (Ghillini, 2020). En este grupo de trabajos también aparece una reflexión acerca de la necesidad de reconfigurar los programas de la mayoría de los sindicatos (Olmedo y Ceberio de León, 2011; Fernández Buey, 1998).

En cuanto a la segunda implicación social del trabajo, Aparicio (2023) nos recuerda que la constitutiva fragilidad de los derechos, especialmente de los que más lo necesiten, denota la fragilidad de los sujetos. Una fragilidad, que siendo resultado de la desarticulación de los vínculos sociales y de las estructuras colectivas que nos sostienen, a consecuencia del sistema capitalista también se convierte en el factor más importante de la falta de participación democrática. A esta cualidad del trabajo como factor constituyente de la subjetividad ciudadana, Ghillini (2020) añade que trabajar sin alienación, se convierte en procesos de dignificar la existencia humana en el sentido de integrar la acción vital de subsistir con la gestión responsable de los recursos naturales y sociales.

### **3. Problemas y posibilidades que encierra la definición de las migraciones: cuestionamientos epistemológicos de la separación de los motivos ambientales, económicos y sociales**

La definición más consensuada sobre lo que son las migraciones parte de la demografía, y expone que se trata de desplazamientos humanos de un lugar a otro. Nada más lejos del último Informe de CODESMA (2021) que apunta un nuevo récord en los desplazamientos humanos. Según los datos que ofrece este documento, han sido 40,5 millones de personas de un total de 49 países que tuvieron que abandonar su hábitat tradicional a lo largo del 2020. De éstos, hasta 30,7 millones de desplazamientos han sido causados por fenómenos climáticos y meteorológicos, como las tormentas, inundaciones, sequías, temperaturas extremas o eventos geofísicos como terremotos o erupciones volcánicas. Esta estampa de millones de desplazados que atribulan las noticias a diario, condensa el mensaje de un mundo en movilización, pero también incorpora una serie de interrogantes. ¿Cuál es la diferencia entre las migraciones económicas y las medioambientales? ¿El mal enfoque de la cuestión migratoria pudo ser una de las causas de la insuficiencia de los medios para su gestión o de la evitación de las responsabilidades?

Resulta de interés subrayar que la definición de las migraciones medioambientales, al igual que el tema del calentamiento y de la crisis climática, es un proceso que desde los años 70 intenta hacerse hueco en las discusiones públicas, siendo sistemáticamente opacado por el discurso de la ONU y una considerable parte de la academia que de forma acrítica reproduce los enfoques acerca del control de las migraciones y desatiende las relaciones entre las causas económicas de otros factores de las migraciones (Ascanio Sánchez, García Cuesta y Rostecka, *en prensa*).

Cabe añadir que de forma paralela a este proceso se ha desarrollado una muy importante epistemología de las investigaciones postmarxistas que demostraron desde diferentes ámbitos que el desarrollo del capitalismo ha sido posible gracias a los movimientos migratorios, al proporcionar mano de obra barata, dócil y desechable en cualquier momento (Castles y Kosack, 1973; Sassen, 1988; Robin, 1987, entre los más influyentes). Sólo recientemente han surgido propuestas que defienden una definición de las migraciones forzadas por motivos socio ambientales “como la expulsión de las personas de sus territorios debido a factores sociales, políticos, económicos y culturales relacionados con la degradación del ambiente” (Ariza de la Cruz *et al*, 2022: 15).

Lo más interesante de estas discusiones, deducido a partir del proceso de la ampliación de la definición de las migraciones en relación a sus causas, es otra contingencia y que apunta hacia la definición de las migraciones aún más amplia. Y es que partiendo de la evidencia de que las migraciones socio medioambientales surgen a raíz de las relaciones entre el deterioro del medio de vida y el deterioro del tejido social, resulta lógico afirmar que los procesos que se desprenden de esta movilización humana no son otra cosa que la convergencia de múltiples procesos de sostenimiento de la vida.

#### **4. Trabajo de las personas migrantes: desde el destierro a la respuesta solidaria**

Sobre el trabajo y las personas migradas se puede decir que es “un doble y creciente proceso de precarización de la naturaleza y naturalización de la precariedad laboral” (Olmedo y Ceberio de León, 2011, p.13). Tenemos, por un lado, el expolio de los recursos naturales, la degradación del medio ambiente, y la consecuente expulsión de los pueblos; y, por otro lado, ya durante el proceso de asentamiento, nos encontramos con las poblaciones enteras condenadas a vivir en condiciones de pobreza extrema. La falta de regulación del estatus de las personas migrantes fuera del país de origen, las dificultades para conseguir permisos de trabajo, las trabas en los procesos de reconocimiento de las cualificaciones, la falta de redes sociales, son las causas de exclusión laboral

de este colectivo y los factores de la alienación social. Esta situación general también la confirman los estudios sobre el empleo de las personas migrantes en Canarias. Las personas migradas son un colectivo que ocupa puestos de trabajo de baja cualificación, habitualmente en el sector de servicios y hostelería los hombres y en el servicio doméstico las mujeres (OBECAN, 2023). Se trata de una dinámica histórica, condicionada políticamente, que perpetúa las condiciones de exclusión de la inmigración (Rostecka, González García y Plasencia Mendoza, 2007) y sostiene la estratificación social en Canarias (León Santana y Godenau, 2015).

Sin embargo, también existen estudios que describen el trabajo de las personas migradas como las dinámicas de respuesta, adaptación o, incluso, nuevas formas de ejercicio de ciudadanía. Así, las situaciones de crisis ambientales han servido para afrontar desafíos e incluso cambiar roles de género (Enarson, 2000), movilizar el colectivo de las mujeres y promover nuevas actividades, como indica la Organización Panamericana de Salud en numerosos informes (Paho.org). También se ha defendido que las mujeres migrantes en los espacios urbanos periféricos despliegan la sostenibilidad de la vida participando en la reproducción familiar y habilitando formas concretas de ejercicio de ciudadanía (Magliano y Arrieta, 2020).

Por otra parte, destacan los estudios que describen la autoorganización de las personas migradas como formas de reconstrucción del tejido social (Rostecka, 2013; Escala Rabadán, 2005; Moctezuma Longoria, 2005). En todos estos trabajos se narran diferentes formas de construir y legitimar la causa social de las migraciones que siempre sostiene la actividad de levantar una comunidad.

Últimamente, al menos en lo que concierne a la causa migratoria en Canarias, se observa que las entidades de las personas migrantes se organizan para resolver problemas muy concretos: el acompañamiento y la gestión de los procesos de regularización, el reconocimiento de las cualificaciones profesionales, la reclamación de derechos fundamentales como atención médica primaria, son quizás los más representativos. No cabe duda que se trata de unas acciones diseñadas para superar los obstáculos tradicionales de una integración malograda, pero en la medida de su desarrollo también vislumbra otra dimensión de la actividad de estas asociaciones de nuevo cuño. Una dimensión que de entrada tiene rasgos de una actividad al servicio de la comunidad:

Esta entidad sin ánimo de lucro surgió con la finalidad de ayudar, asesorar y defender a las personas migrantes provenientes de Venezuela que, en ciertos casos, se vieron en la obligación de retornar a Canarias. Cabe destacar que en la actualidad prestan sus servicios a cualquiera que lo necesite, sin importar su país de origen. «Nuestro objetivo principal es hacer que la vida de estas personas sea digna y decente» (...) (de León, 2023).

De este modo nos acercamos a esta otra dimensión del trabajo que media entre la sociedad y la naturaleza y que forma parte imprescindible de los procesos de sustento de la vida: la creación de los vínculos, mantenimiento de los valores como la solidaridad, la dignidad humana. Algunos de estos valores ya deberían calificarse como patrimonio cultural; antes de que esto ocurra, recordemos que se trata de una parte integral de nuestro ecosistema.

## Discusión y conclusiones

Este artículo se ha propuesto debatir dos cuestiones clave en relación a la emergencia climática. En primer lugar, se ha demostrado la noción ampliada del trabajo en vista de que, a su forma intuitiva, entendida como conducto entre la naturaleza y la sociedad que transforma la materia prima, se añade el valor social del trabajo. En consecuencia, se propone entender el trabajo como una actividad que constituye a los sujetos como seres sociales y como el eje de la organización social. Siendo así, resulta lógico asumir que mantener el ideal de la solidaridad, crear las comunidades en busca de formas de acceso al trabajo para las personas especialmente perjudicadas, son prácticas por excelencia ecológicas relacionadas directamente con las prácticas de sostener la vida.

De esta primera afirmación deriva la pertinencia de la segunda cuestión debatida en este trabajo: las migraciones socio ambientales. La definición de las migraciones que defiende este artículo, es la que mantiene que se trata de procesos de expulsión sistémica en la que participan por igual los factores sociales, políticos, económicos, y culturales, relacionados con la degradación del medio ambiente (Ariza de la Cruz et al). Lo que viene a visualizar esta definición es que, en los procesos de degradación del medio ambiente, las personas y la comunidad, en general, son un elemento más a explotar. Las personas migrantes por razones socio medioambientales casi nunca alcanzan las mismas posiciones sociales en los países de asentamiento. Sea por falta de reconocimiento de los títulos, sea por falta de las redes o una preponderante necesidad de trabajar en cualquier cosa, todas estas circunstancias del trabajo migrante son la muestra de un despojo de las habilidades, vínculos sociales y participación social en general<sup>1</sup>. Los trabajadores migrantes son un colectivo de trabajadores y sujetos precarios, marginalizados en el ejercicio democrático a consecuencia de los procesos migratorios que se han desarrollado en estrecha relación con los procesos de explotación de los bienes materiales de los países de procedencia de la inmensa parte de este colectivo. Por esta razón, y desde la perspectiva de la ecología integral, las actividades emprendidas desde este colectivo en aras de mitigar las consecuencias de estas situaciones tienen el carácter de prácticas de adaptación.

Concluyendo, en cuanto al aporte general, este trabajo aspira a ser útil en la creación del conocimiento sobre las formas de la mitigación de las consecuencias de la crisis medioambiental, particularmente en lo que a la adaptación social se refiere. Tarea imposible a desarrollar sin los aportes previos de los estudios sobre los derechos humanos y el ecofeminismo.

En cuanto a la aportación específica, este trabajo afirma que las estrategias de adaptación de las personas migradas por razones socio medioambientales, como rehacer el vínculo social o reconstruir las formas de participación social, son medidas de sustentabilidad social creadas en la respuesta a la crisis. La importancia de este nuevo enfoque acerca del trabajo de las personas migradas, que se nutre del concepto *proceso de ecologización de los derechos* (Aparicio, 2023), es la contingencia de integrar las experiencias vitales, los ciclos de vida y organización social a las discusiones sobre la crisis medio ambiental.

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## Apéndice metodológico

El objetivo principal del estudio del cual aquí apenas se presenta la parte introductoria, consiste en visualizar los movimientos asociativos de las personas migrantes que luchan por dignificar sus condiciones de vida. En este sentido aquí sólo se presenta la parte de producción del marco teórico que intenta hilar las nuevas tendencias sociales que van de la mano de las asociaciones de las personas migrantes en el contexto de cambio climático. Este estudio surge de la observación-acción de las asociaciones de las personas migrantes que muestran nuevos patrones en las estrategias. Los hechos observados son los esfuerzos por emprender y crear nuevas formas de organización de las redes de colaboración, cambio del perfil de las actividades hacia la especialización en competencias laborales y desarrollo de amplias colaboraciones con la sociedad de Tenerife. A partir de estas observaciones previas se forma la hipótesis de que las cuestiones observadas encarnan un movimiento global que promueve formas de reorganización económica local y que revierten, al mismo tiempo, las lógicas impuestas por las políticas neoliberales y las referentes al control de las migraciones.

El desarrollo de este trabajo consiste en la revisión de la bibliografía especializada acerca del tema acotado por estas tres dimensiones: las migraciones, el trabajo y el cambio climático. Así, este trabajo presenta la parte de una revisión bibliográfica especializada y ajustada al reto planteado. Como requisito de entrada, se seleccionaron aquellos estudios que denotan contenidos alternativos a los planteamientos alineados con las políticas neoliberales ligadas al extractivismo, que plantean una crítica a estos y desarrollan teorías que promueven el pensamiento constructivo. Para conseguir este fin la selección de la bibliografía ha tenido en cuenta tres aspectos a) que los trabajos analizados tengan en cuenta las experiencias de los Países del Sur Global, b) que la difusión de estos trabajos se haga a través de los repertorios específicos y que defienden los derechos ambientales como CLACSO, c) que sean trabajos recogidos por las plataformas de información y divulgación que publican trabajos de los autores del Sur Global, como Redalyc. Con este procedimiento este trabajo se suma a propuestas como Lander (2000) y Gil Araujo, Rosas y Baiocchi (2023) para minimizar la reproducción de las lógicas coloniales tan visibles en la construcción y difusión del conocimiento.



## Nota biográfica

Barbara Rostecka es profesora del Departamento de Sociología y Antropología de la Universidad de La Laguna y tutora de la UNED. Desde 2019 es Secretaria técnica de la Cátedra Cultural Globalización, Migraciones y Nuevas Ciudadanías<sup>2</sup>, entidad en el marco de la cual desarrolla investigación acción con las asociaciones de los inmigrantes afincados en Tenerife y promueve divulgación científica sobre los temas que resume el nombre de la entidad. Es doctora por la Universidad de La Laguna (distinción *Cum Laude*), Máster en Derechos Humanos, Democracia y Globalización (UOC). Pertenece a numerosos grupos de investigación, como: Migraciones, género e identidades" (MIGEID), Redes de cooperación interuniversitaria Canarias-África (2019-2023), Religión, extranjería e identidad europea (2018-2021), Redes de cooperación interuniversitaria Canarias-África (2018-2021), Migraciones Climáticas y Refugiados (MASCARAS), Procesos Transnacionales y Migración (BUAP, México). Sus líneas de investigación, además de las migraciones, abordan los temas como la educación y cambios sociales, perspectiva de género y derechos humanos.

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## Notas

1. El 54% de los trabajadores extranjeros con estudios universitarios está sobrecualificado frente al 33% de los españoles, como revela un análisis exclusivo de la mayor encuesta laboral de Europa" (Sánchez Idalgo et al, 18 de abril, 2024).
2. <https://www.ull.es/catedras/globalizacion-migraciones-ciudadanias/>





**SOCIOECOS**

Climate Change, Sustainability  
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## **TRACK 3**

### ***Social-ecological practices in living and consumption to fight climate emergency***

*Sustainable housing; sustainable cities;  
eco-markets; social practices in search  
for alternative energy sources; energy  
cooperatives and energy sovereignty;  
architecture and design for sustainable  
living and environments; biodiversity  
in rural and urban environments; urban  
nature; the ecological impact of alternative  
energy sources; the negative impact of  
windmills and solar plants on natural  
environments; eco-tourism*



## Navigating Energy Transitions: Perspectives from Sardinia and Corsica Amidst Environmental Challenges and Internal Colonization

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**Abstract:** *In the face of pressing environmental and geopolitical challenges, the imperative of energy transition has risen to the forefront of political agendas worldwide. To address these challenges, the energy transition will require changes in both energy production and consumption. Sustaining current energy supply levels or meeting energy demand with existing energy mixes will pose challenges.*

*In recent decades, efforts to reduce energy consumption and its resulting impacts have focused on increasing energy efficiency, complemented by a growing adoption of renewable or low-carbon energy sources. Nevertheless, it is increasingly evident that these approaches might be inadequate. Hence, there has recently been a growing recognition of the need to consider a new strategy: energy sufficiency.*

*Energy sufficiency, often viewed as a complementary strategy to traditional conservation efforts, encompasses more than mere behavioral changes or emergency measures in response to energy crises. Instead, it entails a fundamental shift towards reducing energy services consumption through changes in values, norms, practices, and collective organization. This strategy aims to achieve a more equitable distribution of energy services consumption, addressing both technical and socio-cultural dimensions. In addition to reports emphasizing the need to adopt energy sufficiency (or at least the risk incurred by not resorting to it), proposals for energy sufficiency measures also emerge in climate assemblies or similar initiatives, especially at the local level. This is notably more apparent than in national government plans for ecological and energy transition.*

*Drawing from ongoing research focused on the cases of Sardinia and Corsica, two geographically proximate yet politically distinct territories, this contribution explores the intersection of energy transition dynamics and territorial independence movements. Despite sharing common characteristics, these islands face unique energy challenges shaped by divergent national energy policies and aspirations. The clash between national energy visions and local demands for autonomy often underscores*

*perceptions of ‘internal colonization,’ highlighting the complex interplay between energy transition, geopolitics, and decolonial struggles.*

*By examining the perspectives of representatives from autonomist and sovereignty parties and movements, this study investigates how energy sufficiency is perceived and integrated into decolonial agendas, shedding light on its potential role in navigating the energy transition within territorially diverse contexts.*

**Keywords:** Energy transition, Corsica, Sardinia, decolonization, energy sovereignty

## 1 Introduction

Energy transition, often hailed as a pivotal response to many of the pressing challenges of our time, encapsulates a spectrum of initiatives aimed at reshaping energy landscapes.

At its essence, energy transition encompasses a holistic reimagining of energy systems, transcending the mere substitution of one energy source for another. It embodies a comprehensive paradigm shift towards sustainability and inclusivity across various domains.

Firstly, energy transition entails a profound restructuring of energy infrastructure and systems. This involves modernizing aging grids, embracing decentralized energy generation, and integrating emerging technologies like energy storage and smart grids. Such efforts promise to enhance energy security and reliability while facilitating the transition towards cleaner energy sources. Moreover, energy transition necessitates a fundamental reevaluation of energy consumption patterns and behaviors. Furthermore, energy transition encompasses socio-political dimensions that extend beyond technological considerations. It involves challenging entrenched power structures, advocating for equitable access to energy resources, and addressing systemic inequalities. By fostering democratic decision-making processes and promoting social inclusion, energy transition becomes a catalyst for broader societal transformation. Additionally, energy transition presents economic opportunities and challenges on both local and global scales. While the transition may disrupt traditional industries reliant on fossil fuels, it also stimulates socio-technical innovation. Investing in renewable energy infrastructure may create jobs, stimulate economic activities, and reduce dependency on volatile energy markets, thereby enhancing long-term economic resilience.

However, navigating the complexities of energy transition requires a multifaceted approach that acknowledges the interconnectedness of environmental, social, economic, and political factors. Overcoming barriers such as policy inertia, vested interests (of old and new energy sectors), and financial constraints demands collaboration, innovation, and commitment from socio-political actors at all levels. This entails recognizing that energy issues are deeply entwined with the three classic pillars of political science: policy, politics, and polity.

Starting from this background and drawing from an ongoing research focused on the cases of Sardinia and Corsica - two geographically proximate yet partially politically distinct territories -, this contribution explores the intersection of global energy transition dynamics and local sovereignty claims. Despite sharing common characteristics, these two islands face unique energy challenges shaped by divergent national energy policies and aspirations. The clash between national energy visions and local demands for autonomy/independence often underscores perceptions of 'internal colonization,' highlighting the complex interplay between energy transition, geopolitics, and decolonial struggles.

## 2 The recent past of energy systems

Over the past few decades, energy systems have exhibited distinctive characteristics that have shaped the global energy landscape. In particular, the current energy system has been characterized by a series of prominent features that have defined its operation and dynamics. First and foremost, the energy system of recent decades has been marked by a high per capita energy consumption. This has been fueled by the growing demand for energy from individuals, communities, and industries, driven by the need to sustain an increasingly consumption-driven economy, within the undebatable gospel of economic growth. Furthermore, the current energy system has demonstrated a high per capita consumption of energy services. In addition to the simple consumption of raw energy, there has been an increase in demand for more refined and complex energy services, such as long-distance transportation, heating and cooling of spaces, and illumination. Another distinctive feature has been the production of high levels of emissions per unit of energy produced.

Energy systems in recent decades have shown a tendency toward centralization. Energy infrastructures, such as power plants and transmission grids, have long been governed in a centralized manner, fostering a sense of distrust among those who question the concentration of power in the hands of a few dominant entities. Moreover, the current energy system has exhibited a strong dependence on energy sources from abroad. Many nations heavily rely

on imports of fossil fuels, as well as of electric energy to meet their energy demand, exposing themselves to risks of geopolitical instability and price fluctuations in the international market. The localized impacts of energy production, predominantly affecting specific regions or communities hosting energy plants and infrastructures, have fueled skepticism about the fairness and equity of current energy system governing practices. Finally, in the energy system of recent decades, energy supply has often been structured around the idea that energy demand (or the demand for energy services) would naturally increase, and that energy supply had to satisfy such a presumed natural trend.

### 3 Main Strategies for the Energy Transition

Acknowledging that there is no single solution to the complex issue of energy transition, it is essential to explore the primary strategies available. Currently, the main ones include the decarbonization of energy production and the energy efficiency strategy. The decarbonization of energy production consists of reducing or eliminating carbon-intensive energy sources such as coal and oil, replacing them with low-carbon alternatives like solar, wind, hydroelectric, and nuclear energy. Another solution that may fall under this strategy is carbon capture and storage, albeit this primarily reduces unabated emissions per unit of energy rather than emissions per unit of energy.

The energy efficiency strategy focuses on increasing the efficiency of energy production, conversion and transportation. It involves actions such as adopting more efficient technologies, implementing energy management practices, improving building insulation, promoting low-energy consumption engines, and utilizing more efficient electronic devices.

These two strategies represent the primary levers used so far, in the frame of neoliberal governance and sustainable development's approach, to address the challenge of energy transition. However, the goal of achieving net zero emissions by 2050 now raises several questions. In short, serious doubts are emerging about whether the decarbonization process and efficiency improvements alone, or together, can suffice to achieve the desired objective. It is for this reason that in recent years, a new strategy has emerged, namely energy sufficiency. This can be defined as the strategy aimed at achieving the "state in which people's basic needs for energy services are met equitably and ecological limits are respected" (Darby and Fawcett, 2018).

The logic behind this is exceedingly simple: if the most of greenhouse gas (GHG) emissions stem from the energy sector, reducing emissions will simply entail reducing the consumption of energy services—that is, services whose

acquisition requires the use of energy. Furthermore, a reorganization of norms, values, practices, infrastructure, and collective organizational methods will be necessary to ensure an equitable contribution to the reduction of energy service consumption (Nicoloso, 2021). Energy sufficiency thus also becomes indispensable for increasing social acceptance of the energy transition. Moreover, energy sufficiency is not a strategy to be relied upon only in emergency situations; rather, it should be integrated into long-term nationally or regionally coordinated plans as a primary strategy alongside the other main strategies.

In addition to reports emphasizing the need to adopt energy sufficiency (or at least the risk incurred by not resorting to it), proposals for energy sufficiency measures also emerge in climate assemblies or similar initiatives, especially at the local level. This is notably more apparent than in national government plans for ecological and energy transition (Lage *et al*, 2023).

#### **4 Corsica and Sardinia: Main Socio-Demographic, Energy and Geopolitical Characteristics**

Corsica and Sardinia are respectively the fourth and the second largest Mediterranean islands by surface area. They are situated close to each other in the Tyrrhenian Sea, approximately along the ninth meridian east. Their combined extension in latitude ranges from 43° N to 38.9° N, spanning around 460 km. Population projections for the next decades suggest that, even though the population density in Sardinia was more than twice that of Corsica in 1999, by 2050, the population density in Sardinia will be only around 16% higher than that of Corsica. This should result from slight annual population increases in Corsica and significant annual population reduction in Sardinia. In terms of gross domestic product (GDP) per capita, both regions are among the poorest in their respective countries, with Sardinia having a smaller GDP per capita than Corsica, as well as a larger deviation from the national average compared to Corsica. Another geo-economical element that unites the two territories, along with others in southern Europe (islands but not only: think of the case of Catalonia), is overtourism, especially developed along the coasts.

The share of electricity production from renewable energy systems (RES) in the two islands is at comparable levels (26.6% to 26.9%). However, by including energy in forms other than electricity, the share of primary energy consumption from RES is even lower (albeit slowly increasing over the last few years) in both France and Italy (14.6% and 16.6% respectively, in 2022). It is since 1966 that Sardinia is connected to the Italian mainland grid through an undersea cable, which originally passed through Corsica solely as a physical bridge. It has been since 1987 that Corsica has been allowed to benefit from this connection. Since



2011, Sardinia has also had an additional direct connection to the mainland Italy grid, and another connection to link Sardinia to the island of Sicily has been very recently approved which is expected to be completed by 2028.

Table 2 also shows the impressive difference between the generation capacity from RES in the two islands: around six times higher in Sardinia than in Corsica, for solar plants; around sixty times higher in Sardinia than in Corsica, for wind plants. As a result of this, Sardinia is a net exporter of electric energy, while Corsica is a net importer (from Sardinia and from mainland Italy). However, Italy is a net importer of electric energy that comes from different neighbouring countries including mainland France.

Table 1. Selected Socio-Demographic Characteristics of Corsica and Sardinia

	<b>Corsica</b>	<b>Sardinia</b>
Surface sqkm	8,722	24,090
Inhabitants (x 1,000) (1999) <sup>1</sup>	260	1,642
Inhabitants (x 1,000) (2023) <sup>2</sup>	351	1,578
Inhabitants (x 1,000) (2050) <sup>3</sup>	386	1,239
Population CAGR (1999-2023)	+1.26%	-0.17%
Population CAGR (2023-2050)	+0.35%	-0.89%
Population density (1999)	29.8	68.2
Population density (2023)	40.2	65.5
Population density (2050)	44.3	51.4
Persons at risk of poverty and social exclusion (2022) <sup>4</sup>	24.3%	36.4%
GDP per Capita (in 1,000 EUR) <sup>5</sup>	29.1 (2021)	23.7 (2022)
National GDP per Capita gap <sup>6</sup>	-21.1% (2021)	-28.2% (2022)
RAI (2018) <sup>7</sup>	12.5	19.0

Table 2. Selected Energy Characteristics of Corsica and Sardinia

	<b>Corsica</b>	<b>Sardinia</b>
Cooling Degree Days <sup>8</sup>	119.4	266.5
Cooling Degree Days CAGR <sup>9</sup>	+6.1%	+4.2%
Heating Degree Days <sup>10</sup>	1,487.9	1,164.1
Heating Degree Days CAGR <sup>11</sup>	-0.8%	-0.9%
Renewables installed capacity (MW) (2021) <sup>12</sup>	Wind: 18 Solar: 152 Hydro: 223	Wind: 1,094 Solar: 1,001 Hydro: 466
Share of primary energy consumption from RES (2022) <sup>13</sup>	14.6% [France]	16.6% [Italy]
Electric energy consumption (GWh) (2022) <sup>14</sup>	2,351	8,922
Net electric energy production (GWh) (2022) <sup>15</sup>	1,742	12,619
Electric energy production deficit/surplus (2022) <sup>16</sup>	-25.9%	+39.2%
Electric energy production share from RES (2022) <sup>17</sup>	26.6%	26.9%

While there are plans (established at the national level) to increase the capacity of both islands to produce energy, plans for Sardinia are much more considerable than those for Corsica, even considering the significant difference in population. Plans for Sardinia not only include the increase of renewable capacity, but also the use of the island as a site for installing liquified natural gas (LNG) terminals, both sponsored by the government as a way to substitute (in both energy and employment terms) the soon-to-happen phase out of some still active coal-fired power plants.

On a political level, Corsica and Sardinia can fall within the category of so-called stateless nations (Keating, 2001). They are two territories characterized by strong ethno-nationalist legacy, although characterized by different historical, cultural, and socio-economic peculiarities. Beyond their differences, both are largely describable as civic (ethno)nationalisms (Brubaker, 1996), distinguishing them from ethnic ones. In Corsica, ethnonationalism has deep roots in the island's history, marked by centuries of external domination – by France, England and the Republic of Genoa – and cultural resistance (De La Calle and Fazi, 2010). In Sardinia, ethnonationalism has had a more recent evolution, influenced by the island's socio-economic dynamics and the pursuit of greater decision-making autonomy. The characteristics of Sardinian ethnonationalism also include the valorization of local language and traditions; a fundamental element is linked to antimilitarism and the presence of numerous military bases (especially US) on the island (Pala, 2016).

These two territories are not only stateless nations but also two islands, which geographically configure them as realities with a complex relationship with the rest of the European continent and not only with the nation-state to which they officially “belong” (Baldacchino, 2010).

No matter some shared identity and cultural standpoints, Corsica and Sardinia maintain considerable political differences. Corsican movements have adopted a range of tactics, from peaceful protests to civil disobedience and more militant activism, including armed struggle. At the electoral level, Corsica is currently governed by the autonomist party Let us make Corsica (Femua Corsica), following a previous legislature in which a coalition of autonomists and independentists (previous Free Corsica, Corsica Libera) was in power. In recent times, the French President Macron has even opened to the possibility of enshrining Corsican autonomy in the Constitution. Conversely, in Sardinia, a region that already has an autonomous statute, autonomism and independentism have faced greater challenges in politicization. Although formally in power for several decades with the historic Sardinian Action Party (Partito Sardo d'Azione), the latter has abandoned the radicalism of past decades, governing the island with political forces from the entire (Italian) political spectrum. On the contrary, the radical

left independentist parties have consistently encountered difficulties in forming electoral coalitions, often presenting at the polls in a very fragmented way. Therefore, while Sardinian and Corsican identity are both widely spread among the population, in one case this has found an electoral translation, while in the other case it has not.

Given this general overview of the characteristics of the two islands, in the remainder we briefly present a few preliminary results of an ongoing empirical investigation.

## 5 Methodology

To empirically investigate the issues introduced so far, we have been conducting empirical research in Corsica and Sardinia, based on qualitative data collection, primarily through semi-structured interviews. Respondents cover a broad spectrum, being members of political parties, social movements, and civil society organizations that define themselves as ethno-nationalists and/or environmentalists.

The interviews, currently underway, have explored various aspects, including: the relationships between ethno-nationalism and environmentalism; opinions and alternatives regarding ecological and climate policies; perspectives on energy transition and renewable energies. In addition to interviews, we have been conducting desk research, based on both our own investigations and materials provided by the interviewees themselves.

## 6 Analysis

The ecological crisis and climate change are perceived as significant issues: contrarily to some media representations of ethnonationalism, no denialist positions have emerged from our interviews. However, political proposals on how to address the ecoclimate crisis at both the local and broader international levels appear vague. Moreover, a widespread pessimism regarding the ecological and climate future of the island(s) is shared by almost all respondents.

A research that was intended to address the broader issue of the ecoclimate crisis has almost automatically turned into a study on energy transition. Without being prompted by researchers, debates on energy transition and RES have taken a central position in the narratives of our respondents. This is especially true in Sardinia, where the island's nature is often denounced as a "green sacrifice zone" (Zografos and Robbins, 2020) and as a victim of both

internal (Italian) and external colonialism. Sardinians envy the Corsicans' ability to resist, as evidenced by much lower numbers of photovoltaic and especially wind macro-plants. However, it is likely that such lower numbers are also due to less impetus coming from the French government and not just from a grassroots mobilization and opposition. Nevertheless, energy transition is considered necessary, even in Sardinia, where the damage caused by the fossil fuel industry and the current presence of coal plants as well as old and new LNG terminals has had enormous impacts on the health of the population, the territory, and the environment.

The main solutions identified to address energy transition are: regional plannings (or, in some narratives, national plannings, considering Sardinia and Corsica as nations) and the spread of renewable energy communities. What is firmly rejected, albeit to a lesser extent by Corsican environmentalist associations which do not see that as a looming threat, is the installation of large-scale projects, in the hands of foreign capitalist groups, which would produce large amounts of energy (in surplus compared to the needs of the territory) without leading to actual economic, social, ecological wealth in the area(s). The main frame is therefore related to the defense of the territory and the aversion towards capitalist (and colonialist) speculation. Beyond some sporadic identity-based and explicitly developmentist/neoliberal/anti-ecological claims, among environmentalist and/or nationalist groups, aesthetic and so-called not in my back yard (NIMBY) discourses remain marginal, or however framed within broader political criticism of the development model.

While the frame of energy efficiency is reiterated, sometimes even explicitly, in several interviews (and in many public positions of political representatives), sufficiency is never explicitly endorsed. None of the interviewees use terms such as sufficiency or energy sobriety, but this may be also related to the fact that these are more academic than political terms; however, no one has explicitly used concepts such as degrowth or reduction of consumption either, which can be understood as the political translations of sufficiency.

Respondents consider that the path to pursue is energy sovereignty, without necessarily meaning a reduction in the production and consumption of energy at the local level. The criticism is therefore aimed at what some have called green capitalism (Buller, 2022) or even more the process of "decarbonization by dispossession" (Andreucci et al, 2023) in a global(ist) scenario. The transition to RES is deemed necessary, especially considering the damages caused by the oil and gas industry (and the danger of nuclear energy), but only if RES remain under public control and assume a reduced scale, instead of large-scale projects managed by energy corporations.

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## Abbreviations

- **CAGR:** Compound Annual Growth Rate
- **EUR:** Euro (currency)
- **GDP:** Gross Domestic Product
- **GWh:** Gigawatt-hour
- **LNG:** Liquefied Natural Gas
- **MW:** Megawatt
- **NIMBY:** Not in my backyard
- **NUTS:** Nomenclature of Territorial Units for Statistics
- **RAI:** Regional Authority Index
- **RES:** Renewable Energy Sources
- **Sqkm:** Square kilometre

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## Notes

- 1 Insee (2024a) and Istat (2024a).
- 2 Insee (2023) and Istat (2024a).
- 3 Insee (2017) and Istat (2024b).
- 4 Eurostat (2023b).
- 5 Insee (2024b) and Sardegna Statistiche (2003).
- 6 Own elaborations from Insee (2024b) and Istat (2023).
- 7 Hooghe et al (2021).
- 8 Eurostat (2023a).
- 9 Own elaborations (three-year mobile average 1979-2022) from Eurostat (2023a).
- 10 Eurostat (2023a).
- 11 Own elaborations (three-year mobile average 1979-2022) from Eurostat (2023a).
- 12 Agence ORE, Enedis, RTE and SER (2021) and Gestore dei Servizi Energetici (2023).
- 13 Energy Institute (2023).
- 14 Électricité de France - Corse (2022) and Terna (2023).
- 15 Électricité de France - Corse (2022) and Terna (2023).
- 16 Own elaborations from Électricité de France - Corse (2022) and Terna (2023).
- 17 Own elaborations from Électricité de France - Corse (2022) and Terna (2023).

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# Beyond Environmentalism: Mapping the Terrain of Intergenerational Climate Solidarity

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**Abstract:** *Climate sustainability requires new forms of solidarity that encompass all inhabitants of the planet, including future generations. This paper focuses on the intergenerational dimension of solidarity, aiming to understand how recent literature addresses concerns for future generations and identifies mechanisms that foster this solidarity. We explore various approaches to intergenerational climate solidarity (ICS). Our findings highlight the importance of individual motives, situational factors, relational dynamics, and cultural influences in shaping ICS. Understanding these micro-level processes is crucial for informing the development of effective policies aimed at mitigating greenhouse gas emissions and promoting climate sustainability on a global scale.*

**Keywords:** *Climate change, low-carbon behavior, intergenerational solidarity, climate solidarity, prosocial behavior*

## 1 Introduction

In the prevailing discourse within the social sciences and humanities, low-carbon behaviors are typically framed solely as pro-environmental actions, aimed at caring for and preserving nature (Jorgenson 2018; Perlaviciute et al. 2021; Steg et al. 2014). However, it is worth noting that the primary beneficiaries of such reductions are often not the current inhabitants of wealthy countries, but rather their descendants and the populations of developing countries and their descendants. Thus, the concept of climate sustainability inherently implies a form of solidarity that is both global and future-oriented (Bazzani 2022a; 2023a; 2023b). From this perspective, nature conservation and meeting the needs of other human beings (solidarity) are viewed as complementary rather than competing objectives. However, the latter aspect—solidarity—has received relatively little attention as a motivator for low-carbon behaviors.

This article aims to shed light on the intergenerational dimension of this solidarity. If motivations for caring for the planet also stem, as we argue, from altruistic impulses directed toward future generations, understanding the mechanisms that shape and promote this form of solidarity becomes crucial for fostering



low-carbon individual or household behavior. Our objective is to explore how recent literature addresses this specific concern for future generations and, more specifically, what insights it offers regarding the factors that may foster this kind of solidarity. To achieve this, we present the preliminary findings of a systematic literature review (SLR) that seeks to answer the research question: What are the identified mechanisms that drive intergenerational forms of climate solidarity?

## 2 Intergenerational Climate Solidarity

The concept of solidarity is both intuitively understandable and highly debated within academic circles. Generally, solidarity refers to any bond that fosters cohesion within a group or community and typically involves a sense of belonging (Foote 1951; Smith and Sorrell 2014).

However, it is essential to refine this definition when considering other social processes or dynamics (Bayertz 1999) that, despite fostering strong identity ties, may not necessarily lead to acts of solidarity among members. Lindenberg (1998) contends that solidarity can be observed only through solidarity-oriented behavior, which encompasses prosocial behavior. A defining characteristic of prosocial behavior is that it involves costs for the individual (*ego*) but benefits others (*alter*) (Wittek and Bekkers 2015). While this definition may not encompass all possible meanings and origins of solidarity, it helps to distinguish solidarity from other social processes (Smith and Sorrell 2014).

Durkheim developed the most renowned theory regarding the genesis of modern solidarity, emphasizing a moral constraint that binds individuals together, focusing on the “structural” aspects of society (Durkheim 1893/1964). According to Durkheim, individual motivations for prosocial behaviors stem from the novel type of labor interdependence, and the emergence of solidarity is attributed to socialization, wherein norms are internalized, and prosocial personalities are cultivated (Lindenberg et al. 2006, p. 4). However, from our perspective, geared towards comprehending the emergence of new forms of solidarity in response to climate challenges, solely emphasizing structural conditions and norm internalization is insufficient. While labor interdependence lays the groundwork for solidarity, the evolution of prosocial behavior is influenced by a myriad of contingent factors beyond socialization. In this regard, drawing from Toennies’ emphasis on social relations giving rise to various forms of associations described by diverse mechanisms of solidarity (Toennies 1887/2001) and following Hitlin (2014, p. 195), we contend the necessity to scrutinize “micro-level” processes to gain deeper insights into the mechanisms fostering solidarity (Bazzani 2023c).

This conceptualization of solidarity must now be contextualized within the global framework. Brunkhorst (2005) suggests that while modern solidarity, which evolved within nation-states, has effectively addressed significant historical challenges of modernity, it appears inadequate in confronting contemporary global challenges shaped by extensive interdependence networks (Bazzani 2022b). Efforts to tackle global challenges often involve prosocial behaviors as they can benefit distant actors in time and/or space. Among these challenges, global warming underscores the necessity for a new form of solidarity transcending that developed within modern nation-states. Specifically, the most severe impacts of climate change are projected to be felt in the distant future, primarily by future generations. Consequently, adopting behaviors aimed at mitigating climate change risks equates to embracing prosocial conduct towards future generations. In this context, we define intergenerational climate solidarity (ICS) as a manifestation of low-carbon behavior driven by altruistic motivations directed towards future generations. Subsequently, we will systematically review recent literature to empirically examine this intergenerational solidarity through a Systematic Literature Review (SLR).

### 3 Method

An SLR was selected for its capacity to offer a comprehensive synthesis of knowledge across multiple disciplines. Following the PRISMA guidelines (Page et al. 2021), this systematic review was carried out.

To address our research question, we conducted searches on two prominent databases, Scopus and Web of Science, employing a search string that combined terms relating to the intergenerational and future-oriented dimension with those pertaining to solidarity, encompassing both general and pro-environmental contexts. Initially, research terms were chosen based on prior studies on prosocial and pro-environmental behavior. Subsequently, the search string was refined based on the initial results, and a new database query was executed. Importantly, references to kinship solidarity (such as research on bequests and familial relationships) were explicitly excluded from the search. While significant, these topics fall within the realm of “traditional” forms of solidarity and therefore lie outside the scope of our research.

This process yielded 654 results. Additionally, six articles were manually added based on the screened results.

The third step involved study selection. We included only journal articles that met the following criteria: a) written in English, b) presented empirical results, and c) directly addressed the intergenerational dimension of prosocial behavior. We

excluded studies that focused solely on forms of prosocial behavior unrelated to intergenerational dynamics or took a normative approach. Following these criteria, we identified 52 relevant results.

During the subsequent analysis, we excluded articles that conceptualized ICS solely as an independent variable for pro-environmental behavior, without exploring factors or phenomena that could foster the development of intergenerational solidarity. Therefore, our analysis is based on 25 selected articles.

## 4 Results

Our findings reveal a gap in empirical research concerning the study of intergenerational climate solidarity, despite the growing recognition of environmental challenges as intergenerational concerns (Gardiner 2006). The concept of ICS is complex and multifaceted, as evident from the diverse ways it is conceptualized in the literature (e.g., as a set of psychological attitudes, value orientations, etc.). However, our analysis identifies several common clusters that shed light on potential factors influencing ICS, offering insights for future research and policy recommendations. We delineate four main approaches within which the literature can be classified based on the mechanisms it identifies and how these mechanisms can be activated and fostered. This classification framework aligns with our previous theoretical work (Bazzani 2023a).

### 4.1 Situational Characteristics

Situational approaches underscore the influence of situational factors in either encouraging or discouraging prosocial behavior (Fetchenhauer et al. 2006). Given that ICS behavior involves prioritizing the welfare of others over one's immediate self-interest, it inherently entails a normative orientation.

The literature increasingly explores the motives and decision-making frameworks that can overcome psychological barriers to intergenerational prosocial behavior (Wade-Benzoni 2008; Wade-Benzoni et al. 2012). Recent research investigates whether manipulating the emotions experienced during the decision-making process (Lu et al. 2022) or enhancing individuals' perceived efficacy or power could promote forms of intergenerational altruism (Hensen et al. 2016; Tost et al. 2013). A much-discussed topic is the role that persuasive messages activating a legacy motive—the desire to leave a positive legacy—might play in strengthening the willingness of present individuals to make sacrifices for future generations (Zaval et al. 2015; Hurlstone et al. 2020; Syropoulos et al. 2023).

In a promising development, researchers are delving deeper into these intergenerational connections. Individual choices regarding future generations are intricately linked to the inheritance from preceding generations. Consequently, recent studies explore how the situational characteristics of these choices are influenced by individuals' perceptions of their relationship with previous generations.

Building on past research on "intergenerational reciprocity" (Wade-Benzoni 2002), studies investigate the extent to which reflecting on the "sacrifices" made by previous generations can serve as a potential driver of ICS (Watkins and Goodwin 2019; Higgins and Lipatrick 2022), or the role that perceived intentions of previous generations may play in decisions regarding future generations (Bang et al. 2017). Research examining how the relationship with the past may influence decisions about the future extends not only to previous generations but also to policies and other processes (Noblet et al. 2015).

The issue of the relationship with future generations can be understood as a conflict between social identities and conflicting groups—"us," the current generations, versus "them," the future generations. Interventions in choice architecture prove effective in reframing intergroup relations, such as reducing social distance between groups, decreasing perceived otherness, and broadening circles of identification through prejudice reduction techniques (Meleady and Crisp 2017). Additionally, reformulating the intergroup decision-making framework using non-economic nudges has shown efficacy. For instance, Böhm et al. (2020) demonstrate that "default nudges"—altering the default level of choice—and "self-commitment nudges"—providing individuals with the opportunity to self-commit to intergenerational solidarity—are effective in altering willingness to cooperate on long-term mitigation efforts beneficial to future generations.

## 4.2 Rational Choice

Rational choice theories typically operate under the premise that individuals aim to maximize their gains. Within this framework, the challenge of ICS lies in the pursuit of actions from which the individual ego does not directly benefit, and *alter* cannot reciprocate. Among the articles we reviewed, only one explored the potential individual benefits of altruism toward future generations.

Building on extensive literature concerning reputation and cooperation, altruistic behavior toward future generations can be conceptualized as a "reputational good" (Inoue et al. 2023). Similar to altruism in general, this behavior is positively valued even when it entails a cost to the detriment of the overall group. This suggests the possibility of introducing forms of reputational incentives linked to solidarity behavior toward future generations.

### 4.3 Interactional Structures

Interactionist approaches to understanding solidarity focus on the features and structures of interdependencies underlying prosocial behavior.

A substantial body of evidence indicates that intergroup contact can foster an increased willingness to assist members of other groups (Johnston and Glasford 2018). In line with this, de Paula Sieverding et al. (2023) explored the political solidarity of older adults with young people in the US, Germany, and Brazil, demonstrating that the quantity and quality of intergenerational contact with young individuals indirectly contribute to this solidarity.

The structure of relationships can also influence cooperation across generations. Significant research has examined how individual decisions are influenced when embedded in collective decision-making contexts. These studies suggest that intergenerational altruism tends to be minimal when decisions are made individually but increases when collective voting mechanisms (Hauser et al. 2014) or collectively decided forms of punishment for free-riding behavior (Lohse and Waichman 2020) are introduced. In the same vein, studies show that people are more inclined to donate to temporally distant individuals when their decisions were observable by others (Hong et al. 2024) or if a “representative of an imaginary future generation” is included during the group negotiations.

However, under specific circumstances, the collective setting may produce contrasting outcomes. For instance, in an incentivized donation experiment where the donation amount was determined by voting, Kamyō et al. (2020) found that giving parents an extra vote to represent their under voting-age children appeared to decrease altruism toward generic future generations in favor of the interests of direct descendants.

### 4.4 Institutions

The issue of the relationship with future generations can be approached by considering how intergenerational relationships are shaped by norms, values, cultural orientations, and practices.

For instance, the influence of the economic environment, with its institutionalized courses of action, on individual preferences cannot be underestimated. In a study focused on Bangladesh, Sharier et al. (2017) aimed to assess the impact of capitalist modernization and a competitive economy on prosocial orientations toward the future, comparing inhabitants of rural and urban contexts.

Similarly, our attitudes toward future generations are shaped by long-standing cultural traditions perpetuated by the institutions of our social communities. These attitudes are not merely a result of our relationships with previous generations but also stem from cultural traits embedded in the societies to which we belong. Syropoulos et al. (2024), for example, have conducted international comparisons, revealing a correlation between attitudes favorable to intergenerational solidarity and a country's age or other cultural traits such as long-term orientation.

The social transmission of cultural values also affects intergenerational relationships. Building on previous research on perceived relationships with the previous generation, recent studies have highlighted the role of *gratitude* toward past generations as a psychological mediator informing solidarity toward future generations (Barnett et al. 2021), particularly concerning pro-environmental behavior (Syropoulos et al. 2020). In this context, according to the Authors, *gratitude* serves as a "moral memory" function (Simmel 1917-19/1996), linking generations in chains of reciprocity.

## 5 Concluding Remarks

The development and promotion of pro-environmental behaviors represent a primary challenge of our time. This involves broadening traditional forms of solidarity to encompass a solidarity oriented toward the future inhabitants of the planet.

While there is an established literature investigating intergenerational choices, recent research has begun to approach this topic within a framework that emphasizes the potential relationship with future generations.

This literature offers valuable insights for action regarding climate change. It highlights the effectiveness of manipulating the framework or context of choices. In terms of the relationship between intergenerational solidarity and pro-social behavior, the literature primarily frames it as a decision-making problem. It identifies both a set of dispositions (attitudes, values, etc.) associated with ICS and a range of psychological mechanisms that can activate pro-social behavior directed towards future generations.

Other critical factors such as institutional frameworks, infrastructures, policies, and educational processes necessitate further investigation. For instance, there is limited discussion on the role of the political-economic context in shaping conflicting norms or the influence of institutionalized habits on different forms of solidarity. Additionally, there is a lack of focus on organizational contexts as

systems for intergenerational transmission of norms (Hernandez et al. 2015). Moreover, there is a scarcity of observational studies, which may be attributed to the underrepresentation of disciplines such as sociology and anthropology in this area.

Future research should aim to address these gaps to better understand the micro-level processes underlying the emergence of climate solidarity. This will support the development of new policies aimed at reducing greenhouse gas emissions.

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## Methodological Appendix

For our Systematic Literature Review we followed the PRISMA guidelines (Page et al. 2021).

Two prominent databases were searched ("Scopus" and "Web of Science"), looking for recent observational studies addressing the topic of "intergenerational climate solidarity". Our research question was: What are the identified mechanisms that drive intergenerational forms of climate solidarity?

Research string used: ("intergenerational" OR "future generation\*" OR "future others") AND (pro-social OR prosocial OR proenvironment\* OR pro-environment\* OR solidarity OR altruism OR generosity OR "climate justice") [AND] NOT Family

Inclusion criteria:

- Publication type: Peer review articles
- Language: English
- Subject area: Social Sciences, Environmental Sciences, Economics and Psychology
- Type of research: empirical
- Identified references: 941; Records screened: 654; Additional records identified: 6.

Consistently with our research question, we only assessed eligible articles in which ‘intergenerational climate solidarity’ was the dependent variable.

The categorization of the reviewed articles was conducted on the basis of the mechanisms they identify and how these mechanisms can be activated and fostered. The proposed categorization aligns with our previous theoretical work (Bazzani 2023a).

## Notes

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## Social Acceptance of Water Reuse from Policy Instruments - The Case of Lisbon

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**Abstract:** *Climate change has been imperative in the changes that have taken place on the planet in recent decades, affecting various resources, including water. Droughts have become a reality in many places, particularly in southern Europe, where previously unaffected areas now face the threat of water scarcity. To deal with this situation, Europe, and more specifically Portugal, has adopted water reuse to promote adaptation and mitigate the effects of climate change. However, challenges related to the acceptance of water reuse by the community may hinder its evolution.*

*This article investigates the social acceptance of water reuse in Lisbon, in the context of the national and EU regulatory frameworks. Policy instruments were analysed to identify the main factors influencing social acceptance in the official documents governing the practice. Based on the conceptual foundations of social acceptance, the analysis reveals three key domains that significantly shape reuse practices, thus necessitating differentiated strategies to overcome the challenges. These include the dynamics of risk perception and cost considerations, along with the imperative of robust stakeholder engagement, which is essential to promote equitable decision-making through collaborative work. In addition, transparency and public participation emerge as key elements indispensable for generating trust in water reuse. Through effective communication modalities and targeted awareness campaigns, we emphasise the fundamental role of ensuring public understanding of the benefits and risk mitigation strategies. While existing regulatory frameworks partially meet these demands, it is important that they are improved to fully respond to the challenges that hinder the widespread acceptance of water reuse schemes.*

**Keywords:** *Social acceptance, policy instruments, water reuse, risk perception, climate adaptation, reuse costs.*

## 1 Introduction

Climate change constitutes a reality in contemporary times, imposing significant constraints on various activities and planetary resources, particularly on water bodies (Garnier *et al.*, 2015). To address the increasing risks of water scarcity, a strategic approach to addressing water-related challenges involves diversifying water sources, aiming to alleviate pressure on drinking water and freeing up its availability for other purposes (Kosovac, Hurlimann and Davidson, 2017). In this context, the practice of water reuse stands out, not only by increasing available supply but also by introducing a circular approach that seeks to close the water cycle within a territory. Water reuse promotes efficiency in water management, while contributing to climate adaptation (Bixio *et al.*, 2006). In the European scenario, and especially in Southern Europe, water scarcity has intensified over the last few decades, affecting crucial sectors such as tourism and agriculture (Iglesias *et al.*, 2007). Faced with this situation, countries in the region, including Portugal, have been adopting water reuse as a measure to mitigate these effects (Lavrnjć, Zapater-Pereyra and Mancini, 2017). However, the implementation of this strategy raises relevant social issues that may operate as barriers to its acceptance.

In 2019, Portugal took a significant step forward by enacting comprehensive legislation (*Law Decree n.º 119/2019*, 2019) focused on the reuse of reclaimed water for non-potable purposes, aligning itself with the EU directive (EU Commission, 2020). To complement this regulatory framework, the Portuguese Environment Agency (APA) developed a guide specifically tailored for the effective implementation of water reuse, with an emphasis on urban areas (APA, 2019). These two crucial documents have played a role in providing guidance and structure for the adoption of water reuse in Lisbon city.

As part of doctoral research, this paper investigates the drivers and barriers to water reuse in Lisbon, in the ongoing project to implement irrigation pilots in green areas, based on an analysis of policy instruments. This empirical research uses social acceptance theory to analyse risk perceptions, notions of justice and trust as key elements in the acceptance and support of water reuse schemes.

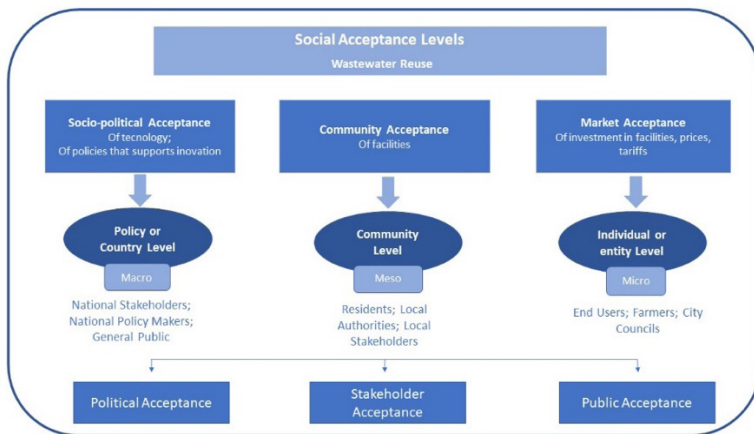
## 2 Social Acceptance Theory

To analyse the collected data and the regulatory documents, the framework of social acceptance theory was employed. This theory postulates the acceptance of technological solutions that produce environmental benefits and has evolved mainly in the context of emerging energy models (Wüstenhagen *et al.*, 2007; Wolsink, 2018; Upham *et al.*, 2015). However, it was applied

to solutions in the water sector within the B-WaterSmart project due to its comprehensive framework illustrating how various stakeholders align to accept new technologies within the sector (Gomes et al., 2023). Following the adoption of the theory of social acceptance for water-related technologies, a refinement was implemented, drawing upon the literature to incorporate elements specifically relevant to wastewater reuse.

Different levels of acceptance were adopted that represent the various social spheres that will influence the implementation and development of schemes of water sector, considering that acceptance refers to the favourable or positive response of members of a social unit - whether it be a country, community, city, or organisation - to a proposed new technology, shown in figure 1 below (Upham et al. 2015).

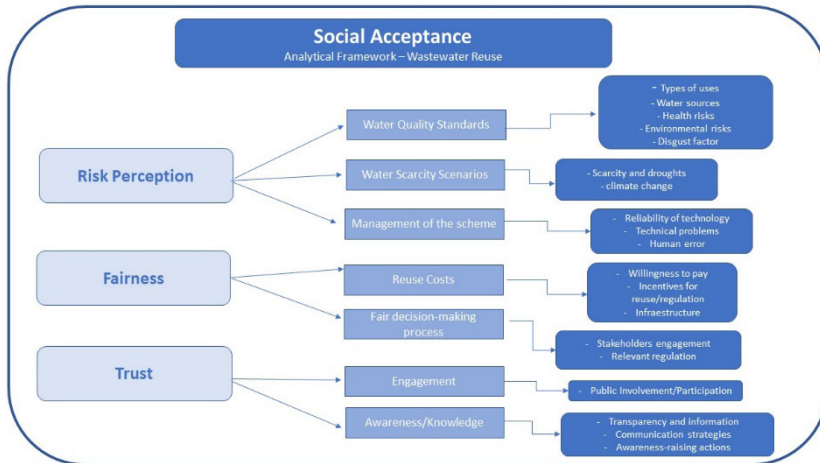
Figure 1. *Social Acceptance: Spheres, Levels and Actors* (2022), Source: Own elaboration adapted from Wüstenhagen et al., 2007 and Upham et al., 2015.



Three levels of acceptance were incorporated: sociopolitical acceptance, addressing actors at the national level; community acceptance, accounting for local actors; and market acceptance, characterized by individual or entity-level endorsement. Each of these levels will involve a range of actors, depicted in the figure as political acceptance, stakeholder acceptance, and public acceptance, indicating that within each sphere, there will be different types of parties.

In addition, recurring categories from social acceptance theory were adopted to understand their interaction and their manifestations within the sector. These categories encompass risk perception, fairness, and trust. Several subcategories influencing water reuse schemes were identified from the literature, and they are outlined in Figure 2.

Figure 2. *Social Acceptance Analytical Framework - Wastewater Reuse* (2022). Source: Own elaboration adapted from Wüstenhagen et al., 2007; Gomes et al., 2023.



Three categories were adopted to explore perceptions in the context of water reuse. Specifically concerning risk perceptions, the subcategories identified include adherence to water quality standards, awareness of water scarcity scenarios, and effective management of the schemes. In the realm of fairness, or justice, the subcategories that emerged encompass the assessment of costs associated with water reuse and the promotion of fair decision-making processes between stakeholders. Regarding trust, emphasis was placed on subcategories such as fostering engagement, creating awareness, and enhancing knowledge. This categorization provides a structured framework for a comprehensive exploration of water reuse dynamics, shedding light on key aspects influencing perceptions and attitudes within the studied context.

### 3 Methodology

The data collected for the investigation is derived from three sources that provide insight into the policy instruments governing water reuse. They are:

1. The EU Reuse Directive (EU Regulation 2020/741).
2. Portuguese legislation for Water Reuse (Law Decree nº 119/2019).
3. Reuse Guide (APA, 2019).

The documents were analysed using the social acceptance theory adopted, with a focus on extracting passages that align with the fundamental principles of the theory, using the points outlined in the EU directive and national documents as a basis for comparison.

## 4 Results

The analysis was conducted on the documents governing water reuse at both the European Union and Portuguese levels. The results of this analysis, framed within the theory of social acceptance, are presented in Table 1.

Table 1. *Analysis of Documents for Regulation and Implementation of Water Reuse in Portugal (2023)*. Source: Own elaboration.

Axes of acceptance			Portuguese regulation	European Union regulation
Risk Perceptions	Water quality Standards	Health Risk	- Water quality parameters; Risk assessment; Fit for purpose approach. <b>Decree-Law no. 119/2019</b> . - Risk management model. <b>Guide for water reuse (APA 2019)</b> .	- Minimum water quality requirements for agricultural irrigation; Fit for purpose approach; Water quality parameters; Risk management plan; Training for users; Monitoring by competent authorities.
		Environmental Risk	- Water reuse as a contribution to the sustainable use of the resource. <b>Guide to Water Reuse (APA, 2019)</b> - Concern about the contamination of soil and groundwater evidenced in the quality standards established. <b>Decree-Law no. 119/2019</b> .	- Water reuse from urban wastewater treatment plants is considered to have a lower environmental impact than other alternative water supply methods such as transfers or desalination.
		Types of water use	- Defines the water uses. Agriculture, urban uses, watering parks and gardens, street washing.	- Agricultural irrigation.
		Water Source	- Defines water sources - Urban wastewater. <b>Decree-Law no. 119/2019</b> .	- Defines water sources - Urban wastewater.
		Disgust Factor	Social Indicator	Social Indicator
	Water Scarcity scenarios	Climate change	- Considers climate change as responsible for the increase in shortages and droughts in the country.	- Considers climate change as one of the causes of pressure on water resources.
		Scarcity and droughts	- Recognises the increase in the frequency and intensity of droughts over the last 30 years. <b>Decree-Law no. 119/2019</b> .	Recognises the increased frequency and intensity of droughts and the use of water reuse as a tool to deal with it.
	Management of the scheme	Technical/human errors	Different actors responsible for guaranteeing water quality.	Operators of water production systems as those primarily responsible for water quality.
		Reliability of technology	- Multi-barrier method.	- Multi-barrier method.



Axes of acceptance			Portuguese regulation	European Union regulation
Fairness	Reuse cost	Willingness to pay	Social Indicator	Social Indicator
		Incentives for reuse/ Relevant regulation	Presents regulations and guidelines for implementation.	Encouraging water reuse through regulation.
		Infrastructure	It does not present strategies to encourage infrastructure development.	Promoting member state funding for the necessary infrastructure.
	Fair decision-making process	Stakeholder engagement	Defining the actors, including the public, and ensuring their involvement. <b>Guide to Water Reuse (APA, 2019).</b>	Co-operation and interaction between the various parties should be a prerequisite for establishing the procedures for treating this water.
Trust	Engagement	Public involvement/ participation	The public is the main stakeholder in reuse strategies. <b>Guide to water reuse (APA, 2019)</b>	It emphasises the importance of public trust in water reuse.
	Awareness/ knowledge	Transparency and information	Need for signposting where water reuse is implemented. <b>Decree-Law no. 119/2019.</b>	Need for information on water reuse for the public; Need for clear and up-to-date information to increase transparency.
		Communication strategies	The need to publicise water reuse in order to overcome psychological barriers. <b>Guide to Water Reuse (APA, 2019).</b>	Member States should ensure that information and awareness campaigns are organised.
		Awareness raising action	Campaigns for raising awareness <b>Guide to Water Reuse (APA, 2019).</b>	The education and training of end users are fundamental as components of the application and maintenance of preventive measures.

## 5 Discussion

The prevailing documents in Portugal and the European Union present a clearly defined approach to addressing the perceived risks associated with water reuse. EU legislation establishes a comprehensive set of measures to ensure the safety of reclaimed water, encompassing the formulation of risk containment plans, the adoption of multi-barrier methods in water production, risk assessment, a fit-for-purpose approach, and the establishment of stringent parameters to uphold resource quality. Despite being a relatively recent regulatory framework, Portugal has promptly integrated these parameters into its legislation, aligning with the guidelines set by the European Union (Rebello et al., 2020).

These documents reflect considerable concern with ensuring water quality and controlling schemes. They specify parameters and methodology for production of different types of water reuse depending on its application, in agriculture, street cleaning, irrigation of green areas (EU regulation focus on directive to agriculture only) as well as define the water source designated for water reuse production, typically originating from urban uses.

Legislation plays an important role in ensuring the safety and security of reclaimed water, thereby promoting acceptance of water reuse practices. Regulations establish parameters for water production across various applications, outlining quality standards, risk assessment protocols, tailored approaches for specific uses, multi-barrier methods, and risk management models. This set of guidelines contributes significantly to increasing the safety of the reuse practice, resulting in greater confidence on the part of stakeholders in projects of this nature (Shoushtarian and Negahban-Azar, 2020).

Currently, methods for producing reclaimed water are at an advanced stage, incorporating cutting-edge technologies that ensure water is obtained in accordance with the use it will be put on. This technological progress not only responds to regulatory demands, but also meets growing quality expectations, thus reinforcing the safety and reliability of water reuse (Khan and Roser, 2007).

Addressing the imperative for fairness in accessing the benefits offered by water reuse as a mean of mitigating the impacts of the climate crisis, the associated costs emerge as a factor influencing social acceptance. However, existing regulations lack a precise delineation regarding the financing of these costs, the European legislation's emphasis on the responsibility of member countries to shoulder the expenses associated with implementing costs. Still regarding to fairness, in the realm of equitable decision-making, both national and EU regulations underscore the indispensable role of active stakeholder engagement. Cooperation among diverse parties is explicitly identified as a fundamental prerequisite for water treatment management and governance, ensuring an equitable and inclusive approach to the development and implementation of reuse practices.

Turning to the crucial aspect of trust, regulatory frameworks highlight the imperative of public participation in the implementation of water reuse schemes. This necessitates a well-informed public regarding the advantages of water reuse and the robust risk management strategies in place to address potential issues. Both Portuguese and European Union documents align on the paramount importance of transparency in disseminating information related to water reuse. Effective communication strategies and awareness-raising initiatives stand out as essential components. These initiatives

play a fundamental role not only in providing accurate and comprehensible information but also in promoting public understanding, thus fostering confidence in the implementation of water reuse practices. The convergence of national and regional perspectives underscores the shared commitment to transparency and public involvement in the sustainable management of water resources through reuse.

## 6 Conclusion

Addressing perceived risks associated with water reuse involves implementing strategies that prioritize transparency, effective communication, and financial clarity. Firstly, to enhance transparency and build trust, it is crucial to establish clear and accessible channels for disseminating information about water reuse projects. This includes sharing details on the quality of reclaimed water and the benefits of such initiatives. Public awareness campaigns and educational programs can play an important role in fostering understanding and trust among the community.

Regarding the impact of costs on social acceptance, a viable solution involves developing financing models that clearly outline the distribution of expenses, being the national government responsible for its incentives. Collaboration between regulatory bodies, local authorities, and relevant stakeholders is essential to establish fair mechanisms for sharing the financial burden. This collaborative effort should also involve exploring innovative funding options, such as public-private partnerships, to ensure sustainable financing for water reuse projects.

In terms of equitable decision-making and stakeholder engagement, creating platforms for inclusive participation is key. Establishing regular forums where community members, environmental organizations, and industry representatives can voice their concerns, provide input, and actively participate in decision-making processes will contribute to a more inclusive approach. This can help in identifying and addressing potential challenges while ensuring diverse perspectives are considered.

Finally, to bolster public trust, ongoing efforts in transparency and communication are essential. Regular updates, community forums, and educational initiatives can keep the public well-informed about the positive impacts and safety measures associated with water reuse. This proactive approach can help dispel misconceptions and build a supportive community that understands and values the importance of sustainable water resource management through reuse.

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### Carla Gomes

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## Notes

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## GoiEner Energy Cooperative – a Social Economy Initiative Facing the Challenge of Degrowth

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**Abstract:** *The current situation of climate crisis, resource depletion and growing inequalities has led to the emergence of several alternative proposals to the conventional economic model. Among them arises the proposal of degrowth, which questions the current developmentalism and proposes a reduction in the use of resources, as well as a more equitable distribution of them.*

*To analyse its viability, it is necessary to study the existence of degrowth initiatives in practice. For this purpose, using the methodology of the ethical triangle and the characterization of degrowth based on its normative and applied principles, the case of the Basque energy cooperative GoiEner is analysed to determine whether it can be considered a fully degrowth organization. The analysis shows that, although GoiEner is not yet one, by making progress in complying with the defined principles, it has the potential to become one in the future.*

**Keywords:** *Degrowth, energy, sustainability, social economy, cooperativism.*

### 1 Introduction

Recently, the Intergovernmental Panel on Climate Change (IPCC) set the human contribution to climate change at 90%, causing unprecedented global warming (IPCC, 2021). Hence, more people advocate a socioeconomic and value system change in the human production system and the environment (Musseta, 2020). Among alternative paradigms we find *commons* (Atutxa, Aguado and Zubero, 2020), *circular economy* (Pearce and Turner, 1990), *economy of the common good* (Felber, 2015) or the *steady state economy* (Daly, Urquidi and De la Peña, 1974). However, the *degrowth* proposal is of interest as it aims to face the problems associated with the capitalist system and its persistent focus on economic growth through a reduction in economic scale, resource use and a value system change in society (Andreoni and Galmarini, 2014; Hickel, 2021).

Degrowth theories are mentioned by the United Nations (IPCC, 2022) or the European Environment Agency (EEA, 2021). In 2023, European Parliament hosted a conference called *Beyond Growth* (Jensen et al., 2023). It stressed the difficulty of moving from theoretical constructions to practical initiatives (Schwartzman, 2022; Kongshøj, 2023). If we analyse energy, it is (a) a service at the core of the dominant socioeconomic system (Mitchell, 2011; Di Muzio, 2015) with (b) a highly regulated sector and oligopolistic Spanish market. However, with an increase of social and local energy initiatives in Spain (Sasia, Martínez and Domínguez, 2019; Atutxa, Zubero and Calvo-Sotomayor, 2020, 2022), degrowth could help investigate this tendency.

In this sense, finding a degrowth economic initiative and analysing it is a fundamental step to test its applicability. However, research analysing possible links between the Social and Solidarity Economy and Degrowth is scarce (Johanisova, Crabtree and Fraňková, 2013; Bauhardt, 2014; Yáñez, 2021). This is the main scientific contribution of this work. It creates knowledge to understand degrowth and its implications by analysing a local energy initiative. Through systematically tested dimensions, we create a tool studying the forms adopted by degrowth at a micro level. This tool could be used by other initiatives for their self-diagnosis about degrowth. Through the study of a cooperative enterprise, it explores if these initiatives promote an economic system respecting planetary limits.

## 2 Theoretical Framework: Degrowth for the Transition to Social and Ecological Sustainability

Considering the so-called *maldevelopment* involving inequality, poverty or environmental degradation (Tortosa, 2001; Unceta, 2009), the North-South divide that externalizes pollution costs to developing countries (Hickel, 2021, 2022), as well as a possible (eco)systemic collapse (Bergstrom et al., 2021; Willcock et al., 2023), degrowth emerges as an alternative. It does not imply austerity, but an orderly and planned reduction of economic activity. If accompanied by a change to how we regard welfare, it would not imply its decline. Conversely, Parrique (2023) calls degrowth a temporary transition towards a post-growth economy, once we have reduced our economic scale until respecting the natural planetary capacities.

Moreover, degrowth can also be understood as “a more equitable distribution of existing resources” (Hickel 2019, p. 12). At this point, we encounter “the need to assume a radical distribution of wealth” (Taibo 2021, p. 155), in order to cover people’s basic material needs. From another perspective, degrowth criticizes the normative guiding principles in our societies (Latouche, 2009). In this way,



for Petridis, Muraca and Kallis (2015) and Kallis et al. (2018), degrowth involves a cultural-political reform for radical social change, creating new institutions that create well-being. Degrowth would also be an alternative to sustainable development paradigms that hide a contradiction within themselves (Latouche, 2009).

Hence, degrowth is wary of some principles of the 2030 Agenda. If we focus on the *Beyond Growth 2023* conference by the European Parliament, we find an interesting critique of Sustainable Development Goal 8. This goal has two indicators that require an increase in economic growth and productivity that seem incompatible with the need to reduce production and consumption (Jensen et al., 2023). Similarly, Jensen et al. (2023) state that goal 12 (responsible production and consumption) and goal 13 (climate action) would be contradictory.

The previous considerations are consistent with the findings of Fitzpatrick, Parrique and Cosme (2022) who demonstrated that the breadth and diversity of degrowth inexorably leads to an equally diverse agenda, full of goals, objectives, instruments, etc. Considering an extensive bibliographical review, we have distilled the following degrowth principles, among which we distinguish the normative principles from the applied ones in Table 1 below:

Table 1. Normative and Applied Principles of Degrowth (2024), Self-elaboration.

Normative Principles	Applied Principles	Brief Description
1. Sustainability and environmental justice	1.1. Reduction in the use of inputs necessary for the development of economic activity	From the viewpoint of resource exploitation, we become aware of our ecological footprint and the carrying capacity of the ecosystem. In response, an active and conscious position is taken to reduce the use of fossil resources and energies.
	1.2. Reduction of waste generated by economic activity	From the viewpoint of waste generation, the initiative tries to reduce it. It uses sustainable technologies and tries not to jeopardize the existence of other initiatives in different regions of the planet.
	1.3. Protection of environmental impacts to the most vulnerable groups and people	The initiative is aware of the asymmetric impact of various environmental problems and makes a conscious effort to protect the most vulnerable social segments.

Normative Principles	Applied Principles	Brief Description
2. Equity and social justice	2.1. Wealth distribution	Through a sufficient level of economic activity and not leaning towards perpetual growth, the initiative seeks an equitable and fair distribution of the wealth generated (goods, services and dividends).
	2.2. Primacy of the people towards capital	Capital accumulation and economic profit are not the objectives of the initiative. Placing people at the center of the activity, the initiative ethically reflects on its purpose, tries to improve working conditions and the working day, etc.
3. Autonomy and political justice	3.1. Recognition and integrity	The Human Rights of all individuals, as well as their human autonomy and inherent dignity, are effectively recognized.
	3.2. Deliberative and direct democratic processes	A separation of economics and politics is proposed. A participatory and political negotiation of the conditions of the economy is sought.
4. Conviviality and sobriety	4.1. Care and promotion of relational goods	Spaces are created in which to relate and coexist outside the logic of the market. A slowdown of processes and greater non-commercial exchange are advocated.
	4.2. Search for voluntary self-limitation	This principle is not a response to objective limits, but rather an action that aims to generate cultural changes. Self-limitation or austerity to achieve a more egalitarian and autonomous society.

Note: This table was elaborated by the authors using secondary data available in Fitzpatrick, Parrique and Cosme (2022) and Jensen et al. (2023).

Normative principles refer to the theoretical categories on which degrowth is based, as well as the awareness necessary to reduce our consumption, protect our societies, and move towards political, economic and social equality. The applied principles, in turn, refer to the concrete ways in which an initiative can be developed. The latter have been described and provided with a set of questions to serve as a reference for the analysis of initiatives. When it comes to evaluate each company's degrowth condition, it can develop guidelines for improvement, and no principle should prevail over the other.

### 3 Results: GoiEner in the Face of Degrowth

GoiEner Cooperative (from now on GoiEner) is established as a non-profit cooperative of consumers and users whose territorial scope is the Spanish Basque Autonomous Community. It belongs to the energy marketing sector,

providing energy only from renewable sources and personally advising its contractors. In addition, it is characterized for its collective and democratic decision-making, within a cooperative mindset. GoiEner works to create a change in the energy and business governance model, as well as to take care of the environment and help its partners save. As of January 2024, the organization has around 17,600 members, 21,300 contracts and six physical offices.

According to the Basque Network of Alternative and Solidary Economy REAS Euskadi (2022), during the last financial year they obtained income of 20,068,265 euros (with only 1% coming from subsidies) and incurred expenses of 20,678,581 euros. Likewise, it belongs to networks such as REScoop.eu, promoting cooperative governance and alliance work. GoiEner has also been adding partner entities such as GoiEner Association ('GoiEner Elkartea') focused on awareness tasks, training, etc. and, in the Spanish Autonomous Region of Navarre, with Navarrese Cooperative ('Nafarkoop') intended to be the legal instrument through which to invest in renewable generation projects. These entities, including GoiEner itself, converge under the umbrella of GoiEner Group ('GoiEner Taldea').

### **3.1 What GoiEner should be or the Normative Axis**

GoiEner was born in 2012, surrounded by a growing concern for sustainability. The Millennium Goals were coming to an end and the Sustainable Development Goals (SDG) gained traction. In Europe, different governments developed energy transition policies promoting renewable energy, as well as energy efficiency. Among the population, there is increasing awareness about promoting a green energy model, decarbonization and non-dependence on limited natural resources (IPCC, 2021).

In this context, the population demands a governance model based on transparency and participation. A project where you make certain decisions in a cooperative and democratic way, and where you can access all important information. The normative dimension is then favourable to these alternatives. In fact, concerning the joint analysis of this first normative axis and the applied degrowth principles, GoiEner continues to develop its activity in a socioeconomic context that recognizes the social value it creates.

### **3.2 What GoiEner wants to be or the Declarative Axis**

In the declarative axis we want to find out what strategic elements GoiEner includes in its purpose that allows it responding to the normative challenges, which will help it govern its behaviour on a day-to-day basis, and will guide its business conduct and account for the social good that GoiEner provides

(Martínez and Unigarro, 2023). Like any cooperative, GoiEner seeks to respond to the needs of stakeholders (workers, partners, customers...) and communities (GoiEner, 2019).

The cooperative members are committed to the project, which GoiEner rewards through democratic participation processes to advance self-organization and trust. Its social aspect is also "to a certain extent degrowth-oriented (although not explicit)" (GoiEner 2019, p. 17). Likewise, they are strongly committed to social innovation and "citizen empowerment for the direct management of a basic resource for life, such as energy" (GoiEner 2019, p. 11). They ultimately put the person and life at the center, versus economic profit.

### 3.3 What GoiEner in fact is or the Practical Axis

Here, we talk about those "specific behaviors that the organization demonstrates in relation to the implementation of the strategy" (Martínez and Unigarro 2023, p. 85). GoiEner demonstrates great accessibility and transparency: the client has access to updated rates, general contract conditions, company financial statements, regulations, REAS Euskadi social audits, etc. We also find great efforts in innovation: GoiEner participates in research projects funded by the European Union, through which it exposes new formulas to achieve energy empowerment.

In 2015, GoiEner Elkartea was founded with the aim of "facilitating volunteer activities that would not be typical of a marketing company" (GoiEner 2019, p. 9). Later that year, Nafarkoop was founded to overcome GoiEner's main competitive disadvantage: not having energy generation capacity. As a marketer, GoiEner depends on the large market operators and the general network to supply its contractors. In this regard, Nafarkoop carries out photovoltaic installations in private homes or companies, in order to achieve (renewable) energy self-sufficiency.

## 4 Comprehensive Assessment of the Contribution that GoiEner Makes to Degrowth

It could be stated that GoiEner has a degrowth cultural dimension. In fact, in its strategic plan degrowth is contemplated as a course of action (GoiEner, 2019). They seek to adopt degrowth as an internal value that can subsequently be spread through their Social and Solidarity Economy alliances. The following Table 2 has a double-entry table that, in the declarative and operational axes, evaluates on a three-level scale ('Responds appropriately', 'Responds Partially' and 'Does not respond') the response that GoiEner gives in the applied principles of degrowth:

Table 2. Axis of the Ethical Triangle and Applied Principles of Degrowth (2024), Self-elaboration.

Normative or Axiological Axis	Applied principles of degrowth						
	1.1 Reduction of the economic scale	1.2 Reduction of waste	1.3 Impact on environment				
<p>They take the environment into account in their habits, even if it means giving up comforts.</p> <p>It is believed that the industry has great responsibility in environmental deterioration and that the importance of small local businesses plays an important role in sustainability.</p>	<p>High degree of concern for sustainability. However, the assessment of environmental protection services and policies is low.</p> <p>Affordable and non-polluting energy is a priority.</p>	<p>Concern for both environmental sustainability and social sustainability energy poverty in Spain reaches 14.3%.</p> <p>Heating homes in winter is a main problem that affects the well-being of Basques.</p> <p>Growing awareness of limited resources, promoting the idea of sharing instead of producing without limits.</p>	2.1 Wealth distribution				
			2.2 Primacy of people	2.1. Recognition and integrity	3.1. Recognition and integrity	3.2. Deliberative democratic processes	4.1. Promotion of relational goods
			<p>Need to address the climate crisis and economic inequality while promoting democratic participation.</p> <p>A new energy model should prioritize people and economic justice in the transition to 100% renewable, efficient and smart energy.</p> <p>There is a change in perspective, going from being "customers" to citizens who demand their right to participate in the production and consumption of clean energy.</p>	<p>Importance of multilevel framework: regional, national and European legislation.</p> <p>Recognition of social and political diversity.</p> <p>Social initiatives that put the centre including Social Economy, Social Markets, Initiatives like Flavors (Zaporeak) and Neighbours (Bizilagunak), etc.</p>	<p>In socio-environmental decision processes, there is a lack of reflection on the importance of women.</p> <p>The need for the European Union to promote economic integration and democratic sovereignty is highlighted.</p> <p>More than half of Basque citizens have signed initiatives in favor of the environment, and 21% have participated in protest events.</p>	<p>Politicized and industrialized society, with various social and political organizations that have influenced the country.</p> <p>Practices such as Auzolan (collective work for community benefit) and the importance of relational networks in situations of social vulnerability stand out.</p> <p>44.8% of Basque society believes in collective action.</p>	<p>Importance of circular economy.</p> <p>Space for solidarity consumption where we can obtain common well-being, supporting solidarity and mutual reciprocity, and local production.</p> <p>Consideration of the transition to fairer economic models for poorer countries.</p> <p>The path to the future is established in the evolution from the industrial paradigm of continuous growth to one of voluntary sobriety, moderation and simplicity.</p>

Table 2. Axis of the Ethical Triangle and Applied Principles of Degrowth (2024), Self-elaboration.

		Applied principles of degrowth									
Declarative or Strategic Axis	1.1 Reduction of the economic scale	1.2 Reduction of waste	1.3 Impact on environment	2.1 Wealth distribution	2.2. Primacy of people	3.1 Recognition and integrity	3.2. Deliberative democratic processes	4.1. Promotion of relational goods	4.2. Voluntary self-limitation		
	They are committed to sell exclusively renewable energy, generated by sustainable and fair technologies. Interest in promoting (self) generation. They are committed to energy efficiency and reduction in consumption through innovation.	They contemplate an ethical limit to have a dignified life and an ecological limit to avoid the plundering of resources. Developing a Contingency Plan and raising the possibility of creating resilience tools.	Non-profit policy and commitment to improving prices for its members. Their commitment to salary parity is very high.	People and life at the center, versus economic profit. They have an Equality Plan that seeks to raise awareness about critical consciousness, equality training and ecofeminism.	Recognition of autonomy based on the freedom-responsibility binomial. They promote a business model that generates better people and is also free of discrimination.	High commitment to equitable participation and accountability. They advance in communication and in the generation of trust. They maintain a structure that is as horizontal and democratic as possible.	They defend that their company is a habitable space that transversally integrates people's care and development. They promote a recognition of "invisible tasks", carried out mostly by the women. They want to introduce aspects related to the finite limits of the planet into the educational curriculum.				
Practical or Operating Axis	Management of 106.8 GWh renewables and generation of 10.5 GWh. Expansion of renewables. They advance in better modeling and prediction of consumption. Reduction of final energy consumption.	It does not seem to translate into practice everything it declares in relation to this principle.	The economic surplus is allocated to reserves or donated to other entities in the group. They use ethical finance. There is no wage gap and the wage band index is minimal.	They develop actions to promote equality, safety and health of their employees. Trend towards parity in the composition of the workforce and to integrate the gender perspective. Actions to empower individuals.	They develop communication actions as dynamics of recognition of the work done. There does not appear to be any form of discrimination. They only collaborate with projects that guarantee individual autonomy.	They call General Assemblies for voting open to all members. They actively review internal power relations and mechanisms of internal democracy.	Volunteering, talks and events for reflection, awareness and sensitization. Volunteers collaborate in training and advice processes free and accessible.	CoEnerg seems to have not moved far enough in the direction of voluntary self-limitation.			

Legends:  
■ Responds adequately  
■ Responds partially  
■ Does not respond

Note: This table was elaborated by the authors using secondary data available in Barcena et al. 2009; Etxarri and Morandeiira 2012; Curiel and Pérez-Mendiguren 2014; Zibecki 2015; Greenpeace 2017; Alejos 2018; CoEnerg 2019; Bengoetxea 2020; Chaves 2020; Enfokamer 2022; Márquez and Etxarri 2022; Cadena SER 2023; CoEnerg 2023; Rioja 2023; Universidad de Deusto 2023.

Although GoiEner transfers renewable energy from large operators, it is also making progress in creating a quantifiable demand from users interested in consuming only renewable energy (an information that is essential for a socioecological transition). Furthermore, GoiEner has taken giant steps towards energy sovereignty and renewable self-sufficiency. At the same time, GoiEner is offering and demanding real transparency, which could force large operators to enhance their accountability; a tendency that could be transferred to the rest of the economic actors in the system through *cultural pollution*, understood as the process by which the strategic commitments pursued by GoiEner are shared and implemented by the actors with whom they collaborate.

In this regard, GoiEner has a careful strategic plan, defining initiatives with ambitious lines of action regarding degrowth. Despite this document and certain areas still being at a strategic stage, Goiener has made an important progress to become a fully-degrowth organization through waste reduction, the promotion of democratic processes and relational goods, among other aspects. By also advancing in self-limitation policies and the protection of environmental impacts, Goiener might achieve a fully degrowth status that aligns the normative, declarative and practical axes analysed.

As a weakness, it should be noted the absence of procedural elements in the described principles. By themselves, these principles determine an initiative's position with respect to degrowth at a given moment, but they do not guarantee that it will continue to be degrowth-orientated in the future. To overcome this, initiatives must integrate these principles into their processes and move towards a motivation that is not excessively self-referenced or that depends on charismatic leaders. The vital importance of ideological reflection in organizations comes into play to ensure the conservation of these principles.

## 5 Conclusions

This article tackles one of the main criticisms traditionally directed at degrowth: the difficulty of implementing at a micro level the frameworks and principles defined on the macro scale. The novel joint use of the ethical triangle methodology and the principles defined in this article for the analysis of potentially degrowth praxis favors (a) the demonstration that it is possible to advance degrowth from the daily action of already existing initiatives and (b) contributes to raising awareness of the contribution that these initiatives may be making without, possibly, themselves being fully aware of it.

The fact that GoiEner meets some of the conditions to be considered degrowth is supported by the declaration of its strategic plan, which is part of its

declarative axis, where the initiative advocates a global approach to a reduction of consumption and better wealth distribution, solidarity and support for the creation of transformative governance models. However, despite adequately responding to the criteria presented during the selection of alternatives, GoiEner in practice appears not to respond to two of the nine principles applied. Although this leads to conclude that GoiEner is not fully degrowth-orientated, the important transformative potential that it shows should not be ignored.

In this sense, it is essential to emphasize the development that GoiEner has experienced in the practical axis through the reduction of the economic scale and waste, the distribution of wealth and the primacy of people through democratic processes. All these actions located in the practical axis invite us to think that the cooperative will continue to advance in degrowth praxis. Future research about the potential of GoiEner to achieve a fully degrowth-orientation, as well as its practical promotion of synergies with other similar synergies are possible future research avenues. Similarly, the practical application of degrowth paradigm in other organizations is also another possible area of research.

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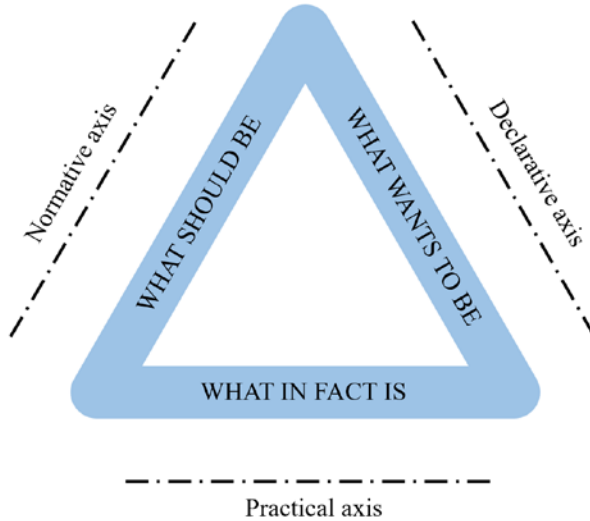
## Methodological Appendix

Firstly, the descriptive method was applied for the characterization and formulation of principles and the case study for the exploration of praxis through an exhaustive review of the literature. Respecting the methodological rigor necessary in all descriptive research (Blessing, Chakrabarti and Wallace, 1998; Abreu, 2014), an interpretation of degrowth is proposed which has enabled the formulation of its normative and applied principles. This has paved the way for the empirical contrast of GoiEner's degrowth character, allowing a more holistic understanding of degrowth (Vallespín, 2000).

For the second phase, a case study was chosen, a research strategy that builds knowledge through in-depth information analysis from a case (Eisenhardt and Graebner, 2007; Ramírez and Hervís, 2019). Hence, we have analysed primary documents of Goiener (official strategic documents, internal regulations, social audits, etc.) and scientific publications about GoiEner (Antepara 2020; Capellán-Pérez, Campos-Celador and Teres Zubiaga, 2016; Atutxa, Zubero and Calvo-Sotomayor, 2022), to name but a few. To choose GoiEner, all member organizations from the Network of Alternative and Solidary Economy of the Basque Country (REAS Euskadi) were reviewed and ten initiatives (9.17% out of 109) were selected due to their cultural or economic model recognizing biophysical limits and/or economic inequalities.

GoiEner has been studied based on its normative, declarative and practical elements proposed by the ethical triangle methodology (Sasia, Martínez and Domínguez, 2019; Martínez and Unigarro, 2023), as shown in Figure 1 below. This has enabled to understand the project from three axes: what society recognizes that the initiative 'should be' (normative or axiological axis), what the company 'wants to be' (declarative or strategic) and what the company 'in fact is' (practical or operational).

Figure 1. *The Ethical Triangle and the Axis of (Self)Understanding of the Organization* (2023),  
Self-elaboration



Note: This figure was elaborated by the authors using secondary data available in Martínez and Unigarro (2023, p. 83)

Once the context in which the GoiEner arose is understood and its internal and external characteristics are explained, we proceed to study its degrowth condition.

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Abbreviations

REAS Euskadi: Basque Network of Alternative and Solidary Economy (Red de Economía Alternativa y Solidaria), association that aims to develop Alternative and Solidary Economy in the Spanish Basque Autonomous Community through the inclusion and cooperation between its different member organizations.

SDG: Sustainable Development Goals, established by the United Nations.

## Biographical Notes

Mario Damborenea studies the *Research Master in Philosophy and Economics* at the Erasmus Institute for Philosophy and Economics in Rotterdam, the Netherlands. In addition, he works as a Teaching Assistant for a Philosophy bachelor course at the Erasmus School of Economics and has collaborated with Dr. Ekhi Atutxa and Dr. Xabier Mendizabal on the elaboration of two forthcoming papers about degrowth and post-growth. Previously, he studied the *Bachelor's degree in Philosophy, Politics and Economics* at the University of Deusto in Bilbao. His research interests include the normative evaluation of alternative economic proposals, the new debates in climate ethics and distributive justice theory, and the political philosophy.

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## Notes

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## V2G-QUESTS Integrating Vehicle-to-Grid Technologies for Equitable and Sustainable Transitions in Positive Energy Districts

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**Abstract:** *The Vehicle to Grid for Equitable Zero-Emission Transitions in positive energy districts (V2G-QUESTS) project is presented as a pioneering and crucial initiative in the context of a fair and equitable digital transition. In a world where technological development faces the challenge of mitigating environmental degradation caused by climate change, V2G-QUESTS stands out in preventing the unequal or harmful development of technologies such as Vehicle-to-Grid (V2G) in urban environments, particularly in socially disadvantaged communities, betting on social equity in the adoption of advanced technologies.*

*The essence of V2G-QUESTS lies in its holistic approach that integrates social sciences to understand how technological innovations impact and are shaped by social, economic, and cultural structures. The project commits to ensuring that the transition to sustainable energy systems and mobility technologies is not only environmentally sustainable but also socially just and accessible to all strata of society.*

*To discern the impact of the urban transition to this new technological model, an urban simulation environment based on Multi-Agent Systems will be developed, which will replicate social behavior at different degrees and case studies across the European territory. This approach allows an interdisciplinary analysis of the interactions and the impact of V2G technology in different social and technical spheres, enabling regional organizations and institutions to adapt to the future needs of their inhabitants.*

*This task involves integrating into a multi-agent system a detailed model of the electrical energy system, as well as a model of daily transportation needs, a model of transportation mode selection that includes driving behavior and the interaction of drivers with V2G technologies, and a model of social impact on the various agents involved. Orchestrating all these models will allow capturing the complexity of the interactions between different agents, such as energy providers, electric vehicle users, and network operators to ensure that the simulations reflect realistic*

scenarios and provide valuable insights into how users can interact with the V2G system.

To achieve these objectives, it is necessary to specify the main characteristics to be embodied in each scenario to be specified, considering the three urban dimensions; society, economy and technical infrastructure. The present study focuses its efforts on specifying these vital characteristics for the specification of the scenarios.

**Keywords:** V2G, Equitable electric transport, electric mobility, energy-efficient districts, energy transition

## 1 Introduction

Cities, home to over half of the world's population, are at a crucial crossroads (World Bank, 2022). On one hand, they are engines of economic growth, innovation, and social development. On the other hand, they face pressing challenges such as traffic congestion, air pollution, dependence on fossil fuels, and uncontrolled urban sprawl (IPCC, 2022).

The current urban development model, based on private car dependence and fossil fuels, is unsustainable in the long term. Urban transportation carbon emissions significantly contribute to climate change, while air pollution affects public health and quality of life (WHO, 2023).

A paradigm shift towards a more sustainable urban development model is urgent, prioritizing efficient urban mobility, renewable energy integration, and social equity (UN, 2023). This shift must be comprehensive, encompassing economic, social, environmental, and technological aspects.

In this context, new technologies such as electric vehicles (EVs) and vehicle-to-grid (V2G) technology emerge as tools for urban transformation (Deloitte, 2024). EVs offer a cleaner and more efficient transportation alternative, while V2G technology allows bidirectional energy integration between EVs and the electrical grid, enabling more efficient energy use and renewable sources integration.

However, like any technological transition, the adoption of the V2G model is not without risks. Its implementation will impact urban fabric in economic, social, and technical dimensions, making it crucial to evaluate its effects in each dimension without omitting any.



This study is part of the V2G-QUESTS project, which aims to model the urban environment with its potential V2G development. This modeling will allow anticipating and preventing risks of marginalization or social exclusion that could arise from improper management of the technical-economic resources associated with V2G technology.

In this context, the study focuses on defining the characteristics that the V2G-QUESTS project's model must consider in each case study to be analyzed. Specifying these characteristics is essential to better understand the social, economic, and technical dynamics that influence the adoption of the V2G model, identifying areas where V2G model implementation could generate risks of social marginalization or exclusion, as well as regions with the greatest potential for positive impact on urban society.

These models, and their results, will enable the development of intervention strategies and public policies that minimize these risks and promote a fair and inclusive transition towards a more sustainable energy model. Therefore, defining the characteristics to consider in each case study is a fundamental step. The study's results will enable the V2G-QUESTS project team to develop a more precise and robust model, which in turn will contribute to informed decision-making on the implementation of the V2G model in cities.

## 2 Methodology

In line with the previously established foundations, a series of collaborative work sessions and detailed analysis have been conducted, providing a framework for the exhaustive exploration of essential characteristics to be considered. These sessions, designed to foster idea generation and knowledge exchange, have been conducted under an informal brainstorming approach, thus facilitating the identification and evaluation of key elements relevant to the specification of variables in the context of V2G technology within the urban environment.

The outcome of these working sessions and discussions has been the development of a list of critical aspects that define and delimit the scope of application of the project in question. This list, based on the practical experience and specialized knowledge of the participants, serves as a solid and coherent foundation for the precise definition of distinctive characteristics that will guide scenario modeling and strategy formulation in the V2G-QUESTS project. During these sessions, special attention was paid to the identification and categorization of both agent and environmental attributes considered essential to the project's objectives. Through collaborative analysis, these sessions facilitated the detection and prioritization of key variables that will shape the

modeling and implementation phases of the V2G-QUESTS project, ensuring a comprehensive and robust approach to addressing urban mobility challenges.

### 3 Characterisation of ABM

Characterizing the multi-agent model involves characterizing three types of assets; the active agents, the passive agents and the environment in which they act. For this purpose, and after developing a series of workshop sessions, the characteristics to be defined are considered to be the following:

**Active Agent Characterization:** These attributes comprise demographic and socioeconomic variables that characterize the individuals participating in the urban environment. Among them are:

- Age. Influences transportation preferences and willingness to adopt new technologies.
- Presence of children under their care. They may require access to specific services, such as schools or child care facilities.
- Existence of dependent relatives. May influence mobility decisions and the availability of time and resources to participate in V2G and urban transportation activities.
- Available private transport. Affects mobility choices and participation in public or shared transport initiatives, while influencing traffic congestion.
- Available public transport. Directly impacts mobility options and the willingness to adopt alternatives, especially for those without access to private transportation.
- Employment status. Affects mobility patterns, including travel times and destinations.
- Working days. Influence the demand for transportation and participation in work-related activities, which affects the use of transportation.
- Distance to POs. Distances to places such as work or schools, impacts transportation needs and patterns.
- Daily to-do lists. Reflect activities and commitments that require mobility, influencing transportation decisions and patterns.

**Passive Agent Characterization:** These attributes encompass the structural components and operational characteristics of public transportation systems within the urban environment. Key features include:

- Public transport. It includes details on transportation infrastructure, such as routes, stops and services available (e.g., buses, streetcars, trains), as well as vehicle capacity and frequency to meet the demand for public transportation.

- **Regulatory Framework.** Includes regulations related to safety, accessibility, fares, and other aspects that affect the operation and provision of public transportation services in the urban environment.
- **Energy Management Systems (EMS).** Crucial in the context of public transportation systems, especially when considering emerging technologies such as V2G. This feature addresses energy management systems used to optimize energy consumption in public transport vehicles, as well as the integration of clean and renewable energy technologies in the operation of these systems.

Understanding active and passive agent's aspects allows for a more precise segmentation of the population and facilitates the design of interventions and specific policies for particular demographic groups.

**Environment Characterization:** These attributes relate to the temporal and contextual characteristics that can influence the behavior of agents at any given time. They include variables such as;

- **Workday/non-workday, weekend.** This variable distinguishes between working and non-working days, as well as weekends, which can influence mobility patterns and transport demand in the urban environment.
- **Special events.** Demonstrations or sporting events, can modify the normal flow of traffic and affect mobility in the urban environment, which should be considered in the modeling of the transportation system.
- **Weather conditions.** Weather conditions, such as rain, snow or temperature, can influence the choice of transport modes and the operational efficiency of public transport systems.
- **Seasonality.** Affects mobility patterns and transportation demand throughout the year, with changes in travel preferences and user behavior, which must be considered for effective urban transportation planning and management.

Considering these temporal and contextual factors is crucial for capturing the dynamics and variability of agent behavior over time and for informing effective planning and management of urban mobility.

## 4 Defined Hypotheses

The V2G-QUESTS project proposes to use an agent-based model (ABM) to model urban behavior. This model will determine the urban areas with the greatest potential for energy exchange through V2G, maximizing the benefits of this technology. In order to understand the impact of the implementation of this type of technology, a series of hypotheses or aspects to be tested are developed. After several working sessions, the following have been defined:

- **Implementation Focus:** The evaluation will determine whether infrastructure (ville) or social behavior (cité), as two key elements of the urban environment, has more potential to contribute to a successful scenario (Richard Sennett, 2019). Key Performance Indicators (KPIs) will be used to compare scenarios where infrastructure is fixed and social behavior is modified, and vice versa.
- **Remote Work:** The impact of telecommuting on the population's needs and interests regarding electric mobility will be evaluated. Will the need for travel decrease, and consequently, the demand for electric vehicles?
- **Renewable Technology Placement:** Scenarios with in-situ (within the urban environment, like rooftop solar panels) and ex-situ (connected to the substation, such as distant wind or solar parks) implementations of renewable sources will be evaluated.
- **Feasibility/Profitability of Energy Storage Systems (ESS):** The viability and profitability of installing ESS in the urban environment, whether in-situ or ex-situ, will be assessed.
- **Typology of Energy Storage Systems (ESS):** Different types of ESS, including seasonal ones (capable of storing energy for long periods) like hydrogen batteries, will be analyzed to understand their impact on the system.
- **Charging Point Reliability:** Reliability profiles will be defined, considering scenarios with different reliability profiles of charging points and analyzing how failures and inoperability affect the system.
- **Location/Existence of Ultra-Fast Charging Systems:** The impact of ultra-fast chargers on social and urban behavior will be studied. How would the speed of charging, similar to traditional gas stations, affect the usage patterns of electric vehicles?
- **Autonomous Vehicles:** Aspects of the behavior of autonomous transport vehicles (similar to taxis), such as reaching the customer and transporting them to their destination, will be defined. Their impact on the electrical system will be assessed.
- **Shared Cars:** Car-sharing behavior will be modeled similarly to public transportation, analyzing its impact on the demand for electric vehicles and the electrical grid.

These scenarios will allow the analysis of the combined effect of various variables on the impact of electric vehicles and V2G technology in the urban environment. The selection of specific scenarios will be based on an analysis of future trends, data availability, and relevance to the selected case studies.

## 5 Conclusions

The V2G-QUESTS project stands out as a crucial and innovative initiative in the transition to equitable and sustainable urban development by integrating Vehicle-to-Grid (V2G) technologies into positive energy districts. Its holistic approach combines social science with technological innovation to ensure a transition to sustainable energy and mobility systems that are both environmentally responsible and socially just. Using multi-agent system simulations, the project specifies vital characteristics in the urban dimensions of society, economy and technical infrastructure, enabling an understanding of how V2G technology impacts and is shaped by social and economic structures. The detailed characterization of active and passive agents, together with environmental factors, informs the formulation of hypotheses and the evaluation of scenarios that address aspects such as the influence of telework on electric mobility, the feasibility of energy storage systems, and the impact of autonomous vehicles and car sharing on the electric system and urban behavior. These actions seek to promote a fair and inclusive transition towards a more efficient and environmentally friendly urban mobility model.

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## Abbreviations

- **EMS:** Energy Management Systems
- **EV:** Electric Vehicle
- **POI:** Point of Interest
- **V2G:** Vehicle to Grid

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## An Adaptive Governance for Water Justice in Europe

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**Abstract:** *The intense droughts of the last five years, which most recently led the Portuguese Government to approve water rationing in the region of Algarve, are stark reminders of the scarcity threat looming over Europe. The increase in consumption in recent decades - from households to agriculture to industry - compounded by climate change - has contributed to a growing pressure. Water stress is not just a concern of Southern Europe anymore and has already prompted the European Commission to announce a new strategy for water resilience to be launched in 2024.*

*The active involvement of social scientists has never been so crucial for water management as today. 20% of the European territory and 30% of Europeans are affected by water stress during an average year, according to the European Environment Agency. Droughts alone already represent an estimated loss of 9 billion euros annually, coupled with the impacts of storms and floods. It is estimated that 17 per cent of the continent's population and 13 per cent of its GDP will be affected by a high to extreme risk of scarcity by 2050.*

*The Organisation for Economic Co-operation and Development (OECD) has created in 2015 a set of principles for water governance, some of them especially crucial in face of the climate emergency. Policy coherence between sectors has been one of the most challenging and is paramount for implementing a circular economy across the nexus with energy, waste management and food production. The appropriate scales for governing water resources within basin systems are another key element in this governance model. Water governance has been mostly local and incremental, as noted by the Global Commission on the Economics of Water (2023), in the wake of the UN Water Conference of March 2023.*

*To develop a new water culture, it will be crucial to cultivate trust and engagement, one of the key dimensions of the OECD model. This requires finding balanced and negotiated solutions to address the trade-offs between competing water demands (e.g., tourism vs agriculture), which come to the fore especially during intense drought episodes. The new*

*models of governance require an effective and inclusive engagement of key stakeholders, but also social actors that are most vulnerable and historically underrepresented.*

*This communication addresses the main challenges currently facing water governance in Europe. It is based on a policy review and also draws insights from recent analyses carried out in the six countries involved in the B-WaterSmart project (H2020, Grant No. 869171) (Portugal, Italy, Spain, Belgium, Germany and Norway), regarding models of governance and social acceptability of water-smart solutions (e.g., water reuse, stormwater management). We examine the key trends towards a more adaptive, fair and participatory governance of water resources in Europe, seeking to strike a balance between local priorities and the global nature of water adaptation.*

**Keywords:** Governance, drought, justice, water, climate change

## 1 Introduction

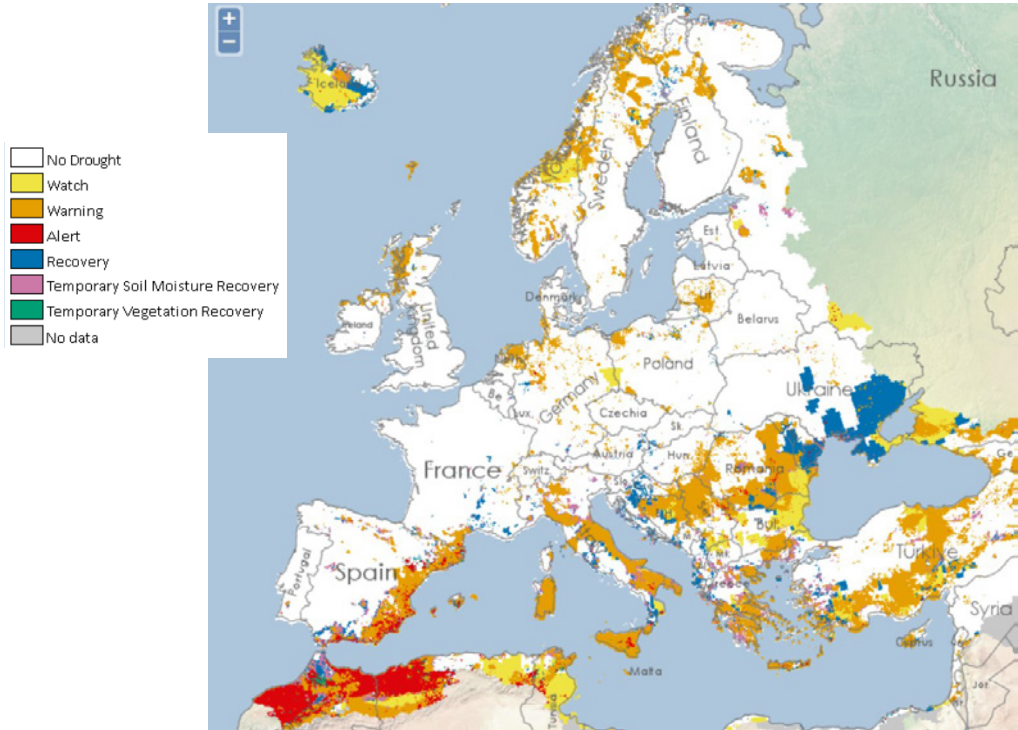
The European Commission had announced a new strategy for water resilience to be launched in March 2024, but it was postponed amidst the farmers protests that erupted across the EU, prompting concern from the main stakeholders and organisation in the water sector (Water Europe, 2024). The water crisis is at the heart of the sustainability challenges for the continent over the coming decades, and it is inextricably connected to the climate emergency, as well as to biodiversity loss and food systems.

The intense droughts of 2022 and 2023, which most recently prompted several European countries to impose water rationing over the winter (Portugal, Spain, Italy), have brought to the fore the increasing threat of water scarcity in Europe (figure 1). Winters and summers over the last few years were particularly dry and warm. Europe has been warming much faster than the global average according to the most recent reports (WMO, 2023).



Figure 1. *Situation of the Drought in Europe, March 2024*

Source: European Drought Observatory, EU (CC BY 4.0); <https://edo.jrc.ec.europa.eu>



Water restrictions were on top of the agenda for Spanish and Portuguese farmers protesting on the roads last Winter and come amidst a strong backlash against environmental measures included in the Green Deal and the Restoration Law (2023), which require the reduction of pesticides use and the reservation of land for biodiversity recovery. The most recent conflicts over water distribution put into evidence a crucial issue for water governance over the coming decades: the trade-offs between socioeconomic sectors when it comes to addressing water scarcity, most notably between different types of agriculture and booming sectors such as tourism.

Besides changes in precipitation patterns and problems of water scarcity, a crucial challenge for water governance in this era is water pollution, globally as well as in Europe. A new agreement for the restoration of freshwater systems, launched as part of the UN Water Agenda (2023) had already been signed by 46 countries in March 2024. Despite the high-quality standards set for 2027 by the Water Framework Directive, 22% of Europe’s surface water bodies and 28% of the groundwater waters are still significantly affected by diffuse pollution from agriculture (nutrients and pesticides), according to the European Environment Agency (EEA, 2021).

Climate change and rising consumption are key factors in the water crisis. 20% of the European territory and 30% of Europeans are affected by water stress during an average year, also according to the EEA. Droughts alone already represent an estimated loss of 9 billion euros annually, coupled with the impacts of storms and floods. It is estimated that 17 per cent of the continent's population and 13 per cent of its GDP will be affected by a high to extreme risk of scarcity by 2050.

This communication addresses the main challenges currently facing water governance in Europe, based on a policy review and data collected within the B-WaterSmart project (Research and Innovation Action funded by the European Commission through the H2020 programme, Grant Agreement no. 869171). Based on the experience of Lisbon (Portugal), Alicante (Spain), East Frisia (Germany), Bodø (Norway), Flanders (Belgium) and Venice (Italy), we observe key trends and present key recommendations towards a resilient and adaptive water governance for Europe.

## **2 Taking Stock: Challenges for an Adaptive Water Governance**

The Organisation for Economic Co-operation and Development (OECD) has launched a Water Governance Initiative in 2015, which established 12 voluntary principles for water governance around the key dimensions of Effectiveness, Efficiency, Trust and Engagement (Figure 2). These have been endorsed by more than 170 stakeholder groups or governments worldwide and should contribute for achieving the UN Agenda 2030 and the Sustainable Development Goals, of which SDG 6 aims to 'Ensure access to water and sanitation for all'.

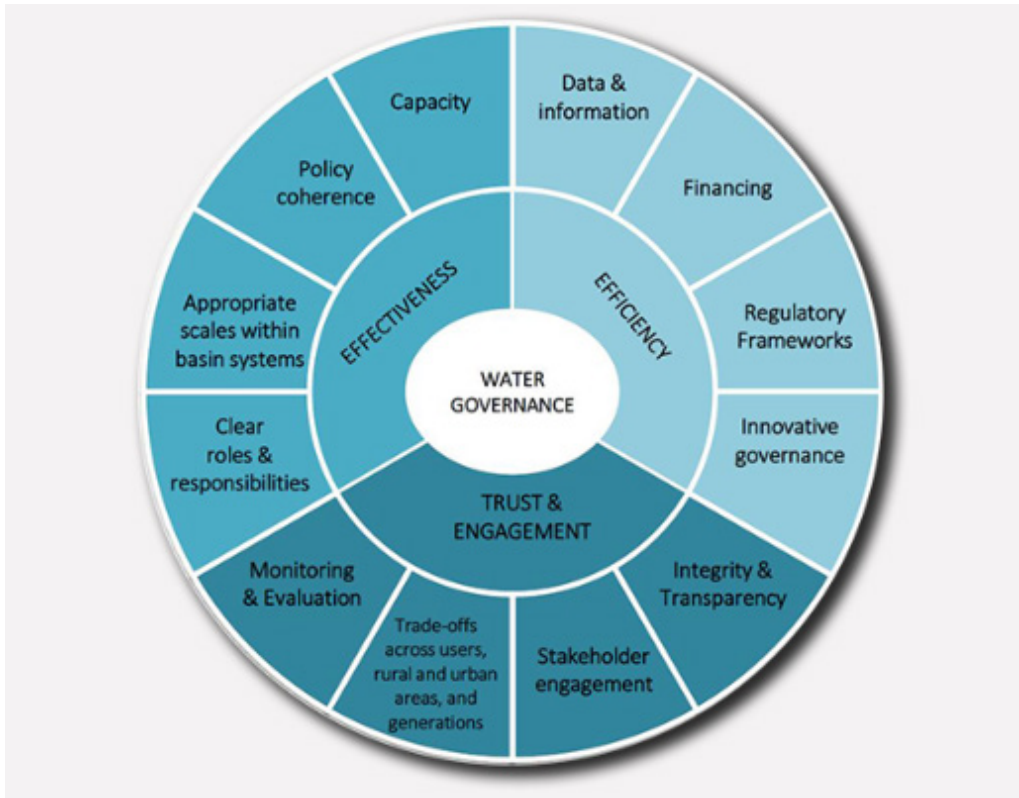
Policy coherence between sectors has been one of the most challenging and is paramount for implementing a circular economy across the nexus with energy, waste management and food production. The appropriate scales for governing water resources within basin systems constitute another key element in this governance model.

Water governance presents itself as a challenge both at the local and at the transboundary levels. Polycentric models of governance have shown performance advantages, however, imply costs that may be too high for smaller river basins (Pahl-Wostl *et al.*, 2012; Guría, 2019). Transboundary and global management - across regions and countries - has been identified as a crucial under-addressed aspect of water governance in the era of climate change. Water governance models have been too incremental and local, and water has to be managed as a collective global resource, not just across borders through

treaties, concluded the report 'Turning the Tide', launched in March 2023 just before the special Water Conference organised by the United Nations (Global Commission on the Economics of Water, 2023).

Figure 2. *The OECD Principles for Water Governance (2015)*

Source: Organisation for Economic Co-operation and Development. <https://www.oecd.org/governance/oecd-principles-on-water-governance.htm>



In Europe, transboundary management of water resources between shared river basins (appropriate scales) remains a challenge. The existing treaties are based on ecological concerns mostly, but not yet up to the challenge of the climate crisis and a growing demand, which will require new governance mechanisms with a wide representation of interested stakeholders, including farmers and industries (Baranyai, 2019).

Water reuse and stormwater management, for example, require the implementation of multi-benefit measures throughout the water cycle and an effective nexus approach. Water was almost absent from the circular economy plans of EU member-States until recently (Fidelis et al., 2021).

At the EU level, the Proposal for a revised Urban Wastewater Treatment Directive (COM, 2022) 541 final) promises to be a significant impulse to the circular economy across the water-energy-waste nexus. The new Integrated Plan for Nutrient Management will be another step further an effective implementation of the EU Action Plan for the Circular Economy (EC, 2020), the Green Deal and the 2050 goal of carbon neutrality, while contributing to recovering soils and biodiversity, as well as more sustainable food systems.

Water governance in Europe is moving towards a more adaptive model, which responds to the challenges brought about by climate change, with more intense and frequent climate extremes, requiring flexibility and innovation in e.g., stormwater management, drought response and prevention of water scarcity, by resorting to alternative sources (such as reused treated wastewater). These systems should support a process of transformative change, helping to enhance innovation, learning, adaptation, trust, cooperation and the achievement of more effective, equitable, and sustainable outcomes at multiple scales (Pahl-Wostl, 2017).

Damman *et al.* (2023) emphasise that a water-smart society aims at societal well-being and co-development across different disciplines and sectors (across the water-energy-food nexus) within a long-term view of sustainability.

One of the most recent B-WaterSmart reports analyses the solutions that these regions are developing in the light of the 12 OECD principles. These include the need to create new funding programmes, as well as providing clear guidelines at national level and empowering local and regional authorities to implement innovative solutions for reuse, nutrient recovery (for industry and agriculture) and stormwater (Schmidt *et al.*, 2023).

In order to implement these kinds of changes in an effective and lasting way, the involvement of social scientists has been strengthened in the transition to sustainability. Only with an interdisciplinary and intersectoral approach will we be able to adapt to climate change, supporting a more resilient and fairer water governance, which includes adequate protection for the most vulnerable social groups and socio-economic sectors. Social justice is a core concern for adaptive governance in face of climate change (Nicholson-Cole and O'Riordan, 2009). In the case of B-WaterSmart, the Living Labs have created Communities of Practice (CoPs) that have acted as an extension to the community, namely the stakeholders who are invited to participate in the co-creation of solutions for smart water management.

### 3 The Portuguese Case

An assessment carried out for the Portuguese Environment Agency (Oliveira, 2021) has evaluated precipitation patterns and pointed out that there has been less 15% rain over the last 20 years in Portugal and Spain, and average annual precipitations may still further decline by 10 to 25% until the end of the century. Water availability has decreased 20% in just two decades.

Persistent deficiencies in the monitoring system have made it more challenging to identify inefficiencies in water consumption across regions and sectors. One of the regions with most deficient information is coastal Algarve, Southern Portugal (Oliveira, 2021), where in the winter of 2023-2024 worsening water scarcity led to the Drought Permanent Commission deciding to start water rationing in January 2024 (Portuguese Government, 2024), prompting strong protests from the agriculture sector, which has been required to reduce consumption by 25% (besides cuts of 15% for urban consumption and tourism).

Trust in authorities and the effectiveness of public participation remain persistent challenges for water governance in the country. The Water Framework Directive (2000) has recommended the constitution of management authorities based on the river basins, which boundaries most often do not coincide with administrative delimitations. However, the practical implementation of this principle has varied significantly between the EU Member-States (Rowbottom *et al.*, 2022). In Portugal, the constitution of the Hydrographic Regional Administrations (ARH) in 2008, as decentralised authorities with a relative autonomous management – charging direct taxes for the use of water resources and coastal areas – was seen as a significant step in that direction, but in 2012 they would eventually be reintegrated into the Portuguese Environment Agency (Schmidt *et al.*, 2015).

In terms of public participation and stakeholder engagement, procedures have improved over the last few decades, but there is still some way to go to improve accountability and transparency. At the national scale, the National Water Council (Conselho Nacional da Água) represents key stakeholders of the water sector, however the proceedings of the meetings have not been generally made public. The River Basin District Councils play an advisory role to the national environment agency (APA) as the main node for stakeholder engagement, at the level of the river basins.

In Portugal, agriculture accounts for 70% of the freshwater consumption, 13% is for domestic supply, 9% for hydroelectrical production and 6% for industry. It remains a challenge to manage trade-offs between sectors in situations of water scarcity. A Permanent Drought Commission was created to approve and monitor the implementation of the Prevention, Monitoring and Contingency

Plan for Drought Situations, being responsible for defining political guidelines in these situations, that have become more frequent in the country. The Commission is made up of the members of the Government responsible for the Environment and Agriculture, Forestry and Rural Development, who coordinate jointly, and the following areas of governance: Finance; Internal Administration; Local Administration; Labour, Solidarity and Social Security; Health; Economy and Sea. The composition of the Commission can be extended to other governmental areas, as well as municipalities, whenever necessary.

In Portugal, the new Strategic Plan for Water Supply and Wastewater and Rainwater Sanitation (PENSAARP 2030) just came into force in February 2024, and includes an assessment of the governance issues at the level of each river basin. The cross-sectoral integration of water management is among the most critical issues identified, as well as the lack of monitoring. Recognising that appropriate governance mechanisms will be critical for the implementation of the plan, PENSAARP 2030 will be coordinated by a specialised management structure, the 2030 Management Support Group (GAG 2030), and also recommends the establishment of a National Commitment Pact for Water Services (APA, 2024).

## 4 Conclusions

Addressing water scarcity, which is affecting an increasing territory and population, will be a fundamental part of a water resilience strategy for the European Union. Climate change is driving an 'intensified' water cycle, with more intense storms and floods, but also droughts. Coupled with a rising consumption over the last few decades, it is now urgent to implement a full circular economy for water, in line with the Green Deal and the EU Strategy on Adaptation to Climate Change.

Five principles stand out from the OECD governance framework as most critical for addressing water scarcity and climate adaptation challenges over the coming decades: policy coherence, trade-offs between users, appropriate scales and stakeholder engagement and, naturally, financing.

*Policy coherence* is at the core of the water governance challenges nowadays, as recent assessments have demonstrated. Schmidt *et al.* (2023) analyse the governance gaps across six European regions as part of the H2020 project B-WaterSmart, highlighting where sectoral integration must improve across the nexus water-energy-waste, to allow for the implementation of a circular economy.

To develop a water-smart culture, it will be crucial to cultivate trust and engagement, one of the key dimensions of the OECD model. This requires finding balanced and negotiated solutions to address the *trade-offs between users* and competing water demands (e.g., tourism vs agriculture), which come to the fore especially during intense drought episodes that require emergency measures. Trust in public institutions is a relevant issue that influences fairness notions around water management in some countries.

*Stakeholder engagement* across the value chain could improve shared problem ownership and investment opportunities. Adaptive and just models of governance will require an effective and inclusive engagement of key stakeholders, but also of social actors that are most vulnerable and have been historically underrepresented. The Communities of Practice (CoP) of B-WaterSmart are a reference framework for implementing participation mechanisms, which should always strive to ensure continuity under the coordination of municipalities or other institutions. The existent consultation mechanisms at the *appropriate scales* of the river basins (such as the hydrographic councils) should also be reinforced in their inclusiveness and mandate.

*Financing*, finally, will certainly be a touching stone in implementing new value chains across the nexus, thus creating new circularities between wastewater treatment plants (WWTP), industry, agriculture and urban planning. This is crucial to ensure the adaptation of existent infrastructure, as well as training and capacity-building at the local and regional levels.

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## Methodological appendix

Qualitative data for this communication was collected through analysis of policy instruments and literature. Qualitative primary data derive from semi-structured interviews carried out for the B-WaterSmart project in 2023, as well as direct observation at its stakeholder meetings of the Communities of Practice (2021 to 2023). These data are compiled and analysed in further detail in the reports available at <https://b-watersmart.eu/results-downloads/society-governance-policy>.

## Biographical notes

Carla Gomes is an environmental social scientist at the Institute of Social Sciences of the University of Lisbon (ICS-ULisboa). Holds degrees in Communications, Environmental Management, Climate Change and International Development. PhD from the University of East Anglia (UK). Having started her career as a journalist, as a researcher she is interested in interdisciplinary approaches to climate adaptation, environmental justice, human capabilities and ecological knowledge. She has participated in multiple research projects on climate change adaptation, with the Institute of Social Sciences, mostly supporting the implementation of climate action at the local and regional level. She has also undertaken independent field research in Cabo Verde and Mozambique. Her doctoral thesis analysed the justice implications of land deals in Mozambique (2017). Author of an awarded book on Climate Change and the Portuguese-Speaking African Countries (2010), has also authored or co-authored papers in peer-reviewed journals (e.g., "Trusted Land" in *Climate and Development* in 2021), as well as book chapters, on topics such as environmental justice, land issues, adaptation to climate change and stakeholder engagement. Her main project at the moment is B-WaterSmart (Horizon 2020, funded by the European Commission, GA No. 869171), where she leads the work package on Society, Governance and Policy.

Luísa Schmidt is Sociologist and Research Professor at the Institute of Social Sciences of the University of Lisbon (ICS-ULisboa). Part of the team that

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## Note

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## Un consumo sostenible de alimentos: el caso del ecomercado de Granada

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**Resumen:** *En estas líneas analizaré el entramado de relaciones sociales que componen el ecomercado de Granada. Un mercado gestionado por productores locales y pensado para los y las granadinas. Para comprender el conjunto de procesos sociales que componen el mencionado espacio, realicé cuatro observaciones participantes y nueve entrevistas en profundidad. Entre los principales resultados destaco una gran fidelidad e implicación por parte de los consumidores, que probablemente se fundamente en una gran conciencia medioambiental. Por su parte, el ecomercado es una organización autogestionada y asamblearia, lo que puede parecer su mayor virtud, es también su mayor debilidad, ya que año tras año cada vez pesan más las labores de gestión. Por último, encuentro una relación con las instituciones públicas cordial pero manifiestamente mejorable. Llama la atención que una actividad tan alineada con los Objetivos de Desarrollo sostenible tenga tan poco apoyo institucional.*

**Palabras clave:** *Consumo político de alimentos, sociología de la alimentación, Ecomercado, cambio climático*

### 1 Introducción

El grupo intergubernamental de expertos sobre cambio climático, en su último informe de 2023, fue rotundo al afirmar las graves y diversas consecuencias que se avecinan como consecuencia de la emergencia climática y energética. También señala de forma inequívoca a las actividades humanas como la principal causa de ambas crisis, debido a que llevamos años haciendo un uso insostenible de los recursos energéticos (IPCC, 2023). Por tanto, vivimos una realidad de doble crisis inminente: la crisis climática y la crisis energética. Ambas, íntimamente relacionadas y, al mismo tiempo, claramente distintas. Por un lado, la crisis climática, materializada en calentamiento global, recurrentes sequías, etc. (FAOSTAT, 2020). Otro ejemplo, “una persona nacida en 2014 ha vivido los ocho años más calurosos desde que hay registros” (Bordera y Turiel 2022, p.25). Por otro lado, una grave crisis energética, entendida como el agotamiento de diferentes recursos naturales. En 1971 el geofísico Hubbert predijo que llegaríamos al máximo de producción de petróleo en 2005, así lo certificó la Agencia Internacional de la Energía en 2010. Gracias a la

aportación del *fracking* de EEUU postergamos hasta diciembre de 2018 el pico de producción del conjunto de hidrocarburos líquidos. Desde entonces, estos están en un declive irreversible (Turiel, 2020).

Al tiempo que el mundo afronta esas dos graves crisis, nos alimentamos gracias a una industria agroalimentaria causante de entre el 44% y el 57% de las emisiones totales de CO<sub>2</sub>, añadiendo los costes derivados del uso de fertilizantes, refrigeración, transporte y envasado. Se sabe que los alimentos viajan grandes distancias antes de llegar a nuestra cocina, por ejemplo, la carne que se consumen en España recorre de media 2380 km y el café 6227 km (González Hidalgo et al., 2012). Lo que supone un derroche de energía, de diésel concretamente, que es difícilmente justificable si tenemos en cuenta el contexto de doble crisis que acabo de explicar.

Frente a este sistema de producción y consumo, existen alternativas solventes de consumo de alimentos que no implican esas grandes cantidades de contaminación y despilfarro energético. En esta comunicación me dispongo a analizar el conjunto de relaciones sociales que configuran el ecomercado de Granada (localidad española). Todo ello, como un caso de estudio de práctica socio-ecológica que es el objetivo de estudio de la investigación en la que se enmarca esta ponencia.

## 2 Una visión general del Ecomercado

La gestión del Ecomercado es la principal actividad de la Red Agroecológica de Granada (RAG). Desde 2014, la RAG organiza dos ecomercados al mes, uno situado en el centro del Granada (ecomercado sur), el primer sábado de cada mes y otro en la zona norte de la ciudad, una zona periférica (Ecomercado norte), el tercer sábado de cada mes. Ambos mercados tienen como objetivo general la venta de productos ecológicos y de producción local.

Eventualmente, en los ecomercados también se organizan actividades sin ánimo de lucro. Producto de las diferentes observaciones que he llevado a cabo<sup>3</sup> he observado varias de estas actividades. En primer lugar, la RAG suele invitar a una asociación que tiene como objetivo la conservación de semillas locales y no modificadas genéticamente<sup>4</sup>. En este puesto, el representante de la asociación intercambia semillas y explica los beneficios de usar semillas locales, por ejemplo, que están mejor adaptadas al clima y a las plagas del territorio. También observé un puesto de intercambio de ropa de segunda mano gestionado por la asociación de madres contra el cambio climático. Por último, la informante MP2, me contó durante su entrevista que también suelen organizar catas de aceite, pan y tomates autóctonos.

Además de estas actividades ocasionales, el ecomercado cuenta con entre veinte y veinticinco puestos estables que venden carne, huevos, leche, queso, fruta, verdura, pan, aceite, todo tipo de legumbres, cereales y vino. También forman parte del ecomercado, con un puesto propio, una biblioteca, un puesto de productos de higiene y otro puesto de ropa. Todos los productos son locales y cuentan con certificación ecológica. Durante las observaciones pude comprobar que todos los productores mostraban, en un lugar visible del puesto, el certificado de producción ecológica de la Junta de Andalucía<sup>5</sup>.

### **3 La organización interna de la Red Agroecológica de Granada (RAG)**

Gracias a las entrevistas en profundidad con gestores de la RAG, pude averiguar la gestión interna de la organización. El principal valor de la red es su carácter asambleario y autogestionado. Es decir, no reciben financiación de ningún organismo público y toman todas las decisiones de forma asamblearia.

Aunque todas las decisiones importantes pasan por la asamblea. La RAG se organiza en diferentes comisiones que gestionan el trabajo diario. La Comisión de seguimiento y admisión, se encarga de admitir o desestimar las propuestas de participación en el ecomercado, esencialmente, controlan que los productores sean locales y que tengan en regla el certificado de producción ecológica. Una vez, comprobados estos requisitos se propone a la asamblea para su admisión. La comisión de difusión, que se encarga de hacer y difundir los carteles en las redes sociales. La comisión de infraestructura se encarga de gestionar todo lo necesario para que todos los puestos tengan la misma imagen corporativa y también montan y desmontan los puestos al empezar y terminar cada evento. Por último, la comisión de gestión económica y Ayuntamiento, que se encarga de cobrar la cuota de socio a cada productor y, con ese dinero, pagarle al consistorio la tasa de ocupación de vía pública. Otra de las funciones importantes de esta comisión es la de supervisar que se respete la horquilla de precios fijada por la asamblea para los productos frescos. Morillas del Moral (2020), añade a esta lista la comisión de actividades, que supuestamente se encargaría de proponer y organizar las diferentes actividades que eventualmente se organizan.

Por su parte, el Ayuntamiento de Granada, se limita a conceder el permiso de ocupación de vía pública para que pueda llevarse a cabo la actividad. Esta situación genera un gran sentimiento de inseguridad y decepción por parte de los gestores del mercado respecto a la actitud tanto del Ayuntamiento de la ciudad como de la Junta de Andalucía. El fragmento de MP2 explica bastante bien el sentimiento de olvido institucional que viven.

MP2: Todo es bastante complicado con ellos. El principal problema es el pago trimestral, porque tienes que hacer instancia y pedir permiso, cada vez. No hay forma de domiciliar los pagos, ni nada... Es una actividad que hago yo en mis ratos libres. Y ya porque pensamos que siempre nos van a dejar ponernos pero cualquier día nos niegan el permiso y se acabó. De hecho, nos llamaron ayer porque no habían visto el pago y estábamos sin permiso para el mercado de mañana... Es una gestión que no es para nada ágil. Luego para conseguir los permisos para la concesión del ecomercado norte, nos costó mucho convencerlo de que no molestábamos, buscar un espacio que no moleste, siempre es todo como rogar... De hecho, ya hemos tenido el primer problema porque pedimos un cambio de día para el ecomercado del día 6 de enero (de 2024) y nos lo han negado... Antes, sí podíamos hacer cambios de días, ahora nada. Ningún equipo de gobierno nos había puesto ningún problema con los cambios de fechas, ha sido ahora con el PP la primera vez que nos han puesto un problema para cambiar de fecha. Ni nos limpian, ni nos riegan, ni nos dan difusión, nada. La última concejala de vía pública del PSOE, sí nos regaba más, alguna vez nos barría el suelo antes de los mercados, nos acercaba los contenedores e hizo una rueda de prensa para difundir el noveno aniversario del ecomercado.

Todo ello genera una situación incoherencia institucional. Por un lado, todas las instituciones públicas presumen de hacer grandes esfuerzos por alcanzar los Objetivos de Desarrollo Sostenible (ODS) pero por otro, en este caso concreto, olvidan a quienes producen comida ecológica para un consumo local. En este sentido me veo obligado a recordar los objetivos 2, 3, 6 y 11, que buscan erradicar el hambre en el mundo, que todas y todos disfrutemos de agua limpia y que vivamos en ciudades sostenibles. ¿Acaso el ecomercado no ayuda a conseguir estos objetivos?

## 4 Los discursos y prácticas de los consumidores

Existen algunas publicaciones que ofrecen datos concretos sobre las motivaciones y prácticas de los consumidores. Por ejemplo, Morillas del Moral (2020), realizó una pequeña encuesta en la que preguntaba a algunos consumidores. Entre los resultados destaco que el 60% de los consumidores gastaba más de 50€ mensuales, que un 27% acudían siempre y un 40% entre 6 y 11 veces al año.

Los datos de mi propio trabajo de campo ayudan a sostener estas consideraciones. Para empezar, pude observar una evidente fidelidad de los y las consumidoras. Por otro lado, suelen hacer grandes compras, es frecuente observarles cargados con grandes bolsas de comida, bolsas que en la gran mayoría de casos eran reutilizables.

Respecto a las motivaciones internas para comprar su comida en el ecomercado, aunque es sin duda un tema que merece más atención y entrevistas, puedo ofrecer algunos resultados preliminares. En primer lugar, destaca entre los consumidores una gran motivación por *consumir comida sana*. La mayoría de informantes entienden, por sano, comida sin pesticidas y sin procesar.

Martín Criado (2007) explica como el conocimiento nutricional no es determinante sobre las prácticas de consumo de alimentos, especialmente entre familias de clase popular. En cambio, sí resulta determinante gestión del dinero y del tiempo. La *doble jornada* (de las madres) convierte la preparación de comidas en una carrera contra reloj, en donde la consigna es ir a la práctico, por tanto, la alimentación de la familia puede alejarse del ideal nutricional. Lo importante que señala el autor, es que cuando las madres de clases populares se alejan del ideal de comida saludable, no es por falta de información, sino por falta de condiciones materiales, en forma de tiempo, sobre todo. Una reflexión que confirma el informe AISEC (2015), también para población andaluza.

En cambio, los consumidores del ecomercado realizan verdaderos esfuerzos por alimentarse principalmente gracias a estos productos. De forma que, aunque los condicionantes materiales continúan presentes, muestran una gran concienciación medioambiental, al tiempo que, de cuidados de la propia salud. Una conciencia que opera como una energía extra para cumplir con su intención de comer saludable, al tiempo que practicar un consumo responsable de alimentos. Por ejemplo, MC1, una consumidora habitual del ecomercado recorre casi una hora de trayecto para comprar sus alimentos y organiza su menú semanal para aprovechar la comida que ha comprado. MC4, por su parte, añade a esto modificaciones en sus actividades de ocio con la intención de no desperdiciar comida.

MC1: Que de vez en cuando hicieran algo por el centro, por aquí para no tener que ir siempre tan lejos... Lo de que sea cada dos semanas me da un poco igual porque compro y me aguanta la comida pero la distancia sí es un problema, normalmente voy andando y si tengo mucha compra vuelvo en bus.

MC4: Es complicado, muchas veces si me invitan a salir a comer por ahí, yo prefiero quedarme en casa para comer sano y aprovechar la verdura que tengo, aunque eso genera muchas veces incomprensión por parte de mi circulo social... Es una decisión personal.

Desde mi punto de vista, la pregunta pertinente ahora, sería qué tienen de especial estas personas para llevar un tipo de alimentación tan saludable (al tiempo que un consumo responsable) a pesar de los grandes esfuerzos que les supone. Aunque la investigación está abierta, una idea sobresale como posible

respuesta: los consumidores del ecomercado manifiestan un interés especial por cuidar la naturaleza y el medio ambiente.

Son muchas las investigaciones que sostienen, en base a un sólido trabajo de campo, que la imitación es una parte importante en el proceso de incorporación de nuevas prácticas o valores. Así, Merga (2015) aporta un ejemplo para el ámbito educativo, la autora australiana explica que las familias que cuentan con una amplia biblioteca en casa junto con progenitores que leen frecuentemente, incrementan sustancialmente las posibilidades de inculcar esa afición a sus hijos e hijas. De forma similar, los y las consumidoras del ecomercado aprenden en la infancia a apreciar los entornos naturales. Después, en la vida adulta, se mueven guiados por ese interés en cuidar aquello que han aprendido a valorar, es decir, la naturaleza. Así, MC1 y MC4 recuerdan los siguientes momentos de su infancia:

I: ¿Qué planes hacíais en vacaciones?

MC1: Íbamos mucho al campo también, íbamos al norte a Asturias, o a Cádiz, hacíamos excursiones por el campo.

MC4: Ayudaba a mi padre con su huerto, entonces no lo valoraba, lo veía como una obligación pero ahora comprendo el valor de cultivar tus alimentos y cuidar la tierra.

Otro de los temas que merece atención son las desigualdades de género que he podido observar durante todas las observaciones (O1, O2, O3 y O4). A pesar de que, Morillas del Moral (2020) no encuentra ninguna diferencia entre hombres y mujeres, a mí me resultó muy significativa la distribución de roles entre los consumidores. Mientras ellas hacían la compra de alimentos, elegían productos y cantidades, ellos guardaban cola en el siguiente puesto, iban al coche a dejar los productos más voluminosos o simplemente cargaban con la comida. Por otro lado, en todas las observaciones percibí una clara mayoría de consumidoras.

Por último, todos los informantes manifestaron tener una cantidad suficiente de ingresos y no observé ningún tipo de carencia material. También es cierto que la muestra todavía es pequeña y, en ningún tema, he alcanzado la saturación teórica. Por tanto, sería muy interesante averiguar si esta forma alternativa de consumo de alimentos está al alcance solo de las clases más acomodadas.

## 5 Conclusiones

Desde las ciencias sociales se ha detectado una limitación común entre el conjunto de los análisis existentes sobre el cambio climático que se fundamenta en ofrecer soluciones que pasen exclusivamente por el libre



mercado (Villavicencio, 2021). De forma que, el ecomercado, como práctica socio-ecológica es capaz de ofrecer una importante solución superando los límites del libre mercado.

Toda la filosofía general del ecomercado busca un modelo de gestión que trascienda los límites del libre mercado. Para empezar un sistema de fijación de precios que tiene como objetivo garantizar, por un lado, que los productores puedan sostener su actividad económica, por otro, garantizar la accesibilidad de los productos a una mayoría social. Luego, su modelo de distribución y venta de alimentos no busca maximizar beneficios, no buscan vender su producción allá donde sea más rentable, buscan sostenerse vendiendo en el territorio con la intención de general el menor impacto medioambiental posible.

Para terminar de sostener esta idea, debo recordar ese conjunto de actividades paralelas que organiza el ecomercado y que se basan en el simple intercambio de productos con la mera intención de satisfacer una necesidad. Por ejemplo, la actividad de intercambio de ropa organizada por la asociación madres contra el cambio climático. Evidentemente, dar una segunda vida a la ropa evita los costes asociados a la producción, distribución y compra de nuevas prendas.

Por último, para cerrar este apartado de conclusiones, tengo que recopilar dos reflexiones importantes. En primer lugar, esa característica de consumidor concienciado que, a pesar de las dificultades, asiste con regularidad al ecomercado para comprar sus alimentos mensuales. Resulta interesante observar que algunas personas actúan en línea con la paradoja de Giddens (2009), mientras que otros actúan contra el cambio climático con las herramientas que tiene a su alcance. Al otro lado de la moneda, frente a ese esfuerzo extra que realizan algunos consumidores, encuentro la dejadez por parte del Ayuntamiento de Granada en promocionar y facilitar la organización del ecomercado. Lo que resulta sorprendente dado el interés que sí muestran por alcanzar los Objetivos de Desarrollo sostenible.

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## Apéndice metodológico

Para alcanzar una comprensión profunda del entramado de relaciones personales que configuran los ecomercados de Granada, he realizado 9 entrevistas en profundidad siguiendo las pautas de Taylor y Bogdan (1987), entre las destaco mi interés por diversificar al máximo el perfil de los y las entrevistadas para tratar de cubrir la gama completa de discursos.

Para complementar las entrevistas y siguiendo los consejos de Ruiz Olabuénaga (2012), he realizado 4 observaciones en profundidad, tres de ellas en el ecomercado sur y una en el de la zona norte. A continuación, pueden ampliar información respecto al perfil de los y las entrevistadas en la tabla 1 y respecto a las observaciones en la tabla 2.

## Tablas

Tabla 1. Descripción de las Personas Entrevistadas (2023 y 2024), José Luis González Rivas

Código	Descripción	Rol
MC1	Mujer nacida en Madrid en 1995. Actualmente trabaja como investigadora en la Universidad de Granada.	Consumidora
MP2	Mujer nacida en 1981 en la provincia de Granada. Actualmente Trabaja como Trabajadora social. En su tiempo libre desempeña tareas de gestión del ecomercado y colabora con quesería de su familia.	Productora
HC3	Hombre nacido en 1961 en la provincia de Gerona. Profesionalmente tiene un centro de enseñanza de Yoga.	Consumidor
MC4	Mujer nacida en 1991 en Suiza. Actualmente se dedica a dar clases de español, aunque tiene formación en Turismo.	Consumidora
MC5	Mujer nacida en Barcelona en 1986. Actualmente es Agente de medio ambiente.	Consumidora
HC6	Hombre nacido en 1986 en Barcelona. Trabaja para una empresa de logística.	Consumidora
MC7	Mujer nacida en Córdoba en 1970. Actualmente es administrativa para la Junta de Andalucía.	Consumidora
HC8	Hombre nacido en Granada en 1974. Tiene una empresa de Arquitectura y diseño.	Consumidor
MP9	Mujer en 1997 en Láchar. Actualmente trabaja en la cooperativa Valle y Vega.	Productora

Tabla 2. Descripción de las Observaciones Realizadas (2023 y 2024), José Luis González Rivas

Código	Breve descripción	Fecha
O1	Primera observación del ecomercado sur. Encuentro un gran número de personas, sobre todo mujeres, cargadas con bolsas de tela. Por otro lado, 23 puesto de verdura, quesos, carne, pan o aceite entre otros.	10 de junio de 2023
O2	Segunda observación del ecomercado sur.	7 de octubre de 2023
O3	Tercera observación del ecomercado norte. Se observan menos puestos y menos afluencia de público. También veo caras conocidas, es decir, algunos consumidores compran en ambos mercados.	16 de diciembre de 2023
O4	Cuarta observación del ecomercado sur. Destaco dos actividades: el puesto de intercambio de semillas, organizado por una asociación en favor de la conservación de semillas autóctonas y otro puesto de intercambio de ropa usada gestionado por una organización de madres contra el cambio climático.	6 de enero de 2024

## Abreviaturas

- **RAG:** Red Agroecológica de Granada

## Nota Biográfica

José Luis González Rivas ha sido Personal Investigador Predoctoral en Formación con una Ayuda del Departamento de Educación, Universidades e Investigación del Gobierno Vasco para el desarrollo de su tesis doctoral afiliada al Departamento de Sociología y Trabajo Social, Universidad del País Vasco/Euskal Herriko Unibertsitatea. Graduado en Sociología por la Universidad de Granada (2016). En 2017, finalizó un Máster en Problemas Sociales por la misma Universidad. Su investigación se centra en los y las escritoras de graffiti desde una aproximación cualitativa.

## Notas

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2. Correo electrónico para comunicaciones con el autor josegrivas90@gmail.com
3. Recomiendo al lector leer el apartado Apéndice metodológico para una mayor comprensión del trabajo de campo realizado.
4. Son muchos los autores que muestran tanto la importancia de usar y conservar variedades de semillas no modificadas genéticamente y propias del territorio, como el peligro para la salud pública que implica el uso generalizado de semillas modificadas genéticamente (Vivas Esteve, 2017; Shiva, 2020).
5. Para saber más sobre la certificación ecológica consultar: <https://caae.es/>.



## Habitando en comunidad desde la ecología urbana: adentrándonos en las viviendas colaborativas (cohousing)

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**Resumen:** *En las últimas décadas y coincidiendo con la crisis de la vivienda en el Estado español, han comenzado a proliferar nuevas formas de habitar y convivir en torno a la vivienda como dimensión humana. Una de ellas, está relacionada con las viviendas colaborativas o cohousing, práctica que cuenta con una larga tradición en otros países, como es el caso de Dinamarca. En nuestro caso, el punto de vista desde el que surge esta propuesta está anclado en dos ejes complementarios, uno de ellos trata de recuperar el sentido de vivir en comunidad y el segundo incide en una manera de entender la vivienda como valor de uso. Estos ejes implican un cambio en el modo de vivir y en la ocupación del espacio en la ciudad. Estos cambios, no son exclusivos en la ciudad, encontramos en contextos rurales propuestas de cohousing que surgen con fuerza.*

*Por ello, abordamos el cohousing en esta presentación desde diferentes puntos de vista considerándolo como un movimiento social que transforma el concepto de habitar, en que se produce una estrecha relación con el vivir en comunidad, donde los cuidados, el bienestar, la igualdad de género y empoderamiento de las mujeres, y en general, contribuyen a promover sociedades inclusivas de cara al desarrollo sostenible. Hablamos de colaboración, de habitar y de cuidar, por tanto, la repercusión de los roles de género en el desempeño de dichas tareas en un contexto novedoso.*

*Es por ello que nos hemos planteado interrelacionar nuestro objeto de investigación con los "Objetivos de Desarrollo Sostenible", varios de ellos remiten directamente al punto onceavo del (ODS) "Ciudades y asentamientos humanos sostenibles".*

**Palabras clave:** *Vivienda, cohousing, ODS, prácticas sociales, ecología social, sociocracia*

## 1 Contextualización y estado de la cuestión

La cuestión de la vivienda colaborativa es reciente en cuanto a su implantación, siendo una de los primeros países en apostar por esta praxis social Dinamarca con la emergencia de las viviendas cooperativas Andel en 1866 (Lacol y la ciudad invisible, 2018). Actualmente, más del 30% de las viviendas de la capital Copenhague se inscriben en esta forma de entender la vivienda a través del régimen cooperativo Andel.

En el contexto internacional no solamente tenemos la experiencia de Dinamarca, también se han estudiado otros casos como los de Alemania (Mietshauser Syndikat), o Reino Unido con la experiencia de los Radical Routes (Lacol y la ciudad invisible, 2018). Todo ellos vienen a ser experiencias asentadas y con cierta emergencia social en dichas sociedades.

En el caso de España encontramos la presencia de diferentes movimientos sociales relativos a las viviendas cooperativas. Entre ellos, se pueden citar las experiencias de Entre Patios (Madrid) y La borda (Cataluña). En el caso más próximo al País Vasco encontramos otras experiencias emergentes como son las redes Kobizitzak o Ametsak Sortzen.

Una de las razones de la emergencia de estas nuevas formas de habitar, vivir y convivir la podamos vincular con los nuevos modos de vida, estilos y formas de vivir que van evolucionando paulatinamente en función de las necesidades y de los cambios que acompañan a la sociedad. En este caso nos centramos en un tipo de vida vinculado a un proceso transformador de la vivienda en comunidad, el *cohousing*. En el contexto de unas sociedades cada vez más atravesadas por la dificultad y tensión para el acceso a la vivienda, surge este fenómeno social, cuyo objetivo es poner en tela de juicio las formas tradicionales hegemónicas de vivir y convivir.

Habida cuenta de ello, este trabajo es un avance de una investigación en curso, relacionada con las viviendas en comunidad o cooperativismo dentro del paraguas de la *cesión o valor de uso*, frente al valor de cambio. El *cohousing* se caracteriza en que la vivienda tiene un sentido de uso, a la vez que hace una apuesta por lo colectivo desde el momento en el que nos encontramos con espacios privados y espacios comunes. En el contexto de estas viviendas colaborativas, según Lacol, la comunidad,

[...], decida sobre el modelo de convivencia que quiere impulsar. De este modo se puede repensar la forma de habitar y fomentar modelos de vivir en colectivo que apuesten por una mayor convivencia, colaboración y solidaridad entre los habitantes de la cooperativa. Esto se traduce en

la optimización de ciertos servicios y equipamientos que normalmente incorporamos a los espacios privados de cada vivienda (como la lavandería, herramientas, espacios para cuidados, habitaciones para visitantes, etc). (Lacol, 2018:15)

Muchas de estas viviendas están organizadas según el patrón de la cooperativa. Estamos ante una nueva forma de vivir y convivir, donde los binomios público-privado, interior-exterior, y social-intimo se ven renegociados y resignificados, adoptando de este modo nuevas formas de entender y comprender el espacio. Además de todo esto, lo interesante del estudio de la vivienda colaborativa consiste en la incorporación de nuevos marcos de sentido sobre el ser humano y su forma de vivir y convivir, huyendo de los marcos individualistas para adentrarse en nuevos marcos de sentido próximos a la cooperación y a la solidaridad, tal como enfatizan las iniciativas del cohousing .

En este sentido, el énfasis de este fenómeno social se inscribe en el valor social de la vivienda, apostando por nuevos valores vinculados con el compartir, con la solidaridad y, en definitiva, con el convivir (Lacol y La ciutat Invisible, 2018). El énfasis en las tareas domésticas compartidas, así como la combinación de espacios colectivos y privados que aseguran el desarrollo de la vida social permiten plantear unos recursos económicos comunes. Es importante señalar que el beneficio vas más allá de los indicadores económicos, ya que incide también en cuestiones de cuidado y socialización, pensando el cohousing como un entorno seguro en el que los niños puedan crecer y sus habitantes como una "familiaextensa" compuesta por personas de edades, intereses y orígenes diversos que viven en un mismo hogar.

El modelo de cohousing es eficaz a la hora de inspirar a la gente para que su vida sea más ecológica, por posibilitar en la mayoría de los casos un contacto directo con la naturaleza así como por implementar prácticas de consumo consideradas no sólo más sostenibles sino también más saludables (Wang & Hadjri, 2018). La tierra se nutre y la huella medioambiental se reduce, lo que permite a los individuos y su impacto en un vecindario más amplio y en el medio ambiente.

## 2 Metodología

A partir de un mapeo de iniciativas tanto en zonas urbanas como rurales y en las que encontramos una especial inquietud por el cambio climático y la sostenibilidad recurriremos a la realización de entrevistas y grupos focales. Nos planteamos como punto de partida la siguiente cuestión: ¿cómo la vida en comunidad, este modelo de convivencia y habitar, pone en marcha mecanismos

y procesos de cambio social que actúan en beneficio de la sostenibilidad y dan respuesta a algunos de los retos del cambio climático?

La segunda de las cuestiones generales que nos planteamos gira en torno a: Indagar de qué manera los espacios comunes en el cohousing y la ocupación del espacio está en estrecha relación con el cuidado y la colaboración, y, en muchos casos, el género adquiere una especial relevancia desde la perspectiva de la igualdad de género.

Encontramos iniciativas de esta índole en diferentes comunidades, algunas con una larga trayectoria, como en el caso de La Borda en Barcelona y Entre Patios en Madrid. Por cuestiones de proximidad, nos centraremos en la CAPV y Navarra. Ello nos permitirá además contrastar la acogida de estas iniciativas en un territorio en el que tradicionalmente la casa, *etxea*, ha ocupado un lugar central tanto en la organización social y en el imaginario colectivo, como elemento estructurante de la identidad del individuo para con la comunidad que va más allá de la mera vivienda como lugar de habitación.

Partiendo de este planteamiento general, y en línea con los objetivos del proyecto Socio-ecos y los ODS, prevemos realizar entrevistas semi-dirigidas a expertos/as, responsables de políticas públicas, a personas que habitan en diferentes cohousing o han hecho una apuesta por esta opción, así como a personas significativas de movimientos sociales. Asimismo, contemplamos realizar entrevistas sobre casos de trayectoria ya asentada, como pueden ser La Borda en Barcelona y Entre Patios en Madrid. Por último, llevaremos a cabo un análisis de diferentes iniciativas cohousing a través de la web.

Tras realizar un primer mapeo de las iniciativas de la CAPV y Navarra, hemos podido observar un funcionamiento en red: dos redes, Ametzak Sortzen y Koobizitza, agrupan diferentes cooperativas. Hemos seleccionado un caso específico en Navarra, Arterra Bizimodu que consideramos un *tipo ideal* desde el punto de vista del interés de esta investigación.

### **3 Análisis de caso: Arterra Bizimodu**

Arterra Bizimodu es una iniciativa de covivienda situada en la Comunidad autónoma de Navarra. Se trata de un proyecto de Cohousing inscrito en una extensa red de coviviendas en cesión de uso lideradas por Koobizitza. Este proyecto surge en el año 2014 a partir de la iniciativa de muchas personas, cuyo interés personal busca articular nuevas formas de vivir, habitar, consumir y compartir. En definitiva, se trata de una iniciativa propulsora de una nueva forma de vivir distanciada de las formas hegemónicas sociales, culturales y



económicas de nuestras sociedades. En este proyecto de cohousing conviven actualmente más de 40 personas adultas y menores de edad, siendo la constitución familiar (denominada fuego por Arterra) distribuida en 20 núcleos principales en un antiguo hotel rural en la localidad de Artieda. En este sentido, toda persona con interés en la participación en el proyecto tiene derecho a acceso, siempre y cuando existan plazas libres.

Realizando una etnografía digital de esta organización, vemos que Arterra Bizimodu busca articular nuevas formas no solo de vivir sino también de convivir, proponiendo a sus participantes una armonía entre lo personal (el acceso a una forma de vivir) y lo colectivo (la gestión social de dicha forma de vivir a través de la sociocracia).

Arterra Bizimodu somos una comunidad intencional que nació en la primavera de 2014 en la localidad de Artieda, Navarra. Con el lema *“Otro mundo no solo es posible, sino necesario”*, llevamos desde entonces caminando como Ecoaldea con el objetivo de dinamizar actividades hacia la autosuficiencia y de indagar otras economías que reflejen un nuevo equilibrio entre lo personal y lo colectivo, desplegando la creatividad y los diversos talentos de cada una de las personas que se van sumando al proyecto. Lo hacemos con la confianza de que, sumando, es más fácil el camino (Arterra Bizimodu, 2023).

Como se puede observar, se trata de una comunidad intencional, es decir una comunidad no solamente constituida en base a una necesidad social como es el acceso a una vivienda, sino también en base a la necesidad de construir una forma de convivencia acorde a unos valores, principios y una ética común. En este caso, una ética dirigida a la articulación de nuevas formas de consumo y nuevas formas de establecer relaciones a todos los niveles, desde los niveles sociales hasta los económicos y políticos (sociocracia). Además de todo esto, se trata de una ecoaldea cuya meta principal reside en la búsqueda de la autosuficiencia socioeconómica: es decir, la búsqueda de formas alternativas de consumir, poniendo en el centro las necesidades del ser humano y de la naturaleza.

Asimismo, los objetivos de esta iniciativa de convivencia se inscriben en la colaboración, el cuidado, el compartir y el participar. Primero, nos recuerdan los habitantes de Arterra, la colaboración desde la intención sociopolítica de que no podemos seguir aupando el modelo neoliberal de convivencia, estrechamente vinculado al individuo como entidad exclusiva. Segundo, el cuidado con la intención de buscar nuevas formas de relación con la naturaleza, la biología y el planeta. Tercero, el compartir desde la necesidad de construir una economía del bien común, propulsora de un nuevo sentido respecto a la producción y al

consumo (lo local por encima de todo). Cuarto, participar en la consecución de una sociedad regida por valores humanos de equidad, realización, paz, sustentabilidad y creatividad.

Por último, Arterra Bizimodu nos propone una visión de un vivir distanciado de las formas hegemónicas de nuestras sociedades. En el centro de estas nuevas formas de vida está la voluntad social por el cuidado del medio ambiente, el cuidado de la persona y de su dignidad humana, el cuidado de una economía sostenible y el cuidado de una nueva forma de organización y de hacer política. En esto último, el proyecto de sociocracia resulta fundamental, puesto que se trata de la necesidad de transformar la organización de las relaciones sociales y políticas. En Arterra, con la práctica de la sociocracia se busca la construcción de nuevas formas de toma de decisiones, promoviendo la horizontalidad por encima de la verticalidad que habitualmente domina en la vida cotidiana.

## 4 Conclusiones

La conjunción de concebir la vivienda como necesidad vital y la importancia de la comunidad para el desarrollo de la vida en sociedad se acompaña por un alto grado de conciencia sobre el impacto de la acción humana en el planeta se traduce en la necesidad de incorporar la sostenibilidad como elemento central en la puesta en marcha en los cohousing analizados. Aunque nuestro estudio se encuentra aún en proceso, hemos podido detectar tanto en las primeras entrevistas realizadas como en el análisis de los sitios web que ambos ejes, la vida en comunidad y un alto nivel de conciencia ecológica ocupan un lugar preponderante. Es más, podríamos decir que ambos se piensan como estrechamente imbricados para hacer frente al cambio climático. En el caso de los cohousing elegidos, intuimos que la sostenibilidad es una preocupación real así como un ámbito de acción inmediata que toma forma a través de la puesta en marcha de prácticas socioecológicas concretas, tanto en el ámbito rural como en el urbano.

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## Notas biográficas

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- Cheddadi Zakariae (2024) 'Emergencia de la islamofobia en el discurso político de VOX', *Política y Sociedad*, 61(1).
- León, J. M., & Cheddadi, Z. (2024) 'Discurso político ante el multiculturalismo de la derecha española: un análisis comparado entre PP y Vox', *Migraciones. Publicación Del Instituto Universitario De Estudios Sobre Migraciones*, 1–22.
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## Facing The Climate Crisis as a Common Challenge: the Role of Commoning Design Practices in Enhancing Urban Resilience

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**Abstract:** *The study of the resilience of cities, conceived as spaces of collective survival within a natural resource-dependent life cycle, is at the forefront of interdisciplinary discourse. As climate change intensifies current and future crises, the urgency for cities to cope with these challenges is paramount. The source of collective actions that exacerbate the impacts of the climate crisis are cities, which are the areas of struggle that will face these impacts most harshly. For a solution that will end this vicious cycle, there is a need to design and manage living spaces with collective consciousness and experiences rather than an individual-centred approach. How planning and design disciplines can develop the ability to tackle the environmental and social crises that await us in the future, adapt to climate change, and create resilient living spaces are current discussion topics that need to be addressed with an interdisciplinary, holistic approach.*

*Therefore, this research's starting point is to explore the intersection of the climate crisis, planning design, and commoning practices. The reason for focusing on the commons as an additional discipline, which includes the use of the commons and the practices of creating and managing shared spaces, is the expectation that urban challenges such as climate crisis and socio-economic and ecological crises that threaten living spaces can be solved through design and space creation tools and methods that will put forward approaches within the framework of commoning practices.*

*The study is shaped around the hypothesis that the production of platforms and gathering spaces where everyday decisions will be taken and solutions that can be implemented with a spirit of unity are produced through commoning practices has the power to transform cities into socio-ecologically resilient living spaces. From its perspective on design, "How can commoning practices contribute to design discipline seeking solutions to the impacts of climate change? The new social and spatial relationship systems established by commoning practices in the face of unexpected crises and the dynamics of producing common space and creating common ground are discussed in the case of Düzce Hope Homes. The climate crisis requires a holistic approach that cannot be solved*

*only through commoning design practices. However, asking whether it is possible to include the concerns of communities in the struggle against future crises through common practices and approaches can be considered a quest to act together and empower common ground.*

**Keywords:** *Commoning design practices, climate crisis, urban resilience, commoning practices, Düzce Hope Home*

## 1 Introduction

The climate crisis problem is not only environmental and ecological but also a complex problem that will affect the entire world system with its social, economic, ethical, and political dimensions on a global scale and is difficult to foresee. A multi-layered chain of risks awaiting humanity at the global level requires solutions that are difficult to anticipate and realise. In this context, settlements and communities should be able to cope with unexpected changes and improve their ability to adapt to changing conditions. The resilience perspective is increasingly used as an approach to understanding the dynamics of social-ecological systems (Folke, 2006, p. 253), which refers to preventing changes, risks, and surprises or ensuring the sustainability of the system by adapting to such uncertainties (Holling, 1973; Folke, 2006 quoted in Özyetkin Altun, 2011). The *socio-ecological approach*, which describes more than a protectionist approach to change and unexpected crises, plays a critical role in the sustainability of urban systems and services in the face of climate change impacts by emphasising the capacity to adapt to change (Folke 2006).

As tree communities bound by coexistence and solidarity that exist by sharing common resources, surviving together with underground root communication networks against environmental threats is a profound message to humanity about how to imagine a common life. Resources in the world ecosystem, such as water, forests, and pastures in rural areas, which are expected to be accessible by everyone, are defined as our ecological commons. The need for people to live together brings the question of how to use, manage, and transform the commons in ecological, social, and collective memory. According to Bookchin (1996), "No longer is it enough to speak of new techniques for conserving and fostering the natural environment; we must deal with the earth communally, as a human collectivity" (Bookchin 1996, p. 47). To explain that the commons are not just things we share but a mode of 'commoning', De Angelis and Stavrides (2010) define the commons in three stages.

"Firstly, all commons involve some sort of common pool of resources, understood as non-commodified means of fulfilling people's needs;

secondly, the commons are necessarily created and sustained by communities; the third and most important element in terms of conceptualising the commons is the verb *to common* – the social process that creates and reproduces the commons.” (e-flux Journal 2010, p. 2).

People’s involvement in decision-making processes regarding their problems and needs triggers the transformation of daily practices by increasing their sense of belonging to the space and the processes carried out collectively. The promising aspect of this state of cooperation in the face of climate change is its potential to increase resilience against challenges and risks by creating common ways of living, spaces, and processes. This study discusses the potential of spatial and social relations produced through common practices to transform cities into living spaces resilient to climate change. By examining the relation between commoning practices and climate change struggles and re-discussing the place of design literature in this context, this article attempts to look beyond the components of design that have been discussed so far.

This study hypothesises that “the production of platforms where common decisions are taken, and solutions are produced against the challenges to be faced in the struggle against the climate crisis through commoning practices has the potential to transform cities into living spaces that are resilient to future agendas in a socio-ecological context”. The starting point of the research is the question: “Can commoning practices be considered as a tool that enhances resilience against climate crisis?” From its perspective with planning and design, “How can commoning practices contribute to design discipline seeking solutions to the climate crisis? will be discussed. These questions will be addressed in the case of Düzce Hope Homes (Düzce Umut Evleri). The focus will be on what common concerns this practice shares, how they come together, their way of transforming urban space, their ability to struggle against challenges and adapt to change, and the processes of designing new spatial and social relations. These components are discussed by reviewing the literature and gathering citizen opinions through interviews. The outputs of the interviews with Hazal Gümüş and Öncül Kırilangıç, who contributed as experts and community members from the beginning of the process to the construction process, were also included in the research. This article should be considered the first step of a more comprehensive and long-term thesis study.

## 2 Climate Challenge and Urban Resilience

As an indisputable fact that the effects that will occur due to climate change are caused by “human-induced” reasons, the IPCC (2007) Fourth Assessment Report states that “the warming of the climate system is certain” and the

human impact on the climate system is clear (IPCC, 2023). With the rapid increase in the world population through the industrial era, the takeover of the world ecosystem by the capitalist system, and the rise of modernism, collective and nature-adapted life practices have evolved into a dominating nature and individual-centred understanding. Among the threats that have the potential to cause the most harm to humanity and the planet in the next ten years, “failure of climate action”, “extreme weather events”, and “loss of biodiversity” are listed as the most severe risks (WEF, 2022).

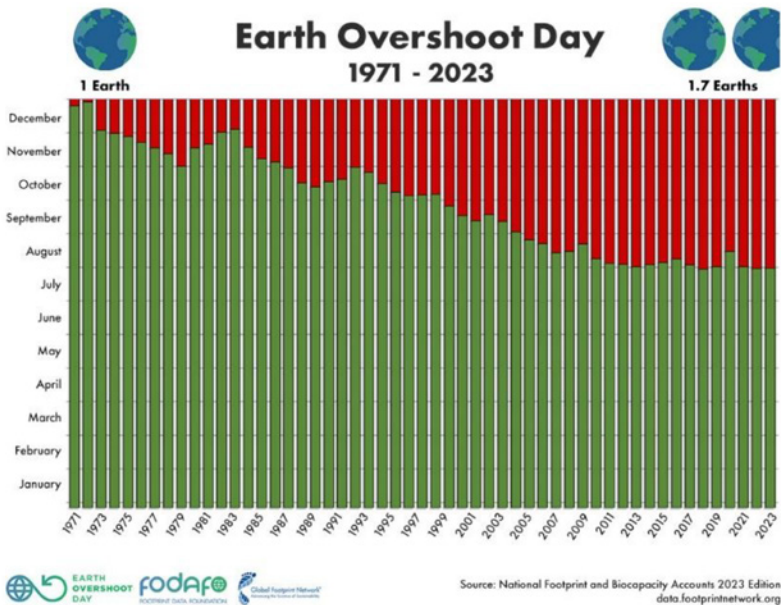


Figure 1. Earth Overshoot Day 1971-2023 (National Footprint and Biocapacity Accounts; Footprint Network, 2023)

According to the data, humanity will need 1.7 planet Earth by 2023 (Global Footprint Network, 2023). The first month of 2024 stands out not only as the warmest January on record but also as the first month in which the global average temperature exceeded 1.5°C above the pre-industrial reference period (Copernicus, 2024). All these data together point to the fact that the times when our age will experience the most significant global, economic, and social transformations are not far away.

In the case of cities, the degree to which cities can tolerate change before they are reorganised around a new set of structures and processes (Alberti et al., 2009; Holling, 2001). The ability of systems to adapt to changing conditions is defined as urban resilience (Pickett, Cadenasso, and Grove, 2004). As a response to this necessity, enhancing urban resilience to the impacts of climate



change (Meerow, Newell and Stults, 2016) has become increasingly emphasised, becoming a subject within the realm of planning and design disciplines. As both the source of the uncontrolled actions that exacerbate the impacts of the climate crisis and the areas where these impacts are most harshly confronted, cities need to develop this capability to ensure the sustainability of the urban systems. In addressing climate change, international agreements play a significant role in implementing conventional methods such as transitioning to renewable energy sources, increasing energy efficiency, forest conservation and restoration, sustainable agricultural practices, and reducing air pollution. UNFCCC promotes international cooperation to address the effects of global warming and reduce greenhouse gas emissions. Alongside this, the Kyoto Protocol, which imposes binding commitments on governments for greenhouse gas reduction, and the Paris Agreement, which aims to limit global warming to 1.5°C, collectively form a crucial framework for international efforts to tackle climate change.

On the other hand, the urban design discipline expands its scope of work in tackling the climate crisis by encouraging social participation in addition to climate-compatible infrastructure, environmental planning, and conservation practices that align with international policies and strategies based on sustainability principles. Policies formulated from the top down to mitigate and adapt to the impacts of the climate crisis struggle cannot have the intended influence on urban systems and turn into matters that citizens cannot fully embrace. This poses challenges in transferring top-down solutions for building resilient living spaces and strengthening the response to the climate crisis at the local level. Firstly, “failure to discuss site-specific needs comprehensively(1)”. Considering that cities are complex networks of social, cultural and economic interactions shaped by the behaviour and interactions of individuals beyond their physical components, the actions to be implemented depending on the policies formulated require a discussion directly related to the living practices and spatial forms produced. Nevertheless, spatial design processes controlled by market mechanisms have limited opportunities for us to introspect about our relationship with nature and prioritise ecological concerns. Dar and Khirfan (2017) stated that there is a lack of climate change adaptation studies that address urban design, especially at the neighbourhood or district scale (Dhar and Khirfan, 2017, p. 602). Secondly, “lack of knowledge and awareness about climate change(2)”. Recent research findings suggest that climate change communication is crucial to improve knowledge and awareness, which will increase engagement with climate policy, which in turn can improve policies and outcomes (Khatibi et al., 2021). Lastly, the “lack of opportunity to community learn through the exchange of experience(3)” invites us to reconsider the contrast between specialised and scientific knowledge and everyday life practices.

The climate crisis requires a holistic approach that cannot be solved only through commoning design practices. However, asking whether it is possible to include the concerns of communities in the struggle against future crises through common practices and approaches can be considered a quest to act together and empower common ground. At this point, can commoning design practices allow us to discuss an encouraging approach to shift the centres of discussion of the climate crisis to the local context?

### 3 Common space and commoning practices

In today's cities, which are changed and transformed by capitalist actions, the discussion of public spaces such as streets, squares, and parks where the sense of community is formed within the framework of the concept of "common space" allows discussing whether an alternative way of design practices and new forms of socialisation is possible. Stavrides (2016) defines *common space* as *the sum of spatial relations produced by practices of commoning*; communities that inhabit them are thus always communities-in-the-making (Stavrides 2016, p. 19). Emphasising that public spaces are created from the very beginning by an authority that controls these spaces and establishes the rules to which the people who can use them are subject, he distinguishes the common space from public and private spaces (Stavrides, 2016).

Instead of normative design and planning approaches and methods that define urban life, bottom-up transformation processes programmed by citizens in line with their own needs should be inclusive and allow for diversity and flexible forms of spatial use. Commoning practices offer new methods and tools to co-produce space and create a sense of community. Facilitating community participation through involvement in the development and implementation of projects organised by the community itself allows individuals to express their views and build a sense of belonging to both place and community. Because the commoners devise rules for accessing resources. Most of the time, developing methods of ensuring the sustainability of common resources has been an important part of the process of commoning" (e-flux Journal 2010, p. 5). When these components are incorporated into design processes, commoning practices allow communities to shape their physical environment in a way that is more responsive to their needs, values and goals. In this context, analysing the experiences of commoning practices in today's cities is seen as a good start to understanding how the potential that emerges when the collective spirit of people comes to the fore can shape urban spaces and life, how it can produce solutions against the possible impacts or unexpected risks of climate change and to what extent it covers urban design discipline.

## 4 Düzce Hope Homes (Düzce, Turkey). Participatory Design and Construction for the Earthquake Victims Housing Cooperative



Figure 2. Project area (Düzce Umut Atölyesi, 2017)

DHH is a community-based housing-life project that was established as a result of the movement of homeless earthquake survivors advocating for their right to safe and permanent housing in a city where a natural disaster like an earthquake led to widespread destruction. It starts with the situation of earthquake victims who were living in temporary shelters as homeless tenants after their buildings were destroyed or damaged following the 1999 earthquakes in Düzce, Turkey. In 2001, they voiced their demand for safe and permanent housing. Through many years of mobilisation and activism, including mass demonstrations and government lobbying, a cooperative was set up to fight for the right to housing to be extended to tenant victims of earthquakes (World Habitat, 2017). From 1999 to 2014, the design and construction process started after the allocation of the land and the approval of the right ownership of the cooperative members.

### 4.1 Why is Düzce Hope Homes a commoning practice?



Figure 3. Initiative meeting of tenant earthquake survivor's solidarity housing cooperative (Düzce Umut Atölyesi, 2017)

The fact that the government's support for earthquake victims was directed only toward homeowners and that the needs and rights demands of dispossessed tenants were not met triggered the formation of self-organisation and solidarity practices for the earthquake victims of Düzce. In other words, claiming ownership of the conditions needed for life and its reproduction in itself creates a *commons* (De Angelis and Harvie Müşterekler, 2016). The bond that holds the homeless tenant earthquake survivors together is based on a common problem, a commonality in suffering, and shared hopes and dreams for the future as a community (Interview to Gümüş, 2024).

"The community established for a secure dwelling does not change even when a new member joins; unlike the first form of organisation of the community, the cooperative creates a set of written rules, so a common defined ground is woven by the community" (Interview to Kırlangıç, 2024).

The community used the cooperative as an essential tool for commoning and formed a base by uniting around a common concern. The community's ability to self-organize negotiate and maintain a multi-stakeholder practice of common work makes it possible to evaluate it as a commoning practice.

## 4.2 Participatory Design Experience and Construction Process

Homeless earthquake survivors from Düzce have made an open call to develop a participatory democratic method in the design and construction process of their living spaces. One Hope Association, MSGSU, students, academics, architects, engineers, planners, sociologists, and a wide range of professional groups have come together (Gümüş, 2017). In this process, an alternative design practice process that puts the subjects of the struggle at the centre of the process and is designed with them was discussed. They often collaborated to democratically decide on-site plan alternatives and discuss the project's cost, regulatory constraints, and design process.



Figure 4. DHH Process of creating site plan alternatives by the community through games and participatory tools (World Habitat, 2017)



Figure 5. Site Plan decision meeting (Düzce Umut Atölyesi, 2017)



Figure 6. 3D model of Düzce Hope Homes (Düzce Umut Atölyesi, 2017)



Figure 7. Construction process, (Düzce Umut Atölyesi, 2017)

The project's construction process was established with a non-wasteful ecological approach, with the construction site building built entirely from recycled materials by cooperative members and volunteers. DHH can also create and expand socio-economically self-sufficient multi-stakeholder networks that support the cooperative's members.



## Conclusions

According to Trosper (2002), to be resilient, societies must generally demonstrate the ability to buffer disturbance, self-organize, and learn and adapt (Tompkins and Adger, 2004). In the case of DHH, the participatory planning, design, and construction processes carried out by professionals, volunteers, and civil society for earthquake victims create a self-organised and solidaristic community with the potential to create more resilient and responsive spaces.

Düzce Hope Homes community has created:

“Potential to discuss site-specific needs comprehensively” (1) by

- aiming not only on housing production but also on the production of a common space where social networks are re-established,
- creating space to ensure access to permanent and safe living spaces through participatory planning and design practices,
- developing a sense of solidarity and the ability to negotiate in the face of uncertainties and challenges.
- offering a democratic approach to reconstruction activities.

“Opportunity to increase knowledge and awareness about climate change” (2) by,

- reconsidering ecological thresholds,
- considering solutions that will ensure ecological sustainability, such as rainwater harvesting and solar energy generation projects,
- producing disaster-resilient and environment-friendly buildings.

“Opportunity for learning through experience exchange” (3) by,

- ensuring social resilience and sustainability of the community through co-operative activities, such as a community centre, women’s cooperative kitchen, community garden, market areas,
- making the act of co-production and discussion a part of community life.

These values point to a concern for creating a self-sufficient and resilient living space with social, economic, and ecological approaches that shape the community’s daily practices. DHH case can be considered as a contribution to remind planning and design disciplines that collective networks woven with bottom-up needs and demands can create a common space and a new sociality beyond the space. At this point, commoning practices can play an essential role in dealing climate crises, as they can direct political pressure to ensure the efficient use of resources, encourage solidarity and democracy, and be innovative and creative. Commoning practices, fed by multidisciplinary cooperation networks including local governments and planning and design

experts, can create urban spaces that will respond to this effort. They can also play a facilitating role in developing participatory and collaborative action and the collective mobilisation of expertise. As a result, commoning practices and processes can be considered a stepping stone that will carry design practices that seek solutions and new approaches to resilience in the face of climate change.

Focusing on the Düzce Hope Homes Project from the perspective of design, the most important achievement of the participatory design process has been the function of reproducing the sociality of the space design produced by the communities together and collectively (Gümüş 2017, p. 96). However, the design itself is not the founder or provider of anything. However, the design has taken a facilitating role in the formation of spatial commons in the case of DHH (Interview to Kırlangıç, 2024). It is not the planning or the design but the commonality and the demand created by the DHH community that is the basis for the participatory and multi-stakeholder nature of the design process itself. This collectivity has enabled the establishment of new relationships by “commoning design process” and solidarity for the design and construction of living spaces. Lastly, “Can commoning design practices be defined as an approach to increasing community influence and control over design?” this question is left for further studies to be discussed.

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## Methodological Appendix

The research is based on literature and case studies. The selection criteria were that the case study was located in disadvantaged geographies in the face of an unexpected crisis, its ability to design new social and spatial relations, and its existence as a common practice with a cooperative process. Scientific journals and articles, online documents, written, visual and press data in the literature on the case, crisis response and commoning processes were analysed, and interviews with members of the community were included in the research through discourse and text analysis. The outputs of the interviews with Hazal GÜMÜŞ and Öncül KIRLANGIÇ, who contributed as experts and community members from the beginning of the process to the construction process, were also included in the research. The interview was following these questions:

1. What is the driving force behind the realisation of Düzce Hope Houses as a commoning practice that re-establishes social relations through a construction and cooperative process that transcends the capital production relations in Turkey?
2. Are Düzce Hope Houses concerned with becoming a more environmentally and ecologically sustainable living space as a local commons? Which environmental practices and strategies are used?
3. What do you think are the factors and motivations behind the formation of community consciousness behind the experience of the co-design process produced for the houses and living space by the co-operative members and experts as a common practice that goes beyond the concept of participation?
4. Have you witnessed that the commoning practice experienced has increased the community's ability to act together in crises?
5. Do you think that the experience of creating a common space can have a transformative effect on planning and design disciplines? If yes, in which components and aspects can this be possible?

## Abbreviations

- **AR5:** IPCC Fifth Assessment Report
- **DHH:** Düzce Hope Homes (Düzce Umut Evleri)
- **DHS:** Düzce Hope Studio (Düzce Umut Atölyesi)
- **IPCC:** Intergovernmental Panel on Climate Change
- **MSGSU:** Mimar Sinan Fine Arts University
- **UNFCCC:** United Nations Framework Convention on Climate Change

## Biographical Note

### Salime Benan Kaya

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## Notes

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## Citizen Appropriation of Energy Transition: Encouragement of Collective Action as a Public Policy

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**Abstract:** *This proposal is based on an investigation carried out as part of a study entitled “Localizing ecological, democratic and social transitions”, funded by the TEES programme of ADEME. The aim of our project is to study ecological, democratic and social transitions as a whole, by examining the measures that aim to enlarge the groups participating in public debates and decision-making and in transition trials. To this end, we have been able to monitor the work of a Life project - the Local Energy Transition Strategies Going for Climate Change - carried out under the auspices of the French Centre-Val de Loire region in partnership with ADEME, with funding for the period 2021 to 2025. The aim of this project is to speed up energy transition by encouraging the collective appropriation of energy issues by local stakeholders.*

*More concretely, the aim is to set up a system of citizen involvement every year for three years, in the form of collective actions in six areas (groups of municipalities) within the Region. The aim of the “collective intelligence” training programmes and workshops and of the support of the project leaders is to train groups of citizens who will set up actions for energy sobriety or production.*

*This enhanced role of community groups and local collectives can be found in numerous domains of public action for the environment and ecological transition. However, putting this aim into practical action is generally achieved by aid provided on a thematic rather than a regional basis through a call for projects for existing collectives. This Life project takes a different approach, involving the creation of new citizen groups by putting workshop participants in contact with “inspiring” initiatives. By offering so-called “sobriety” initiatives, the aim of this project is not only to create citizen energy communities, but also to develop actions in different domains of energy and ecological transition (housing, mobility, consumption, food, re-use).*

*One of the interests of the Life project for our research is that it makes it possible to take a different viewpoint of the incentive measures and of the expected effects of collective action. Our investigation through the project*

*leaders and the workshop participants provides us with a way of viewing the situation upstream of the action and of examining the ways and means of encouraging commitment, how this is seen by the participants, and the difficulties of getting the new groups involved in concrete actions.*

*Our proposed text is organized around two main questions:*

- 1) How do the effects of incentive measures for collective engagement vary in different socio-spatial contexts?*
- 2) Does calling on citizen involvement have an effect of politicization or depoliticization of environmental issues?*

**Keywords:** *Socio-ecological transition, energy transition, collective action, sustainability transitions, local energy communities*

## 1 Introduction

In France, as in many countries, community groups and collectives have been given a key role in many domains of public environmental action and ecological transition. For example, the second scenario of the French environment and energy management agency (ADEME) for a carbon-neutral society by 2050, which is based on “regional cooperation”, focuses on the role of collective citizen initiatives to bring about change in the regions (ADEME 2021). Supporting existing collectives is thus strategically important for public transition policies (Audet 2015, Mazeaud 2021), often through calls for theme-based projects.

For a long time, raising awareness of the need to change practices focused on changes at the individual level (Martin, Gaspard, 2016), but both researchers and public policies currently seem to focus on forms of collective organisations and citizenship schemes (CGDD, 2017; Cit’in, 2017; Villalba and Melin, 2022; Van Neste, Melé and Larrue, 2024). There is a tension in the literature between, on the one hand, studies analysing the means and competencies of people involved in collective actions and that index the actions taken on the basis of the uneven distribution of resources or “capital” (Noblet, Guillemot and Chouinard, 2016 ; Beaurain, Rouaux and Arnould, 2017), and on the other hand, those that focus more on the role of learning processes during the action (Deboulet and Nez, 2013; Seguin, 2020). These two approaches, like those we used for conflict situations (Bobbio, Melé and Ugalde, 2016) or collective actions related to waste management (Melé, Cirelli, 2023), are based on surveys investigating the way individuals become involved in collective action.

The present paper takes a different and complementary approach, based on observation and analysis of a trial conducted in the Val-de-Loire region in

France. As part of a current study entitled “Localizing ecological, democratic and social transitions”, funded by the TEES programme of ADEME, we conducted a survey (about 20 interviews) and observed the work of the Life project - *Local Energy Transition Strategies Going for Climate Change* - carried out under the auspices of the Centre-Val de Loire region in partnership with ADEME, with funding for the period 2021 to 2025. The aim of this project is to speed up energy transition by encouraging the collective appropriation of energy issues by local stakeholders. Specifically, the idea is to set up a system of citizen involvement every year for three years, in the form of collective actions in six areas (groups of municipalities) of the Region. The objective of the “collective intelligence” training programmes and workshops and of the support of the project leaders is to train groups of citizens who will set up actions for energy sobriety or production.

In this way, our survey of project leaders and workshop participants offers an approach that provides a new viewpoint of how commitment occurs and the expected outcomes of collective actions. Here, it is not a question of investigating forms of organisation or internal governance, which have already been well documented (Debizet, Pappalardo, 2021), but of examining the emergence and role of incentives provided by the public authorities. We were able to observe how new citizen collectives emerged through contact between the workshop participants. Finally, by offering so-called “sobriety” initiatives, the aim of this project is not just to create citizen energy communities, but also to open up actions in different domains of energy and ecological transition (housing, mobility, consumption, food, re-use).

This paper thus offers a way of viewing the situation upstream of the action and of examining the ways and means of encouraging commitment as a public policy objective, the perceptions of the participants, and the difficulties of getting the new groups involved in concrete actions.

## **2 The Fragile Organisation of Citizen Collectives**

Altogether, 500 people across the six areas participated in the first phase of the project. In all the areas, it was difficult to retain the participants, with a strong drop-out rate (40%) after the first workshop, partly compensated for by participants who joined up over the course of the project (only 40% of the 224 participants in the fourth workshop had attended all four workshops).

Recruitment methods were determined by each group of municipalities; two areas used a system of random draw, the others were based on volunteers. The majority of participants were aged between 50 and 64, with few in the younger

(20-25 years) and older (65+ years) age range. There were also more executives and professionals than manual workers. In Blois and Bourges, the random draw system provided a greater variety of participants, including people with less interest in the theme and who would not have participated spontaneously.

People already involved in associations, or who were or had been local councillors (10% of participants), were often mentioned by the participants when describing the group. Some said, and regretted, that they felt that the group was composed of people already convinced about the issues of transition.

At the end of the fourth workshop, participants had to subscribe to certain activity ideas and make a commitment to self-organise. According to one of the facilitators, what emerged from the workshops was not projects, but "embryos of collective dynamics", in that everything is open-ended: the scale of intervention, the status and organisation of the group driving the project, the actions to be implemented, the relationship with existing groups, partnerships, and above all the real involvement of the people on the list.

The current dynamics regarding energy production and sobriety (food, housing, consumption, transport) differ widely. While more participants focused on questions of sobriety, a group interested in renewable energy rapidly emerged. The composition of the groups arising from the project (one per area for energy production) was slightly more diverse than the energy production cooperatives that exist in the region, which are characterised by retirees with technical skills and competence in setting up projects. Compared to sobriety projects, energy production involves a more complex organisation of collective action, time constraints, and more technical set-ups. However, the support of *Energie Partagée*, a national organisation that promotes civic energy-production collectives, helps identify the range of possibilities.

Twenty-six sobriety initiatives emerged from the workshops, involving first of all food, sharing objects and transport (5 each), followed by awareness raising (4), and then housing, waste management and light pollution (2 each). At the time of our survey, which was carried out four to six months after the last workshops, some of these groups were no longer active, some had decided to join existing organisations, and others were going through a structuring process with variable levels of involvement. The surveys, which we carried out with the main spokespersons of the regional project leaders, revealed a significant reduction in the number of participants compared to those enrolled in the final workshop. Uncertainty about the future of the groups lies partly on their capacity to attract new participants, from a small core derived from the Life project.

### 3 Tensions between Politicization and De-politicization

This experimentation is firmly rooted in a means of public action advocating citizen involvement in the issues of ecological and energy transition. It is a public policy choice, as well as the position of the European Green group, which is responsible for environmental policies in the Centre-Val de Loire region, and which calls for the generalisation of participative procedures and the optimisation of the action of community groups in the framework of a policy of so-called "continuous democracy". These elements can be considered as a form of politicization, whereby the right to speak about the issue of energy and the climate is not restricted to technical bodies, broadening participation in the debate on the meaning of public actions. However, the conditions for implementing this approach are characterised by an opposing process, which could be qualified as de-politicization, in that it involves a disconnection with the local political scene, as well as eviction from the debate of the possibility of sharing decision-making about energy-related policies.

Paradoxically, a certain disconnection of actions with the local political scene can be observed. Some of the participants of the first workshop expressed their incomprehension and sometimes non-acceptance of the objective of creating groups committed to implementing the actions. They thought that they had been invited to join a panel of citizens to discuss the procedures for transition in the domain of energy. They considered that they had the capacity to give their opinion about public action procedures. This misunderstanding implicitly highlights the standpoint of the project; residents are seen as potential partners, project implementers, and not as participating or playing an active role in public decision-making.

Our observations reveal workshops based on methods that aim to allow expression of feelings, personal experiences and suggestions, but which do not really provide opportunities for debate. We can see here the techniques and procedures typical of "collective intelligence" training courses and a certain routinisation of participatory schemes (Mazeaud, Nonjon, 2018). Certain questions considered as "political", in the sense here of their capacity to spark debate between the participants and to introduce controversial issues in society, are ignored, notably the question of nuclear power, the role of private enterprises, or the effects of European or national regulations (Christen, Hamman, 2015). Moreover, citizen initiatives cannot take the form of demands made directly to the local authorities; the participants are asked to suggest actions that can be carried out by groups of self-organized and self-sufficient citizens. Consequently, priority is given to projects involving awareness, the provision of new services (pooling objects, car-sharing), and organising access to organic, local food. Some of the people we interviewed emphasised their

interest in forms of more confrontational collective actions demanding an acceleration of climate change policies, while accepting that their participation in the dynamics proposed by the Life project involves a more “benevolent” form of action and which demonstrates a consensus regarding the objectives with the local authorities.

Furthermore, the link with the regional strategies expressed in the regional climate-air-energy plans (PCAET) does not seem to be particularly sought after, nor appear in the interviews as an objective for the facilitators or participants. In any event, the project does not suggest a reason to re-open the debate about local strategies regarding energy transition. Nevertheless, the lack of connection between these two measures does not necessarily imply a contradiction. The actions of the Life project can become an element of the action plan or awareness component of the PCAET, as in Blois.

The idea of promoting shared governance, mentioned without further details in the presentation documents of the project, could suggest that setting up the project in an area must result in a new way of steering transition actions at the local level, or to opening a debate on the modalities of making decisions about the local energy policy. There is some continuing ambiguity about what exactly is to be governed – regional energy transition at the inter-municipal scale, as suggested by the workshop invitation, or each of the renewable energy production projects. In fact, the call for open governance only concerns energy production projects, which, once they go beyond microprojects, require drawing up contracts between different types of stakeholders and consideration of how the citizen collectives and local groups can continue to play a role, even if private investors contribute to the funding. It involves promoting “democratic” management and decision-sharing practices in citizen energy communities (Gomez, Til, 2023: 7). Based on this principle, decisions are taken on the basis of one person = one vote, which allows “citizen” control of partnership projects, independent of the amount of money invested.

Providing this framework through the creation of a citizen collective means localizing a resource that the local council can take over when confronted with a private project, or when it wishes to support a collaborative project or to establish a group of activists when setting up shared energy-production actions. To enable the creation of local energy communities, the Life programme mainly activates the citizen dimension.



## 4 Conclusions

This experimental project promoting all forms of engagement in actions for transition opens up the issues of renewable energy production. Encouraging commitment and collective action occurs through a simulation process, whereby participants come together to imagine the type of society and of citizen involvement that would bring about a sustainable world. We can observe a tension between politicization of a technical issue by opening it up to the public concerned, and de-politicization of the position attributed to the participants who were encouraged to think of actions that could be taken by the local population. Indeed, the opportunities for discussion in the workshops did not lead to a debate about the dysfunctions or the effects of current regulations, but rather to finding ways of getting round them in order to limit their negative impacts in a given area.

This leads to a shift from the more strictly political forms of community action, such as attempts to provide a counter-balance (Lapostolle, Roy, 2022), requests for debate about local policies, advocacy of attributing new rights or for the overhaul of the regulatory system (Fung, 2003; Coler et al., 2021). The question of democratization appears to be limited to reference to shared governance of energy production projects. Overall, it most often involves enabling people who are already alert to environmental issues to consider taking action. Rather than shared governance, the aim is to set up pro-energy transition coalitions at the regional level (Hess, 2018; Gomez, Tyl, 2023), which could enable the spread of projects by creating a favourable supporting environment (Fontaine, 2018). The aim of this experimental project is thus to act extensively on the social fabric of the region. The project leaders hypothesise that this enrolment and support process will increase the number of areas proactively seeking to develop renewable energy initiatives that could be transformed into the “renewable or citizen energy communities” defined in the French Energy Climate law of 2019 (Gomez, Tyl, 2023).

The strategy of the project is thus to organise and raise the profile of collectives, predicting that it is possible to act at a very early stage in order to setting up the energy transition public. However, we observed the considerable fragility of the groups created during the project, which have not yet become collectives; some will not withstand the test of autonomous collective action, and others will have to adapt to the possible resources and alliances in each local context, in other words, demonstrate their ability not only to act but also to exist collectively in the social world.

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## Biographical Note

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*socioécologiques et milieux de vie, entre expérimentation, politisation et institutionnalisation*, Montréal: Presses de l'Université de Montréal; with Claudia Cirelli, "Une géographie de l'engagement: la place des associations dans la transition rudologique", *Norois*, n°268-269, 3 / 4, 2023, p. 73-89; with Luigi Bobbio and Vicente Ugalde (edit.), *Conflictos y concertación: la gestión de los residuos en México, Italia y Francia*. Mexico, El Colegio de México, 2017. <https://patricemele.academia.edu>.



## Are Young People Really Concerned about Climate Change? Evidence from Italy<sup>1</sup>

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**Abstract:** *This paper presents specific findings from a comprehensive research project designed to explore the repercussions of a climate of uncertainty on Italian consumers, focusing on the realms of environment, technology, and consumption. Through a snowball sampling approach, a total of 12,050 self-completed questionnaires were gathered in November 2022. The non-probabilistic sample, while representing all age groups, is skewed towards the younger population.*

*In particular, our emphasis will be on the consumption patterns and daily habits related to sustainability among young respondents. Our findings highlight that while certain practices such as recycling and using glass or water bottles are widely adopted, more involving and demanding behaviours, such as purchasing local or organic food, prioritizing fair trade products, or steering clear of fast fashion retailers, are less prevalent, particularly among the younger generations. Furthermore, our results highlight how, contrary to what is reported by various studies, it is the older generations that are more willing to adopt sustainable behaviours.*

**Keywords:** *Consumer behaviour, sustainable practices, young people, Italy, climate change*

### 1 Introduction<sup>2</sup>

The rapid changes in Earth's climate caused by human activity are significantly altering the natural conditions that support life for all species, including humans. Consequently, this poses a serious threat to the future of society (Brulle and Dunlap, 2015).

In recent global surveys, a rising concern about climate change has been underscored (Narawad, 2023). The Pew Research Center's annual Global Attitudes survey (2022) reveals a consistent increase since 2014 in the percentage of people worldwide who view climate change as a "major threat." Nonetheless, according to Poortinga et al. (2019), men, older individuals, and those with lower levels of formal education typically harbour more scepticism regarding the reality and human-induced origins of climate change. This

scepticism often manifests as doubts regarding trends and attributions, leading to lesser concern about the repercussions of climate change.

Notably, environmental protection has become a top priority, particularly among the younger demographic actively engaging in sustainable practices. According to Deloitte Global 2022 Gen Z and Millennial Survey' (2022), approximately three-quarters of Generation Z and Millennial respondents express the belief that addressing climate change is crucial, yet less than half hold optimism about the success of global efforts to safeguard the planet.

Both generations are doing their part. Nine in ten say they are committed to protecting the environment. In everyday life, they buy second-hand clothes and prefer local or organic food. In the near future, despite economic constraints, half of them will be more sustainable in all their purchases, opting for products such as solar panels and electric vehicles. They believe that businesses and governments need to do more to combat climate change. Only 15% of Generation Z and 14% of Millennials fully agree that companies are taking significant action to protect the environment. This is only slightly higher than the 11% of Generation Z and the 13% of Millennials who think their governments are doing a lot to combat climate change.

In this context we conducted our research project.

## **2 Research Objective and Methodology**

In the following sections, we will focus on the results of a survey, conducted in Italy, aimed at investigating changes at the individual and territorial levels in three specific areas: Environment, Technology, and Consumption, taking into account the Sustainable Development Goals recommended in the 2030 Agenda and promoted by the National Recovery and Resilience Plan (PNRR). To carry out this project, we conducted a survey through an online self-completed questionnaire, administered via the SurveyMonkey platform, following a snowballing process (Gabor, 2007; Handcock, Gile, 2011). 12,050 self-completed questionnaires were collected between November 5 and 25, 2022, entered into an Excel database, and then processed using SPSS.

Various types of analyses were then performed, significance tests and comparisons with other studies and statistics on the trends in question. The results reported in the following sections are statistically significant. Data have been matched with some demographic variables, such as age, gender, and geographic area.

## 2.1 The Questionnaire

After collecting demographic information, the questionnaire proceeds to understand whether and how the climate of uncertainty has changed the individual's scale of values, his worries, his hopes for the future, and very specifically his behaviour in everyday life.

Afterwards, the questionnaire focused on the level of knowledge of Italians about the goals of the 2030 Agenda and whether their implementation is the responsibility of individuals, companies, or institutions.

## 2.2 The Sample

After careful data cleaning, the non-probabilistic convenience sample (Coomber, 1997) was reduced from approximately 16,000 questionnaires to 12,050. Participants come from all over Italy, mainly from the northwest of the country (62.3%), and are equally distributed among small town, medium and big cities.

As can be seen from Table 1, the genres are evenly distributed among the different age groups. Women and young people are overrepresented. Regarding age, we used the classification provided by ISTAT, specifically the age groups 18-24 and 25-34, which partially correspond to Generation Z (born between 1997 and 2013) and Millennials (born between 1981 and 1996) respectively.

More than half of the sample lives with their parents and includes students or working students. The educational level of the sample is high, considering that 63.4% of respondents are between 18 and 24 years old and do not yet have a bachelor's degree.

The amount of income was determined by an indirect question, however more than half of the respondents indicate that they "live decently with some sacrifices" (they could choose also "just survive," "live inconspicuously but with many sacrifices," "live without sacrifices").

Table 1. The Sample

Age groups	18-24	25-34	35-49	50-64	over65	Tot.
<b>Gender</b>						
Male	34.40%	42.80%	30.90%	35.30%	39.90%	35.20%
Female	65.00%	56.70%	68.80%	64.60%	60.10%	64.40%
Non binary	0.60%	0.50%	0.40%	0.10%	0.00%	0.50%
Tot.	63.40%	9.80%	9.40%	15.50%	2.00%	100.00%
<b>Who do you live with?</b>						
Alone	3.2%	12.1%	8.5%	7.8%	20.6%	5.60%
Parents	80.2%	42.1%	5.3%	2.8%	1.3%	55.90%
Spouse/partner	2.4%	35.8%	75.2%	77.1%	68.9%	25.4%
Sons/nephews	0.2%	9.6%	65.2%	65.0%	14.3%	17.60%
Friends	9.5%	4.9%	0.4%	0.5%	1.3%	6.60%
Brothers/sisters	35.2%	12.3%	1.2%	1.0%	0.8%	23.80%
Pet	20.2%	16.7%	25.3%	25.0%	16.8%	21.00%
<b>Educational level</b>						
Primary school/junior high	2.5%	2.3%	7.0%	7.1%	19.3%	4.00%
Vocational courses	2.4%	3.3%	5.9%	7.1%	8.0%	3.60%
High school	78.0%	35.4%	44.0%	51.1%	47.1%	65.90%
Bachelor's degree	15.5%	25.0%	11.2%	6.4%	2.9%	14.30%
Master's degree/postgraduate course	1.6%	34.0%	31.9%	28.4%	22.7%	12.20%
<b>Employment status</b>						
Student	60.3%	8.7%	0.4%	0.1%	0.0%	39.10%
Working student	21.0%	9.8%	0.4%	0.3%	0.0%	14.30%
Untenured worker	7.3%	18.3%	9.6%	5.1%	0.0%	8.10%
Tenured worker	6.1%	43.6%	64.6%	55.9%	3.8%	22.90%
Freelance	2.0%	12.2%	15.7%	20.6%	11.3%	7.40%
Unemployed/looking for work	3.1%	6.0%	3.2%	2.7%	0.0%	3.30%
Housewife	0.2%	1.2%	5.8%	8.4%	8.0%	2.20%
Retired	0.1%	0.2%	0.4%	7.0%	76.9%	2.70%
<b>Perception of income</b>						
Just survive	3.2%	7.7%	8.9%	6.1%	5.0%	4.70%
Live discreetly but with many sacrifices	17.3%	23.2%	20.9%	18.9%	12.2%	18.4%
Live decently with some sacrifices	57.9%	52.0%	53.3%	53.5%	57.1%	56.2%
Live without making sacrifices	15.1%	12.3%	12.6%	16.3%	17.6%	14.8%
Rather not answer	6.5%	4.8%	4.3%	5.2%	8.0%	5.9%

### 3 Results

#### 3.1 Consumption and Everyday Practices toward Sustainability

Our results confirm what emerges from previous research projects showing that concern for environmental sustainability can lead to choosing local products



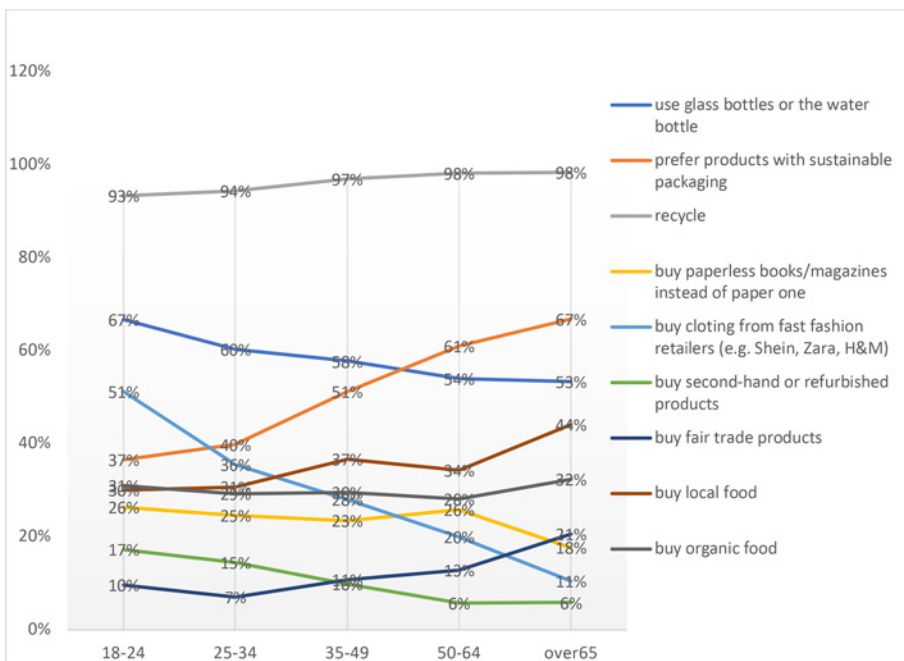
(Balzano and Vianelli, 2020), promoting a reduction in consumption (Shaw and Newholm, 2002), or even adopting an anti-consumption stance (Makri *et al.*, 2020).

As with other attitudes and behaviours, women pay more attention to sustainability, as ISTAT data confirm (2022). However, gender differences are not as pronounced as for concern about environmental and economic sustainability.

Some unsustainable behaviours (Niinimäki *et al.*, 2020) are more likely to be shared among young people, such as the purchase of fast-fashion clothing, which gradually decreases with age. On the other hand, the preference for products with sustainable packaging increase with age. Finally, the over-65s are more likely to buy fair trade products or local food.

Thus, contrary to what is repeatedly voiced in the media and what emerges from other national (Ipsos, 2022) and international research (Deloitte, 2022), younger groups appear to be less interested in adopting sustainable behaviours and engaging in critical consumption practises than older participants. As confirmed by ISTAT (2022), interest in environmentally friendly behaviours is not the main characteristic of young age groups (see Fig. 1).

Figure 1. Thinking about Your Everyday Life How Often...  
(Sum of "Much" and "Very Much" by Age Groups)



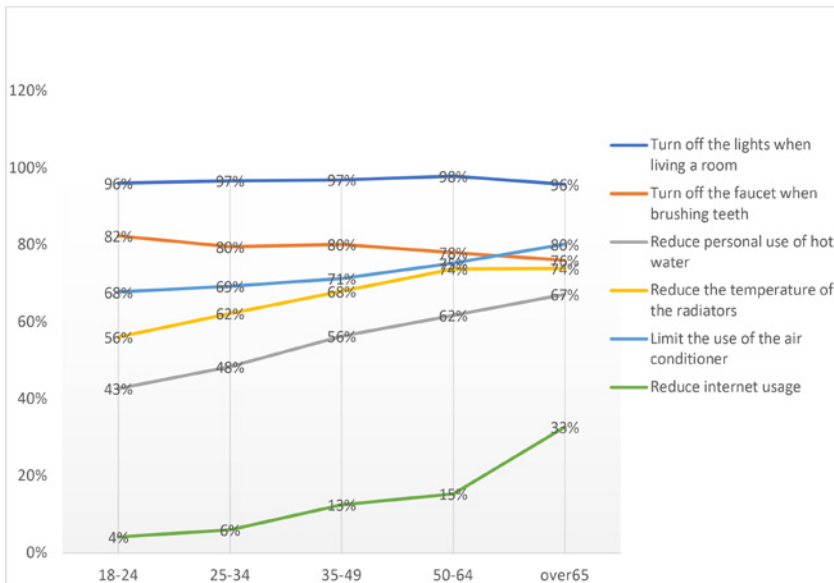
When asked about the sustainable gestures in everyday life, approximately three quarters of respondents always make sure to turn off the lights when leaving a room, the percentage of those who always turn off the tap when brushing their teeth decreases slightly, while other virtuous behaviours are practiced less systematically.

Interestingly, the behaviour that is least likely to change is the use of the Internet, perhaps because it is not so immediately seen as a polluting factor or because it is now perceived as an indispensable tool.

There are not relevant differences between men and women.

Instead, the number of those who embrace sustainable practices increases with age. The only behaviour that adolescents implement more frequently, albeit with a minimal difference from the adult groups, is turning off the faucet while brushing teeth. Finally, the most widespread behaviour that unites all age groups is turning off the lights when leaving the room (see Fig. 2).

Figure 2. Thinking about Your Everyday Life How Often...  
(Sum of "Much" and "Very Much" by Age Groups)



As is known, consumer behavior and sustainable daily practices are influenced by values systems (Samarasinghe, 2012), fears, and hopes for the future (Norgaard, 2009) that will be analyzed in the following sections.

### 3.2 Consumers' Values

According to Lim *et al.* (2023), in line with the global movement toward environmental-social governance (ESG) and sustainable development goals (SDGs), consumer ethics and sustainable consumption are at the centre of recent consumer research behaviour. In this paper, we look at the two elements, from a ten items table, that according to literature (Mondelaers *et al.*, 2009; Yeng and Yazdanifard, 2015) are most useful in explaining consumers' choices: health and protecting the environment.

As expected, health is very important for 89.3% of respondents, as confirmed by the Coop report (2023).

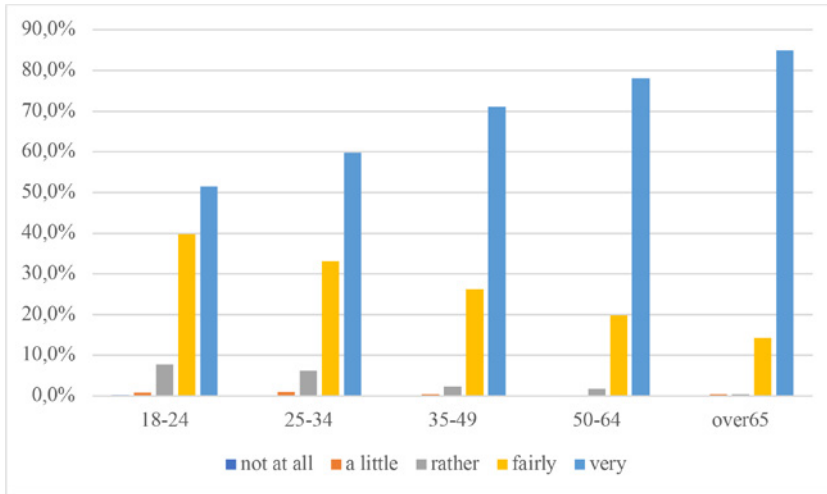
Looking at the data by age group, the results reinforce what other studies (Di Santo, 2023) have also shown: in recent years, health has become an important value for all age groups, including the youngest who used to take it for granted.

The value judgment is generally less strong when it comes to the environment. Again, there are more women (61.6%) than men (53.9%).

Regarding the distribution of results by age, there is a gradual and surprising rise in scores as age increases. This contrasts with the findings of other surveys, which suggest that Millennials or Generation Y and Generation Z are considerably more inclined to take responsibility for the environment compared to Generation X and Baby Boomers (Dwidienawati *et. al.*, 2021).

Despite the extensive media attention given to the Friday for Future movement and the "rhetoric of the new generation of environmental youth movements" (Friberg, 2022, p. 49), the data indicates that there is still a long way to go before young individuals fully grasp the significance of the planet for our survival. Even though they may engage in numerous struggles and challenges for their own well-being and validation, there's a need for them to comprehend the vital connection between the health of the environment and our own health, a concern that is widely acknowledged. Awareness of this seems to be developing over the years (see Fig. 3).

Figure 3. In Your Opinion, How Important is Respect for the Environment?

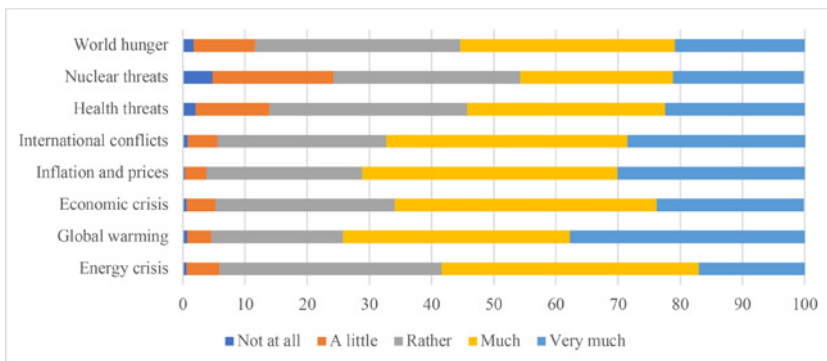


The concept of “eco-anxiety” could explain why the youngest rated the item “respect for the environment” as less important. According to the American Psychology Association (Clayton et al., 2017), eco-anxiety is “the chronic fear of environmental cataclysm that comes from observing the seemingly irrevocable impact of climate change and the associated concern for one’s future and that of next generations”; this fear affects young people in particular (Clayton et al., 2017; Clayton and Karazsia, 2020) and leads to various coping strategies (Ágoston et al., 2022) that promote sustainable practices on the one hand and lead to a kind of apathy waiting for the problem to solve itself on the other.

### 3.3 Consumers’ Fears

As previous studies confirm (Clayton and Karazsia, 2020), climate change (global warming) is of greatest concern to our respondents (see Fig. 4).

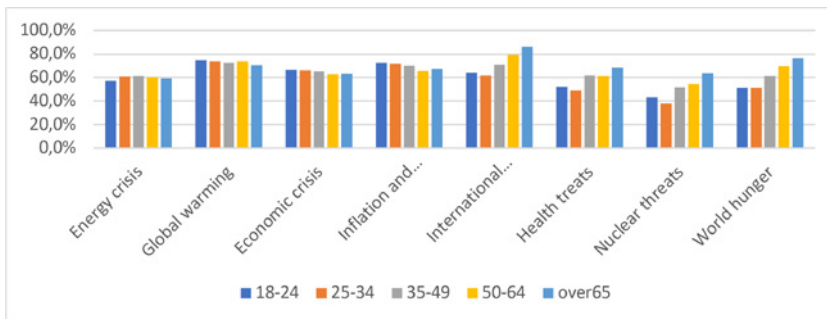
Figure 4. Thinking about the Current Situation, How Worried are You about...



There are notable differences between the level of concern of men and women, which is higher for the latter on all the proposed items.

Analysis of the data by age group reveals that some concerns are cross-cutting and affect all respondents equally, while others increase with age (see Fig. 5).

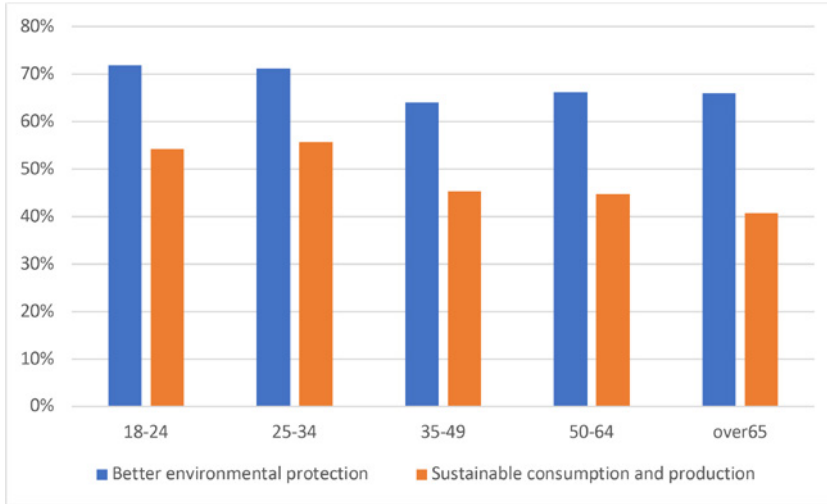
Figure 5. Thinking about the Current Situation, how Worried are you about...  
(Sum of "Much" and "Very Much" by age groups)



### 3.4 Consumers' Wishes for the Future

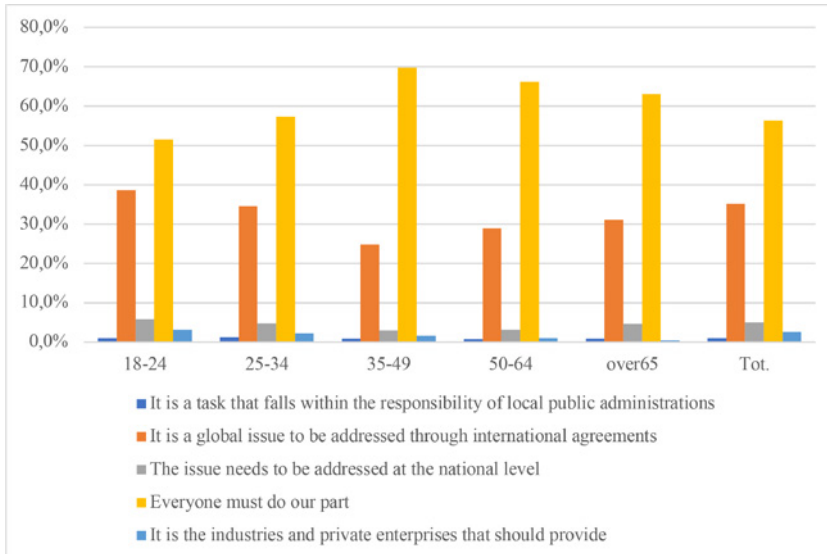
Participants were prompted to envision the world they wish to inhabit in a decade and choose three aspects that hold the highest significance for them. 70.0% named "better environmental protection" and more than half (51.8%) wanted "more sustainable consumption and production" (possible alternatives included "less conflicts", "more equality within countries", "more equality between countries", "more respect for human rights", "better environmental protection", "more sustainable consumption and production", "more employment opportunities", "better access to education", "better access to health care", "more gender equality", and "better management of international migration flows") (see Fig. 6).

Figure 6. Try to Imagine the World you Want to Live in 10 Years from Now. Which are the Three most Important Aspects for You? (by Age Groups)



Speaking of sustainability, more than half of our respondents are aware that everyone has to do their part. The 35-49 age group in particular shares this sense of responsibility, which is reduced to a minimum among younger people (see Fig 7).

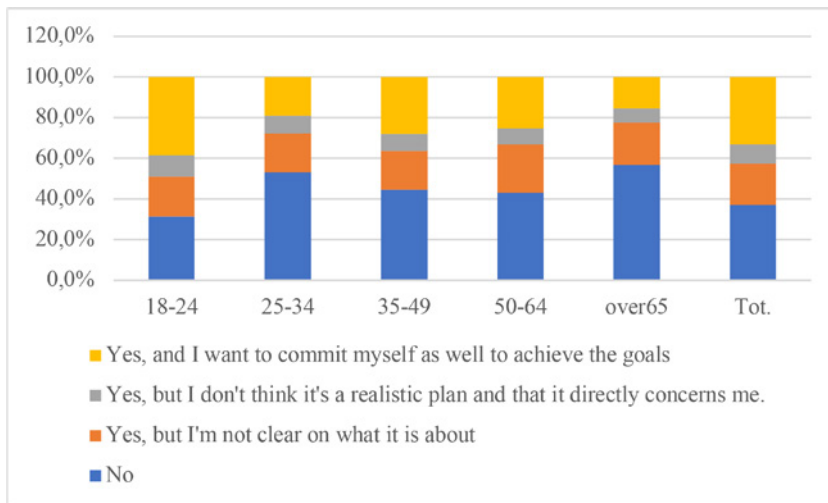
Figure 7. Who do You Think Should Primarily Take Care of Sustainability?



To verify whether respondents had heard of official initiatives in favour of sustainability, including concrete ones, they were asked questions about the 2030 Agenda. More than a third of the sample had never heard of it.

It is primarily the 18-to 24-year-olds who want to get involved, while the next age group is already less invested (see Fig. 8).

Figure 8. Have you Ever Heard of Agenda 2030?



## 4 Conclusion and Final Remarks

To answer the question “Are Young People Really Concerned about Climate Change?” we have reviewed previous literature and collected primary data. According to our results, climate change is indeed of great concerns for all our informants. In terms of awareness regarding programs beneficial to the health of the planet, the youngest individuals are the ones who are most familiar with the 2030 Agenda’s goals and are willing to implement them.

Younger generations aspire, slightly more significantly than older people, to a future where the environment is better protected and characterized by more sustainable consumption and production. However, when asked about values, young people attach great importance to their own health and - compared to older age groups - appear to value less the health of the planet. It seems that, on younger generations, the years marked by pandemic-related fears have exerted a more significant influence than Greta Thunberg’s environmental movements.

When it comes to determining who is responsible for taking care of the health of the planet, most respondents believe in individual responsibility, but younger people seem to be less inclined to act on this belief, resulting in less emphasis on buying sustainable products or packaging and adopting energy-saving practices.

Our results confirm those of other research (Istat, 2022), which suggest that young people, even if very concerned about the climate change, seem to be more reluctant to adopt sustainable behaviours compared to older generations. In this sense, the consumption choices of young people are influenced by the well-known gap between attitudes and behaviours, typical of sustainable consumption (Carrington *et al.*, 2010; Vieira *et al.*, 2023).

A limitation of the study resides in the non-probabilistic convenience sample that does not allow generalising the results to the Italian population. Nevertheless, the sample's size enabled us to conduct significant comparisons, even among less represented groups.

Further inquiry could incorporate an examination of the influence of eco-anxiety (Clayton *et al.*, 2017) on young people's perspectives regarding the link between personal well-being and planetary health. This is especially relevant given our findings suggesting a notable prioritization of personal health over environmental concerns.

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## Biographical Notes

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## Notes

1. Corresponding author: [ariela.mortara@iulm.it](mailto:ariela.mortara@iulm.it). The research project was funded by IULM University of Milan and conducted as part of the course «Sociology of Change in the Digital Age».
2. The paper is the joint work of its two authors. However, following standard academic practice, it should be mentioned that Ariela Mortara wrote paragraphs 1, 2, 4 and Rosantonieta Scramaglia wrote paragraph 3.



## A Limited Energy Democracy. Citizen Initiatives to Produce Renewable Energy in France<sup>1</sup>

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**Abstract:** *Citizen initiatives to produce renewable energy are developing in many forms and in different ways in Europe. I explore here the French case, which is characterised by a centralised, technocratic energy system that still leaves a considerable place for nuclear energy and keeps civil society at a distance. How do energy citizen collectives manage to emerge and develop in an unfavourable national context? The first renewable energy production cooperatives developed in France from 2005, later than in other European countries. In recent years, however, the French government has tried to catch up with renewable energy, and citizen initiatives have multiplied, driven by the national association movement Shared Energy (Énergie partagée).*

*The spread of these local energy communities has been the focus of recent attention in social science research, which sees them as key players in the energy transition and in the development of an 'energy democracy'. This article offers a critical analysis of this concept, which has often been approached in a normative way, highlighting the positive effects of experiments and glossing over the tensions and conflicts. The aim is to examine the 'citizen' dimension of energy projects, taking into account the two dimensions – social and political – of the definition of democracy. What role do citizens play in the development, financing and governance of these projects? What is the socio-economic profile and trajectory of commitment of the participants? How do some of them manage to put forward their point of view on a technical subject, and to what extent is the technical nature of the debates a factor in the exclusion of other audiences? Are there any changes in the balance of power when it comes to decisions on energy issues? Who benefits from the economic spin-offs of these projects on the territory?*

*Based on a case study of a citizen solar power plant in the Centre-Val de Loire region, I show that citizen energy projects differ from those run only by private companies, mainly in terms of governance. Citizens take part in structuring decisions on the design and development of energy infrastructure. Their investment can also stimulate other citizen initiatives*

*on energy and ecological transition issues. There are, however, many limits to citizen involvement, as the need to join forces with an industrial partner for large-scale facilities means that compromises have to be made, limiting both the influence of citizens on project configuration and the socio-economic spin-offs for the territory. These energy projects are also complex, long and time-consuming, which explains the difficulties of mobilising more than a small, socially homogenous group of committed citizens. Citizen initiatives to produce renewable energy therefore have limited democratizing effects, both socially and politically, as they do not broaden the social base of those involved, nor do they give rise to a debate between public decision-makers and citizens on local energy policies.*

**Keywords:** *Local energy communities, energy democracy, energy transition, socio-ecological transition, collective action*

## 1 Introduction

Citizen initiatives to produce renewable energy, which are developing in a variety of forms (cooperatives, associations, etc.), aim to give residents living near energy infrastructures direct control over their location, financing, governance and socio-economic spin-offs. This development is taking place in different ways in Europe, depending on national public policy regimes that are more or less open to cooperative approaches and renewable energies (Wokuri, 2019). I explore here the French case, which is characterised by a centralised and technocratic energy system that still gives a considerable place to nuclear energy and keeps civil society at a distance (Aykut and Evrard, 2018). How do citizen groups producing renewable energy manage to emerge and develop in an unfavourable national context? The first renewable energy production cooperatives began to develop in France in 2005, much later than in other European countries (Poize and Rüdinger, 2014). However, there has been an increase in the number of citizen initiatives over the past decade (Fontaine, 2019; Debizet and Pappalardo, 2021), due to changes in legislation as the French government seeks to catch up in terms of renewable energies, the growing role played by a range of public players – the French Agency for Ecological Transition (Agence de la transition écologique, Ademe), the Regional Nature Parks (Parcs naturels régionaux, PNR) and certain local authorities – and the impetus provided by Shared Energy (Énergie partagée) (Assié, 2021). This national association, launched in 2010 by the Enercoop cooperative to support the development of citizen energy projects, lists 351 such projects in France in 2024<sup>2</sup>.

The spread of these local energy communities is the subject of recent attention in social science research, which sees them as key players in the energy transition and in the development of an “energy democracy”, “because of their supposed ability to provide citizens with a means of participating in the management of the energy system, to take account of energy-related social needs and to generate socio-economic benefits” (Blanchet and Herzberg, 2019, p. 143). This article offers a critical analysis of this concept of ‘energy democracy’, which has often been approached in a normative manner, emphasising the positive effects of experiments thus labelled (Becker and Naumann, 2017; Szulecki, 2018; Veelen and van der Horst, 2018) and glossing over the tensions and conflicts (Blanchet and Herzberg, 2019). The aim is to examine the ‘citizen’ dimension of renewable energy production projects, taking into account the two dimensions – social and political – of the definition of democracy, as the exercise of power by all citizens and the defence of the interests of the most disadvantaged (Hayat, 2020). What role do citizens play in the development, financing and governance of these projects? What is the socio-economic profile and trajectory of commitment of the participants? How do some of them manage to put forward their point of view on a technical subject, and to what extent is the technical nature of the debates a factor in the exclusion of other audiences? Are there any changes in the balance of power when it comes to decisions on energy issues? Who benefits from the economic spin-offs of these projects on the territory?

To answer these questions, I conducted a case study in the Centre-Val de Loire region, in an area that is not particularly favourable to the development of renewable energies because of the presence of a nuclear power station and poor sunlight conditions. In Saint-Benoît-la-Forêt, a commune of 846 inhabitants located 40 km from Tours and next to Chinon, the association Citizen Renewable Energies in Rabelaisie (Énergies renouvelables citoyennes en Rabelaisie, EnRCR) has been running a solar power plant project since 2018 on a former industrial landfill site, which went into production in July 2023 and produces 3090 MWh/year. The analysis is based on interviews with around fifteen stakeholders variously involved in the project (see methodological appendix). After a presentation of the profiles of the citizens involved and their factors of commitment, I will analyse the coalitions of actors in order to understand the vectors and obstacles to the emergence and development of this type of project, and then I will question its effects.

## **2 A project linked to the “tenacity” of a few citizens**

The members of the association have different profiles and degrees of commitment. The three most active over the long term correspond to the profile

highlighted in the literature (Melé, 2023): men, often retired, with a strong interest and/or skills in technical issues due to their profession and/or personal practices. Two of them, aged 65 and 72, are retired and are converting the technical or communication skills they acquired in their working lives, as an engineer in the Departmental Directorate for Territories (Direction départementale des territoires) and an after-sales technician, into the association. The third, a 46-year-old care assistant, has a more atypical profile, but he has always had a passion for technology, which has encouraged him to explore many alternative lifestyles. Women have joined this male-dominated world on a secondary or temporary basis. An engineer at the nuclear power plant and a schoolteacher, who are still working, became involved in the association one or two years after it was launched, before leaving due to a lack of time. While the technical dimension is often put forward to explain the under-representation of women in these energy groups<sup>3</sup>, it is mainly care responsibilities that explain their withdrawal, in addition to career changes. A 70-year-old retired woman and former town hall secretary has been running them for the past two years with her husband, but she devotes less time than the main leaders – at the busiest times, between 2 and 3 hours a week, whereas one of the founders of the collective estimates his weekly commitment at between 10 and 15 hours.

The association, which has around forty members, is run by a small core of five active members who come together in a steering committee that organises itself and takes decisions in a collegial way. Tasks are allocated on the basis of the various skills they have acquired in their professional and associative lives. What these volunteers have in common is that they are all involved in a wide range of local associations: for the preservation of peasant agriculture (Associations pour le maintien de l'agriculture paysanne, Amap), migrant aid, grocery shop, library, etc. Their activist backgrounds are rich and varied, including for one of them a stint in a youth organisation and trade unions, and for another two terms as a local councillor. Although they all vote, they are critical of political parties. The leaders of the citizen project also share energy saving and alternative consumption practices. Of the six members of the association I met, four have installed solar panels at homes. They thus value a concrete and pragmatic commitment, as one of them put it: "I was very interested in the subject of energy, it was my way of getting involved, how I get involved to change the face of the world in a practical way, because I like practical ecology" (interview, November 6, 2023).

Their relationship with politics, ecology and capitalism is however contrasted. While some claim to be left-wing and ecologists, close to La France Insoumise or Europe Écologie Les Verts, openly criticising the capitalist system and the weight of large companies in the renewable energy sector, others emphasise apoliticism and distance themselves from environmentalist organisations. These

political differences are a source of tension and conflict. For example, activists from a local environmental group were concerned about the environmental impact of the former landfill site on which the solar power plant is to be built, and then about the need to cut down trees. According to one activist, this “gave rise to quite a lot of tension in the group and some left (...) because there were other people (...) who were more interested in seeing a project through to the end than in trying to resolve, step by step, the environmental issues that arose” (interview, March 11, 2024).

Despite these differences, the members of the association share a common demand for “citizen ownership” and “shared governance” of the energy project. They are keen to ensure that local residents remain at the heart of the solar power plant’s long-term development, whereas some projects have only a “citizen display”. One of the groups that inspired them in a neighbouring department was quickly evicted from the governance of the project by the company, who was only interested in benefiting from the participatory bonus on the electricity purchase tariff<sup>4</sup>. However, the scale and complexity of the solar power plant has also led them to negotiate with a range of public and private organisations. By analysing the interactions within these coalitions of actors, we can examine the role that citizens actually played in the project, as well as the factors that made possible or hindered this citizen experiment.

### 3 A more or less facilitating “ecosystem”

When I ask the association’s leaders about the people who have helped them, several partners are mentioned. The Loire-Anjou-Touraine Regional Nature Park (PNR) played a key role in providing impetus. In the early 2010s, as part of a Territorial Objective Contract with Ademe, the PNR sought to “help citizens’ groups to get organised” (interview to the head of the PNR planning department, March 27, 2024). The first public meeting, which gave rise to the association Citizen Renewable Energies in Rabelaisie, was organised by this public body. It then put the citizens in touch with the companies Initiatives & Énergies Locales – which had set up the initial solar power plant project, which failed to get a feed-in tariff from the French Energy Regulatory Commission (Commission de régulation de l’énergie, CRE), and gave them the studies free of charge – and Impulsion, which will act as project management assistant to find an industrial partner. The PNR also offers them several training courses with Shared Energy and the Coherent Housing and Energy Solutions (Habitat cohérent et solutions énergétiques, Hacsé) consultancy, two actors who are part of the ‘ecosystem’ favorable to the emergence and development of the project.



The members of the association agree on the central support role played by Shared Energy, a network being set up at the same time on a national scale. It includes an association, which supports local initiatives with facilitators based in the regions and nationally, and an investment fund (Shared energy investment, *Énergie partagée investissement*, EPI) which raises money to invest in citizen renewable energy projects in France. After a phase aimed at “creating groups and getting people to initiate projects”, the role of Shared Energy’s regional coordinator is now to support the thirty or so groups in the Centre-Val de Loire region to “create a sense of community around this network, a climate of mutual support, facilitate the emergence of projects” and, “when there are technical problems, try to find solutions, help them meet elected representatives, get organised so that they have a fairly rigorous methodology, (...) be as credible as possible” (interview, December 11, 2023). This energy engineer provides citizen groups with resources and feedback, and helps them to draw up a communication plan. The members of the association have also been trained in the technical aspects of photovoltaics by the Hacsé consultancy. The head of this small company, an engineer involved in humanitarian work, also provided the citizens with a counter-expertise on the technical studies carried out by the developer.

As for local authorities, the role of the Centre-Val de Loire region has been important. Led since 2016 by a coalition government of socialists and ecologists, the regional council has sought to develop “citizen ownership” of the energy transition in response to the growing opposition to renewable energy installations (interview to the ecologist vice-president for energy transition and permanent democracy from 2015 to 2022, April 15, 2024). In addition to funding the posts of the two regional Shared Energy coordinators, several subsidies were introduced, including the “one euro citizen, one euro region” scheme – which has largely been deactivated due to a change in European regulations that no longer allow regional aid to be combined with State aid.

The role of local elected representatives is more mixed. The members of the association regret their late and limited involvement in the project, making a distinction between the officials of the commune of Saint-Benoît-la-Forêt and those of the community of communes. The former described themselves as “facilitators”, giving the association planning permission when the first project was abandoned and a promise of a 40-year lease at a reduced rent. These elected representatives admit that they did not play a major role afterwards, leaving the initiative to the citizens despite their doubts about their “amateurism” (interview to the mayor and first deputy, March 26, 2024). On the other hand, the members of the association criticise the lack of involvement of the elected representatives of the community of communes, who did not respond to their initial request for a partnership with the local semi-public

company<sup>5</sup> and only became involved at the very end of the project by agreeing to contribute 20,000 euros to the subscription. This reluctance on the part of local councillors is systematically linked to a “pro-nuclear environment” and “the financial windfall” that the Chinon nuclear power plant represents in the structuring of the territory, but also to their “mistrust of anything that might be initiated and originate from citizens” (interview to an opposition councillor in Chinon, March 11, 2024).

Another difficulty encountered by the citizen collective was the search for an industrial partner. With the help of a project management assistant, the members of the association turned down several offers that didn’t meet their specifications: “We wanted to remain part of the governance. So the project remains truly a citizen throughout its life. (...) They were willing to take the project from us, but fire us as soon as possible” (interview to an association leader, December 12, 2023). In the end, the deal was struck between the simplified joint stock company (SAS)<sup>6</sup> Rabelaisie Green Energies Together 37 (Rabelaisie Énergies vertes ensemble 37, Rêve 37), Energy Shared Investment (EPI) and Let’s Change our Vision of Energy (Changeons notre vision de l’énergie, CVE), a Marseille-based company that installs photovoltaic panels in several countries. The citizens involved in the negotiations feel that the company has “listened” and taken on board most of their demands, particularly with regard to “shared governance”. Although they are a minority shareholder (60% CVE, 20% Rêve 37, 20% EPI), they have the power to block structural decisions (2 votes CVE, 1 vote Rêve 37, 1 vote EPI). Negotiations with the industrialist were not straightforward, however, because of the different objectives of a profit-making company and a citizen project. If the company agreed that the resale of the project would be conditional on the agreement of the citizens, the latter had to give up solar panels manufactured in France. These different approaches are still palpable once the plant has been commissioned, when it comes to site visits: while the association wants to increase the number of visits in order to raise awareness and disseminate the experience, the company does not intend to waste too much time on a project that is considered to be unprofitable and time-consuming.

#### **4 More impact on raising awareness than on energy production**

While the aim of citizen collectives is to produce renewable energy and thus help to reduce greenhouse gas emissions, their contribution to the fight against global warming is marginal (Wokuri, 2019). Admittedly, municipalities such as Saint-Benoît-la-Forêt are becoming passive in terms of electricity. But, as the expert from Hacsé points out, citizen energy remains “a small drop in the ocean

compared with the solar park that is being developed every day in France” (interview, March 8, 2024). What’s more, while this solar power plant is seen as a “major citizen project” – the first of its scale in the Centre-Val de Loire region – the industrialist CVE describes it as a “small project” (interview, April 5, 2024).

Another effect often put forward and to be relativized is the economic impact on the local area. As the citizens did not obtain the use of local companies and French labor for the installation of the solar power plant, the repercussions in terms of economic activity and employment are limited to the mobilisation of local companies for site preparation and maintenance work, and of a breeder whose sheep are eco-pastured. In addition, the local authorities receive remuneration from the lease of the land by the commune and from the flat-rate tax on network companies by the community of communes. As for capital sharing, the effects on the local area remain limited. Admittedly, a small part of the profits from the solar power plant will be redistributed locally, as a fund-raising operation has enabled local residents and local authorities to take shares, bringing together 80 shareholders (75,000 euros from private funds and 45,000 from local authorities). But the return on these shares is estimated at between 1 and 2.5%, given the project’s low profitability<sup>7</sup>. While the shareholders speak of an “act of citizenship” or “militancy”, this low return on investment has complicated the mobilisation of the population and reduced the project’s openness to a more socially diverse public. Their involvement in the project is also limited, even though each shareholder will have a vote at general meetings, regardless of the amount subscribed: “All shareholders will be able to say what they think about the orientations that will be taken. But they won’t be more involved than that” (interview to the Chairman of Rêve 37, December 12, 2023).

The balance sheet seems more positive if we look at the effects in terms of environmental awareness and education, which represent another objective of these initiatives to encourage energy sobriety. According to the head of Hacsé, citizen projects above all help to develop an “energy culture” by disseminating information to “people who want to understand what this energy is that feeds us morning, noon and night” (interview, March 8, 2024). Awareness-raising takes the form of conferences, training courses and even a participatory worksite to learn how to install solar panels at home. These activities around energy projects enable citizens to better understand the stakes involved in energy consumption and production, to change some of their daily practices (or even their electricity supplier by switching to Enercoop) and to spread this knowledge to those around them.

A project like Saint-Benoît-la-Forêt can also encourage the emergence of other citizen initiatives. Visits to the solar power plant aim to “explain what a community

project is, how it's set up, and how energy is produced in a way that's different from nuclear power. And then to encourage people to get involved in this type of citizen project, whether it's an energy project or anything else" (interview to an association leader, December 12, 2023). The Rêve 37 company also aims to integrate other citizen renewable energy production projects at the department level, in order to rationalize operating costs, pool risks and guarantee long-term profitability. The coordinator of Shared Energy describes the project in Chinon as "federating and structuring the network at departmental and regional level" (interview, December 11, 2023). She emphasizes the networking and "skills enhancement" of participants, with the acquisition of technical knowledge – linked to solar energy, but also to project set-up, legal and financial aspects – and activist skills that can then be reconverted in other collectives on different dimensions of the ecological transition. There have also been processes of professionalization, as in the case of a teacher involved in a citizen collective who became a regional Shared Energy coordinator. One of the association's founders, however, wonders whether it's really "this type of project that gets people more involved" (interview, December 12, 2023). The association's active members emphasize their difficulties in maintaining mobilisation during the five years it took to develop the project, due not only to the local context, which doesn't help to highlight the problems of energy production, but also to the time lag between administrative delays and citizens' desire to take action.

Another expected effect of citizen renewable energy projects is to generate fewer oppositions. Social acceptability is one of the main arguments put forward by the developer to engage in this type of project, despite the constraints in terms of time investment and sharing of governance: "For us, it is important to involve local authorities and citizens in projects, to have an acceptance of the project. Today, we realize that there is much more opposition. (...) It allows us to get the projects out" (interview to two CVE employees, April 5, 2024). The solar power plant in Saint-Benoît-la-Forêt generated very few objections, which is largely related to the fact that this former landfill site, closed since 2001, could not accommodate almost any other activity. Even if other citizen projects (especially on wind power) are more contested, the regional leader of Shared Energy highlights the legitimacy of these "territorial projects that are supported by citizens, that are politically supported by local elected officials and that are more difficult to dismantle" (interview, December 11, 2023).

However, these citizen initiatives do not lead to broader debate on local energy policies (Melé, 2023). In the Saint-Benoît-la-Forêt collective, the nuclear issue is avoided because it is locally divisive. Most of the residents, or people close to them, work in the nuclear sector, and several members of the association are in favour of an energy mix. The collective is thus refocusing on "the same denominator (...) for renewable energies", to avoid being branded as "an anti-

nuclear association” (interview to an association founder, November 6, 2023). While regulatory changes could be conducive to the emergence of consultation on energy issues, with the March 10, 2023 law to accelerate the development of renewable energies requiring all communes to identify zones for the development of renewable energies, the public meetings organized at the time of the inquiry were poorly attended and did not allow for real debate: “It will be more information than consultation”, according to a local elected official (interview, December 12, 2023).

## 5 Conclusion

Citizen energy projects differ in many ways from those run only by private companies, mainly in terms of governance. Citizens take part in structuring decisions on the design and development of energy infrastructures, with an influence that varies from case to case depending on their negotiating skills and the support they receive from a range of stakeholders. They also demonstrate the ability to see projects through to completion, despite a series of setbacks (Assié, 2021), which may stimulate other citizen initiatives on energy and ecological transition issues. There are, however, many limits to citizen involvement, as the need to join forces with an industrial partner for large-scale facilities means that compromises have to be made, limiting both the influence of citizens on project configuration and the socio-economic spin-offs for the territory. The militant objectives of citizen collectives and those of private companies, focused on economic profitability, are thus in tension. Moreover, these energy projects are complex, long and time-consuming, which explains the difficulty of mobilising the population over the long term, beyond a small, socially homogeneous group of committed citizens. Citizen initiatives to produce renewable energy therefore have limited democratizing effects, both socially and politically, as they do not broaden the social base of those involved, nor do they give rise to a debate between public decision-makers and citizens on local energy policies.

However, the case studied here has a number of specific features that make it “more laborious than other initiatives”, according to the solar energy expert who follows several collectives in France (interview, March 8, 2024). One of the main reasons for this is the fact that the project is located in an area that relies heavily on the socio-economic spin-offs of a nuclear power plant, making it difficult to mobilise local residents and public authorities. It would therefore be interesting to vary local, regional and national contexts by studying other citizen collectives, to understand the diversity of the models followed and their differentiated effects in terms of energy democracy.

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## Methodological Appendix

The survey is based on 13 interviews conducted with 16 people between November 2023 and April 2024. I met stakeholders involved in various ways in the Saint-Benoît-la-Forêt solar power plant project, using the Socioecos project typology, which distinguishes six categories of actors (see table). The interviews, most of which were face-to-face (three were conducted by videoconference and one by telephone), lasted between 1 and 3 hours and were fully transcribed. I also carried out a documentary study, analysing the documents available on the websites of different actors involved in the project (Shared Energy, Citizen Renewable Energies in Rabelaisie, Rêve 37, CVE, PNR Loire-Anjou-Touraine)

and those made available by the people I interviewed. Moreover, as I live near Saint-Benoît-la-Forêt, I participated in the share subscription, which will enable me to take part in the annual general meeting of shareholders and observe the decision-making and voting processes from the inside.

Table 1. List of interviews

Type of stakeholder	Organisation	Position of person met	Date
Participants (association)	Citizen Renewable Energies in Rabelaisie	Founder and member of the steering committee	06.11.2023
		Founder and member of the steering committee, chairman of SAS Rêve 37, local councillor	12.12.2023
		Founder and member of the steering committee	13.12.2023
		Member of the steering committee (disengaged)	18.03.2024
		Member of the steering committee since 2022	09.04.2024
Social movements	Chinon Environment Collective	Historic member (also member of EnRCR and opposition local councillor in Chinon)	11.03.2024
Public and private organisations	Shared Energy	Regional coordinator (salaried)	11.12.2023
		- M&A project manager - Asset manager	05.04.2024
Public policy	Loire-Anjou-Touraine Regional Nature Park	Head of planning department	27.03.2024
	Saint-Benoît-la-Forêt Town Hall	Mayor and Deputy Mayor	26.03.2024
	Centre-Val de Loire Region	- Vice-President responsible for energy transition since November 2022 - Advisor to the office of the President of the Region on energy transition	05.02.2024
Vice-President in charge of energy transition and permanent democracy from 2015 to December 2022 (since deputy for the 1st constituency of Indre-et-Loire)		15.04.2024	
Experts	Coherent Housing and Energy Solutions (Hacsé)	Head of the consultancy, solar energy expert for over 20 years	08.03.2024
Civil society		Questionnaire planned for subscribers of Rêve 37	

## Abbreviations

- **Ademe:** French Agency for Ecological Transition (Agence de la transition écologique).
- **Amap:** Association for the Preservation of Peasant Agriculture (Association pour le maintien de l'agriculture paysanne, Amap).
- **CRE:** French Energy Regulatory Commission (Commission de régulation de l'énergie).
- **CVE:** Let's Change our Vision of Energy (Changeons notre vision de l'énergie).
- **EnRCR:** Citizen Renewable Energies in Rabelaisie (Énergies renouvelables citoyennes en Rabelaisie).
- **EPI:** Shared Energy Investment (Énergie partagée investissement).
- **Hacsé:** Coherent Housing and Energy Solutions (Habitat cohérent et solutions énergétiques).
- **PNR:** Regional Nature Park (Parc naturel regional).
- **Rêve 37:** Rabelaisie Green Energies Together 37 (Rabelaisie Énergies vertes ensemble 37).
- **SAS:** Simplified joint stock company (Société par actions simplifiées).
- **SCIC:** Cooperative society of collective interest (Société coopérative d'intérêt collectif).

## Biographical Note

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## Notes

1. This research was carried out as part of the Socioecos programme "Building a sustainable society. Mobilisation, participation and management of socio-ecological practices", coordinated by Benjamín Tejerina at the University of the Basque Country and funded by the Spanish Ministry of Science and Innovation and the European Union (2023-2025). To contact me: heloise.nez@u-paris.fr.



2. <https://energie-partagee.org/decouvrir/energie-citoyenne/chiffres-cles/> (accessed on April 11, 2024).
3. The photovoltaic panel expert, who acted as a consultant to the citizen collective, believes that: "It's quite masculine. It's technical... It's a technology where we talk about concrete, where we talk about kilowatt hours, we talk about cables" (interview, March 8, 2024).
4. Renewable energy projects have an advantage over the feed-in tariff awarded by the French Energy Regulatory Commission (Commission de régulation de l'énergie, CRE) for facilities that have benefited from collective financing (by at least twenty people and/or one or more local authorities).
5. EnerCentre, which was set up in 2012 by the Intercommunal Energy Union (Syndicat intercommunal d'énergie) of Indre-et-Loire, initially refused to take on the solar power plant project because of a lack of profitability, but then belatedly made an offer to the association in partnership with Enercoop when the citizens were already well advanced in setting up the project with two other partners.
6. The citizens had to create a company to be able to interest subscribers, because an association cannot redistribute the money it owns as profit. They hesitated between the status of an SAS and that of a cooperative society of collective interest (Société coopérative d'intérêt collectif, SCIC), which could better correspond to the citizen dimension of their project but seemed more restrictive to them.
7. The low profitability of the solar power plant is due to the unfavourable sunshine conditions in the north of France, the increase in the cost of materials and the deterioration in bank credit conditions with the cumulative effects of the covid-19 epidemic and the war in Ukraine, but also to the additional cost linked to the time required for a citizen project (generally invoiced by companies). It is also linked to the fact of producing a single project in low sunshine conditions, whereas private operators manage to balance their books by producing more solar power plants in the south of France and ensuring economies of scale for the purchase and installation of materials.



# An Important but Less Pressing Issue? Individual Actions against Climate Change in Romania over the Last Decade

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**Abstract:** According to Eurobarometer surveys, Romanian citizens consider climate change the fourth most pressing problem. Still, at the same time, the country's citizens are relatively less involved in actions to prevent and mitigate climate change. There is, therefore, undoubtedly an attitude-action gap. Using data from the Special Eurobarometer Climate Change 2009, 2019, and 2021, I examined the frequency with which each type of action to prevent and mitigate climate change is taken in Romania. I also put the Romanian data into context (e.g., EU27, EU24, Visegrad Four) to give an idea of how far the individual actions of Romanians fall behind or fit into the broader picture of the European and post-socialist region. After the descriptive data, I also carried out a short multivariate analysis. For this purpose, I looked at the impact of socio-demographic and specific climate change-related variables on the aggregate (cumulative scale) of the actions under study. The most popular climate action is household energy saving. Selective waste collection, buying local food, and environmentally friendly transport are moderately popular. All of these actions may be motivated by reasons other than climate change mitigation, e.g., financial scarcity, health protection, and support for the local economy. The regression model results suggest that the better educated, the better off tend to take more climate action. More intense attitudes toward the urgency of climate change positively influence the taking of action. Perhaps one of the most important observations is that the pandemic did not significantly impact the actions listed, nor did it hurt environmental and climate action.

**Keywords:** Climate change mitigation, individual actions, Romania, Eurobarometer

## 1 Introduction

Concern, knowledge, and awareness of climate change and behavioral support of climate change mitigation vary widely worldwide. The literature suggests cultural, social, psychological, and experiential explanations (Lee et al. 2015). The attitudes and actions towards climate change in Central and Eastern

European countries and their environmental awareness in general are less studied (Marquart-Pyatt, 2012). Still, sporadic studies show that environmental awareness in the region's countries differs from that in other countries, not only in moderation but also in socio-demographic background. In this short analysis, I aim to continue my previous research on the attitudes of Romanian society towards climate change (Nistor, 2013, 2022) by examining the individual-level commitment to actions aiming to fight climate change.

Climate change is, in a sense, an abstract, ambivalent phenomenon for the public, and attitudes towards climate change carry the effects of messages published in the media (Vainio and Paloniemi, 2011; Marquart-Pyatt et al., 2014), so it is not surprising that public opinion polls show both support and skepticism about the phenomenon (Whitmarsh, 2011). There is also ambivalence and a gap in terms of attitudes and behaviors. For example, attitudes and dispositions have shown public support for climate change mitigation steps and actions. Still, *de facto* participation in such actions declines as more burdensome actions are required (e.g., installing solar panels, paying extra taxes (Dietz et al., 2007, for Romania: Nistor, 2010).

However, fighting climate change implies more than intensive attitudes. Commitments imply institutional and political actions that can lead to climate neutrality in a post-carbon society (Urry, 2011), and for which the support of citizens is essential (Lorenzoni and Pidgeon, 2006; Ortega-Egea et al., 2014). It is clear that, beyond in-principle commitments, what ultimately matters is the extent to which concrete actions of citizens support the climate movement (Dietz et al., 2007).

## 2 Research Questions

Rooted in the previous arguments on the importance of concrete actions in fighting climate change, the present analysis aims to investigate how Romania performs regarding individual actions related to climate change mitigation. The paper also asks how Romanians' commitment to individual-level climate change-related actions has changed during the last decade and how Romania performs in broader and narrower regional comparisons. Previous analysis of Romanians' climate change-related attitudes showed that between 2009 and 2021, about a tenth of respondents (7-16%) considered climate change the most critical problem under review, and in the decade under review, climate change was ranked third or fourth in the ranking of the essential issues of the world, with such data the country lagging behind the EU average (Nistor, 2022). Multivariate analysis failed to circumscribe a clear profile of those Romanian respondents who are the most committed to, in principle, attitudinal level

climate change mitigations; however, such analyses showed that there is a segment of the population that sees this issue as important and relevant, but this segment is less related to social background variables other than education (Nistor, 2013, 2022). Following this conclusion, the present analysis also aims to investigate the background of climate change actions in terms of socio-demographic and attitudinal variables in Romania to answer whether we can circumscribe a clear population segment dedicated to climate change mitigation in terms of its actions.<sup>2</sup>

### 3 Methodology

The following analyses are based on the data from the Special Eurobarometer Climate Change surveys for 2009 (European Commission, 2009), 2019 (European Commission, 2019), and 2021 (European Commission, 2021), i.e., the Special Eurobarometer 72.1, 91.3, and 91.5 waves and corresponding datasets.<sup>3</sup> Based on these data, we will look 1) at the frequency of commitment to individual actions related to climate change mitigation and 2) investigate the role of socio-demographic variables and climate change attitudes on these actions. We put the Romanian data into a regional context, so we also ask the question of how Romanian citizens “perform” compared to the EU27 country groups, respectively, compared to smaller regional groups of post-socialist countries, such as the Visegrad Four (V4) countries, comprising the Czech Republic, Hungary, Poland, and Slovakia. After the descriptive data presentation, a brief multivariate analysis is carried out. For this purpose, an additive variable of climate change-related actions (cumulative scale) is created. Such a cumulative variable is a relatively crude approximation of climate change-related actions because it does not consider the characteristics of each action but focuses on whether the respondent is doing the action. Thus, all actions are deemed equivalent, regardless of difficulty, cost, etc. Despite the methodological limitation of such an analysis, I assume that such an additive scale can give a picture of the general commitment to climate change mitigation. Then, this additive scale is examined through regression analysis to answer how it is affected by socio-demographic and specific climate change-related variables.

### 4 Analysis and Discussion

In 2009, the Special Eurobarometer Climate Change survey asked respondents whether they performed eleven actions related to climate change mitigation. As seen from Table 1, the most popular actions related to climate change mitigation in Romania were those related to saving energy at home, with around half of the respondents doing so. Selective waste collection, buying local food,

and choosing environmentally friendly transport were moderately popular. These actions may be motivated by reasons other than climate protection, e.g., financial scarcity, health protection, and supporting the local economy. Actions that required higher financial inputs (e.g., green cars, solar panels) were less common among Romanians, and the situation is similar for switching energy suppliers.<sup>4</sup> Consequently, we can judge Romanians' commitment to climate change mitigation as moderate.

Table 1. *Personal Actions to Combat Climate Change.*  
Frequency (%) of Respondents Indicating Each Action in 2009 in Romania  
Source: author's calculations based on Special Eurobarometer 72.1.

Actions aimed at fighting climate change	% of respondents acting (%)
Purchased a car that consumes less fuel or is more environmentally friendly	11
Reduced the use of car, for example by car sharing	9
Chose an environmentally friendly way of transport (by foot, bicycle, public transport)	33
Reduced energy consumption at home (e.g. turning down air conditioning)	53
Reduced the consumption of water at home (e.g. not leaving water running)	49
Avoided taking short-haul flights	3
Switched to an energy supplier or tariff supplying a greater share of energy from renewable resources	3
Separated most of the waste for recycling	38
Reduced the consumption of disposable items (e.g., plastic bags)	38
Bought seasonal and local products to avoid products from far away that contribute to CO2 emissions	13
Installed equipment in your home that generates renewable energy (e.g. solar panels)	1

Knowing the general picture of 2009, let's see the individual-level climate change mitigation actions a decade later, i.e., in 2019 and 2021. Such a more recent picture is justified by the need to analyze the longitudinal evolution of individual-level commitments for fighting climate change and the context of the pandemic. Amid changed daily lives, fears, and crises, it is worth seeing whether respondents still have the "energy" left to take climate-related action. Compared to the 2009 variables, thirteen were used in the 2019 Special Eurobarometer survey questionnaires to tap the respondents' actions to fight climate change. In 2021, the list of investigated actions was again modified, asking respondents about fifteen actions. Compared to the 2009 questionnaire, the newly introduced items refer to newer actions, formulations (e.g., carbon footprint), and insights (e.g., meat consumption is linked to climate change).

Table 2 presents the descriptive situation of climate change mitigation actions performed in Romania in 2019 and 2021. Then, we examine how Romania “stands” compared to the EU7 and the region (V4 countries) in two separate graphs. After the descriptive data, a multivariate analysis is used to examine the socio-demographic and attitudinal background of these actions in Romania. For this purpose, we rely on the cumulative action variable, where each action performed counts as 1 so that in 2019, the maximum number of actions the respondent performs can be 13. In 2021, the maximum number of actions performed can be 15.

Table 2. *Personal Actions to Combat Climate Change. Frequency (%) of Respondents Indicating Each Action in 2019 and 2021 in Romania*

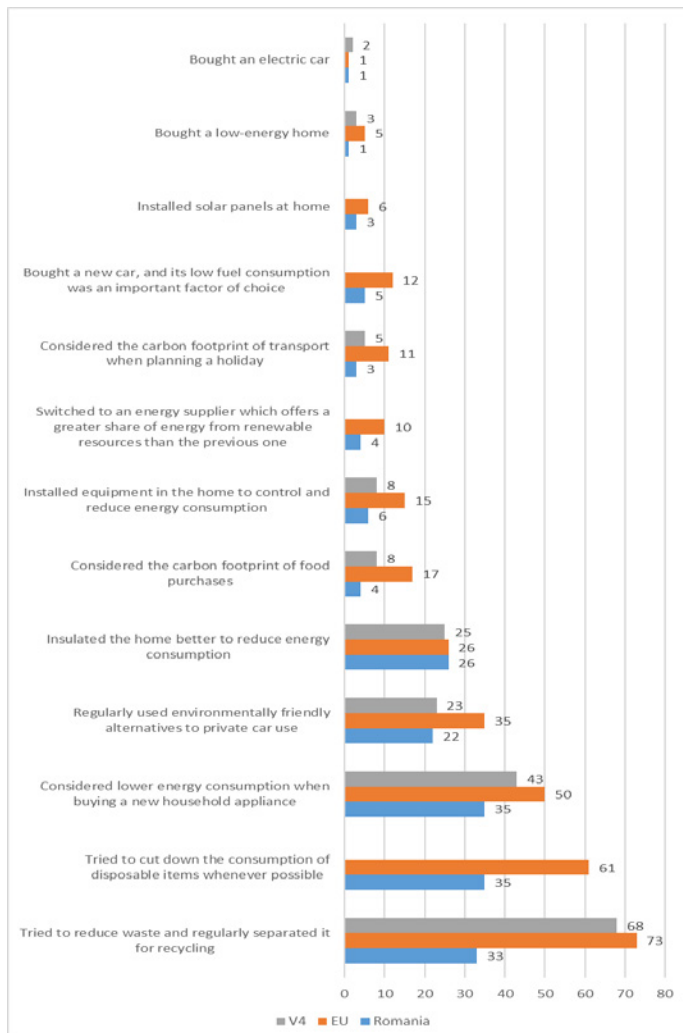
Source: author’s calculations based on Special Eurobarometer 91.3, 91.5 databases

Actions aimed at fighting climate change	2019 (%)	2021 (%)
Tried to reduce waste and regularly separated it for recycling	33	38
Tried to cut down the consumption of disposable items whenever possible (e.g., plastic bags)	35	35
Considered lower energy consumption when buying a new household appliance (e.g., washing machine)	35	30
Regularly used environmentally friendly alternatives to private car use (walking, cycling, etc.)	22	17
Insulated the home better to reduce energy consumption	26	23
Considered the carbon footprint of food purchases	4	5
Installed equipment in the home to control and reduce energy consumption (e.g., smart meter)	6	5
Switched to an energy supplier which offers a greater share of energy from renewable resources than the previous one	4	4
Considered the carbon footprint of transport when planning a holiday	3	5
Bought a new car, and its low fuel consumption was an important factor of choice	5	5
Installed solar panels at home	3	2
Bought a low-energy home	1	2
Bought an electric car	1	2
Bought and ate more organic food	n.a. <sup>5</sup>	23
Bought and ate a smaller amount of meat	n. a.	12

Table 2 shows that the popularity of climate change mitigation actions varies: energy efficiency in the choice of household appliances, reducing the purchase of disposable goods, and separate waste collection are the most popular actions, mentioned by about one-third of the respondents. Around a quarter of respondents insulated their homes, and around the same proportion buy organic food. Environmentally friendly transport is also somewhat popular, but other more sophisticated actions requiring a higher level of knowledge,

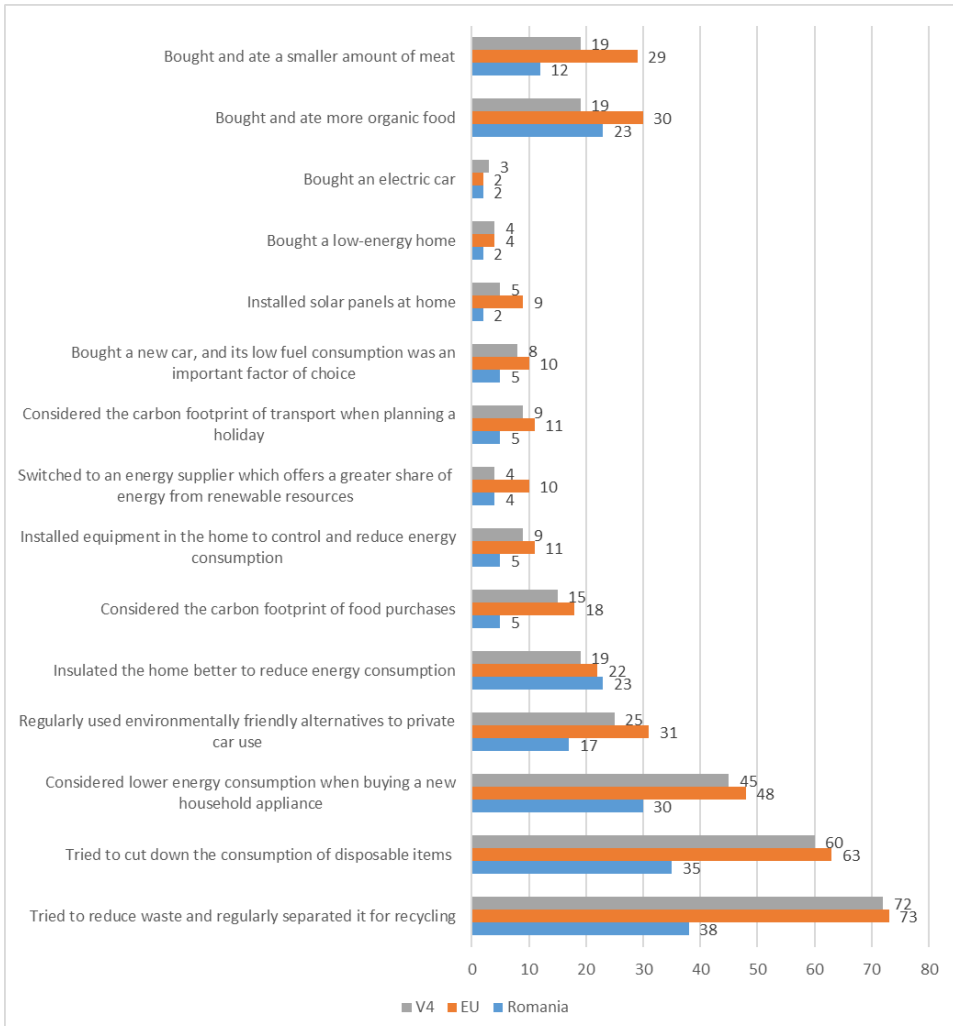
awareness, and financial investment are negligible in the Romanian sample. If we return to the 2009 data, there is little reason to be optimistic: a decade later, most actions continue to have only a few adepts. Still, just over a third of respondents collect waste selectively (although there have been advances in infrastructure and legislation in the country), and fewer people walk or use public transport (33% in 2009, 22% in 2019). In 2021, there was little progress in individual action to protect the climate: the pandemic neither worsened nor improved the situation. Thus, the climate issue in Romania does not seem to be able to move beyond a small fraction of the population.

Figure 1. *Personal Action to Combat Climate Change. Frequency (%) of Respondents Marking Each Action in 2019 in Romania, the EU28 and V4 countries*  
Source: author's calculations based on Special Eurobarometer 91.3



If we take a comparative look at the situation in 2019 and 2021 (see Figure 1 and Figure 2), we notice gaps between Romania and the EU and Romania and the V4 countries. While 33% of Romanians collect their waste selectively in 2019, this rate is around 70% for the EU and the V4. While one-third of Romanians reduced the use of disposables, the proportion is around 50% in the V4 and 60% in the EU. The gap is not as significant for energy-efficient appliances, but here again, Romania underperforms the EU and some V4 countries, such as the Czech Republic and Hungary<sup>6</sup>. For other activities, the field is gradually becoming more leveled.

Figure 2. *Personal Action to Combat Climate Change. Frequency (%) of Respondents Indicating Each Action in 2021 in Romania, the EU and V4 countries*  
 Source: author's calculations based on Special Eurobarometer 91.5





So the problem is not that Romanians only excel in the more mundane, less costly, less sophisticated climate actions but that, from a comparative perspective, far fewer people in Romania are doing these actions than in the EU or even the region, making the country to lag in the fight against climate change. Indeed, only a few people buy electric cars in general, solar panels are rarely installed, and few people across the EU give up air travel. However, the most mundane, easy, apparent activities are done by almost twice as many people in the EU or the V4 as in Romania.

Table 3 presents the linear regression results and shows the variables that explain climate change mitigation actions in Romania. As mentioned in the methodology, the dependent variable is a cumulative variable that counts for the sum of the performed climate change mitigation action; each activity performed counts as one, so we have not considered factors or types of action. The resulting cumulative scale could range from 0 to 13 actions in 2019 and from 0 to 15 in 2021, depending on the number of actions performed. In Romania, in 2019, no respondent did all 13 actions, which is somewhat logical since, for example, we probably don't buy a house, replace our car every year, or install solar panels. On the cumulative action variable, the maximum number of actions performed by Romanians is 11 actions performed by only 1% of the respondents. The average is 1.78 (standard error 1.61), a decrease from 2.5 in 2009. One-third of the respondents did not indicate any action. In 2021, the maximum number of actions taken is ten out of fifteen (1%). 16% of respondents do not accept any action, an improvement compared to 2019. The average is 2.1 (standard error 1.64). So, over a decade, neither the frequency of people taking each action nor the average number of actions taken has changed much. Of course, there may be methodological reasons for this since the same set of variables was not used in the three questionnaires. At the end of the period, the wording of the questions seemed to have become more complex and sophisticated, making it problematic to respond.

The independent variables of the regression analysis consisted of socio-demographic variables and specific climate change variables, such as the perception of the severity of climate change (how serious is the problem of climate change on a 1 – 4 Likert scale) and the variable asking whether individuals could play a role in the fight against climate change (dummy variable: 31% of respondents in both 2019 and 2021 answered yes).

Table 3. Variables that Explain Individual Climate action7 in Romania. Linear Regression Models  
 Source: author's calculations based on Special Eurobarometer 91.3, 91.5

	2019	2021
	B (unstandardized coefficients)	B (unstandardized coefficients)
Constant	3.260***	2.316***
Age	0.003	0.006
Female	0.096	0.070
Educational level (in years)	0.465***	0.386***
Income (subjective)	0.409***	0.312***
Urban settings	-0.067	-0.074
Seriousness of climate change	0.455**	0.181**
Individual responsibility in climate change mitigation	1.279***	1.463***
	R <sup>2</sup> =0.253 F=43,810, df=7, p<0.001	R <sup>2</sup> =0.229 F=43,150, df=7, p<0.001

\*\*\*p<0.001, \*\*p<0.01, \*p<0.5

The resulting models are relatively robust: in both years, we can explain about 25% of the climate actions taken with the variables used. Among the explanatory variables, high education and better financial situation significantly influence actions. Being female or male, living in rural or urban areas is therefore insignificant to the number of climate actions taken. Of course, if we had worked with activity types, the situation would probably have been different since the infrastructure for separate waste collection is highly location-dependent. Hence, this variable, for example, is likely to be significantly influenced by the respondent's place of residence. Respondents who believe climate change is a serious issue and think the individual has a vital role in combating it are significantly more likely to take climate action at the individual level.

## 5 Conclusions

Our conclusions suggest that Romanians' climate change practice is a highly education-dependent, elite-status issue. However, it is not a random manifestation among the population. As previously concluded (Nistor, 2013, 2022), values, attitudes, and actions related to climate change are interconnected. Therefore, a highly educated population is committed to all aspects of climate change, from attitudes to actions. Thus, the following questions remain: How can we increase this segment, and what must be done to make climate change a pressing social issue reflected in corresponding actions in Romania? Policies, media presentations, representations, and targeted educational programs can probably answer this challenging issue.

Among others, Stern's (2000) value-belief-norm (values-beliefs-norms) theory of environmental consciousness and Barr and Gilg's (2007) framework model of environmental actions contend that for environmental actions to be sustainable over time and context, they need to be preceded by more "theoretical" variables that are congruent with them, such as environmental attitudes, values, and knowledge. Even in such ideal cases, it is not a given that an individual is always and everywhere able to act in a way consistent with his/her values, attitudes, and knowledge. There are many cases where, due to a lack of resources (e.g., time, materials) or individual psychological variables (e.g., fatigue, discouragement), environmentally conscious actions do not occur, although the individual's values and attitudes are environmentally conscious. Consequently, individuals must be more informed and sensitized about the problem to advance climate change-related actions. Still, they also need to face a social and political context in which such actions become more achievable (e.g., normative contexts and subsidies).

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## Methodological Appendix

The data analysis is based on secondary data analysis corresponding to Special Eurobarometer Climate Change studies, waves 72.1, 91.3, and 91.5. The datasets were downloaded free from the Gesis Leibniz Institute for the Social Sciences website.

## Biographical Note

Laura Nistor has a PhD in sociology. Her research covers sustainable consumption studies, and environmental sociology. She has published various works on the topics above in Romanian, Hungarian, and English languages. She is Associate Professor Habil. at the Sapientia Hungarian University of Transylvania, Cluj-Napoca, Romania, where she teaches Sociology of Consumption, Quality of Life, and Environmental Sociology courses. Her latest publication: Nistor, L. (2022) 'The Ranking and Rating of Climate Change in Romania: Trends and Individual-Level Determinants' *Sociológia - Slovak Sociological Review*, 54(2), pp. 144–167.

## Notes

1. nistorlaura@uni.sapientia.ro
2. Due to space limitation the analysis skips the literature review on the socio-demographic and attitudinal determinants of climate change actions, but I am aware of that stream of the literature. For an insight in this respect, see my previous works (Nistor, 2013, 2022).
3. See the Methodological Appendix for the exact source of data.
4. This is understandable, since only a few opportunities existed in 2009 in this respect, the country published in 2019 the Regulation 234/2019 on the switching of energy suppliers, which was widely promoted in the media.
5. n.a. = not asked in the current year.
6. For the sake of simplicity only aggregate data are presented for the V4.
7. Cumulative variable based on 13 dummy actions in 2019 and 15 dummy actions in 2021.



## From “Business as Usual” Tourism to Regenerative Tourism. In Search of a Change of Logics in Economic and Social Activities

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**Abstract:** *The large figures of economic and social value attributed to tourism have in their distribution a bias towards consolidated destinations and modalities (cities, sun, and beach...). On the other hand, rural areas, with a low incidence in the economic figures that support the supposed prosperity of the sector, are mostly outside the advantages (economic) and disadvantages (saturation, deterioration, contribution to global change) of traditional destinations. Echoing the potential of tourism in rural areas, we analyse the possibilities of regenerative tourism supported by protected areas. Among the emerging options, this proposal will investigate the potentially positive effect of experiential tourism, based on gastronomic heritage and agroecology.*

*The application of the emerging regenerative proposal to tourism seeks an approach that takes it beyond the reviled sustainability, trying to actively contribute to the eco-social transition, restoring and revitalizing territories through a new approach to tourist use contemplated from an ecocentric perspective.*

*Our paper analyses the theoretical bases that sustain regenerative tourism and anticipates a methodological proposal of analysis-action for territories, which natural and heritage values contain attractions susceptible to tourist use. The definition of the tourism model, its participatory planning and monitoring are proposed from a redesign that addresses the possible risks derived from conventional tourism and that faces the challenges of global change.*

**Keywords:** *Regenerative tourism, ecosocial transition, global Change, agroecology, ecofeminism, degrowth*

## 1 Introduction

While tourism has become a necessity for societies and classes with greater economic availability, its growth in recent decades, together with the forecasts and hopes from the spheres of economic and political power that it will continue to grow, have been accompanied by the advance of awareness and the study of its negative repercussions on social and natural environments (Higham *et al.*, 2021).

In this context, tourism, if it wants to acquire a true commitment in the response to the global emergency, must transcend the incipient assumption of weak sustainability practices, which it welcomes in its “as usual” version, and needs to assume a change of logic that allows the sector to be redesigned together with the territories that serve as a resource, with a holistic vision and an ecocentric perspective.

An alternative that seems to be gaining strength along these lines is the regenerative paradigm, which proposes the reincorporation of the person in his or her place in nature, overcoming the visions of domination and exploitation typical of capitalism based on the logic of unlimited growth (Du Plessis, 2022; East, 2020). The application of this emerging proposal to tourism seeks an approach that takes it beyond the much-maligned sustainability, trying to actively contribute to the eco-social transition, revitalizing and regenerating territories through a new approach to tourist use deeply imbricated in social and natural dynamics. As can be read in Qi *et al.* (2024, 5), regenerative tourism, moving away from conventional tourism guided by profit and volume, would seek to prioritize the environmental and community needs of the destination driven by an internal system of values.

To move towards economic and social activities intertwined with nature that place the person as a caring part of the system, regenerative perspectives advance in the formulation of proposals in various areas. Compatible with these approaches, degrowth as a precondition (Romero *et al.*, 2023), ecofeminism as an ideological support that does not subordinate either women or nature (Ruiz Pérez, 2022; Mies and Shiva, 2014) and agroecology as a proposal for a strategy to transform the vital food base (Val *et al.*, 2021), are considered as schemes in which to found a practice aimed at a drastic change, an ecocultural revolution and that is in the first steps of its practical application.

## 2 Theoretical Framework

The capacity for transformation of the environment that human societies have reached has exceeded the limits that current science accepts as safe to guarantee the continuity of life, as we know it, on the planet (Richardson *et al.*, 2023; Bonan and Doney, 2018; Steffen *et al.*, 2015; Erb *et al.*, 2012; Rockström *et al.*, 2009). The natural system needs to be regenerated.

The reconsideration of the self-perception of human societies within a nature that needs to be regenerated is a fundamental factor. The anthropogenic impact of capitalism (“capitalocene” for Malm, 2016; and Moore, 2017) must be assumed to articulate the measures that put a stop to it and must cover all sectors of economic activity. This is a response that can be considered emerging within the tourism sector.

As Camrass points out, (2023, 1) “regeneration evokes hopeful themes of renewal, revival, rebirth and restoration”. The suggestive goal of redesigning human existence on the “Earth System” (Rockström *et al.*, 2023), correcting the errors of scale, design, efficiency and arrogance of capitalist society (Riechmann, 2005), involves a radical turn in the conception of the environment, replacing the anthropocentric perspective with an ecocentric perspective, and in the logics of knowledge construction, adopting the co-creation of knowledge as a fundamental pillar (Bellato, Frantzeskaki, Lee, *et al.*, 2023; Buckton *et al.*, 2023; Du Plessis, 2022).

In the field of tourism, Bellato, Frantzeskaki, and Nygaard, (2023, 9) construct the following working definition based on the analysis of the academic and grey literature published up to the time of writing your text:

“Regenerative tourism is a transformational approach that aims to fulfil the potential of tourism places to flourish and create net positive effects through increasing the regenerative capacity of human societies and ecosystems. Derived from the ecological worldview, it weaves Indigenous and Western science perspectives and knowledges. Tourism systems are regarded as inseparable from nature and obligated to respect Earth’s principles and laws. In addition, regenerative tourism approaches evolve and vary across places over the long term, thereby harmonising practices with the regeneration of nested living systems.”

In the same document, in order to achieve a regenerative functioning in tourism practice, they point out the identification of seven conceptual principles and the proposal of a two-tiered framework of five design dimensions to kick-start regenerative tourism (Table 1).



Table 1 Relationship between the conceptual principles and design dimensions of regenerative tourism proposed by (Bellato, Frantzeskaki, and Nygaard, 2023)

Starting assumptions	Design Dimension
Draw from an ecological worldview	Regeneration mindset
Use living systems thinking	
Discover the unique potential of a regenerative tourism place	Inherent potential
Leverage the capability of tourism living systems to catalyse transformations	Systems capability
Adopt healing approaches that promote cultural revival, returning lands, and privileging of the perspectives, knowledges and practices of indigenous and marginalised peoples	
Create regenerative places and communities	Intended system effects
Collaborate to evolve and enact regenerative tourism approaches	Tasks and resources

Finally, Bellato *et al.* (2023) specify that the theoretical framework they present can be used for the investigation of different aspects, one of them is “the roles of tourism change agents and other stakeholders within tourism systems in working towards regeneration”. This is the witness collected by the investigation that we are carrying out in two different rural locations in the centre of the peninsula, working in close interaction with their agents.

### 3 Regenerative redesign of rural tourism

The publications related to regenerative tourism, of which a recent sample is cited throughout this text, focus on the conceptualization of the approach, the analysis of its potentiality or the study of experiences of implementation. What we propose here is that, based on the epistemological agreement with the concept and theory of regenerative tourism, social science is involved in the accompaniment and enablement of this type of experiences in the rural environment of the state from a perspective of Participatory Action Research. To come out of the ivory tower to make a direct transfer and act in this way in all phases of the public service entrusted to us.

The regenerative approach to tourism raises the importance of adaptation to the natural, social and cultural characteristics and the recognition of the traditional knowledge of specific territories, avoiding the application of stereotyped formulas and promoting activities whose main objectives are not growth and economic benefits. Recognising and supporting diversity is one of its pillars (Pung *et al.*, 2024). The foundation in the eco-social transformation that drives the regenerative proposal serves as a guide for the design of the IAP practices that should compose it as:

- Collaborative design local community-academia research and development initiatives.
- The individualized treatment of destinations, in analysis, design, planning, development and monitoring, which rules out the systematic adoption of standardized solutions.
- The interdisciplinary and intersectional approach, in which the participation of academia can be understood as a space-time dedicated to reflection, essential for change and not always available in the daily life of productive activities and an element of interconnection with other inspiring realities.
- Distilling local experiences that can inform the creation of policy instruments for scaling regenerative benefits and other initiatives.
- The adoption of post-capitalist thoughts and practices focused on paradigm shifting.

In order to set these processes in motion, it is necessary to identify territories in which there is a social substratum prone to change. As a result of our research trajectory, we consider that protected spaces and those in which agroecological practices have found a place, with a prominent women's agency, meet the preconditions to host these initiatives (Ramírez-García and Mancha-Cáceres, 2023; Mancha-Cáceres and Ramírez-García, 2018; Ramírez-García et al., 2016).

Agroecology and ecofeminism, as a practice and as an ideological framework, contain and share with regeneration an ecological worldview that, in the words of (Pollock, 2019), understands tourism as "a living, networked system embedded in a natural system called Nature and subject to Nature's operating rules and principles". With this systemic vision, the co-creation of knowledge between traditional local knowledge (indigenous in the scientific literature elaborated from areas such as populations recognized as such) and scientific knowledge, also a mainstay of agroecology, and the links and synergies between both sectors focused on the design of infrastructures and facilities, spaces, and processes, can result in the obtaining of intertwined economies with cross-support in their promotion and development. regenerative developments.

Actions on destinations may include prior (or intermediate) tourism planning, which to carry out a real transformation would need to be guided by degrowth criteria. The reduction of energy and material expenditure, the decommodification of the enjoyment of common goods and the promotion of convivial recreational spaces are proposed as keys to a decreasing tourism in search of collective well-being (Romero et al., 2023). To these guidelines must be added the promotion of local tourism as a means of limiting dependence on fossil fuels and supporting the viability of rural territories.

All this requires the conception of a tourism proposal focused on social well-being in which needs are reconceptualized from the aspiration to personal, social, and environmental health, for which environmental education is more necessary than ever. In this regard, it is necessary to review the logic of the promotion of tourism entrepreneurship in the light of the adaptation of economic structures to territorial limits. This includes addressing the analysis of institutional aids that may be detrimental to local systems and dispensing with their use, even before they are withdrawn, relying on the progress of international agreements and conventions (PNUMA, 2022).

The resident population must be considered as part of the tourist network. Their positions will undoubtedly be in accordance with their socio-professional profile and training, so it is necessary to carry out information-participation processes to reach consensus on the establishment of a theoretical tourism model that guides the practice of its promotion and establishment. This logic is consistent with the rural development processes that have been underway for decades in the national countryside, mainly by the local action groups promoted by the LEADER and similar programs. This makes it possible to increase the prominence of the local agency, directly or indirectly related to tourism, which in traditional models is usually relegated to a role of "supply" products and services. This is the case of agri-food producers who, involved in agro-ecological dynamics, can catalyse processes of improvement in the socio-ecological system.

An offer aimed at making these visions and values visible will improve socio-ecological capacities through the transformation of the person's relationships with themselves, with the challenges of people and with the environment (foundation of the regenerative paradigm).

From the point of view of the tourist experience, the regenerative contribution will make it possible to know the local diversities (agency, cultural, economic, ecological). If the enjoyment of tourism involves responsibility and awareness of the consequences of each act and, in line with creative tourism, the visitor undergoes a transformation, it can be expected that the trip to a territory in which a change of logic has taken place will produce a certain promotional effect of the new values through the dissemination of the tourist in his personal environment.

Along these lines, regenerative tourism, to the extent that it manages to escape co-optation, involves production and consumption practices aligned with the principles of the socio-ecological transition in several ways:

- In the form of local initiatives that benefit host communities, such as the promotion of small businesses, local agriculture, and handicrafts.
- Recovering the cycles of the natural environment, including the protection of biodiversity and the restoration of ecosystems.
- Increasing Community Engagement and actively involving local communities in decision-making and tourism management to ensure a positive and equitable impact.
- Promoting in tourists a conscious, informed, and ethical choice when choosing destinations, activities and suppliers that promote regenerative practices.
- Assuming the approaches of ecofeminism, recognizing and making visible the role of women, not only in terms of social equity, but as vanguard agents in the care of living systems.
- Fostering respect and appreciation for local culture (decolonization of thought as well), promoting respectful interactions, and contributing to positive cultural exchange.
- Exploring production and service practices that reduce the use of energy and raw materials in line with decrescent postulates, and
- Minimizing waste generation through a tourism practice with circular economy criteria.

## 4 Conclusions

Regenerative tourism stands out, therefore, for its integrated approach, in the interaction between the local social system and ecosystem, as it seeks a balance between social, ecological, and economic aspects, recognizing the interconnection of these systems and the importance of community participation for the achievement of regeneration, trying to provide answers to the socio-environmental problems already characterized and remaining alert to those not yet identified.

The paradigm shift that it postulates, and the practices that it begins to implement, fit into the articulations of rural and local development promoted by the European Union (bottom-up approach, governance, endogenous economies), but also with various socio-ecological approaches critical of capitalist patriarchy, such as ecofeminism and degrowth.

The assessment and, in the case of local reception, the design of proposals for the regenerative transition of tourism in specific territories with the participation of academia through IAP, we consider that it can involve: the consideration and understanding of the suggested change, the support in terms of human capital that serves as a catalyst in a process that requires time and effort, the guarantee of the opening of possibilities to non-financialized options and non-

monetized relationships and the availability of academia at the service of the needs of the global emergency.

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## Methodological Appendix

**Research Design:** The research design for this study is primarily based on a comprehensive literature review conducted using bibliographic databases such as Scopus and Web of Science (WoS). This approach allows for the systematic gathering and analysis of existing scholarly works, providing a foundation for theoretical exploration and synthesis.

**Primary Data Collection Methods:** The primary data collection method employed in this study is the systematic review of academic literature available in reputable bibliographic databases. The search process involves the formulation of specific search queries, inclusion and exclusion criteria, and the screening of search results to identify relevant studies. Key variables and themes are identified and analysed across the selected literature to address the research objectives and questions.

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## Note

Since your study is theoretical and relies solely on literature review, there’s no need to include information on secondary data sources, sampling strategy, or fieldwork details.



## Continuidad de prácticas y objetos vitivinícolas como agentes del terroir en contextos de crisis climática

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**Resumen:** *La modernización de la vitivinicultura chilena enfrenta problemas ecológicos a finales del siglo XX expresados en monocultivos, agricultura intensiva, contaminación hídrica, alergias alimentarias y explotación laboral. Recibirá como respuesta vitiviniculturas ecológicas que buscan apostar por una calidad que requiere ser ecoamigable. Siguiendo a tres viñas chilenas ecológicas y desde un enfoque actor red, se destacan cuatro componentes tales como levaduras nativas y artificiales, azufre, espacio doméstico y registro de componentes del terroir que dan cuenta de continuidades desde la tradición vinícola potenciadas por el giro ecológico antes que de “quiebres” modernos. Tal muestra de continuidad y derivación ecológica llama a pensar al vino en otra escala de mayor temporalidad que podría servir para comparar nuestras escalas y acciones de convivencia con las de otras entidades tales como el clima o la tierra.*

**Palabras claves:** *Vitivinicultura, terroir, modernidad, escalas, actor red*

### 1 Introducción

La vitivinicultura chilena sufre cambios importantes durante el siglo XX que se expresan en su formalización institucional. Antes de mediados del siglo XIX el vino era un trago más alojado en fundos, bodegas, terrenos de pequeños propietarios y casas de la élite, estando por debajo de la chicha y el mosto en su consumo (Del Pozo, 2013). Pero desde la modernización del vino en Europa se busca estandarizar y formalizar sus procesos con lo que en Chile se promueve un frente de modernización en vitivinicultura que durante el siglo XX logrará su cometido (Coyoumdjian, 2006). De pasar de tinajas de greda a tanques de acero inoxidable, de levaduras nativas a levaduras químicas, el pasar a una gran escala y con métodos estandarizados (agricultura intensiva), la formación de una clase trabajadora del vino y una clase dueña de los medios de producción; la modernización del vino chileno arribará no sin antes dejar huellas problemáticas.



Particularmente se podría mencionar la explotación laboral que sufrían los trabajadores del vino como inquilinos o peones; los monocultivos de *vitis vinífera*; el abuso de productos químicos como el azufre y las correspondientes alergias alimentarias; la contaminación hídrica; el desaprovechamiento de vino; alcoholismo en las capas pobres y medias; la desconexión con las comunidades más cercanas; entre otros (Del Pozo 2013, Couyoumdjian, 2006; Kasahara et al., 2011; Lacoste, 2019), que harán mover el suelo<sup>1</sup> donde está parada la vitivinicultura. Estos problemas serán respondidos por vitiviniculturas ecológicas que se sostendrán en un diseño distinto al que se venía perfilando. Como lo advierten algunas filosofías que fundamentan estas vitiviniculturas, el proceso vinícola se piensa como cursos dinámicos o de constante transformación entre los elementos y actores de la agricultura del lugar. Éstas se han denominado de “precisión” (Esser and Ortega, 2002), “regeneración”, “biológica” (Cotroneo, 2005), “biodinámica” (Boza, 2012) entendiendo, todas, el proceso agrícola, de fermentación y comercialización en relaciones variadas de componentes y actores de la cultura de la vid, algo que el proyecto modernizador diferenciaba en sujetos y objetos.

En estas vitiviniculturas los antiguos objetos son entidades sensibles que pueden dar respuestas de manera interrelacionadas al resto de actores incluyendo humanos haciéndose parte con roles en los que se deja actuar en cadenas ecológicas, salvaguardando aspectos biológicos, inorgánicos, entre otros. Por otro lado, la idea de un sujeto que maneja y le da sentido al proceso se oscurece por una mirada más ecológica de ensamble con el entorno, siendo además desajustada la relación dueño/trabajador donde los dueños se convierten en los mismos trabajadores u otros vínculos no económicos se hacen parte de la producción. La efectividad no se mide por el simple cálculo de los efectos y resultados, sino que más bien por la complejización de la relación del cálculo y lo incierto, donde la acción de otros agentes, su monitoreo, observación junto con aquel fantasma de lo impredecible se transforman en un fondo al cual echarle mano económicamente haciendo emerger una antigua idea de “calidad” de siglos cultivada por la vitivinicultura.

## 2 Metodología

Desde tres casos estudiados se analiza y problematiza la vitivinicultura ecológica desde distintas aproximaciones siguiendo un enfoque actor red (Latour, 2008) que busca dar cuenta de las prácticas y materialidades y como éstas se median y prosiguen en cadenas de transformación. El primer caso es la viña Clos de Luz de familia tradicional y de élite vinculada al mundo vitivinícola que tras una serie de modificaciones en su propiedad destinan sus conocimientos y recursos al plantear una viña ecológica con una fuerte presencia de lo tradicional en

ella. En palabras de ellos la viña: “es volver a lo natural” “en armonía con la naturaleza” (Entrevista 4 con enóloga de Viña Tawa). El segundo caso es la viña Alchemysta Wines de dueños chilenos y estadounidenses. Con un trabajo más preocupado en la fermentación y la puesta en valor en el mercado, Alchemysta mantiene métodos orgánicos tratando de reducir lo más posible el uso de elementos químicos en su producción privilegiando las prácticas artesanales. Finalmente, el tercer caso es la viña Tawa que busca desde un emprendimiento pequeño construir una viña en casa al estilo *château* francés. En los tres casos se encuentran formas distintas de producir el vino, no obstante, tienen en común la respuesta a la antigua forma moderna de producción de vino.

### 3 Modernidad y *terroir*

La cuestión de la modernidad se puede detectar desde los clásicos como Weber (2004) que la explicaban como una racionalización y búsqueda de eficiencia en las decisiones y acciones rompiendo así con la tradición que terminaba cayendo. Es este último uno de los problemas más sustanciales dentro de la modernización, el saber qué pasa con la tradición. Unos años antes que Weber (2004) y sin hacer una cita directa a conceptos como modernidad o modernización, Durkheim (1985) advertía de la distinción entre solidaridad mecánica y orgánica como formas de vinculación provenientes de la complejización de la división del trabajo en las sociedades. En ese sentido para él, la sociedad tradicional que mantiene poca o nula división del trabajo se apoyaría en otros similares para llevar a cabo actividades, la orgánica, por otro lado, se basaría en la especialización o la diferenciación funcional de individuos para apostar por acuerdos basados en valores morales individuales. Marx (1978) abordará el problema situando una clara diferencia entre sociedad tradicional y sociedad capitalista haciendo énfasis en la proletarización y la expropiación sufrida por los productores directos a cambio de la venta de su fuerza de trabajo. Luhmann (1998), un autor más reciente, rescatará la tradición de Parsons y Durkheim para afirmar que la diferenciación funcional con cierre operacional marcará los sistemas modernos, haciendo un recorrido entre la unidad, lo tradicional, y la diferenciación, la modernidad. Ya en discusión con el autor anterior y desde una lectura más actual, Latour (2007) corresponderá la modernidad a la proliferación de los híbridos, la ciencia y la política se distinguirán (la naturaleza y la libertad del humano respectivamente), pero los híbridos, las junturas estarán ahí continuamente a pesar de los rompimientos y progresos de la modernidad.

Como se advertía, en el mundo del vino chileno se rompe tal cual proceso de modernización con aquella tradición “poco higiénica” e “insalubre” que motivaba problemas de alcoholismo. En su reemplazo el vino limpio, controlado de buena

presencia y publicidad como mercancía se transforma en una impronta del Estado nación chileno con el que se difunde el sentimiento nacional, reeditando estatus, alcurnia y ganancias llegando incluso a ser considerado como “la renta nacional ilimitada del país”.

Para los intelectuales de la modernidad, la organización con su respectiva diferenciación funcional y cálculos es central para poder estudiarla. En ese sentido uno de los conceptos que pueden ayudar a comprender la forma de organización que mantiene el vino es el *terroir*. Al *terroir* (Pszczólkowski, 2014), se le ha definido como un lugar<sup>2</sup> específico del vino que le permite dar ciertas características sensibles. Cualidades tales como sabor, aroma y color, es el causante, en otras palabras, de darle una cierta individualidad o subjetividad al vino, entendiendo lo anterior como una cualidad dispuesta en el exterior que obliga a algún componente sumarla a su quehacer<sup>3</sup>. Pero dentro del campo vinícola existen ciertas controversias al respecto, particularmente sobre la existencia del *terroir* y la aparición de otros conceptos como *climats* (Pszczólkowski, 2014) que vienen a discutir con el primero. El *terroir* es un concepto que tiene variadas acepciones y traducciones que no dejan muy conformes a interesados en el mundo vinícola.

Siguiendo a Letablier y Nicolas (1994), desde la selección de Pszczólkowski (2014), el *terroir* podría definirse por la tipicidad de calidad que no es reproducible en otra área de producción, que es mantenida por una tradición a la que se le atribuye un origen geográfico determinado y que representa un gusto colectivo. A pesar de ello, desde Teil (2010) se pone en tela de juicio esta noción a propósito de si existe realmente. El autor reflexionará en torno a si es posible considerar el *terroir* como un hecho u objeto externo y permanente de su contexto cultural. Dispondrá, tal cual las discusiones científicas y epistemológicas, que desprender al *terroir* de sus interacciones locales y a distancias no es posible ya que éstas son cruciales en términos de su hacer.

Por lo mismo, Pszczólkowski (2014), siguiendo a Teil (2010), pondrá énfasis en los viticultores como mediadores del *terroir* o “directores de orquesta” en palabras de él. Inclusive irá más allá sosteniendo que el *terroir* es un objeto posterior y que varía en relación a los cambios de los actores que lo permiten emerger, tales como clima (considerando el cambio climático), suelos, cepas, parras, viticultores, variaciones de levaduras, el mercado, los análisis sensitivos, los gustos de expertos, legos y consumidores que buscan conseguir una cierta tipicidad de calidad arraigada en las tradiciones y área geográfica.

## 4 De la continuidad de las prácticas y objetos del vino

Los problemas mencionados al inicio de contaminación ambiental, hídrica, de explotación laboral, alergias alimentarias, calidad, llevarán a plantear otro rompimiento con lo que se venía haciendo que conllevará la búsqueda de una estética tradicional, la puesta en práctica de nuevas fórmulas para obtener vino, pero, sobre todo, por la continuidad de prácticas que supuestamente habían sido revolucionadas con la modernidad. Tradiciones y materialidades como el azufre, fuertemente criticado, el château, las levaduras nativas, entre otros, desde hace siglos siguen participando de la producción vinícola. Estas materialidades hablan de una no modernidad porque no se ha roto nada con la tradición, de hecho, se han potenciado las tradiciones con formas que no determinan, pero sí refuerzan procesos u objetos como los mencionados.

El caso del vino parece uno particular porque no se rompe con la modernidad, más bien existen traducciones o discontinuidades para mantener prácticas y conectar materialidades que ya se venían desplegando de hace varios siglos. Se podría pensar en la fermentación controlada como una de las grandes innovaciones del vino, pero en palabras de expertos "you need to buy yeast, wich had previously been part of the grapes. And because you are using a pure culture, it is vulnerable to other organisms, so you need more chemicals to sanitize your vessel and tools" (Katz, 2020; p. 40) más bien ha sido un contratiempo y una debilidad la intromisión de la levadura artificial en el vino, ya que

"The Old World way of making wine, which worked well enough to make a product that was universally enjoyed in grape-growing regions, and fetishized by elites across much of the globe, was to crush grapes and let them sit with their skins and stems until they began to ferment" (Katz, 2020; p. 40).

En ese sentido, la fermentación del vino se aprecia como otro ejemplo de su continuidad y no como uno de rompimiento moderno pues justamente las otras levaduras han estado presente, las que se denominan no *Saccharomyces*, y vuelven a estar en la palestra porque se les otorga en la actualidad la posibilidad de ofrecer más componentes aromáticos fortaleciendo y dando mayor calidad al vino. No obstante, la afirmación anterior no está en contra de la levadura artificial de *Saccharomyces*, sino que más bien habla de la convivencia que han mantenido ambas desde los orígenes del vino. De hecho, la no *Saccharomyces* requiere de la *Saccharomyces* para poder llevar a cabo el proceso de fermentación transformando las azúcares en etanol y CO<sub>2</sub> (Jolly et al., 2006; Escalante and Ibarra, 2007). Desde palabras de un viñatero de Alchemysta Wines: "queremos que siga siendo una molécula que esté súper

añatada, que los aromas, que los sabores, que el color, que los taninos, que todos los conceptos que envuelven el producto estén siempre presentes y siempre estén unidos entre sí” (Entrevista 10, 2023)

En las tres viñas citadas se muestran ejemplos del uso de azufre, en mayores o menores medidas y aunque existe una cierta veda por parte de los viñateros para compartir la información al respecto, el uso de azufre se hace (Figura1).

Figura 1. Sala de guarda del azufre en Viña Clos de Luz (2023), Elaboración propia



El *terroir* se aprecia en un sentido extenso porque conlleva una pesquisa de los interesados en hacer el vino en un lugar determinado. Pero esta pesquisa no puede resolverse con la implantación moderna de monocultivos, sino que obliga a pensar en ciertas diplomacias y conocimientos que no son propios de la modernidad.

Por ejemplo, el *château* francés (Réjalot, 2013) no es una invención de la modernidad, sino que proviene de la edad media con la señalización del feudalismo. El *château* se transformaba en un real “señor” del vino que embestía a las producciones y otros productores del vino entregándoles cuidado.

A la actualidad y con los cambios en la producción en Francia, el *château* sigue manteniendo estos aspectos y de hecho la modernidad lo potencia con figuras legales como la Apelación. Incluso se podría ir aún más atrás a propósito de cómo el vino se produce y ver cómo desde los espacios campesinos domésticos se produce y difunde el vino. Un ejemplo es la Viña Tawa que desde una resignificación de esta realidad campesina y el *château* intenta poner en escena su viña.

A través de la figura de la Hacienda se da este tipo de vitivinicultura que es la institución de regulación social en gran parte del siglo 17 y 18 en Chile donde existe un patrón que cuida y protege inquilinos ofreciendo, entre distintos recursos, las viñas. En viña Tawa se piensa desde un espacio doméstico abierto al público. En palabras de la enóloga de Viña Tawa: "como se hace en Francia, la casa es la viña, se hace maridaje y también sirve para hacer turismo (...) desde siempre es volver a lo antiguo, a lo tradicional" (Entrevista 4, 2023).

El registrar componentes del *terroir* se puede rastrear desde antes de la modernidad, en Egipto con la inscripción de los lugares donde se producía, el año y otros datos que mostraban la importancia de los lugares, sus condiciones climáticas, geológicas y tiempo de guarda (Pszczólkowski, 2014). Esto se no se hace desde la modernidad, sino que desde el antiguo Egipto según se tiene registro (Figura 2).

Figura 2. Etiqueta de vino Aro. Clos de luz (2023). Elaboración propia



## 5 Discusión

Los elementos constituyentes del *terroir*, como puede desprenderse, contribuyen a una forma de organización propia del vino que estaba más o menos estabilizada desde antes del arribo de la modernidad y que se sostiene en la interacción de agentes locales, humanos y no humanos. Ya se advertía que estas otras vitiviniculturas discutían con la moderna apostando por un giro ecoamigable, pero el *terroir* como lógica independiente del modo moderno, es una forma de organización que se ha mantenido desde hace muchos siglos en el vino.

De lo visto, se podría mencionar las levaduras nativas, el uso de azufre, el espacio doméstico de vitivinicultura, el registro de aspectos relevantes del *terroir*, pero cabe preguntarse si es que estos objetos y prácticas en realidad han sido transformados por el giro ecológico de la vitivinicultura o sólo han sido continuados desde una tradición en algunos casos antiquísima.

El problema de las temporalidades es uno que destaca de lo anterior porque algunas viven más tiempo que otras. Como explican Prigogine y Stengers (1992), el gran problema existente en el tipo de escala y explicación científica sobre el universo y la cosmología radica en la concepción de reversibilidad o aquella ligadura entre la causa y el efecto. Lo anterior ha generado el efecto de que entidades como el universo se piensen homogéneamente, cuando en realidad sus expresiones son disipativas, en extensión e irreversibles.

No solamente estos autores se han acercado al problema de la escala, también lo ha hecho Latour (2008) con su crítica a las escalas micro y macro. Para él ninguna es tal, sino que más bien son agregados desde otros puntos, que controlan o transportan. En ese sentido se puede apreciar cómo hay partes del vino que parecieran estar más estabilizadas y sujetadas como el azufre en comparación a la levadura artificial de *Saccharomyces*. La sujeción se ha hecho hace siglos en distintas etapas de su producción variando y desplazándose, pero en lo medular se ha seguido manteniendo esa forma clásica de hacer el vino. Se podría decir que la modernidad y la respuesta ecológica o posmoderna de la vitivinicultura han aportado con objetos y prácticas, y si bien ha sido así, tal como lo señala el trabajo empírico expuesto, no han logrado sujetar establemente e inclusive las respuestas de la vitivinicultura ecológica han sido volver a lo que se venía haciendo (hasta antes de la modernidad) para potenciarlo con lecturas agrícolas más acabadas o científicas.

Con lo anterior no se quiere sostener una "esencia" del vino, tal como nuestra orientación actor red indica los actantes se construyen por las interacciones con otros, pero sí no se puede negar que el vino pareciese mantener una serie de



estabilizaciones de larga data. Prigogine y Stengers (1992) en torno al tiempo y la eternidad aproximan cómo el universo mantiene un movimiento de expansión e irreversibilidad, con discontinuidades y derivadas, pero no por ello esencial o permanente, sino a otra escala. El vino podría ser un ejemplo sobre esas otras formas de tiempo con las que convivimos y que podrían servir para comparar nuestros tiempos y acciones de convivencia con los de otras entidades como el vino, el clima, el agua o la tierra.

## 6 Conclusiones

Como se ha podido declarar, la vitivinicultura en Chile vive un proceso de modernización que a finales del siglo XX sufre una crisis que es respondida con distintas vitiviniculturas ecológicas. Con ellas se busca dar una continuidad a la vitivinicultura en armonía con el medio ambiente, las tradiciones y las comunidades. A pesar de esta modernización y respuesta, la vitivinicultura chilena habla de una continuidad potenciada por la ecología antes que de un “quiebre” con la tradición. De hecho, muchas de sus prácticas y objetos ecológicos buscan fortalecer dichas continuidades como lo son la producción doméstica del vino o las levaduras nativas. Se sostiene que esta continuidad es muestra que el vino presenta una escalabilidad distinta a otras entidades y que su ensamblaje apunta a pensarlo desde otro tiempo.

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## Resumen biográfico

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## Notas

1. Noción de suelo latoureana de “Dónde aterrizar. Cómo orientarse en política”. Penguin Random House. Barcelona. 2019.
2. Lugar donde confluyen aspectos agrícolas, climáticos y geológicos.
3. Idea latoureana de subjetividad o sujeción. Revisar “Segundo movimiento: redistribuir lo local” de Reensamblar lo social: Una introducción a la teoría del actor red (2008), específicamente el apartado de “Componente adicionales (Plug-ins)”.







**SOCIOECOS**

Climate Change, Sustainability  
and Socio-ecological Practices

## **TRACK 4**

### **Socio-ecological practices for rewilding and nature preservation. Science and citizen science and the climate change**

*Socio-ecological practices of adaptation, mitigation, resistance, transition and resilience to the climate emergency; social practices for wildlife preservation; interspecies relationships; new forms of pastoralism; traditional ecological knowledge; nature-based social-ecological practices; social responses to natural and human-provoked disasters; the rights of plants and animals; legal aspects of nature; scientific aspects of climate emergency; citizen science-based science projects*



# **Sprouting Between Art and Science: Three Art Commissions on Seeds as the Resilient Pillars of Healthy and Sustainable Food Systems of Past, Present and Future**

Raquel Ajates

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**Abstract:** *In a context of climate emergency and increasing digitisation of our material reality, art can act as a powerful way of expressing and conveying complex information through engaging and inspiring artwork and experiences. This paper reports on three artistic commissions that were launched in the framework of a research project on sustainable seed systems policy. Seeds are the basis of life and healthy and sustainable food systems.*

*However, we are far removed from their beauty, their cycles and the challenges that characterise these tiny pillars that underpin agriculture and become our food. A call for three artistic commission was launched in 2022 with the objective of communicating scientific concepts about seeds in an original and thought-provoking way, and to move from knowledge to positive action by create bridges of understanding and inspiration.*

*The call had the following three categories: 1. Travelling Seeds, 2. Physical Seeds, and 3. Digitalised Seeds. Reports from three complementary outputs are presented and discussed: a) two art exhibitions of the artworks in 2023, b) three educational guides created to extend the artworks' impact after the exhibitions, and take the generated knowledge to new younger audiences, and c) the launch of an open-source seed initiative called Semillas Libres in collaboration with Red de Semillas, also exhibited for audiences to take away and sow. The paper concludes with reflections on the process and recommendations for future art-science collaborations.*

**Keywords:** *Seeds, educational guides, digital art, art exhibition, sustainable food systems*

## **1 Introduction: An Art and Science Collaboration for Sustainable Seed Systems**

This paper presents an art-science collaboration framed in the research project "Seed wars go digital: sustainability, big data, and the movement

*for open source seeds*". This project had a bifold objective: first, to identify the challenges facing sustainable seed systems, and second, to analyse the feasibility of alternative models of seed governance, exploring how the concept of the commons and digital open source movements can help protect seeds from an increasing variety loss and privatisation. Seeds are the basis of life and the basis of healthy and sustainable food. However, we are far removed from their beauty, their cycles and the challenges that characterise these tiny pillars of agriculture that become our food.

The professionalisation of the cultivation and conservation of seeds as separate activities from agriculture has culminated on a high degree of homogenisation of varieties with the aim of increasing yields and profits, reducing the biodiversity of cultivated crops and of our diets. Nearly 80% of the seed varieties cultivated a century ago have been lost forever, and already in 2018 four corporations controlled more than 60% of global sales of patented seeds (FAO, 2019).

Seed systems are a key part of achieving sustainable food systems, yet they continue to face the same obstacles that have threatened their sustainability for several decades, and are now becoming more acute: the critical reduction in the use of cultivated biodiversity in farming systems, the lack of availability of suitable registered varieties for regenerative farming, and the intensification of intellectual property barriers. At the same time, the increasingly lower cost of genetic sequencing techniques that enable the digitisation of seed genetic material is blurring physical and digital boundaries, opening up new opportunities and challenges for its conservation and accessibility. In this context of climate emergency and increasing digitisation of our material reality, art can act as a powerful way of expressing and conveying complex information through engaging and inspiring artworks and experiences (Curtis et al., 2012; Bentz, 2020). We only truly understand something new when we can relate it to something we already understand. This art-science collaboration sought to build those bridges of understanding and inspiration to enable people to reconnect with the seeds that feed us.

An art call was designed during the first half of 2022 (Ajates, 2022); the call and the selection process was directed by Raquel Ajates, the Principal Investigator (PI) of the research project, with funding and support from the Daniel and Nina Carasso Foundation, UNED50, and the Museu Terra – at the time called Museu de la Vida Rural – and in collaboration with Red Plana de Arte y Escuela. The call for commissions was published in October 2022, including details of the requirements for each commission and the support provided to selected artists. The joint objectives of the commissions were to create participatory approaches to generate, activate and disseminate knowledge about issues and conservation initiatives related to cultivated seeds, past, present and

future; to explore the role of seed systems in healthy and diverse diets; to make visible the importance and connections between cultivated diversity and the sustainability of territories, their people and food production; to foster collaborations between artists with an interest in healthy and sustainable food systems; and to link the environmental and cultural importance of seeds within and beyond the 2030 Sustainable Development Goals. The call invited proposals for three different commission categories:

- Art Commission 1, *Travelling Seeds*, sought the creation of a portable seed bank that reflected the fact that throughout history, seeds have travelled across continents and communities as a common good. This work was asked to include seed samples and the multimedia stories of their ecosystems and the people who have had a relationship with them (e.g. who have donated, saved, grown, cooked, exchanged them, etc.). The bank had to become a pedagogical and interactive tool, and be portable so that it could be transported by different initiatives and groups to schools and community and educational events.
- Art Commission 2, *Physical Seeds*, focused on seeds on their tangible state, to highlight how their beauty lies in their shape, colours, diversity, sizes, etc. This commission invited proposals that could foster learning, identification and the appreciation of seeds. This commission had to use seeds or their representation as painted, printed, photographed, sewn, woven, sculpted, etc., or under the microscope. The stories of the people who care for, cultivate and select the seeds were also a theme to be explored under this category.
- Art Commission 3, *Digital seeds*, delved deeper into how data and statistics tend to separate feelings from the facts or people they represent, often creating a lack of empathy, which translates into a lack of action. The cost reduction of genetic sequencing techniques is increasing the speed at which companies and universities digitise the genetic material of seeds, generating databases of what is called Digital Sequence Information (more commonly referred to by its acronym, DSI), dematerialising seeds and further distancing us from them. Their digitisation also opens doors to the need for new governance models and synergies with the digital commons, such as opensource initiatives (Ajates, 2023). Proposals for this commission had to use digital data of genetic information of seeds as a basis, and from there, create a meaningful manifestation of them through visualisation, sonification, etc. The resulting artwork should question our perception of data as mediated by technology, and technology itself, to give visibility to the seeds hidden behind the code. The proposal also had to address the opportunities and challenges of the digitisation of seeds, and create an artwork or artistic experience in which diverse audiences could bridge the gap between digital and physical seeds, finding a sense of beauty, meaning and closeness in data.



The selected individuals and proposals received financial and networking support from the collaborating organisations, access to data and literature on seed issues, participation in an artist residency and the exhibition of the works at the Escuelas Pías de la UNED (Madrid) and at the Museu Terra (Tarragona). A Selection Committee was created to ensure an objective and comprehensive assessment of the submissions; this committee was composed of five members representing the participating organisations: Museu Terra, Fundación Daniel y Nina Carasso, Planea y UNED.

## 2 Selected Art Commissions

In this section, the resulting art works and their creators are presented, as well as the complementary outputs to this art-science collaboration; images and a more detailed description can be found in a blog entry published by the Fundación Daniel y Nina Carasso (FDNC, 2023):

### 2.1 Art Commission 1: *Portable Seed Bank* by Marco Ranieri

Marco Ranieri is an artist, activist, independent researcher and associate professor at the Faculty of Fine Arts of the Polytechnic University of Valencia. As an artist he focuses his sculptural, performative and relational work on transforming the experience of territory into art. He builds alliances with partner species and collaborating agents such as insects, birds, plants, ferments, lichens and bacterial communities. As an activist, he generates contexts and ephemeral spaces for dialogue and socialisation, to enable and strengthen relationships and empathic links through participatory situations. He develops mobile devices for artistic mediation and promotes collaborative processes to generate community proposals for co-evolutionary solutions to local socio-environmental problems.

The portable seed bank designed by Ranieri is a mobile device for research and agro-artistic mediation designed to store, reproduce and cultivate traditional horticultural varieties. Composed of different boxes with different uses, it can be assembled to build a single device or two separate modules for seed conservation and cultivation.

The Mobile Seed Bank functions as a meeting point and catalyst for peasant thinking, creating spaces for conversation and exchange of knowledge and experiences, being an itinerant mobile knowledge hub and interactive pedagogical tool, and a point of access to rural knowledge that generates new narratives and promotes the construction of collective imaginaries.

## **2.2 Art Commission 2: *The dance of seeds. The Germination of Knowledge, by the Majorca's Association for Local Varieties (Associació de Varietats Locals de Mallorca), coordinated by Aina Socies Fiol.***

The Associació de Varietats Locals (AVL) is an organisation that aims to recover, conserve and multiply the local varieties of Mallorca, as well as the associated biocultural memory. Over the years, the AVL has disseminated its work through multimedia materials, such as videos, posters, catalogues, and educational and textile materials. For the production of these materials, the Associació collaborates with different artists, including Lluís Vidaña (visual artist), Nívola Uyà (illustrator) and Enric Socias (transmedia artist), the three creators who contributed to the collaborative development of the selected artistic proposal.

*The dance of seeds. The germination of knowledge* created an interactive installation that identified the act of planting, composed of several physical elements: the continent where to plant, the seed, and the diversity of local varieties, specifically a seed of each type of crop: vegetable, cereal, legume and fruit. The audience was able to interact with the exhibition, and select videos of testimonies from local seed guardians, through which they could learn more about each of the seed varieties and the people who have helped to conserve them. The artwork also included delicate illustrations of the seed-seed cycles of the four types of crops - horticulture, cereals, legumes and fruit – from the traditional varieties represented in the videos.

## **2.3 Art Commission 3, *Sound Seeds: Cultural/spatial/geopolitical sonification of seeds deposited in international germplasm banks, by Javier Forment Millet***

Addressing the opportunities and challenges of the increasing digitisation of seeds' genetic material, the artwork invited diverse audiences to bridge the gap between digital and physical seeds, finding a sense of beauty, meaning and closeness in data. The creator, Javier Forment, holds a PhD in Biological Sciences, specialising in Bioinformatics, with more than twenty years providing bioinformatics services to research groups in public Biotechnology centres and as a teacher of Linux and Python programming for biotechnologists at the Polytechnic University of Valencia. Dr Forment has also been a drummer in different rock bands since his teenage years, and more recently he is a bass player in a reggae-fusion band. Over the last five years, he has grown interested in art-science collaborations, developing projects of sonification of genetic sequences and collaborating with different conceptual and new media artists. He is passionate about science, art, philosophy, and human development.

This artwork carried out a sonification of genetic sequences of seeds deposited in open access international germplasm banks, creating a sound installation accompanied by a panel explaining the automatic generation of the sound sequences and a graphic animation of the data contained in the sound sequence. Sounds and images from the countries of origin of the different types of sonified seed were used to highlight the cultures that have developed and maintained these varieties. The carbon footprint derived from consulting the databases was also shown, comparing it with the carbon footprint derived from maintaining the seeds in the germplasm banks.

## **2.4 Complementary Outputs: Educational Guides and an Open Source Seed Initiative**

As part of the exhibitions, two outreach initiatives complementary to the artworks were inaugurated at the same time. One of them was the Open Source Seed Initiative entitled *Semillas Libres* (Free Seeds), for which I collaborated with 11 seed networks of the *Red de Semillas* (Spain's sustainable seed network), designing a new logo and seed envelope design, and which resulted in the free dissemination of 1,000 seed envelopes of non-proprietary traditional varieties explaining the open source seed model to attendees at the exhibitions, so that after experiencing the exhibition, they could move from knowledge to action.

The second output complementary to the artworks was a set of three Educational Guides. In order to ensure that the artworks had an impact beyond the exhibitions, three educational resources - one for each artwork - were created with multimedia activities for schools, colleges, universities and community events, and made available in open access format in the *Red Planea de Arte y Escuela* (Planea, 2023).

The artist residency was a synergistic event that enabled the synchronic interaction of all the people involved in this collaboration. Celebrated in June 2023 and hosted by the *Museu de la Vida Rural*, and in collaboration with *Red Planea*, this four-day event offered an inspiring space for ideas exchange and identifying synergies across the art commissions.

## **3 Discussion and Conclusions**

The artworks were exhibited in Madrid and Tarragona. The first exhibition was held in *Escuelas Pías* of *Universidad Nacional de Educación a Distancia* (Madrid) from 31st October to 16th November 2023. The *Museu de Terra* (*L'Espluga de Francolí*, Tarragona) exhibited the artworks from 1st December 2023 to 10th January 2024, framed in its axis of Cultural Education for Sustainability.

While the university management supported this art-science collaboration, based on the appreciation of its innovative value and connection to the Sustainable Development Goals, there were several logistic barriers that had to be overcome. From finding the right channels to process the contracts with the artists, to the logistics of the exhibition, it is important to highlight the time demands required to realise this type of collaboration with external artists and organisations. Nevertheless, there was a determination to bring the artwork to the university, which resulted in opening new internal pathways to facilitate this type of art-science collaboration in the future. Additionally, the popular university building in the centre of Madrid where the first exhibition took place, based in a multicultural neighbourhood, was selected to reach wider audiences. Another challenge of exhibiting in the university is the lack of resources or systems to count and interact with visitors. The second exhibition at the Museu Terra was visited by 428 people, a high number for a month of December according to the Museum's statistics. The educational guides had already been viewed and downloaded more than 170 times in January 2024, also a positive figure considering that they were only published in November 2023.

To conclude, it is worth highlighting that the topics covered in this research project on cultivated biodiversity, opensource models and the digitisation of genetic seed sequences are complex and very timely issues in science, technology and innovation debates. The content of the artworks, the exhibition information panels – written by the PI - and the educational guides – written by the artists, and edited by the PI - made use of an informative language, without renouncing the rigour of their content. By translating the content into art media, these concepts were communicated to new audiences and in new formats.

Through their exhibition in a popular university building in a multicultural area of Madrid, and in a museum in a rural area, the works reached new audiences and publics traditionally forgotten in the popularisation of science. Through the educational guides, the dissemination continues and will continue to reach students of different ages and across regions. And through the open source seeds initiative, audiences were engaged in improving their environments through a sensorial and practical experience. Looking at the future, both the Museu Terra and Planea have confirmed their interest and commitment to carry out new exhibitions of the works in other cities, with a complementary educational proposal to activate the educational guides from different subjects and themes. In addition, there is a plan in collaboration with Red Planea to continue keeping track of the number of downloads and use of the Educational Guides, which this year will be translated into English and shared with the European network Let's Liberate Diversity, to further amplify their impact.

Art cannot only translate complex concepts to new audiences, but also identify novel links between these concepts. This art-science call received proposals full of inspiration and creativity, great expertise, and very attentive to the social and environmental issues faced by seed systems. This is testimony to the appetite for art and science collaborations. I hope this experience may have served to create new synergies and encourage new art and science collaborations that can contribute to accelerate the transition to fairer, healthier and more sustainable food systems.

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## Biographical note

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# Mapping Floods. Climate Change, Extreme Weather Events, and Geographic Data Visualisation from a Visual Communication Design Perspective

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**Abstract:** *In the conversation around climate change and its consequences, the use of maps is frequently brought up both as a tool for analysis and behaviour, with both technical-scientific and dissemination purposes. On the one hand, technical visualisations are often hard to digest for a general audience; on the other hand, data visualisations conceived for social media tend to oversimplify if not betray the accuracy and complexity of data. This is a well-known discrepancy that is exacerbated when the need to produce visualisations becomes urgent during the occurrence of these extreme conditions.*

*EU support programs to make data available to authorities and organisations in affected areas, and maintain also an information service available for general public users. That's the aim of Copernicus with its products like Rapid Mapping (RM) and Risk and Recovery Mapping (RRM), and of European Flood Awareness System, a service that allows users to interact with maps to monitor and forecast such events.*

*While dissemination efforts to make data less opaque are made by EU institutions, hiring renowned designers like Federica Fragapane to develop accessible data visualization around the topic such as with Europe's Flood Management: Navigating with Data (Mancino, 2023), the general public relies more on national and local newspapers, television, and social media to access instant information, especially during an emergency.*

*Referring to the concept of design emergency (Rawsthorn and Antonelli, 2022), the paper will examine maps and cartographies elaborated by various actors around the crisis concerning recent floods in Europe. The paper will analyse the recent flooding events from the point of view of risk and emergency communication and management, with a central focus on the visual, graphic and semiotic aspects of the graphic solutions adopted regarding the communication channel, and compared with other international case studies.*

**Keywords:** *Information design, hazard maps, floods, data visualisation, graphic design*

## 1 Introduction

Referring to the concept of *design emergency* as intended by Paola Antonelli and Alice Rawsthorn, therefore looking at design also as a tool to help people deal with catastrophic events, cartography and particularly hazard maps are visual tools of interest in accessing the management of critical situations. A hazard map's objective should be to investigate and understand risks to prepare for future events through land use planning, development controls, flood mitigation and community education.

"Design is not a miracle cure, but it is a powerful tool that can help us to address issues if it is applied sensitively and responsibly" (Rawsthorn and Antonelli, 2022); on the one hand, technological innovations allow us to have access to refined visualisations; on the other hand citizens' needs in preparing or facing an emergency could not be fulfilled by only by complex visualisations made by and for experts.

## 2 Research objective

This analysis takes into consideration examples of different maps related to floods and how they dealt with the difficulty inherent in information design: to gather, understand, and translate information without misrepresentation or loss, becoming examples of that idea of design as an instrument to translate information; "(...) to cartographic design, visual communication design must use all the disciplines regarding translation as a mediation among different language, able to offer cultural tools to handle semiotic operations which demands interpreting actions"<sup>1</sup> (Quaggiotto, 2016).

With this perspective in mind, the analysis focuses on a series of maps, designed with the intent of being of help to the people living in risk areas, or to disseminate and inform about the topic of floods, and takes into consideration the visual languages adopted, from the choice of visual variables to the effectiveness of pictogram design, typographic legibility, colour palette, graphic composition. The aim is to show how visual design can help disseminate information in all phases of an emergency: from preparation to real-time coping to consequence management.

### 3 The role of visual communication design

The contribution of design in tackling emergencies has not yet found proper recognition: “Even though the topic has been widely discussed in architecture for emergency or product design for its handling, little has been discussed from the communication perspective, and, even more so, of the need to rethink design through the permanent emergency paradigm”<sup>2</sup> (Piscitelli, 2019). Not forgetting that designing for survival “(...) has not only to deal with safety but also with the spectrum of worries and fears”<sup>3</sup> (Pietroni and Turrini, 2022).

Apply a user-centred design methodology, taking into consideration not only the data but also the user’s needs, abilities, and possibilities – if not drawing a map for each. Cognitive, motor and digital diversities significantly affect how users are perceived and decoded on the map. Evaluations that make sense in the choice of colours, the design of pictograms, the readability of information, and the ease of use of designed digital interfaces, especially when these maps contain sensitive information for making survival choices.

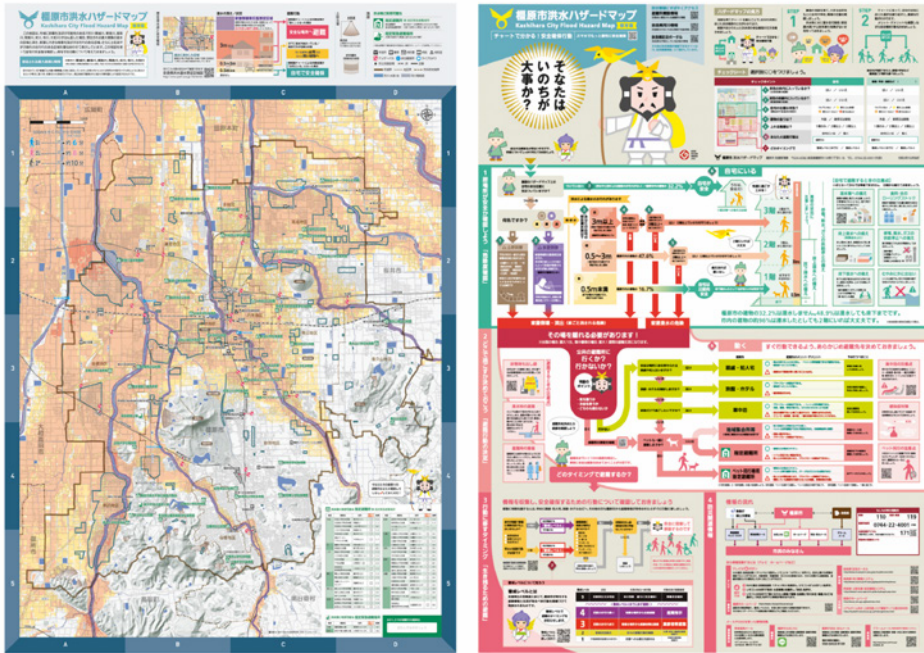
### 4 Preparing for flood and hazard maps

A relevant example is the Kashihara Flood Hazard Map (GK Kyoto, R2 Media Solution and ADD, 2021), launched in 2021, commissioned by Kashihara City Municipality and realised by GK Kyoto, a design studio specialised in information design, together with R2 Media Solution Inc and Alliance for Disaster reduction Design (ADD), a non-profit organisation established in 2007, working on disaster prevention design tools.

Kashihara’s position, in Nara prefecture, in case of flood, is interested in the basin of seven rivers, (Katsuragi River, Soga River, Takatori River, Asuka River, Yone River, Tera River, Yamato River); therefore, Kashihara Municipality published, on their website, a compendium of materials useful in case of extreme events – earthquakes, storms, landslide – and floods. A common practice in Japan.



Figure 1. *Kashihara City Flood Hazard Map* by GK Kyoto, R2 Media Solution Inc and ADD Alliance for Disaster Reduction Design, Kashihara City Municipality Website, 2021. Used under a UK Copyright Exception



The project of the Kashihara City Flood Hazard Map subverts the general evacuation concept, trying to state what's best for each citizen, according to their position at a certain moment, relying on digital technologies on top of the usual paper map, distributing both a paper version of the map and a web app, accessible through a QR code, with a GPS to determine the level of danger in a certain area and the consequential and appropriate safety decisions.

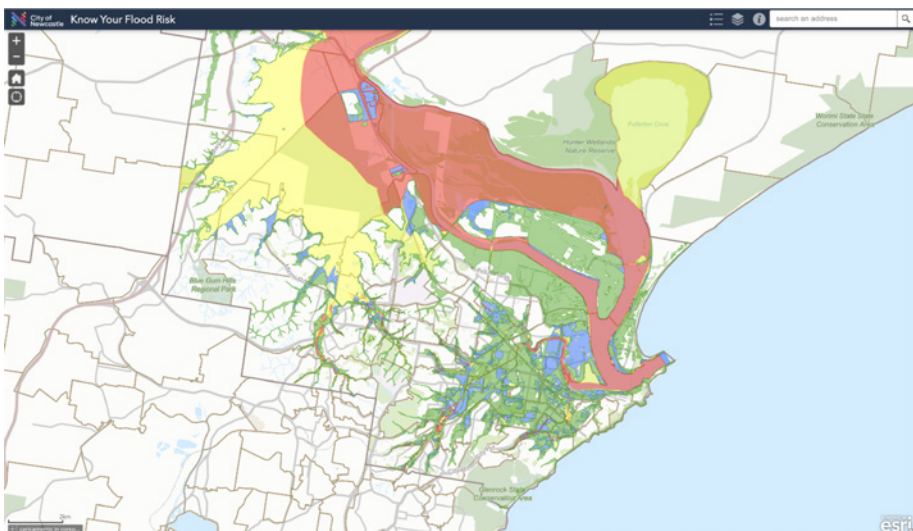
The map includes the expected range and maximum depth of flooding in the event of a flood, landslide warning areas, evacuation destinations designated by the city, safety actions to be taken, and evacuation information. The map connects the depth of flooding and the citizen's situation, allowing different and custom solutions for each user. The printed maps are A1-sized, double-sided colour-printed, and folded in an A4 format. They were first released in 55.000 copies and distributed to all Kashihara citizens.

The project was awarded a Good Design Award, a leading design competition in Japan oriented to the common good, in 2022; the jury recognized the value of this project in recognizing that one of the most dangerous behaviours during

a disaster is the tendency of people in a panic to hide relevant information and to put into practice actions dedicated by majority conformity bias. Using GPS to provide information on what could happen in their exact location could allow people to make the best decisions for their safety, and take the most appropriate evacuation method. Analysed from a communication perspective, the approach “anyone, any time, anywhere” (Dare mo ga, istu demo, doko demo) (Urabe et al., 2010), is implemented in the different web pages with instructions (for those who are in their cars, for those who have pets, etc.) but above all is actualised in the two versions of the map.

Quite interesting the choice to show also areas previously affected by floods in the main hazard map, and to make available a map dedicated exclusively to this issue, with evidence of the different floods over the years. The map is based on a cartographic layer made by relying on OpenStreetMap and shows different information elements’ layering. First and foremost is colour, with a colour scale from green (no risk) to red (high risk) placed transparently on the map base. A series of pictographic symbols designed by the ADD team are in use. Distances are expressed by both declaring the scale of a map and converting each distance into the time taken to travel by different types of citizens (adults, elderly people, etc.). Ultimately, a series of characters related to Japanese folklore are also introduced, which have the visual task of highlighting more relevant messages. This kind of map is a *synsemic text*, a visual object in which different languages and codes have meaning by mutual relations and because of their relations and coexistence in an informative visual space (Perondi, 2012).

Figure 2. Screenshot of *Know Your Flood Risk* webpage, Newcastle Municipality Website. Used under a UK Copyright Exception



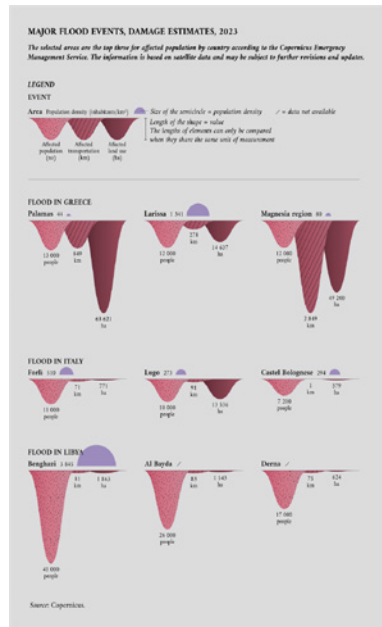
The City of Newcastle in Australia is strongly defined by the presence of water, as the recently designed logo reminds<sup>4</sup>. This means that the area is affected by the risk of floods, due to intense rainfall, Hunter River floods, or storms, which interest one-third of all properties of the area. Different types of flood may affect different areas in the municipality – flash flooding exceeds the capacity of the drainage network and mainly affects local waterways (Throsby, Styx, Cottage, Dark and Ironbark Creeks). Sustained heavy rainfall in the Hunter River catchment may cause river levels to spill out into the low-lying areas (Hexham, Beresfield and Sandgate). Oceanic storms on the coast may cause elevated water levels and large waves, affecting the harbour area suburbs such as Stockton, Carrington, Wickham, Maryville and Islington. The Municipality has published an online interactive flood map, which allows citizens to type their address and check their risk, along with a series of other tools. The interactive map is built upon ArcGIS technology, and sensitive areas are identified with a gradient rising from green to red according to increasing risk.

Starting from the title, Know Your Flood Risk, the map is designed to be used and adapted according to the user's location. The map keeps a recognisable geographic layer beneath the flood risk areas and allows the user to fill in a street address to get relative information. The map keeps a "technical" look and feel, and doesn't provide further information on how to behave in case of flood, as it is conceived as one of the tools the Municipality offers for such events, along with an online list of FAQ, an animated video and other documents on the municipality website dedicated page<sup>5</sup>.

## 5 Flood reporting

Visual choices change when maps are meant to report and assess those events for analytical purposes. Among the many data collections and information available in data.portal.eu, EU data platform, Europe's Flood Management: Navigating with Data webpage (Mancino, 2023) hosts flood assessment data provided by Copernicus, and some data visualisations by renowned designer Federica Fracapane, in which the stylistic signature of Fracapane, famous for her ability to use organic and natural shapes to create empathic and compelling visualisations, depicts data about various aspect of floods.

Figure 3. *Major Flood Events, Damage Estimates, 2023*, by Federica Fragapane and European Data - The official portal for European data, 2023, is licensed under CC BY 4.0.



Visualisations like *Major Flood Events, Major Damage Estimate 2023* (Fragapane, 2023a), after heavy precipitation events in Italy and Slovenia and Mediterranean Storm Daniel, *Extent of Potential Flood-Prone Areas in the Whole Europe* (Fragapane, 2023b), *Hydrometric Network Real-Time Water Level Data in Ireland* (Fragapane, 2023c) and *1875 Flood in Toulouse, France* (Fragapane, 2023d) are not designed for a real-time reaction but with an analytical purpose, show a simplified orographic representation of the land, which allows a better visual understanding of the extent of the areas involved.

In *Major Flood Events, Major Damage Estimate 2023* (Fragapane, 2023a), the author chose a series of fluid shapes reminding of drops and a colour palette far from emergency colours, with calm nuances from pink to violet on a grey neutral background. The fact that the shapes in these small multiples are dripping from the same baseline allows the viewer to an easy comparison of the amounts expressed in the same units, exploiting the principle of visual comparison of elements on “non-aligned scales” (Cleveland and McGill, 1984) disseminated by visual journalist Alberto Cairo (Cairo, 2013).

Hazard maps meet journalism and transmedia storytelling in projects like *After the Flood: Never Let Bygone By Bygone* (Caixin Media Company Limited, 2016a), winner of the 2017 Kantas Information is Beautiful Award, about the

consequences and aftermath of the 2016 floods in China. In this interactive long-form, virtual reality, interactive maps, photography and video storytelling collide to create a piece of journalism. The narrative focuses on the village of Taitou is located at Jingxing, a country in the western region of the city of Shijiazhuang in Hebei province, with a dry climate and little precipitation in average years. A place where extreme events such as the 2016 rainfall were unusual, as explained by An Unprecedentedly Drenching Rain (Caixin Media Company Limited, 2016b), an interactive proportional symbol map that relates a timeline to the location and intensity of the rainfall itself, providing a practical implementation of the possibility of *visual variables* (Bertin, 1967), particularly in the updated qualities of "crispiness" and "transparency" as defined by Roth (2017), thanks the *time variable*. The narrative development alternates data visualization according to various visual models, from treemap to animated histogram.

## 6 Dealing with a flood

The aim of Copernicus, the EU programme for developing services based on satellite Earth Observation, is to monitor and forecast the state of the environment on land, sea and in the atmosphere. Copernicus Emergency Management Service (CEMS) uses satellite imagery and other geospatial data to offer free-of-charge mapping service in cases of natural disasters, human-made emergencies and humanitarian crises, delivering two different outputs: Rapid Mapping (RM) and Risk and Recovery Mapping (RRM).

These are complex images, made for professionals, for the aim of supporting emergency activities immediately following a disaster and for prevention, preparedness, disaster risk reduction, mitigation and recovery. With that said, it is interesting to see how the colour palette here is not designed to alert, but to describe, depicting flooded areas with blue. If compared with the first examples of hazard maps analysed, here pictograms and other simplified icons are scarce in favour of textures, gradients, or dots different in size and colours; graphic elements which, because of the similarities with the shapes and colours of the map, are not always easy to distinguish from the orographic background.

The example of EMSR664 - Flood in Italy (Copernicus, 2023), displayed in Figure 4, shows the Copernicus RM interactive online visualisation map for one of the episodes of recent floods in May 2023 in Emilia-Romagna, Italy. The usage of descriptive colours versus symbolic colours to address affected or prone-to-disaster areas is not an unambiguous choice. In daily maps published by the EU ERCC - Emergency Response Coordination Centre, like ECHO Daily Map of 26 May 2023 (ERCC, 2023), colours switch roles again, leaving a dark red to identify the most severe flood areas.

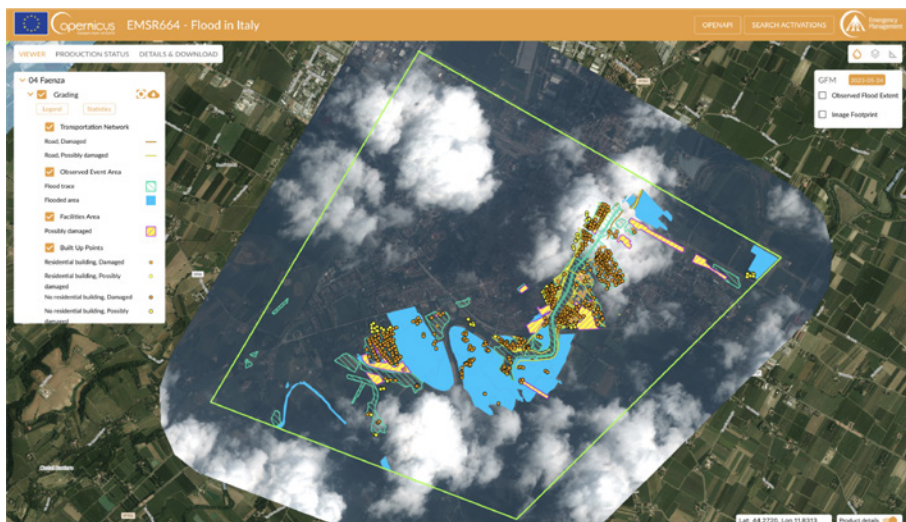


These maps are quite technical and likely difficult to comprehend and consult for common citizens. If we limit the observation to Italy, other examples are ISTAT Risk map of Italian municipalities hazard maps (ISTAT) or the reports by ISPRA, a public research organisation linked to the Ministry of Environment and Energy Security, which publishes a series of data depicting the degree of hazard.

Apparently, journalism is the sector in which most attempts are implemented to make these data visible and more accessible to the general public. After the severe floods and landslides which affected the Emilia-Romagna region in 2023, the newspaper *Il Post* published *Population at Risk in Areas of Medium or High Hydraulic Hazard* (*Popolazione a rischio in aree a pericolosità idraulica media o alta*) interactive map (*Il Post*, 2023), using ISPRA data and the software Fluorish, ranking the areas with the highest risk of flood in a series of gradient from light to dark blue.

Comparison is key when creating data visualisations; when data are geospatial data, it is interesting to find solutions which let the user compare different layers: an impactful example is the one published by ESA with the title *Satellites Map Aftermath of Emilia-Romagna Floods* (ESA, 2023), in which an image which clearly shows the water depth and extension of the flood over Faenza from 17 May 2023 is layered upon another image depicting the economic losses for residential building – images elaborated via SaferPlaces Platform.

Figure 4. EMSR664 - Flood in Italy by Copernicus Emergency Management Service (© 2023 European Union), EMSR664



## 7 Conclusions

The analysis of the examples given so far is, of course, partial in its nature, since these are cases chosen as emblematic and not selected with a general claim. Having said this, the study would suggest that the translation possibilities offered by graphic design are often under-utilised, especially when building tools that should also have dissemination value. There is a double rift between the world of cartography, and that of data visualisation, including geographical data visualisation, and that of visual design applied to the common good. With exceptions such as the one analysed in the first example, survival tools, such as hazard maps, are more often than not designed for professionals, without taking into account user-centred approaches that in communication design are now taken for granted. What was proposed in this analysis is an initial technical examination. Future testing of these tools to verify their effectiveness in use is desirable.

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## Methodological Appendix

The examples chosen for this analysis were selected to provide a broad overview on a global level, presenting cases from countries with a tradition in disaster preparedness, and others where the preventive culture is in the process of being built, as well as a highly differentiated visual and communicative case history. Inevitably the examples are to be regarded as such and there is no claim to exhaustiveness in the analysis presented.

Given the editorial limitation of a maximum of one image per page, it was not possible to insert in the paper every image described. However, all the images mentioned are available at the links listed in the References and Data sources paragraphs.

## Data Sources

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## Abbreviations

- **ADD** Alliance for Disaster reduction Design
- **CEMS** Copernicus Emergency Management Service
- **ERCC** Emergency Response Coordination Centre
- **ESA** European Space Agency
- **EU** European Union
- **FAQ** Frequently Asked Questions
- **GPS** Global Positioning System
- **ISPRA** Italian Higher Institute for Environmental Protection and Research (Istituto Superiore per la Protezione e la Ricerca Ambientale)
- **ISTAT** Italian National Statistical Institute (Istituto Nazionale di Statistica)
- **QR** Code Quick Response Code
- **RM** Rapid Mapping
- **RRM** Risk and Recovery Mapping

## Biographical Note

Laura Bortoloni is an awarded visual communication designer, graphic facilitator, lecturer, artist and printmaker. She is currently a PhD Student at Università degli Studi di Ferrara (Italy). Her research interests are information design, cartography, and design for the common good. She has held lectures, seminars and taught graphic design in various institutions in Italy and abroad, including the Università di Ferrara, where she was a contract professor from 2018 to 2023, Università di Udine, Ecole nationale supérieure des arts Visual de La Cambre, Brussels. A member of AIAP Italian Association for Visual Communication Design, she was its vice president from 2019 to 2021. Selected several times for the ADI Design Index and the AWDA Awards, she has twice won Gold at the ED Awards (2017, 2023) with projects from her design practice Ida Studio. Artist and printmaker, her prints have been exhibited in the UK, USA, Switzerland, Italy and Japan. Among her recent publications: "Almost the same place" Bortoloni L., Corona A., Moretti M. *Progetto grafico* 38 ISSN 1824-1301 [2022] and "Process is the key (or method is strategic)" Bortoloni L. *Dal Buono V. MD Journal* 10 – ISSN 2531-9477 [2020]

## Notes

1. Translation made by the author. Original quote is in Italian "(...)al design della comunicazione spetta il compito di considerare per il progetto cartografico il contributo delle discipline che si occupano di traduzione intesa come attività di mediazione tra lingue in grado di fornire gli strumenti culturali utili a gestire operazioni semiotiche che richiedono azioni interpretative".
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3. Translation made by the author. Original quote is in Italian "(...) gli scenari progettuali si aprono a molteplici soluzioni che riguardano non solo l'incolumità ma che affrontano anche lo spettro delle preoccupazioni e delle paure.
4. The logo of the city was designed in 2019 and is a stylised 'N' with a ripple effect that representing, in fact, water.
5. On 12 December 2023, City of Newcastle Council voted to adopt the Throsby, Styx and Cottage Creek Flood Study and the Newcastle Development Control Plan 2023; as a result of the adoption of these, the data in the online interactive map is currently under review.

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## The Role of Multiple Values of Nature in Supporting Social-Ecological Transformations

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**Abstract:** *The IPBES Values Assessment published in 2022 provides evidence that confirms the key role of diverse values of nature as leverage points for enabling transformative changes towards more just and sustainable futures. However, the critical role of nature' values to enact transformative changes has not been sufficiently addressed in science and policy. In this work, we aim to pursuit the following objectives based on a case study located in the Urdaibai Biosphere Reserve (Basque Country, Spain): (1) identify the main patterns of change in the social-ecological system perceived by the stakeholders, (2) analyze the effects of these changes on the elicited multiple values of nature and (3) evaluate how values can act as leverage points of change towards a desirable native ethical-normative framework of socio-ecological interaction with nature (stewardship and care of nature or "zaintza-suna").*

*We have developed a conceptual framework in which nature is defined as a complex socio-ecological space, historically shaped by a contextualized social and cultural construction. We assume that values strongly influence behaviour. We apply an interdisciplinary heuristic approach to qualitative research, based on an epistemological approach adhered to phenomenology, to capture a multiplicity of perceptions and values with the purpose of evaluating their potential for transformation. Based on the application of semi-structured interviews, we code and analyse the narratives, generated by the stakeholders from their own life frames and their own words, using qualitative methods such as grounded theory and content analysis.*

*The expected results will allow us to acknowledge the quality and degree of human-nature connectedness and comprehend how people' prioritised values are mutually interlinked with current patterns and processes of change. Furthermore, our findings will highlight the levers and trade-offs affecting the process of building a desirable framework of socio-ecological interaction with nature considering five categories: (1) capacity, (2) responsibility, (3) legitimacy, (4) collaboration and (5) motivation to act.*

**Keywords:** *Local values of nature, social-ecological transformations, stewardship and care of nature, qualitative research, Urdaibai Biosphere Reserve (UBR)*

## 1 Introduction

The current context of global climate and environmental crisis wherein the international political decision-making agenda achieved in recent decades to face this growing adversity is far from being an effective path of change. Some authors argue that unless there is a radical transformation in our ways of being, thinking and acting, traditionally based on Western culture, it will not be possible to effectively reverse the increasing global environmental degradation (O'Neill, 1992; Chan *et al.*, 2016; Kenter, 2018; Muradian and Gómez-Baggethun, 2021).

This necessary and urgent transformational change to confront the current context of global crisis requires a profound rethinking of the relationship between human beings and nature, both from an ontological and epistemological point of view. From an ontological point of view, a marked separation and conceptual differentiation in the social-cultural order between human beings and nature can be observed, especially in the Global North. The term ontology refers to the understanding and meaningful articulation of the meaning of nature's being. In short, to the rethinking of a set of essential questions: what is its existence, what is it for, and how should we relate to nature?

From an epistemological point of view, the main hegemonic currents of thought in recent centuries (such as rationalism, empiricism and positivism) have been based on a set of dichotomies (such as mind/body, subject/object, human beings/non-human beings, culture/nature, among others). In this sense, according to Muradian and Pascual (2018), following Murdoch (1997), Western societies in general, and Western science in particular, are characterised by separating nature from people, and human beings from non-human beings. This progressive divergence necessarily imposes, according to these authors, limits on our sensory and cognitive capacity to perceive and interpret other knowledge systems and human-nature interactions present in other cultures.

The IPBES values assessment provides evidence to suggest that the type of transformative change needed to move towards more just and sustainable futures require a set of complementary strategies that can activate key leverage points-centered around values and valuation of nature (IPBES, 2022). However, there is relatively little knowledge about how values operate as a process – as leverage points to promote transformation (IPBES, 2022).

Values are widely considered to be a deep-lying foundation for societal change. There is agreement in the literature that values are important in relation to sustainability and sustainability transformation. A subset of this literature can be described as action-oriented and deals with ways to engage with diverse values as leverage points for moving socio-environmental systems towards sustainability.

IPBES defines transformative change as “a fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values”. Folke *et al.* (2010) state that transformative change involves profound shifts in “perceptions and meaning, social network configurations, patterns of interactions among actors including leadership and political power relations, and associated organizational arrangements”.

We assume the novel contribution of IPBES conceptual frameworks on addressing the following dimensions of research: (1) the methodological role of social sciences, (2) the broadening of traditional environmental science epistemological boundaries, (3) the context specific perspective and, (4) the belief on value pluralism and (5) the pivotal prominence of relational values. However, we question the on-going persistence of science-bias ontological and epistemological premises, shortcomings in value dimensions and the absence of an axiological content within the conceptual framing of the human-nature relations.

Furthermore, we address the following research questions: (1) to what extent we are capable to demonstrate that the current landscape simplification affects the social-ecological relationships between people and nature, as well as the social relationships among people (2) to what extent the balance of expressed relational/instrumental and values/disvalues reflect conflicting value domains and decision-making practices and patterns and (3) to what extent the current value domains can provide relevant deep leverage points for bringing transformative change pathways aiming to support the implementation of a sustainable forest management.

Accordingly, following the line of research and discussion above, this document is structured as follows. The first section aims to justify the need of introducing a philosophical discourse in the context of valuation of nature and a philosophical attempt of rethinking the concept of nature as an ontological entity. In the second section, we will detail the methodological steps that will be followed in this study.

## 2 Conceptual Framework

We assume that nature is hegemonically conceived from a biased and reductionist epistemological approach that is determined by the rationalist and positivist tradition (Muradian and Gómez-Baggethun, 2021). Therefore, we address a prior exercise of reconceptualization of nature that embraces other philosophical conceptions and ancestral cultural worldviews.

In the current context of the hegemonic dominance of rationalist and empiricist approaches, a restricted view of nature itself has been imposed. That is, nature is conceived and studied from a biological point of view, as a heterogeneous and dispersed set of ecosystems composed of animal, plant and mineral species. In order to overcome this reductionist scheme, this research proposes to turn, as an alternative conceptual approach, to the primary notion of nature from its etymological origins.

In this sense, within the framework of Western culture, this origin is found in Ancient Greece with the notion of *physis*. Marjolein Oele (2017) proposes an interpretation of *physis* as "rebirth" or "life folds back and embraces itself", following Aristotle's ontological idea that *reproduction* is the primary function of all living things. In this sense, 20th century philosophers such as Heidegger and Merleau-Ponty will adopt this ancestral conception of nature in their Aristotelian notion of *physis* as the basis for their phenomenological analyses.

In this research, nature is seen as a socially and culturally constructed space as a result of changing relationships between individuals, society and the physical world (i.e., Berghöfer *et al.*, 2022). This view of nature relates to the concept of space according to the philosopher Henri Lefevre, who defines it as a complex social construction as a result of values and social relations of production with affects spatial practices and perceptions (Lefebvre, 1974).

In this sense, 'nature' is not something given, but is rather a result of the relations that exist among individuals, society and the physical world. Its various understandings and interpretations are underpinned by knowledge systems, cultural backgrounds, and languages (Berghöfer *et al.*, 2022). Worldviews are metaphorical lenses through which individuals and social groups perceive, think about, interpret, inhabit and modify the world. They are informed by one's cultural context and background, knowledge system and language (IPBES, 2022).

Muradian and Pascual (2018), following the postulates of the theory of social representation (Moscovici and Duveen, 2000), affirm that the ways in which we perceive and relate to nature and give it meaning, are influenced by cognitive processes that are largely socially constructed. These authors propose a

theoretical framework made up of a finite set of relational models that explain the relationships between human beings and nature, which, in turn, correspond to certain cognitive frameworks.

According to this perspective, some authors argue that values play an important role in the adaptive capacity of people in response to environmental change, therefore theoretical research on values can improve the understanding of how social-ecological systems function and to improving the management of these systems (Jones et al., 2016). However, the epistemological approach is likewise determined by the belief on epistemic premises underpinned on the function of cognitive structures, such as knowledge and mental models, to study the manners of how people relate to ecosystems (Muradian and Gómez-Baggethun, 2021).

We claim that in order to induce a deeper comprehension of human-nature interaction within the context of Western world, we need a shift from the western science subject-object dichotomy in which the modern epistemology is founded. The question that arises is whether the unique mode of knowledge is the understanding of functionings, properties, categories or cause-effect relationships. In other words, if humankind understands the relationship with nature as only as a cognitive or existential meaningfulness. According to Heidegger, our logical way of understanding the truth depends on the most primordial phenomenological experience, that is a process of unfolding or *aletheia* for the ancient Greeks (Heidegger, 2006), i.e., a process of uncovering the pre-theoretical layers that underlie the cognitive thought (Cladakis, 2016).

In contrast to the hegemonic positivist discourse in the contemporary natural science, the object of study of the phenomenology is not the understanding of properties or characteristics but the meaning itself. In other words, the way in which the object, or, better said, the phenomenon becomes intelligible or significant. This phenomenon is not something that the objects embody in themselves, but rather it occurs in the consciousness of the subject as a lived experience. The phenomenological approach to nature is founded on the idea that existence correlates with experience. This assumption requires from the subject an effort to reinterpret what is meant by "real". From phenomenology, the real world is neither an assemblage of things nor of representations, but rather, first and foremost, a meaningful whole which is elicited at the confluence of the experiencer and the reality to be experienced (Merleau-Ponty, 1994).

Theoretical research on values and the kinds of human–nature connectedness from a phenomenology approach can improve our understanding of how social-ecological systems are constructed, function and manage. Based on the ontological and epistemological assumptions described above, we consider

that the phenomenological approach is the adequate epistemological frame to acknowledge values directly from people.

Given the diversity of worldviews, knowledge systems and disciplines, IPBES (2022) establishes different value dimensions and types, including overlapping layers of worldviews (and their underpinning knowledge systems, languages and cultures); broad values (i.e., life-guiding principles) and specific values (i.e., instrumental, intrinsic and relational values). The specific values are defined as follows:

- Instrumental value: The value of an entity as merely a means to an end, and that it is, in principle, substitutable (Pascual *et al.*, 2010). Nature has value because it grants us (Mattijssen *et al.*, 2021).
- Intrinsic value: which denote something has value as an end-in-itself or has inherent or moral value that is not tied to human purposes (Devos *et al.*, 2019).
- Relational values: concern relationships that are reciprocal. With this, it is recognized that humans and nature also shape and influence each other and how we as humans fundamentally depend on nature.

That means the recognition of different value domains that can be objective and subjective, referring both to principles, virtues or which ones and also, by opposition of meaning, the so-called negative values (disvalues). In this sense, values can incorporate positive or negative valence, and therefore, the concept of disvalue will refer to values with negative valence (Lliso *et al.*, 2022). Thus, relational disvalues can be stood as those that are detrimental to the pursuit of a meaningful, dignified, and flourishing life (Lliso *et al.*, 2022).

Profound understanding of how people perceive, expressed in people's own words and from their own frames of reference can help influence behavioural compliance with management and policy prescriptions (Asah *et al.*, 2014). The way people perceive, acquire and use ecosystem services (ES) influences their behaviours (Clary *et al.*, 1998). Thus, the capacity of the ecosystem to provide a wide range of benefits depends on the behaviours of those who value and act toward securing the provision of ES (Asah *et al.*, 2014).

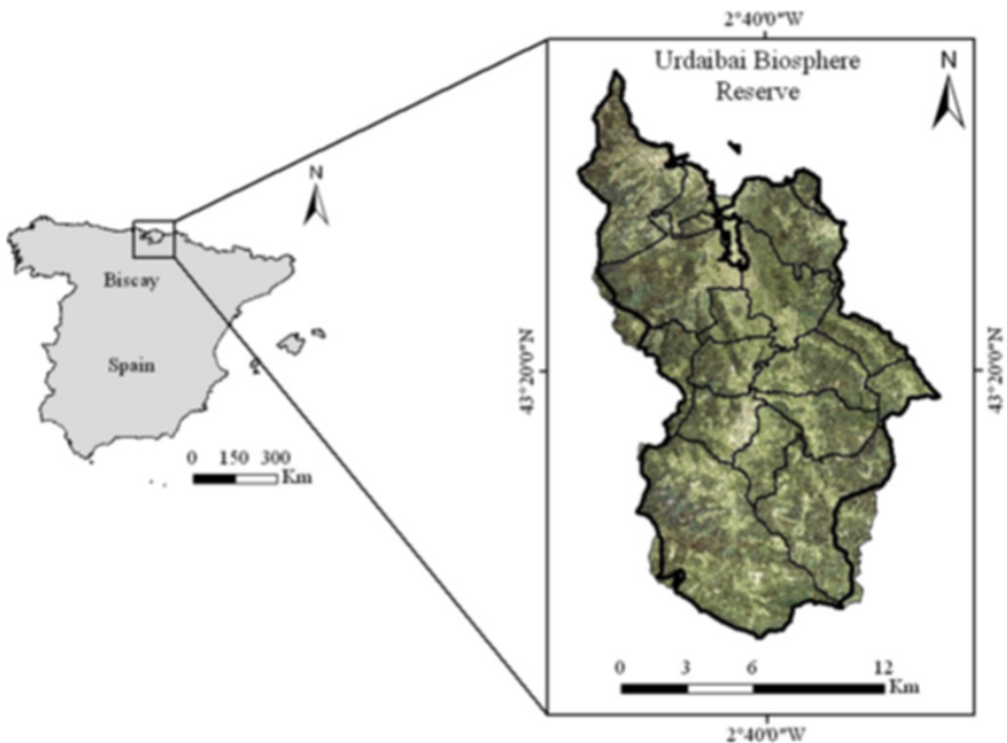
The critical role of nature's values to enact transformative changes has not been sufficiently addressed in science and policy. Payments for Ecosystem Services (PES) and other agri-environmental incentive schemes seek to compensate forest landowners and farmers for changes to enhance ecosystem services. These programs have provided potential pathways toward transformative change. However, the potential for PES programs to integrate nature's values into decision-making, and thereby support broader transformative change, is of increasing research interest (Bremer *et al.*, 2023). Therefore, we will analyse how values can support transformative change.



### 3 Methodology

#### 3.1 Case Study

The Urdaibai estuary is geographically located in northern Spain ( $43^{\circ} 12' - 43^{\circ} 28' N$ ;  $2^{\circ} 33' W - 2^{\circ} 46' W$ ) in the province of Bizkaia (Basque Country) and has a total area of 22,000 ha (Fig. 1). Designated a Biosphere Reserve in 1984 for its high naturalistic and cultural value, the Urdaibai Biosphere Reserve also joined the list of Ramsar Wetlands and the European Union's Natura 2000 network in 1993.



"Figure 1. The Urdaibai Biosphere Reserve"

The main functions of the reserve include the conservation of naturalistic values (ecological variety and complexity), the sustainable socio-economic development of the territory and logistical support (research, training and dissemination and interpretation of the area). To this end, among others, a Use and Management Governance Plan (GPUM) was approved in 1993 (Basque Government, 2004), which articulates the management and conservation guidelines to reconcile the conservation of natural resources with their sustainable use.

The Urdaibai Biosphere Reserve (RBU) covers all or part of 22 municipalities. It represents a complex socio-ecological system where conflicting interests coexist. As a result, its management can become highly conflictive and controversial (Onaindia et al., 2013a). In particular, the almost complete predominance of *Pinus radiata* and *Eucalyptus sp.* These monoculture tree plantations and their unsustainable management have led to erosion, worsening water quality and diminishing freshwater supply, and loss of aesthetic values, among others (Onaindia et al., 2013b; Rodríguez-Loinaz et al., 2013).

### 3.2 Data Collection

The selection of the methods and techniques to get people to express the expected information is based on the previously selected epistemological approach and attitude. The first step begins with the search of what Flores Macías (2013) refers to as a *phenomenological attitude*, which includes: an authentic interest in particular points of view, perspectives of the world, others, and their experience; respect for the uniqueness of these perspectives, with their differences and similarities with mine. The phenomenological attitude as an epistemological framework should accompany not only the research design, but also the data collection and the interpretation, analysis and conclusions.

In this sense, qualitative methods based on narrative-style interviews with open questions have significantly expanded the traditional methods of environmental valuation assessment (Gould et al., 2014). Qualitative data collection techniques can provide access to information hardly available through traditional quantitative approaches (Maxwell, 2005).

Basically, the methodological data collection techniques will consist primarily of in-depth interviews (face to face) by employing prompts with enable people to express values in close relation to their landscape and lived experience (Gould et al., 2015). The interview might include a set of narrative-style questions like vignettes in sociological research (Bloor and Wood, 2006). We recognize the importance of local context, the changes of the landscape so we will follow a place-based approach. We will use historical and current sources (academic sources, media reports, in-person discussion, and observation) and mapping data. In these situational questions, we asked respondents to consider how they would behave and react in a particular circumstance (Satterfield, 2001).

### 3.3 Data Analysis

Regarding to data analysis it will employ a qualitative coding process that combined selective and open coding (Maxwell, 2005). Selective coding involves combing data (interview transcripts) for mentions of predetermined themes.

Open coding entails approaching the data with openness to emerging themes and patterns and is a primary analysis method for grounded theory (Glaser, 1992). The qualitative content analysis method (Chapman *et al.*, 2019; Topp *et al.*, 2021), which uses coding techniques to identify values, norms, knowledge and possible emerging categories within the narrative discourse. Following these prescriptions we have developed a holistic analytical framework (Table 1).

Interpretation in qualitative research involves abstracting out beyond the codes and themes to the larger meaning of the data. We prioritize two essential steps:

a) Uncover Thematic Aspects

Themes in qualitative research (also called categories) are broad units of information that consist of several codes aggregated to form a common idea (Creswell, 2013). The phenomenological themes become knots in the framework of our experiences and certain experiences lived as a significant whole are spun around them. Themes enjoy power when they allow us to carry out phenomenological descriptions.

b) Interpreting the Data

Interpretation involves making sense of the data. Interpretation in qualitative research involves abstracting out beyond the codes and themes to the larger meaning of the data. It is a process that begins with the development of the codes, the formation of themes from the codes, and then the organization of themes into larger units of abstraction to make sense of the data (Creswell, 2013). Next, displays a synthesised version of this method developed by Moustakas (1994), adapted from Creswell (2013):

1. Describe personal experiences with the phenomenon under study. The researcher begins with a full description of his or her own experience of the phenomenon.
2. Develop a list of significant statements. The researcher then finds statements (in the interviews or other data sources) about how individuals are experiencing the topic, lists these significant statements (horizontalization of the data).
3. Take the significant statements and then group them into larger units of information, called "meaning units" or themes.
4. Write a description of "how" the experience happened. This is called "structural description," and the inquirer reflects on the setting and context in which the phenomenon was experienced.
5. Write a composite description of the phenomenon incorporating both the textural and structural descriptions. This passage is the "essence" of the experience and represents the culminating aspect of a phenomenological study.

Table 1: Analytical Framework

Dimension	Ways of working with values (IPBES value assessment)	Categories	Characteristics	Value domains	Human-nature connectedness Ives et al. (2017, 2018)	Articulated relational value	Value Valance	Value expresions	Relationship to nature (settings)
Formation	Broad	Autonomous	Cognitive Sensory	Instrumental		Identity Sense of place Cultural heritage	+ -	Principles Virtues	Relationship to land Relationship to forest
Articulation		Heteronomous	Affective Discourse				Material Experiential Cognitive	Inter-generational concern Aesthetics	Norms Customs
Transfer	Specific	Experience	Non-material Material Self-sustenance	Intrinsic Relational	Emotional Philosophical	Ecological awareness Subsistence, livelihoods,		Habits Discourse	Relationship to mountains Relationships to flora
		Activities							
		Identity							
		Institutions	Formal Informal						

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## MitigACT Project. Mitigating Natural Disaster Risk in Resilient Societies. First Results of the Case Study Forest Fires in Galicia

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**Abstract:** *This paper aims to present and analyze the results of the case study “Forest Fires” from MitigACT project funded in the 2019 by Ministry of Science, Innovation and Universities (PID2019-107443RA-I00). The full title of the MitigACT research project is Mitigating risk in resilient societies. Incorporating experience-based knowledge in environmental disaster prevention, management and recovery. Its main objective is to improve resilience to natural hazards through social knowledge that facilitate the co-production of policies and plans for prevention, management and recovery from environmental disasters. Following this approach, “Forest Fires” case supports the idea that in order to improve public governance of environmental disaster, it is necessary to approach the problem from a multidimensional, multifocal and multiagent perspective, paying special attention to local knowledge, which must be included as an element to be considered in public policies. From a qualitative approach, based on in-depth interviews with people with direct experience related forest fires we obtained recommendations to correct the existing imbalance between the three phases of prevention, management and recovery in the fight against fire.*

**Keywords:** *Forest Fire, governance, prevention, local knowledge*

### 1 Introduction

This paper aims to present and analyze the results of the case study “Forest Fires” from MitigACT project funded in the 2019 by Ministry of Science, Innovation and Universities (PID2019-107443RA-I00). The MitigACT project defends the need to design new management strategies for natural disasters that go beyond the nature-culture distinction when dealing with natural disasters (van Riet, 2021), and pay attention their cultural dimensions (Pyne 2007). Faced with the severity of the socio-economic, political and ecological damage that environmental catastrophes, such as wildfires, cause every year, the international community is striving to design frameworks for disaster risk reduction (DRR). The most recent,



the Sendai Framework, was adopted in 2015 and states that, in order to reduce disaster risk, it will be necessary to share information, strengthen governance and risk coordination among all institutions. Following DRR framework and in order to improve public governance of forest fires, it is necessary to approach the problem from a multidimensional, multifocal and multiagent perspective, paying special attention to local knowledge, which must be included as an element to be considered in the design of public policies.

## 2 The case study Forest Fires Galicia

Forest fires are a recurrent problem in southern European countries. Despite the reduction in the number of fires, they have increased in size, intensity and severity, becoming a serious threat to civil protection. The episodes that have occurred in Galicia in the last decade point to socio-demographic causes in addition to those derived from climate change and inefficient risk management. In recent years, in the Galician territory, the events of 2017 with 3,120 fires, and 62,096.26 Ha burned, and 2022, with 1,713 fires and 51,642 Ha were particularly serious. Official statistics indicate that approximately 95% of forest fires are caused directly or indirectly by human behaviors and activities, including negligence and arson (Ganteaume et al, 2013). Based on these figures, it is clear that Galicia is a fire-prone area where a new governance model is needed to minimize the effects of future forest fires (Marey-Perez et al, 2021). In previous studies, the occurrence of extreme fires is linked to two fundamental factors: weather conditions and the fire propensity of the affected areas. In unfavorable meteorological conditions, such as heat waves, these extreme forest fires can occur in the course of a few days, with multiple outbreaks of great magnitude that simultaneously burn large areas of an entire territory or country (Trigo et al., 2006, Salis et al., 2014).

## 3 Results

Social and economic evolution, as well as changes in land use, have contributed to the creation of structural conditions conducive to forest fires. Given the seriousness of this threat, in recent years there has been a progressive increase in the economic resources dedicated to fire extinction and to the training and preparation of professionals who can fight forest fires. However, certain reformulations are still necessary to incorporate knowledge based on the experience of the local population and professionals from forest fire management. In order to present a small compilation of these recommendations, the following decalogue is offered, extracted from the analysis of the interviews carried out in the Incendios Galicia case study:

- I. A distinction should be made between the different causes of forest fires. The population interviewed recognizes the human origin of most of the fires, but in many occasions they are accidents.
- II. A balance must be found between the prevention, management and recovery phases of firefighting
- III. The working conditions of the personnel that form the firefighting patrols should be improved.
- IV. There are two groups of people dedicated to firefighting tasks. The first group would be made up of professionals with specialized training in forest management and firefighting, which would correspond to personnel hired from the Autonomous Community or the Ministry. The second group would be formed by the patrols hired at the municipal level and the local volunteer population. These two groups should work in a coordinated manner, taking advantage of the different types of knowledge and experience.
- V. Take advantage of the proximity and knowledge of the territory of the local population to advance in social and physical prevention.
- VI. Exploit the opportunities offered by the forestry industry.
- VII. Facilitate the development of new businesses socially and economically sustainable and allow the population to settle in rural area.
- VIII. Revitalize social and intergenerational cohesion in rural areas.
- IX. Strengthen socio-environmental values. Prevention efforts should not only be understood as physical prevention, but also as social prevention.
- X. Listening to the local population is essential to define needs and priorities and to plan the fight against fire.

## 4 Conclusions

Despite the progress made in recent years in the fight against forest fires, natural, economic and social damage they cause each year continues to be considerable. Framework programs to combat natural disasters, such as the Sendai Framework, emphasize the importance of incorporating local knowledge and experience in the definition of strategies to manage this type of threat. The inclusion of bottom-up participation in the definition of public plans and policies remains an elusive challenge in today's societies. In this context, MitigACT project and, specifically, Incendios Galicia case study, aim to incorporate experience-based knowledge into the design of forest fire prevention and management plans. The results presented in this chapter allow the evaluation of forest fire mitigation activities carried out to date and progress in the design of alternative prevention strategies based on cultural heritage and local knowledge.

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## Methodological Appendix

In order to approach the Incendios Galicia case study, the MitigACT project proposes public participation or public engagement as a mechanism for incorporating and transferring social knowledge based on experience in the stages of prevention, management and recovery from natural disasters. The methodology to be followed is based on the application of the Actor-Network Theory, giving voice to all the actors involved in disaster risk reduction. This approach tries to overcome the limitations of those researches in the field of DRR that are carried out under the linear model of knowledge exchange. Access to tacit knowledge, or knowledge based on the experience of the population, was obtained through in-depth interviews with local people from areas affected by forest fires, farmers, firefighting technicians and engineers. The discourses were analyzed using thematic analysis (Marshall and Rossman, 2014). In the task of discourse analysis, the qualitative analysis software NVIVO is used.

Tabla 1. Interview Profiles

Número	Código	Perfil	Fecha
1	E1	Association of communal forests	june 2021
2	E2	City councilor	june 2021
3	E3	Forestry engineer	june 2021
4	E4	Ecological Association	june 2021
5	E5	Farmer	june 2021
6	E6	Wildfire brigade	june 2021
7	E7	Drone developer	june 2021
8	E8	Farmer	september 2021
9	E9	Wildfire brigade	september 2021
10	E10	Wildfire brigade	september 2021

Source: Compiled by authors

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Carmen Rodríguez-Rodríguez is a Permanent Lecturer in the Faculty of Sociology at the University of A Coruña. She holds a PhD in Sociology from the Complutense University of Madrid (Extraordinary Doctorate Award) and has been a FPU scholarship holder. Among the research projects in which she has participated in recent years include: "Mitigating risk in resilient societies. The incorporation of experience-based knowledge in the prevention, management

and recovery of environmental disasters" (PID2019-107443RA-I00) and "Sharing society. The impact of collaborative collective action. Study of the effects of practices, links, structures and mobilizations in the transformation of current societies" (Ref. CSO2016-78107-R). His latest publications (in collaboration with Elvira Santiago) include the book chapters "From the bottom up. The space of local knowledge in forest fire governance" (2024) and "Listening to all. The incorporation of experience-based knowledge for transfer in the Social Sciences" (2024) and the article "Building forest fires resilience. The incorporation of local knowledge into disaster mitigation strategies" (2023). His areas of interest are social imaginaries, environmental issues and sociological theory.

## Notes

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## Desafíos Actuales en la Gestión del Agua en el Mediterráneo: la Reintegración de Prácticas Tradicionales

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**Resumen:** *A lo largo de la historia de España, la gestión del suelo ha pasado del aprovechamiento no sostenible de los recursos naturales destinado a satisfacer las crecientes demandas de la población, a la inutilización de áreas forestales altamente densificadas por ausencia de comunidades rurales, alterando el ciclo hídrico.*

*En la zona del Mijares, como en otras zonas del mediterráneo, el uso de la tierra desempeña un papel crucial en la perturbación del ciclo hidrológico, lo cual implica desafíos en la gestión del territorio. El crecimiento urbano en las costas al servicio del turismo, la deforestación de la cuenca alta durante el s. XVI, el abandono rural en las zonas del interior y el aterramiento de humedales costeros suponen, junto con un incremento en el riesgo de incendios, una menor evaporación que explicaría el descenso en las precipitaciones y la pérdida de caudal en los ríos.*

*Ante la disminución generalizada de caudal en la zona, surge una propuesta de adaptación rural de gestionar la masa forestal y los matorrales e implementar el pastoreo extensivo y trashumancia tal y como se hacía durante los ss. XIII – XVII. Estas medidas ayudarían a aportar humedad al ciclo hídrico local, aumentando el vapor de agua en la atmosfera, ayudando a restablecer el ciclo hídrico.*

**Palabras clave:** *Adaptación rural, despoblamiento, historia de cambios, gestión del suelo, cambio climático*

### 1 Introducción

El cambio climático representa posiblemente el mayor desafío para el futuro de las comunidades asentadas en el Mediterráneo. Sus impactos se ven agravados por otros retos ambientales, como el cambio en el uso del suelo. El grupo de expertos del MedEC (2020) señalan que la agricultura, principal usuario de agua en la región, se ve afectada por reducción en el escurrimiento y la recarga de aguas subterráneas, entre otros efectos.

En las últimas décadas (1980-2012), se ha observado una ligera disminución de las precipitaciones y las aportaciones medias en la Demarcación Hidrográfica del Júcar. Según datos del CEDEX, esta reducción es de hasta 7% en el Sistema de Explotación del Mijares (CHJ, 2016). Además, Hermosilla, Peña e Iranzo (2009, p. 10), indican que desde 1959 al 1999 el caudal del río Mijares medido en el azud de Villarreal ha disminuido en más del 50%. Esta tendencia se ha visto acompañada por cambios significativos en el uso del suelo. Según los resultados del presente estudio, entre los años 1990 y 2018, los *espacios abiertos con poca o sin vegetación* se han triplicado en extensión, al igual que las *áreas urbanas* mientras el *mosaico de cultivos* ha disminuido en un 61%. Estos cambios pueden ser una de las causas de las variaciones climáticas observadas.

Los desafíos actuales que enfrentan las comunidades aledañas al río Mijares incluyen: entender y abordar las causas y consecuencias de la disminución de las precipitaciones y aportaciones; comprender los efectos del cambio en el uso del suelo en la disponibilidad de los recursos hídricos; desarrollar estrategias de adaptación y mitigación para hacer frente a los impactos del cambio climático e identificar las prácticas agrícolas y de gestión del suelo sostenibles que puedan ayudar a contrarrestar los impactos del cambio climático.

En este contexto de desafíos crecientes, la reintegración de prácticas tradicionales emerge como una estrategia prometedora y sostenible, como lo afirman Ruiz et al (2022, p. 2). Estas pueden incluir métodos agrícolas ancestrales, técnicas de gestión del suelo basadas en el conocimiento local y el aprovechamiento de sistemas de uso de agua históricos.

El artículo tiene como objetivo destacar la importancia de la historia en el proceso de transformación del territorio, especialmente en la propuesta de medidas de adaptación que contribuyan a restablecer el equilibrio en la gestión de los recursos en una zona mediterránea. Además, se analiza la viabilidad y los beneficios de reintegrar prácticas tradicionales en la gestión del agua en ésta región, así como proponer recomendaciones para su implementación a nivel local.

## 2 Zona de estudio

El Sistema de Explotación del río Mijares está ubicado en la vertiente oriental de la Península Ibérica, vertiendo al mar Mediterráneo. Se encuentra entre las provincias de Castellón (C.A de Valencia) y Teruel (C.A de Aragón). La superficie total comprendida es de 4.818 km<sup>2</sup>.

En la región hay dos zonas climáticas: una zona costera con clima mediterráneo y precipitación anual de alrededor de 450 mm, y la cuenca alta, con un clima casi continental y una precipitación media anual de unos 800 mm. (Quereda Sala *et al.*, 2016, p. 185). La temperatura media es de 14.4°C. La Evapotranspiración potencial alcanza valores por encima de 950 mm/año.

Pérez Cueva (2011, p. 20) señala que el balance hídrico anual en el Alto Mijares muestra déficits en casi todas las zonas, lo cual sugiere que los caudales del río son necesariamente modestos. Por consiguiente, se subraya la necesidad de avanzar hacia una gestión que mejore la adaptación.

### 3 El papel del uso del suelo en el cambio climático mediterráneo

La mayoría de los impactos del cambio climático se ven exacerbados por otros desafíos ambientales como el cambio en el uso del suelo (MedECC, 2020). Estos cambios se han presentado a lo largo de muchos años. Como ejemplo están las deforestaciones del s.XVII en la cabecera del Mijares que trajeron consigo la pérdida de suelo. Como consecuencia, según Jiménez (1987, p. 3) se produjo la entrada de vientos fríos del Norte a las vegas de la parte meridional de la Península, lo que provocó una disminución de 3 o 4 grados en la temperatura media de muchos valles. Esta es una de las causas a las que se atribuye la desaparición del cultivo de la caña de azúcar en el antiguo Reino de Valencia.

Otro cambio en el paisaje y el resultado es explicado por Millán Millán (comunicación personal, correo electrónico recibido el 23 de noviembre de 2021, p. 3) quien afirma que:

El aterramiento de los humedales en la costa y en la cuenca media-alta disminuye la evaporación ya que esa lámina superficial de agua dulce, menos densa que la salada, se evapora más fácilmente de esa manera se puede considerar que el agua vertida por los ríos al mar, forma parte de la recirculación del agua en el ciclo hídrico local-regional.

El grupo del mencionado autor (Millán *et al.*, 2005, p. 209) continúan explicando:

La pavimentación de zonas naturales, el cambio de tipo de riego de manta a goteo, el aumento de la deforestación o los fuegos forestales son ejemplos adicionales de actividades humanas que alteran el proceso de evaporación, infiltración y recarga del acuífero afectando el ciclo hídrico. En este fenómeno la masa de aire que ingresa con la brisa marina se enriquece con vapor de agua debido a la evaporación



que ocurre sobre los humedales costeros, zonas de regadío, suelo natural y la vegetación, lo que en definitiva, favorece la formación de la precipitación.

En ésta investigación se analizaron dos imágenes del proyecto Corine Land Cover (CLC) correspondientes a los años 1990 y 2018 (Europe Environmental Agency, 1990), se observó que los espacios abiertos con poca o sin vegetación experimentaron el mayor cambio entre todos los usos de suelo en términos porcentuales, aumentando más de tres veces su extensión a expensas de arbustos, bosques y mosaicos de cultivos. El área urbana creció un 288%, ocupando terrenos antes dedicados a cultivos permanentes y mosaicos de cultivos. Por último, el mosaico de cultivos disminuyó un 61%, siendo reemplazado en su mayoría por áreas de arbustos y bosques. Es importante destacar que éstos últimos usos de suelo ocupan más del 70% de área total en la zona de estudio y continúan creciendo año tras año.

Durante el mismo periodo de tiempo se ha observado una ligera disminución de las precipitaciones y las aportaciones medias en la Demarcación Hidrográfica del Júcar. Según datos del CEDEX, esta reducción ha sido de hasta 7% en el Sistema de Explotación del Mijares, de acuerdo con lo expresado por la CHJ (2016, p. 40). Pérez (2009, p. 23) también refiere que en el azud de Villarreal, el río Mijares ha tenido históricamente un caudal de 9.06m<sup>3</sup>/s (entre los años 1912 y 1984), sin embargo, durante la década 1990 -1999 ha pasado a 4m<sup>3</sup>/s .

La transformación del paisaje debido al cambio de uso de suelo podría estar relacionada con la disminución de las precipitaciones y las aportaciones hídricas observadas. Esto se debe a la alteración en la capacidad del suelo para retener agua y regular el flujo de los ríos.

## 4 Historia y contexto en la cuenca del río Mijares

Según Ortega y Villagordo (2020, p. 180):

En 2015, una investigación arqueológica en la cabecera del río Mijares descubrió asentamientos andalusíes cercanos a cursos de agua, con evidencia de agricultura de cereales, pastizales aprovechados con agua de manantiales y pastoreo estacional en altitudes mayores.

Estos hallazgos coinciden con las recomendaciones del agricultor hispano-musulmán Al-Awwam (mencionado por algunos autores como agrónomo), hacia finales del siglo XII (Al Awwam Y.I.M.I, 1998), así como con los estudios de Trillo-San José (1999, p. 137), quienes indican que, aunque los árabes mostraban

preferencia por zonas de relieve suave, también se adaptaban a las condiciones topográficas y de disponibilidad de agua mediante la diversificación de estrategias productivas.

La obra de Al Awwam (1998) refiere que:

Los montes se consideraron tanto de reservas de agua como de madera. La gestión del agua se fundamentaba en su disponibilidad, la fuente de suministro determinaba la selección de cultivos, mientras que el intercambio de suelo se hizo como medida de mejoramiento, especialmente para aquellos que se encontraban lejos de áreas de inundación.

En este contexto, se construyeron y rehabilitaron obras como azudes, canales, pozos, molinos y norias.

Tras la conquista cristiana en el s.XII, continuó la tradición del riego y la repartición del agua, se impuso el pago de impuestos derivados del uso y consumo de agua. Farnos et al (1993 a) señalan que:

Las tierras que estaban en manos de los musulmanes fueron redistribuidas entre privados: nobles, caballeros y órdenes religiosas que participaron en la reconquista, a partir de entonces se crearon nuevas agrupaciones sociales con cierta autonomía y poder de decisión sobre el aprovechamiento del agua y del suelo. El concejo de cada población dio lugar a las masadas las cuales determinaron los territorios agrícolas con estructuras estáticas y ganadería trashumante. Luego vinieron las disposiciones de Jaime I para prohibir la creación de más pueblos en la Sierra de Javalambre, destinando las tierras exclusivamente a pastos.

Estos cambios abrieron espacios cada vez más importantes para la ganadería dentro de las comunidades, relegando así a un segundo plano la agricultura.

El éxito en el comercio de la lana del s. XIV tuvo su declive a mediados del s.XVII no por ausencia de forraje, sino porque los ganaderos se vieron afectados por los conflictos recurrentes con otros gremios como los agricultores, como lo describen Farnos et al (1993 b), por el uso del agua y del suelo (Zafra et al., 2023, p. 4). La evidencia de esos pleitos reposa en los innumerables Acuerdos, Reales Decretos e imposición de aduanas.

Paralelo a los conflictos, se dio la sobreexplotación de los recursos forestales. El aprovechamiento de la madera era constante y de diversa utilidad. Soriano (1926, p. 12) indica que en 1360, el Rey D. Pedro II obligó a los dueños de castillos

a permitir el tránsito de madera proveniente de Aragón por el río Mijares, más adelante, en el año 1433, las villas de La Plana se quejaron a Alfonso III debido al considerable paso de madera que dañaba las pequeñas presas.

Según la reseña de Cavaniles (1795) para el s. XVIII, en el Alto Mijares, los cultivos ya no eran arbustivos, y la presencia de poblaciones se debía a la permanencia de los caudales del Mijares. A la deforestación, ahora había que sumarle el despoblamiento. Alberola (2010, p. 26) dice que las inundaciones estacionales de los meses de septiembre y noviembre solían ser gestionadas a través de la constante reubicación de la población que se asentaba en las riberas de los ríos en los periodos de aguas bajas.

Desde principios del s.XIX, España ha experimentado un clima cada vez más cálido y seco, lo que ha llevado a la inutilización de grandes extensiones de tierra, escasez de grano y altos precios. Estos cambios, han estado en medio de conflictos bélicos en todo el país. Mientras la población en el Alto Mijares disminuía, en la cuenca baja comenzaba la expansión de los cultivos de cítricos. El riego se consideraba una actividad necesaria pero difícil de implementar, debido principalmente a la dificultad para construir obras públicas cerca de tierras privadas.

A finales del s.XIX, la Ley de Aguas (1879) propone solucionar tales dificultades, conservando las condiciones naturales y controlando las explotaciones. Esta Ley entregó autonomía a las comunidades de regantes para que conformar las ordenanzas de riego.

Durante el s.XIX, se construyeron más obras hidráulicas y se mejoraron las técnicas en el uso del agua subterránea. La generalización del agua y la necesidad de riego apostaron por la construcción de presas de embalse para regular el flujo de los ríos y aprovechar sus aguas para riego. Esta situación fue abriendo cada vez más la brecha entre la gestión de los recursos de las cuencas alta y la baja.

En la provincia de Castellón, la historia registra dos períodos en los que se llevaron a cabo reforestaciones: una en el s.XVIII con objetivos navales según Soriano (2000, p. 517) y otra a mediados del s.XX, como lo mencionan Ruiz et al (2022, p. 2) con el fin de proteger el suelo con especies como *Pinus nigra*, *syvestris* y *halepensis*. La despoblación de la cuenca alta y media contribuyó en gran medida al crecimiento descontrolado de estas plantaciones. La presente investigación revela que en la zona de estudio, entre 1990 y 2018 los bosques y arbustos aumentaron su ocupación del 65.1 % al 71%, lo que ha elevado el riesgo de incendios y planteado impactos ambientales negativos que requieren ser abordados para garantizar la salud general del ecosistema.

## 5 Descripción de la propuesta de reintegración de prácticas tradicionales

Ante la disminución generalizada de caudal en la zona y el afán por tratar de restablecer el ciclo hídrico, Ruiz et al (2023, p. 221) proponen una medida de adaptación rural basada en el conocimiento de los actores de la zona, la cual tiene por objeto gestionar la masa forestal y los matorrales. Se plantea un clareo del bosque para crear un paisaje de mosaico en la cuenca media y alta y pastoreo extensivo en las cabeceras e impulsar los huertos tradicionales, tal y como se hacía durante los ss. XIII – XVII. Las prácticas tradicionales (pastoreo extensivo y trashumancia) se proponen además para mitigar el despoblamiento y el abandono rural.

Los cultivos de cítricos se mantendrían debido a la importancia de la humedad costera para mitigar la colisión de las brisas marinas y el aire caliente y seco de la costa, como lo explican Lionello et al (2017, p. 2). Esto sugeriría una reducción en la frecuencia de las tormentas cada vez más severas en esta zona.

Las medidas propuestas ayudarían a aportar humedad al ciclo hídrico local, aumentando el vapor de agua en la atmosfera, que sería captada por las masas de aire que se desplazan desde la costa favoreciendo así la precipitación en las cabeceras y ayudando a restablecer el ciclo hídrico como lo explica Millán (2014, pp. 206–224).

## 6 Conclusiones y recomendaciones

La historia proporciona importantes lecciones sobre cómo las prácticas del pasado han impactado en la gestión de los recursos naturales. Desde la época andalusí hasta la actualidad, los cambios en el uso del suelo han tenido un impacto significativo en el ciclo hidrológico y en la disponibilidad de los recursos hídricos en la cuenca del río Mijares.

Ante la disminución del caudal del río Mijares es crucial volver a prácticas tradicionales y sostenibles de gestión. La propuesta de reintegración de prácticas como el pastoreo extensivo y la trashumancia, junto con la gestión forestal adecuada, podría contribuir a restablecer el ciclo hídrico y mitigar el despoblamiento rural.

La implementación de estas medidas debe ser parte de un enfoque integral y participativo que involucre a todas las partes interesadas. La colaboración entre todos los actores es fundamental para el éxito de cualquier estrategia de adaptación y mitigación.

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## Abreviaturas

- **C.A:** Comunidad Autónoma
- **CHJ:** Confederación Hidrográfica del Júcar
- **CEDEX:** Centro de Estudios y Experimentación de Obras Públicas

## Notas biográficas

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## Notas

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**SOCIOECOS**

Climate Change, Sustainability  
and Socio-ecological Practices

# TRACK 5

## **Socio-ecological practices in education and health in the climate crisis**

*Eco-pedagogies; eco-methodologies;  
eco- and animal-assisted pedagogies and  
therapies; ecological education; eco-centric  
education; eco-feminist approaches in  
pedagogy; eco-critical pedagogies; the  
impact of the climate crisis on health;  
planetary health-based practices*



## One Health in the Socio-Ecological System of the Bay of Plentzia

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**Abstract:** Impacts of global environmental changes have led to new framings of health over the past decades, expanding beyond biomedical-centred approaches. This expansion has led to more holistic health frameworks like Ecohealth, Planetary Health, and One Health. The One Health approach redefined during the COVID-19 pandemic, integrates human, animal, and environmental health, emphasising transdisciplinary collaboration. In this approach human health is understood to not only be influenced by biomedical and socioeconomic factors but also by the environmental conditions in which people live and the other living beings with whom they interact. To operationalise the One Health approach, we here suggest using the concept of Socio-Ecological Systems (SES), understood as complex adaptive systems in which people and nature are inextricably linked, and where both the social and ecological components exert strong influence over outcomes. We aim for a wider definition of health where humans, other organisms and the ecosystem collectively intertwine.

The Bay of Plentzia, on the Biscayan coast, can be understood as an SES where natural areas, urban centres, and the associated human activities are strongly intertwined. In the context of global, regional and local change (e.g. environmental pressures), the health of humans, animals and the environment may be compromised, causing an imbalance in the SES. This study aims to analyse the state of health of the Bay of Plentzia SES, from a One Health approach, highlighting its complex interactions and vulnerabilities.

After conducting a review of existing literature and a cartographic analysis of the study area we approached health in the SES by employing two consolidated frameworks: Nature's Contributions to People (NCP) and Determinants of Human Health, and we developed a proposal for Determinants of Animal Health and separated the Socioeconomic Determinants in another category that supports both humans and animals' determinants. The Bay of Plentzia, influenced by the Cantabrian Sea and Butroe River, faces diverse anthropogenic pressures and challenges, such as sea level rise and pollution, which compromise human-animal-

*environment interactions. We address several environmental issues like tree plantations, water pollution, wetland restoration, and flooding events. These pressures can compromise the health of the ecosystem, which serves as the foundation for the rest of the system's health. Wildlife health and the role of medical and veterinary services are also explored. Socioeconomic factors are crucial, influencing human health, as well as animals and the overall ecosystem. Residents' concerns, perceptions of safety, and socioeconomic conditions in Plentzia are discussed. The text concludes by emphasising the importance of participatory research methodologies to complement existing literature, enriching the understanding of health issues in the Bay of Plentzia.*

**Keywords:** *One health, socio-ecological system, bay of Plentzia, coastal landscape, watershed*

## **1 Introduction: Convergences and divergence of health approaches**

In 1948, WHO proposed a new definition of health inclusive of mental and social well-being in addition to physical health (WHO, 1948). Since then, new perceptions of health arose, recognizing the limitations of a purely biomedical approach. In the Lalonde report (1974) the environment, the socio-economic factors and lifestyle were recognised for the first time as determinants of health. Psychological considerations and social contexts were included to shift the health approach towards a complex "biopsychosocial model" (Engel, 1977). The growing evidence of the impacts of global environmental change highlights human dependence on an environment that shapes, alters, and sustains their health (Corvalán et al., 2005; Rabinowitz et al., 2018). This implies that human health depends not only on biomedical, cultural and socioeconomic factors but also on the conditions of the environment in which they live and the other living beings with whom they interact. Therefore, as Buse et al. (2018) suggest, human health needs to be understood "in tandem with the health of the environments/ ecosystems [...] given the pace of environmental change resulting from human activities."

In the late 20<sup>th</sup> and early 21<sup>st</sup> century, holistic health approaches like *Ecohealth*, *One Health* and *Planetary Health* emerged (Lerner and Berg, 2017). *Planetary Health*, the most recent, addresses climate change and social determinants of health with a multi-scale perspective, from individuals to planetary. Humans are placed at the centre, and the surrounding organisms and environment are seen as supportive (Buse et al., 2018; De Castañeda et al., 2023; Whitmee et al., 2015). *Ecohealth*, originating from the idea of ecosystem health (Rapport,

1999), and incorporating social and political dynamics, adopts a socio-ecological approach to health, focusing on aggregations and processes, rather than individuals (Charron, 2012; Duboz et al., 2018; Lerner and Berg, 2017). *One Health*, rooted in *One Medicine*, was originally focused on human-animal biomedical interactions, food safety, antimicrobial resistance, and zoonotic diseases. In recent years it has faced criticism for its narrow biomedical focus (Davis and Sharp, 2020; De Castañeda et al., 2023; Rabinowitz et al., 2018). While all these approaches acknowledge the interconnectedness of humans, organisms, and the environment, they differ in their emphasis and foundations (Buse et al., 2018; Lerner and Berg, 2017).

Many of the fundamental aspects of these three approaches are integrated in one of the latest definitions of *One Health*; redefined after the COVID-19 pandemic in 2022 by the One Health High-Level Expert Panel (OHHLEP) as “an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals, and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent”. Key underlying principles include equity of sectors and disciplines, the relevance of socio-political and multicultural aspects, the imperative for a sustainable socio-ecological equilibrium, the recognition of human stewardship, and the importance of transdisciplinary collaboration (OHHLEP et al., 2022).

In the context of a Socio-Ecological System (SES), humans live embedded in an environment they interact with, which ensures their existence and permanence at the same time (Ostrom, 2009). Efforts in social and environmental sciences to understand human-nature interrelation have lacked coordination (Norgaard, 2008), resulting in the complexity and difficulty of addressing the full array of health hazards (Traore et al., 2023). The new conception of *One Health* explicitly recognises the environment’s relevance (OHHLEP et al., 2022), including not only its biotic and abiotic components but also the ecosystemic interactions.

Humans, with their cultural, political, and economic contexts, are actors with decision-making capacities that are manifested through their practices, behaviours, and the political governance of the social system in which they are immersed. The social system and the environment surrounding and sustaining it form a complex SES, where humans and nature are inextricably linked (Ostrom, 2009). Examining health within this framework involves exploring the intricate relationships between people and nature from an integrative system thinking approach, acknowledging that humans are a part of, rather than separate from, the natural world, and that nature is significantly shaped by social systems (Zinsstag et al., 2011).

In SES, the interactions between human health, other organisms, and the entire ecosystem are dynamic, configuring a highly complex system, characterised by a multi-scalar structure of transdisciplinary nature (Rabinowitz *et al.*, 2018; Lang and Rayner, 2012; Zinsstag *et al.*, 2023). Besides the importance of the conditions of its components, health-sustaining and promoting interactions and interrelations between them are of utmost importance for the equilibrium of the SES.

## **2 A One Health Approach to the Bay of Plentzia Socio-Ecological System**

The Bay of Plentzia, situated on the Biscayan coast, forms a coastal landscape influenced by the Cantabrian Sea and the Butroe River. The Butroe River originates in the hills of Bizkargi, Gaztelumendi and Sollube. It flows 60 km through rural areas and urban centres such as Mungia or Plentzia, while its tributaries collect water from the entire river basin. The estuary of Plentzia, faces many anthropogenic pressures. The sub-watersheds draining directly into this estuary form our focus area of analysis, 79% belonging to the municipalities of Gorliz, Plentzia and Barrika, where the population is concentrated and many outdoor recreational activities occur. Temporal variability is added to this complex spatial scale, as the touristic nature of this system peaks in the summer months and declines in winter.

In this SES, the natural areas (beach, estuary, coastal cliffs) and productive areas are also recreational spaces and are strongly intertwined with the urban environment. The fauna and flora inhabiting them share space and time with residents and tourists, establishing interactions that shape the SES of the Bay of Plentzia. To address health in this system, it is necessary to analyse the health of its components alongside their potential interactions.

Our One Health approach for the Plentzia Bay SES is rooted in ecosystem health (Rapport, 1998), emphasising the role of the health of the environment in providing the foundation upon which the rest of the health determinants are built (for both humans and animals). For our proposal, we used elements from two consolidated frameworks such as *NCP* and the *Determinants of Human Health* (WHO, 2024; Choi and Sonin, 2018). To identify *Determinants of Animal Health*, we selected elements from social determinants of animal health and health inequalities (Card *et al.*, 2018), fish and wildlife health (Wittrock and Duncan, 2019) and companion animals health (Bauman and Parmley, 2021). Finally, we separated the *Socioeconomic Determinants* proposed in human and animal health determinants and completed them with elements proposed by Rój and Jankowiak (2021); consolidating a separate category.

## 2.1 Interaction between *One Health* determinants

Our focal area is composed of both natural areas and built environments. According to the Spanish Land Occupation Information System (SIOSE, Sistema de Información de Ocupación del Suelo de España), the six urban centres and transportation networks connecting with Sopela, Loiu, Mungia, and Bakio occupied 18.59% of the surface in 2017, predominantly around the beach. The urban centres are surrounded by green and blue areas, offering residents valuable physical and psychological experiences with the natural environment. The existence of various associations for the protection, appreciation, and restoration of these ecosystems reflect the inhabitant's sense of identity and connection to the Bay.

In its healthy state, the environment regulates freshwater quality and quantity, soil formation, and habitat maintenance (Díaz *et al.*, 2018). The potential vegetation includes mixed oak forests and alder groves as the main riparian vegetation. However, according to the Basque government over half of these natural areas are currently covered by eucalyptus plantations, as seen in the whole Butroe basin. In the focus area, few remnants of historic forest persist, with ongoing efforts by the Plentzia Town Council for their restoration and conservation. Within the focus area, the agricultural parcels are not abundant, and are mainly grasslands, according to SIOSE in 2017 with Barrika having the largest surface of fruit trees, herbaceous crops and vineyards. In the river's morphological characterisation carried out by the Basque Water Agency (URA, Agencia Vasca del Agua) in 2018, they found the riparian vegetation along the Butroe disturbed, allowing the invasion of exotic species *Baccharis halimifolia* considered one of the 20 most damaging invasive alien species in Spain (Herrera-Gallastegui and Campos-Prieto, 2010). Apart from environmental impacts, studies have noted its toxicity in animals and allergic reactions in humans due to the high pollen production as stated in a management handbook from the Basque government published in 2014.

The Butroe estuary, now covering only 48% of its original area as indicated by the URA, faces vulnerabilities due to sea level rise threatening the concentrated housing along the coastline. A study conducted by Ihobe shows that Plentzia, despite recent wetland restoration (Carreta and Duo, 2019), remains susceptible, with potential impacts on 18% of residential areas and the loss of 60% of the beach<sup>1</sup>. Beyond the economic impact on tourism, this poses a threat to the quality of life for Bay residents. Upstream areas in Mungia and Gatika also face flood risks, as well as contaminant wash-out during heavy rain episodes.

The estuary and Bay's waters were historically a significant food source (Ropero Pascual, 2008), despite no longer being recognized as shellfishing areas by the

Basque Government. URA's analysis shows that the chemical water quality is generally good, but their ecological assessments in the estuary reveal a macroinvertebrate community degradation in 2022, without specific known causes. While relocating the Gorliz Wastewater Treatment Plant (WWTP) outfall outside the Bay improved conditions, pollution pressures persist (e.g. river, storm overflow discharge points, port facilities...), which makes the URA indicate a low but existing contamination risk in the bathing waters.

Treated wastewater, originating from hospital and domestic sources in Gorliz, and industrial and domestic sources in Mungia, generally complies with permitted pollutant loads according to URA. However, over the past decade, toxicity in organisms such as sea urchins (Mijangos *et al.*, 2020) and endocrine disruptors in mullets (Abumourad *et al.*, 2014) have been observed. Stormwater overflow, partially untreated, can lead to microbiological contamination by *Escherichia coli*, intestinal enterococci and potentially other pathogens. Health controls from the Provincial Council of Biscay (Diputación Foral de Bizkaia) indicate generally excellent conditions in the Bay between 2016 and 2022, but limits were exceeded on multiple occasions in 2021, 2022 and 2023, resulting in temporary beach closures. Toxic macroalgae, though identified in the Bay, haven't impacted local bathers, and eutrophication episodes are less frequent since the decrease of ammonium inputs in the 2000s. However, in 2023, there were indeed reported some incidents of Portuguese man o' war stings, a highly dangerous hydrozoan, which is beginning to be observed in these waters (Montero, 2023).

Apart from the environmental factors that have been identified to influence human health in the Bay, medical services are also crucial. Osakidetza's public health system includes three health centres. Patients with non-acute pathology in the stabilisation phase, convalescence, palliative care, and rehabilitative treatment are attended to in the Gorliz Hospital. In contrast, the remaining hospital care is provided at the Urduliz Hospital. Additionally, private clinics offer more specialised services. Health literacy is promoted by Osasun Sarea and the Physical Activity Guidance Service (Servicio de Orientación para la Actividad Física), aiming to enhance health and citizen participation in these matters. Various associations advocate for the positive impacts of outdoor activities on human well-being while promoting environmental awareness.

There are private veterinary services for the bay's animals. According to the Basque government, in 2024 there were over 3,700 registered domestic animals, mostly companion dogs, but also hunting and guard dogs. Additionally, a significant population of stray and feral cats led to the establishment in 2020, of two associations<sup>2</sup> implementing the Trap-Neuter-Return method for population control. They provide hygienic feed and safe shelter, additionally

promoting social awareness for animal welfare and habitat respect. The Wildlife Recovery Centre of Biscay in Gorniz from the Provincial Council of Biscay rehabilitates wildlife from all over the province conducting epidemiological control to prevent zoonoses and impacts on livestock, and a genetic archiving of threatened species for wildlife conservation. The Agrarian Census of the Basque Country 2020 identifies 181 sheep, 101 cattle, 55 goats, 49 horses, and 45 bee hives, but their exact locations within the focus area are unknown.

Socio-economic factors not only impact human health but also are crucial for other organisms' health and the overall ecosystem's health. In a study conducted by Gizaker in 2022 for the Plentzia municipality, residents rate the village positively (8.5/10) as a place to live, but some perceive a deterioration in recent years. The majority perceive Plentzia as a safe area, with men expressing more confidence than women when walking alone at night. However, around one-third of the interviewees have security concerns, particularly near the Txipio marsh and the metro station. According to this same study, dissatisfaction with the previous government stems from perceived mismanagement and indifference towards residents. Views of the municipality's COVID-19 response vary from 32.9% positive, 33.4% neutral, and 16% negative, citing the government's inactivity. A majority (84.3%) suggest consolidating services with Gorniz for more effective collaboration.

Plentzia, being the smallest of the three municipalities in terms of area, boasts the highest population density. According to Eustat, the Basque Statistic Institute, in 2023 over three-quarters of the population in the focus area is native to Biscay, with an increasing number of residents from other Spanish provinces and foreign countries, especially in Plentzia. Income and working conditions are comparable across the three municipalities, with higher average incomes than the rest of Biscay. Barrika, with the highest income, also exhibited the largest disparities in 2023. In 2021, Plentzia invested in employment promotion, but the Gizaker survey in 2022 revealed concerns about unfavourable conditions for small businesses. Based on this same study, Plentzia residents' main concerns revolve around Urban Planning, including insufficient parking, improved cleaning and gardening services, pavement and road repair, and the creation of a cycle lane along the Butroe River. The three municipalities make use of the Udala Zabaltzen online platform for citizens to report and address street-related issues. Residents actively engage in associations covering culture, sports, environment, youth, women, and neighbourhoods, enhancing social connectedness and promoting local culture and traditions.



### 3 Conclusions

The factors observed shape the state of the SES of the Bay of Plentzia, characterising its health and providing insights into each component (human, animal, environment) and existing interactions among them. However, many other determinants, not mentioned here, may be relevant. Published literature, along with available information and accessible databases, offers a general insight into the system from a One Health approach. However, these sources only provide a partial picture. Although conceiving the totality of components and interactions is complex, the perspective of the people who live and experience the system is of great value. For this reason, this literature research needs to be further enriched with participatory research methodologies, where the knowledge of the people inhabiting the system is considered and used to address the main health-related issues of the three domains (human, animal, and environment) in the Bay of Plentzia.

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## Methodological Appendix

Our general study area corresponds to the Butroe watershed, which is included in the Butroe Hydrological Unit (HU). This HU, as delimited by the URA in 2023 includes two minor watersheds, which flow into Armintza and Bakio. Since their waters do not directly flow into the Bay of Plentzia, they were left out of the analysis. We proceed to divide the Butroe watershed into 45 sub-hydrological units using a Digital Elevation Model and the Hydrology geoprocessing tool from ArcGIS. From these 45 sub-units, we identified 18 that are direct inflows to Butroe estuary (i.e. the tidal part of the river) or the Bay, which together have an extension of around 2500 ha. These 18 sub-watersheds concentrate many of the anthropogenic activities in the area and constitute therefore the focus area.

In order to address the health status of the Focus Area, we conducted an exploratory research to identify the existing literature on health issues in the Bay. To do so we used the search words ("Health" or "Disease" or "Pathology") and ("Plentzia" or "Plencia" or "Gorliz" or "Barrika" or "Butroe" or "Butron") in Scopus.

We only found two papers exclusively addressing human health issues during the past century: syphilis treatment in a rural pharmacy between 1888 and 1921 and an episode of intestinal parasites in children in 1975. We then expanded the search adding the words (“Toxic” or “Status” or “Hazard” or “Quality”), as they are commonly used in the assessment of the ecosystem health, and we found eight additional papers published between 1975 and 2020. One addressing haemolytic streptococcus in humans, four studying the quality status of the aquatic environment, three of them using mussels as biomarkers, one analysing the phytoplankton and zooplankton variability in the Bay, and one analysing the toxicity of the Gorliz and Mungia wastewater treatment plant effluents. Only one of the papers focused on freshwater, more precisely on the ground waters of the area. From all the papers only three were published in the past decade, and one of them focused on past conditions in the Bay.

Given the reduced number of recent peer-review articles about health, we decided to search for published grey literature in our study area. Like this, we included reports, statutes, journals, and other documents where we could find references of the state of health in the Plentzia Bay and the main pressures altering it. Additionally, spatial data available in geoEuskadi was used to create a GIS database, with which a spatial analysis was conducted to complement the identification of pressures in the Butroe watershed.

## Data Sources

### Databases:

GeoEuskadi (2017) ‘Sistema de Ocupación del Suelo de España (SIOSE) [Cartografía Digital]’. Available at: [https://www.geo.euskadi.eus/cartografia/DatosDescarga/Cartografia\\_Basica/Cobertura\\_Usos\\_del\\_Suelo/](https://www.geo.euskadi.eus/cartografia/DatosDescarga/Cartografia_Basica/Cobertura_Usos_del_Suelo/).

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## Abbreviations

- **COVID-19:** Coronavirus Disease 2019
- **HU:** Hydrological Unit
- **NCP:** Nature's Contributions to People
- **OHHLEP:** One Health High-Level Expert Panel
- **SES:** Socio-Ecological System



- **SIOSE:** Spanish Land Occupation Information System (Sistema de Información de Ocupación del Suelo de España)
- **URA:** Basque Water Agency (Agencia Vasca del Agua)
- **WWTP:** Wastewater Treatment Plant

## Bibliographical Notes

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## Notes

1. These numbers reflect a RCP8.5 scenario where an extreme flood event with a return period of 500 years is combined with a sea level rise of 70 cm in 2100.
2. There are two associations that conduct this task: Katu Arima in Gorliz, and Katu Bihotz in Plentzia.

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## Knowledge, action against climate change and eco-anxiety

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**Abstract:** *Eco-anxiety is a condition that is the focus of more and more research. There are many phenomena fuelling eco-anxiety: deforestation, climate change, environmental degradation, depletion of resources, species extinction, global warming, ocean pollution, hole in the ozone layer, etc. (Jamet, Baratgin and Filatova, 2014).*

*Does having precise knowledge about global warming and its consequences increase or reduce eco-anxiety? Does taking action on a daily basis to combat global warming reduce the state of eco-anxiety? These are the questions our paper aims to answer. To answer these questions, we asked a group of young adult apprentices (N = 32) to take the (Hogg et al., 2021) eco-anxiety scale for the first time, thus providing us with an initial measure of the state of eco-anxiety. From this initial measure, we will be able to identify the relative weight of the different phenomena contributing to eco-anxiety.*

*Secondly, these participants were randomly assigned to two conditions: an experimental condition (Chatbot) and a control condition. The experimental condition consists of a Chatbot whose objective is to acquire precise knowledge about CO<sub>2</sub>, energy, critical thinking, the ability to read graphs relating to CO<sub>2</sub> and melting ice and to initiate actions to modify behaviour (Jacquet and Baratgin, 2021; Jacquet et al., 2023). The Chatbot will be available for 3 months. Chatbot participants will learn how to calculate their respective carbon footprint, compare it with their peers and with the carbon footprint of the average French person, identify the carbon level that should not be exceeded if we hope to stay below an increase of 1.5°C, etc. During the Chatbot activity, after each topic (knowledge) an eco-anxiety measurement would be carried out. At the end of this learning process, they will be asked to fill in the Hogg et al. (2021) eco-anxiety scale again. When the Chatbot encourages the participants to engage in eco-responsible actions such as walking to work, using public transport, etc., the level of eco-anxiety will also be measured. Participants in the control condition will also be asked during the 3 months of Chatbot activity to indicate their level of eco-anxiety.*

*This will give us a continuous measurement of eco-anxiety.*

*We are formulating three hypotheses: that the phenomena generating eco-anxiety are linked to the participants' direct environment (H1), an increase in eco-anxiety when knowledge is provided (H2), and a decrease in eco-anxiety following an eco-responsible commitment (H3). The results are currently being collated.*

**Keywords:** *Climate change, eco-anxiety, cognition, conversational agent, dual process theory*

## 1 Introduction

The aim of this article is to design an artificial conversational agent (Chatbot). Its function will be to provide knowledge about climate change and to encourage users to adopt virtuous behaviours.

Out of 10,000 young people aged 16 to 25 from 10 countries (Australia, Brazil, Finland, France, India, Nigeria, Philippines, Portugal, the UK, and the USA), 59% say they are "very" or "extremely worried" about the effects of climate change. Humanity is doomed for 56% of them, 39% plan to stop procreating, and 45% believe that climate change is having a negative impact on their daily lives (Hickman et al. 2021). A more recent study of a representative sample of the French population qualifies the trend (Sutter, Michot and Steffan, 2023). This study showed that eco-anxiety affects all age groups indiscriminately, which means that young people are not the only ones to be affected and that it also enabled us to estimate the number of eco-anxious people in France (2.5 million). The issue of eco-anxiety is the subject of a great deal of research. A review of the literature over the last three years shows that the Hogg eco-anxiety scale 2021 (HEAS) is the most widely used in the world. Developed in Australia and New Zealand (Hogg, Stanley, and O'Brien, 2023), it has been used all over the world (Uzun et al., 2022; Türkarlan, Kozak, and Yildirim, 2023; Sampaio et al., 2023; Heinzl et al., 2023; Rocchi et al., 2023; Mathé et al., 2023). Its relevance lies in the fact that it does not reduce eco-anxiety solely to feelings of distress (Helm et al., 2018; Searle and Gow, 2010) or to cognitive and emotional deficiencies linked to climatic anxiety (Clayton and Karazsia, 2020). This comprehensive scale assesses four dimensions of eco-anxiety: affective symptoms of eco-anxiety; ruminative thoughts; behavioural symptoms and personal impact of anxiety (Hogg, Stanley, and O'Brien, 2023).

We are therefore entitled to wonder whether the contribution of knowledge about climate change might not be one of the vectors of eco-anxiety. If this

phenomenon is relevant, we should observe: 1. an increase in eco-anxiety after the communication of new knowledge on climate change; 2. a drop in eco-anxiety when the participant identifies eco-responsible actions in their daily life; 3. a drop in eco-anxiety when the participant changes their behaviour in favour of more virtuous behaviour.

To understand why some participants are concerned or have specific awareness of climate change, we could appeal to the Dual Process Theories of Reasoning (DPT). DPT distinguishes two types of thinking mechanisms. The intuitive process is rapid, automatic and effortless, while the deliberative process is slow, controlled, and resource demanding. A recent approach to DPT suggests that the switch from the intuitive process activated by default to the deliberative process results from a conflict between multiple intuitions (De Neys, 2023). Eco-anxious people are so in part because they are aware of the incompatibility of our current ways of life and the changes required to arrive at a sustainable future. This awareness of the conflicting incentives given by the present society could lead them to use deliberative processes more than usual.

We have designed an artificial conversational agent (chatbot) that has three main objectives (Jacquet *et al.*, 2023). Firstly, to assess the level of eco-anxiety using HEAS. Secondly, it will provide knowledge based on the identification of deficits. Research on physical phenomena associated with climate change shows serious gaps in our understanding of sea-level rise, for example (Jamet, Baratgin and Filatova, 2014). Thirdly, it will stimulate the participants by highlighting their strengths but also by confronting them with their own cognitive dissonances and conflicts. Cognitive conflicts are factors in the development of knowledge (Sacco and Bucciarelli, 2008). The chatbot is designed to have smooth interactions with participants to avoid frustration (Jacquet, Baratgin and Jamet, 2018; Jacquet, Baratgin and Jamet, 2019).

The experiment began in February 2024 in a vocational training establishment in south-east France. The experiment takes place in three phases: an initial evaluation phase, an activity phase with the Chatbot, and a final evaluation phase. In the initial evaluation phase, participants are asked to complete an online questionnaire. This questionnaire has five objectives: 1. evaluate their pondering and attitudes toward climate change; 2. assess the level of eco-anxiety; 3. to assess knowledge of different aspects of global warming: CO<sub>2</sub>, energy, etc., but also procedural skills such as reading graphs to extract data; 4. to diagnose the thinking style within the DPT framework; 5. question their day-to-day commitment to the fight against global warming.

In the chatbot phase, half of the participants will have access to the chatbot for 5 to 6 weeks via an application that can be downloaded to their phones. The

second half of the participants will make up the control group and will also be using an application with relevant literature. They will fill in the questionnaire at the beginning of the experiment (February) and at the end of the experiment (May) and be asked to take part in intermediate measures of eco-anxiety in between.

This article focuses on the results of the initial phase. Four points will be presented: 1. the general perception of our participants on climate change; 2. Levels of eco-anxiety; 3. Thinking styles 4. Academic knowledge of climate change, as well as procedural knowledge related to graph reading.

## 2 Questionnaire

We assess the following 9 areas: Responses to the five first areas were collected using intensity sliders ranging from 0 to 10.

1. The frequency with which participants thought about eight aspects of climate change. These eight aspects are global change, global warming, environmental damage, loss of resources, extinction of species, hole in the ozone layer, ocean pollution, and deforestation. They are taken from The Hogg eco-anxiety scale (2021).
2. The level of eco-anxiety using HEAS. It is composed of four subscales: affective symptoms of eco-anxiety subscale (4 items), ruminative thoughts sub-scale, (4 items), behavioural symptoms subscale (3 items), and personal impact of anxiety subscale (3 items). HEAS was translated into French.
3. The level of concern about climate change. We used the eight aspects of climate change (cited in the assessment).
4. Identification of progress in the face of climate change. We have taken up the eight aspects (mentioned in assessment 1).
5. The level of skepticism about the Anthropogenic nature of climate change (1 question).
6. The level of knowledge surrounding climate change. Three areas were investigated: (a) the average mass of CO<sub>2</sub> emissions per capita known as the "Carbon Footprint". Three estimations were asked: Worldwide, in France, and that required to avoid exceeding 1.5°C rise in global temperature. (b) the sectors that emit the most CO<sub>2</sub> (one question). (c) Power production and consumption. Seven statements were made. The level of agreement or disagreement was given using an intensity slider.
7. Graph literacy. Assessment of the ability to read graphs (4 questions, 3 on data extraction and 1 question on the limits of the proposed graph). The graph was independent of the theme of climate change. It represented the presence of pupils in class during a week, according to their gender.

8. Thinking style (intuitive versus deliberative) was assessed on the basis of three problems to be solved. The problems were taken from the CRT (quotation), the aim of which was to determine whether a person responds intuitively to a problem that triggers an erroneous automatic response, or whether they take more time to think and figure out the correct answer.
9. Actions taken or intended by the participant to act on climate change within four areas: (a) Transport, (b) Water consumption, (c) Meat consumption and (d) Activism.

### 3 Preliminary results

Findings derived from the initial administration of the questionnaire illuminate participating students' psychological profiles prior to experimental manipulations.

#### 3.1 Reflection devoted to the topic

Generally speaking, climate change registers negligible urgency amongst students ( $M = 28.4$ ,  $SD = 23.8$ ), although nuances arise when scrutinizing discrete constituent parts. Of the examined factors, "climate change" ranks foremost in conscious consideration ( $M = 39.7$ ,  $SD = 31.5$ ). Comparatively little deliberation involves the "ozone hole" ( $M = 8.6$ ,  $SD = 20.1$ ).

#### 3.2 Expressed level of worry

Across categories, expressed worry trends mildly (ranging from  $M = 32.4$ ,  $SD = 31.2$  for "global warming" to  $M = 48.2$ ,  $SD = 35.6$  attributed to "resource depletion"). Overall, individual worry scores were higher than those of devoted reflection but were still under the fifty-point mark on average ( $M = 41.7$ ,  $SD = 32.4$ ).

#### 3.3 Estimation of Progress

Although manifest concern proves restrained, optimism regarding strides achieved recently fails to materialize consistently, as indicated by middle-of-the-road values reaching from  $M = 17.5$ ,  $SD = 21.2$  for the "ozone hole" up to  $M = 27.7$ ,  $SD = 27.3$  connoting "resource depletion".

#### 3.4 Confidence/scepticism toward anthropogenic climate change

Students are on average confident that climate change is caused by humans ( $M = 74.6$ ,  $SD = 30.1$ ) with only two students being more sceptical about its human origin.

### 3.5 Eco-anxiety

Average eco-anxiety manifests feebly at roughly 15.9 (SD = 21.9). Demonstrating considerable disparities throughout the cohort, variation prevails across all measurements under review.

### 3.6 Knowledge surrounding climate change

For associated knowledge, extensive misunderstandings surface concerning carbon footprints. Broad agreement culminates around transportation constituting the paramount source of greenhouse gas emissions, as cited by twenty out of twenty-two participants. Slight discord ensues when nominating secondary contributors, possibly hinting towards residential heating mechanisms (acknowledged by eleven participants). Deficiencies emerge in the grasp of matters pertinent to power usage and manufacture, accentuating the need for pedagogical initiatives geared toward augmenting ecological literacy.

### 3.7 Action against climate change

Half of the students are able to choose what they eat and the other half said they could sometimes do so. Nine students eat meat between one and four times a week while the others eat some every day. No student mentioned being willing to cut down their meat consumption. Three participants spend five or less minutes in the shower while most of them spend between ten and thirty minutes. Four students said they were willing to reduce their water consumption. While seventeen of the students have public transport next to where they live, five of them never take it and three of these students said they are willing to take it more often. Thirteen students never take the plane. Two students belong to activist groups. Seven students report not being willing to change anything in their daily life in favour of the environment.

### 3.8 Thinking style

In the first CRT problem, the majority of students gave the expected incorrect answer (15). None gave the correct answer yet one participant might have been on the right path but made a mistake in their calculation. For the second problem, 15 students gave the expected incorrect answer and 3 answered correctly. The last problem received the highest number of correct responses (6) but also the highest number of unexpected incorrect answers (8). We see that most students do not give the correct answer suggesting that they are using their intuitive system more often. But we also see a wide range of unexpected incorrect answers possibly indicating that the students encountered some other difficulties to solve those problems. Sixteen students failed all three

problems, five solved one, and only one was able to solve two. No students answered all three problems correctly.

### 3.9 Chart understanding

Most of the students successfully identified the lowest value on the graph (20). However, only seven were capable of identifying the x-value that maximized the y-value for both curves. Moreover, sixteen failed to recognize that they could know for sure that there was no x-value for which the two curves were at their highest at the same time. About the identification of problems in the graph, twelve students agreed it would be better to know the full range of each variable. However, only four students acknowledged the y-axis not starting at 0.

## 4 Discussion

This first evaluation phase shows us great discrepancy between students in regard to their individual time spent thinking about climate change, the worry it causes them and how much progress they see happening over the years. Most of the students were overall on the lower side of the scale for all the measures above, as well as their levels of eco-anxiety.

Regarding the level of knowledge of the students, we see that a lot of them were not familiar with the notion of carbon footprint or at least did not have an appraisal of individual emissions in mind. The assessment of the carbon footprint was either much too low or much too high. But most importantly many students did not rank French, global and needed carbon footprint in the right order revealing a lack of understanding of France's position in relation to the rest of the world and of the global targets in terms of CO<sub>2</sub> emissions. Students also displayed a misunderstanding of the topic surrounding the production and consumption of energy.

Finally, more general skills such as critical thinking or the ability to read charts and identify misleading elements also have room to improve. Answers to the CRT indicate that in most cases, the students are unable to override their first intuition to call upon a more deliberate way of solving the problem. We found poor performances in chart reading, which is a capital skill for any scientific topic, firstly to be able to incorporate data in their pool of knowledge but also to avoid misinformation which often relies on misleading graphics.

To sum up, our panel of participants is not highly concerned by the climate crisis at the moment and therefore not particularly prone to eco-anxiety. For us, this lack of concern is simply an opportunity to test the effectiveness of our



intervention. All the more so as it aims to improve this awareness by providing knowledge and skills that the students seem to lack. Of course, this group of students is not necessarily representative of all young adults, since we know that a large proportion of them already suffer from eco-anxiety.

Those initial results have given us the chance to gather information on three major points: 1. To assess the baseline level of our population 2. To adjust the difficulty and the length of the content that they will receive later on 3. To further specify the content of the activities proposed by the chatbot so that it fits the particular needs of the students.

Therefore, we believe that there could be great value in proposing a chatbot-mediated tutoring to the students. We expect the chatbot group to see greater improvement on all metrics compared to the group receiving only targeted reading activities.

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## Methodological Appendix

Thirty-four participants fully completed the questionnaire. They were young adults undergoing vocational training in a French establishment. Ten participants were withdrawn from the study either because they skipped questions too many times, or because their answers revealed a lack of care in completing the questionnaire (e.g. Going to school in a private jet). Two participants were too old for the purpose of this study and were therefore also removed. Our total number of participants was therefore 22. The average age of the young adults was 18.7 (standard deviation = 1.5). There were fifteen men and seven women. They were studying in one of the following three streams: marine mechanics, car mechanics, and hairdressing.

Table 1: The Different Dimensions of the Questionnaire and the Order in which They Were Administered

1. Q1 In the last 2 weeks, how often have you thought about...			
Negative answer to Q1		Positive answer to Q1	
2. Eco-anxiety			
2. Level of Worry CC	2. Level of scepticism	3. Level of Worry CC	3. Level of scepticism
3. Progress on CC	3. level of knowledge CC	4. Progress on CC	4. level of knowledge CC
4. Level of scepticism	4. Action Against CC	5. Level of scepticism	5. Action Against CC
5. Level of knowledge CC	5. Level of Worry CC	6. Level of knowledge CC	6. Level of Worry CC
6. Action Against CC	6. Progress on CC	7. Action Against CC	7. Progress on CC
7. Thinking Style	7. Thinking Style	8. Thinking Style	8. Thinking Style
8. Mastery of graphs	8. Mastery of graphs	9. Mastery of graphs	9. Mastery of graphs

To ensure anonymity, participants were given an identifier at random, by their teacher on the first day of the experiment, together with a link. After providing their ID, they ticked the box specifying the purpose of the questionnaire, giving their agreement to take part in the experiment.

All participants answered questions about how often they thought about aspects of climate change. If they thought about any, even slightly, they were given the eco-anxiety questions on the next page. If not, they did not complete the HEAS. Next, half the participants answered the questionnaire in the order specified in columns 1 and 3 and the other half in the order specified in columns 2 and 4.

## Abbreviations

- **HEAS:** Hogg Eco-anxiety Assessment Scale
- **DPT:** Dual Process Theory
- **CC:** Climate Change

## Biographical Notes

Maxime Bourlier is a first year Ph.D student in cognitive psychology at the CHArt Laboratory of the Paris 8 University whose work revolves around probabilistic reasoning and dual process theories of reasoning. He has published on conditional reasoning [2023] and how to improve reasoning abilities [2023] notably on the subject of the environment [2023].

Baptiste Jacquet is an associate professor in cognitive psychology at the CHArt Laboratory of the Paris 8 University. He has published on the use of chatbots as coaching tools [2023], on the lack of pragmatic reasoning in chatbots [2017, 2018, 2019, 2020, 2022]. His main research interests are conversational pragmatics, artificial intelligence and in particular chatbots. He is particularly interested in how contextual information shapes the way we interpret stimuli and aims at proposing cognitive architectures able to simulate the processing of information happening during cognitive inferences.

Frank Jamet, professor emeritus in developmental psychology, state-diploma in school psychology, state-certified psychometrician, Certificate of aptitude for specialised pedagogical action and school integration. His research focuses on syllogistic [1997], categorical [1996], conditional [2020], temporal (time, speed, space [1999], conventional time [2003, 2006, 2019]), déductive [2000], analogical [1999], and causal reasoning [2000, 2003, 2004, 2007, 2008], complex classifications [1999, 2001], class inclusion [2016, 2018], electrical circuits [2000] and probabilistic reasoning [2016, 2017]. This work is part of a life span approach. He sought to understand what characterises the reasoning of young children (2-3 years) [2009, 2010], children (4-12 years) [2015, 2020], pre-adolescents (13-14) [1999], adolescents (15-18) [1999], adults and experts [1996, 2009, 2016]; differentiating between ordinary people and vulnerable people intellectual development disorders [1998, 1999] mental retardation [2006, 2008], amblyopia [1999], cerebral palsy [2001], autism spectrum disorders [2024]; and comparative culture: Kanak [2015, 2017, 2018, 2022] (New-Caledonia), Saramaca [2014], Dujaka [2014], Awala Yalimapo [2014] (French Guiana), Japanese [2014, 2015, 2024], Chinese [2014], Maka (Cameroon) [2018], Mayan indigenous population [2016] but also on decision-making [2017, 2018] ; human robot interaction [2015,

2017, 2018, 2020, 2021, 2023, 2024] ; climate change [2010, 2011, 2023, 2024]. Jean Baratgin is a cognitive psychology and epistemology professor at the CHArt Laboratory (Paris 8 University, France) and a statistical engineer economist. He is in charge of the P-A-R-I-S thematic programme (*Probability, Assessment, Reasoning and Inference Studies*) His formal and experimental research revolves around the polysemic concept of rationality. He studies reasoning, judgement, belief revision, epistemology, logic and Bayesianism, decision-making and artificial intelligence. In the field of cognitive psychology, he showed that Bruno de Finetti's subjective logic was a very good theoretical interpretation of the indicative conditional in natural language and that the Bayesian model offered a prescriptive model of human judgement. He is one of the precursors of what is referred to in the literature as the *new paradigm for the study of human reasoning* [2021, 2022, 2023]. He is currently leading projects on the influence of cultural knowledge (social norms, beliefs) on inferences and decision-making. He is focusing on Kanak societies in New Caledonia and Amerindian societies in French Guyana [2014], which seem to show a reduction in certain decision-making biases due to specific social norms [2014, 2015, 2017, 2018, 2022]. His work is also part of a developmental approach [2016, 2018, 2020] and has published on the topic of climate change [2010, 2011, 2023, 2024].

## Notes

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1. The study we are presenting is part of an international (Italy, Germany, Spain, and France) EDUS4EL project as part of an ERASMUS program. The aim is to propose educational activities designed to promote changes in individual or collective behaviour about climate change.



## **Culture Change for Climate Change: Attitudes, Perceptions, and Experiences with Climate Change among University Members and Neighbors**

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**Abstract:** *Urban universities often serve as powerful institutions, capable of leveraging resources to address issues at the root of environmental injustices and to promote climate friendly policies. However, universities, and their various constituents may differ in how they see their responsibilities and their roles as a partner with local communities. The goals of the study were twofold. First, it was to investigate in the United States attitudes and perceptions of climate change across a range of university stakeholders, including students, faculty, staff, administrators, and residents of the predominantly Black communities adjacent to the university. Second, we examined attitudes about the actions necessary and who is responsible for efforts to reduce negative impacts of climate change. Preliminary analyses indicate that knowledge of the problem ranges in accuracy and level of technical precision, with residents of the nearby community often lacking formal knowledge, to university faculty, who possess expertise in the subject. Climate change literacy is a potential area where universities can play a role in engaging with community members. Nonetheless both groups drew from personal experiences, firsthand knowledge, and observations to support the claims that climate change exists and was a concern to them. Additionally, the view that efforts to combat climate change must extend beyond the individual to institutions and governments at different levels was shared across both groups. It was widely acknowledged that there are limits to what individuals can do to improve conditions. Important divergences were evident along racial lines. Black residents of the neighboring community often drew upon religion and faith to make sense of and to cope with what they saw as detrimental effects of climate change. This study indicates that collaboration between universities and their neighbors on climate change has potential to strengthen trust, while also pursuing long-term efforts to improve people's lives and promote environmental justice. The results have implications for CWRU, but also to urban universities more broadly, and reveal that universities, in multiple capacities, have special responsibilities when it comes to creating cultural changes around climate change.*

**Keywords:** *Universities, environmental justice, race, climate change*

## 1 Introduction

Pulido (2016) contends that despite over 35 years of work, and some victories, the success of environmental justice activism is fairly limited in terms of improving the conditions of marginalized communities. She argues that “environmental disparities between white and nonwhite communities” over three decades “have not diminished and that the situation may have worsened” (p. 524). In part she argues that this is due to poorly conceptualizing environmental racism, but also due to activists and scholars over reliance on the state as a central actor to promote equitable solutions and to restrict the imposition of environmental harms. This raises an important question, if not the state then who? What is the role of organizations and institutions in ensuring an equitable, just, and sustainable future? Our research turns attention to universities. Universities often have resources and the capacity to impact societal efforts and initiatives, and therefore could play a critical role in the widespread adoption of climate positive policies, proposing equitable solutions and promoting environmental justice.

Due to their location and proximity to disadvantaged communities, urban universities, which often serve as anchor institutions and key drivers of local economic activity, are uniquely positioned to leverage social, political, and economic resources to address issues at the root of environmental injustice. However, universities, and their various constituents may differ in how they see the obligation and the role of the university as a potential partner in such efforts with local communities.

## 2 Literature Review

McCowan (2020) contends that “universities have extraordinary potential for contributing to sustainable development and addressing the root causes of climate change, yet that contribution is not guaranteed.” Universities have been theorized to maintain different functions and modalities of action, which can be effective in promoting climate-positive action. Arguably, these efforts can be conceived of as internal and external relations. Internal efforts and initiatives are ones spearheaded and controlled by university leaders, and whose benefits are primarily the university community directly. Decarbonization policies and goals implemented to improve energy efficiency are examples of such internal policies. As educating its students is a core function of colleges and universities, curricular offerings would too fall under the rubric of internal policies and practices that universities as institutions can engage in. The extent and nature of curricular offerings importantly signal commitment to climate positive action, and through educating students the university plays a critical

role that likely has a long-lasting impact, shaping the understandings, views, and attitudes of future generations around climate change.

Research is another core function of universities, and the innovation and development of scholars across academic disciplines and domains is an important way that universities can contribute to mitigating climate change. As anchor institutions universities can have an impact on their local communities, by leveraging “various forms of capital, including economic, human, and intellectual, to advance the well-being of their local communities (Hodges & Dubb, 2012; Harris & Holley, 2016). This is also due to the role of universities as mediators between diverse publics, the private sector, and government.

While noting that political conditions impact the efforts that universities can undertake, universities across a range of initiatives can engage in multiple ways with external communities and diverse stakeholders. Universities operate in political contexts which can aim to regulate or constrain university action. For example, in Ohio, currently, there are legislative initiatives such as Senate Bill 83, which aim to ban universities from taking action and educating students on topics considered controversial. As the language of the bill states, “Controversial belief or policy’ means any belief or policy that is the subject of political controversy, including issues such as climate change, electoral politics, foreign policy, diversity, equity, and inclusion programs, immigration policy, marriage, or abortion” (Ohio Senate Bill 83, 2023).

Universities operate in and must manage shifting political terrain. But they also can engage in work outside of the constraints of state control, and beyond any individual, they can critically inform and shape discourse and impact public perceptions and public policy.

Beyond commitments to climate positive action and internally implemented strategies to mitigate climate change, universities can also work toward climate justice. However, this requires efforts beyond climate action plans that are overly focused on research and technological innovation and internal mitigation strategies. Instead it requires the galvanizing of external relations with diverse members of the public, but also rethinking the obligations and transformative role universities can play. To date, the work of universities in promoting climate justice has been insufficient. Deeper engagement and nurturing community partnerships will be needed to achieve climate justice and sustainability goals nationally and internationally.

Research and the generation of knowledge are key to the work that universities do and can do around climate change. Faculty often have technological expertise and have spurred innovation and technological development, which



has been key to mitigation strategies. Scientific research has and will continue to play a critical role.

However, it has become increasingly clear that research in social sciences is needed to address the climate crisis. As Sovacool and colleagues (2021) suggest “researchers often promote technological solutions to energy problems while ignoring the social processes that determine their acceptance and use, shape the risks they can present, and offer opportunities for achieving energy policy goals with existing technology.” Social scientific theoretical concepts can improve our understanding of the success and failure of decarbonization strategies and prove valuable in analyzing the challenges encompassed during energy transitions (Beckfield & Evrard, 2023). Researchers have consistently advocated for the integration of social science research as underlying social factors can enable or constrain policies and practices that are necessary to transition to a green economy (Sward et al., 2021). Additionally, research indicates that “political values, ideological worldviews, and cultural mindsets” impact how people respond to information about climate change (Pearson et al., 2017).

Greater understanding is needed to inspire climate-positive action and activism, whether at the individual or collective level, among racially diverse groups. This is particularly important because variation exists along racial group lines in attitudes toward and understanding of climate change. For example, in the United States, Blacks demonstrate greater concern about climate change than whites and view renewable energy more favorably than whites (Ballew et al., 2020). A 2020 study found that 57 percent of Blacks, but only 49 percent of whites, were alarmed or concerned about global warming. Similarly, only 12 percent of Blacks were doubtful about climate change, in comparison to 27 percent of whites.

There are many reasons to investigate variation in knowledge and understanding, as well as perceptions of climate change among diverse groups. In part, research suggests that climate literacy is an important factor that impacts action and support for policy measures designed as a response to and efforts to address the climate crisis (Tobler, Visschers, & Siegrist 2012). Research indicates that there are many prevailing misconceptions and widespread lack of understanding about the causes and consequences of climate change.

Examining the impacts of underlying cultural and ideological factors in shaping support for various decarbonization strategies and climate positive action, is also crucially important to generate and ensure more equitable conditions are met as politics and initiatives are aggressively pursued to reach our decarbonization goals.

### 3 Research Objectives

The objectives of this research study were twofold. First, it was to investigate attitudes and perceptions of climate change across a range of university stakeholders, including students, faculty, staff, senior level administrators, and also residents of the predominantly Black communities proximate to the university. Second, to examine attitudes about the actions necessary and who is responsible for efforts to reduce negative impacts of climate change.

### 4 Methods

For this paper, data analyzed reflect part of the data collected for a larger focus group study. This paper draws from data collected from ten focus groups; three conducted with local neighborhood community members on zoom, and seven focus groups were connected with CWRU community members, including two focus groups with faculty, one focus group with senior administrators, and one focus group with staff members.

Table 1. Description of the Sample Demographics

	Neighborhood Focus Groups (3 focus groups, 21 total participants)	CWRU Faculty, Staff, & Senior Administrators (4 focus groups with N = 47 total participants)
<b>Gender</b>		
Female	16 (76%)	17 (68%)
Male	5 (24%)	8 (32%)
<b>Race</b>		
White	1 (5%)	17 (68%)
Black	16 (80%)	5 (20%)
Asian	1 (5%)	2 (8%)
Mixed	0 (0%)	1 (4%)
Other	2 (10%)	0 (0%)
<b>Household Income</b>		
Below \$10k	2 (15%)	0
11k-20k	1 (8%)	0
21k-30	0 (0%)	0
31k-40k	1 (8%)	0
41k-50k	3 (23%)	0
Above \$50,000	6 (46%)	24 (100%)
<b>Homeownership Status</b>		
Rent	5 (28%)	6 (24%)
Own	13 (72%)	18 (72%)
Other	0	1 (4%)
<b>Age</b>	(mean) 59 years	(mean) 52 years

Table 1 provides a summary of some of the demographics of the focus groups. The Methodological Appendix provides additional details about research design, IRB approval, primary data collection methods, and data analysis.

This research was conducted at Case Western Reserve University (CWRU) in Cleveland, Ohio. In terms of context, CWRU has taken steps to promote sustainability and reduce emissions. In 2008, the then president of the university, Barbara Synder, signed the American College and University Presidents Climate Action Commitment, pledging to create a carbon neutral campus by 2050. By 2011 the university developed and issued its first Climate Action Plan with the goal of reducing greenhouse gas emissions by twenty percent by 2020, a goal achieved by 2017. In 2020, the office of the Provost funded the “Culture Change for Climate Change proposal.” resulting in the creation of the CWRU Climate Action Network (CWRU CAN). CWRU CAN goal is to “harmonize and scale climate action at and by CWRU.” One of the signature programs organized by CWRU CAN is the Climate Action Week, first implemented in 2022. Most, if not all of the university’s efforts and initiatives have been internal or inward focused. CWRU CAN engaged in research that aims to address how the community and CWRU can partner to promote climate positive actions. This research is the result of that initiative.

In addition to the policies implemented as a part of the Climate Action Plan, in 2021 CWRU announced a commitment to completely divest the endowment from fossil fuel related investments. The endowment has already completely divested from such investments in publicly held companies. Divestment was a repeated request of the CWRU Undergraduate Student Government.

Courses focusing on climate change are contribute to robust curricular offerings. Currently, 21 different courses are offered, across a range of disciplines, including sociology, religious studies, philosophy, psychology, history, economics, political science, anthropology, biology, and physics. Additionally, there are various research centers and institutes, as well faculty and student groups engaged around the topic.

The community outside of CWRU however represents a different reality. While only 4 percent of full-time faculty, and 6 percent of undergraduate students at CWRU are Black, the communities to the north and east of the university are predominately Black, 92 percent and 88 percent comparatively. The city of Cleveland is 47 percent Black.

Additionally, communities that neighbor CWRU to the north and east are economically depressed areas. For example, East Cleveland is one of the poorest municipalities in the state of Ohio and one of the poorest in the United States. Table 2 summarizes the racial and socio-economic demographics of these neighborhoods.

The neighborhoods that border the University have also been subject to heightened exposure to harmful environmental conditions. Using the U.S. Council on Environmental Quality (CEQ)'s Climate and Economic Justice Screening Tool (CEJST), one census tract located in East Cleveland meets the threshold for 8 of the 8 categories that indicate economic and environmental overly burden communities (CEQ, 2024). Additionally, the regional planning agency, the Northeast Ohio Areawide Coordinating Agency (NOACA), identified slightly over 80 percent of neighborhoods in East Cleveland as areas where households' experiences are at or above the 90<sup>th</sup> percentile for energy cost burden (NOACA 2024, pp. 155-6). Additionally, 86 census tracts in Glenville also meet this threshold of being energy-burdened.

Table 2. Racial and Socio-economic Demographics of Glenville and East Cleveland, Ohio

	<b>GGlenville, Cleveland, OH</b>	<b>EEast Cleveland, OH</b>
<b>Population</b>		
Total	21,725	13,446
<b>Race</b>		
White	3%	7.7%
Black	92%	88%
Asian	1%	1.4%
Hispanic	1.5%	1%
<b>Household Income</b>		
Median household income (in 2022 dollars,) 2018-2022	\$30,448	\$23,004
Persons in poverty, percent	33%	39.5%
<b>Homeownership Status</b>		
Owner-occupied housing unit rate, 2018-2022	47%	30.9%
<b>Educational Attainment</b>		
High School graduate or higher, percent of persons age 25+	82%	83.6%
Bachelor's degree or higher, percent of persons age 25+	13%	14.9%

## 5 Findings

Preliminary analyses indicate that knowledge of the problem ranges in accuracy and level of technical precision, with residents of the nearby community often lacking formal knowledge, to university faculty, who possess expertise in the subject. For example, Janet, a 64-year-old Black woman with a high school degree, who was born and raised in Cleveland remarked, when asked to describe

or define climate change stated, "I would say that the chemicals in the air... it's causing the earth to change and everything to go wacko [laughter]... just causing the temperature and everything to change" (Focus group 6).

In contrast, Larry, 62-year-old white man with a Ph.D. noted,

"I am a Planetary Geologist. I actually spend a lot of time thinking about climate change and the environment on pretty much the biggest scales possible, varying human scales, you know billions of years in and, ironically, also someone who's kind of a weather nerd, 'cause I do a lot of fieldwork. So I pay attention to the clouds, the rain, the snow, and this was an interesting way to kind of fill in the gap a little bit, pay a little more attention to it as something affecting human beings" (Focus group 9).

Larry, who could be considered a specialist, with high levels of scientific knowledge, contrasted with Janet, who maintained a basic understanding of underlying science.

Nonetheless, both groups drew from personal experiences, first-hand knowledge, and observations to support the claims that climate change exists and is a concern to them. Both Ruby and Russel illustrate this. Ruby, a 76 year old Black woman, had some college education.

She described changes in her environment that signaled to her evidence of climate change. She remarked "I noticed that in the summer, it seems like we have more of these insects. I can't hardly sit on my porch no more. Like it's just more and more of them..." (Focus group 1).

Similarly, Russell, a 52-year-old white man with a master's degree noted:

"I remember when there were those storms this summer, for example, and it was still hot and knocked out all the power, and there were people really struggling with heat. In Cleveland, we don't have air conditioning, for the most part, in the older houses, and people needed to go to community centers to cool off. All those fires this summer, my kids' camps were canceled. People couldn't be outside for work or recreation, various things, and I feel like the last summer even alone there were a lot of direct impacts happening" (Focus group 4).

Both make sense of and find evidence for climate change in their own observations of shifts in local conditions.

Additionally, the view that efforts to combat climate change must extend beyond the individual to institutions and the government was shared across both groups. It was widely acknowledged that there are limits to what individuals can do to improve conditions. For example, Catherine, 59-year-old, white woman noted:

“Until our political system will actually deal with the issues that are created by climate change, the only way that you’re gonna have any positive change is if we get people to get involved...There’s so much work to be done, and until we can get reasonable leadership throughout our government and get people acknowledging that climate change is actually an issue, and get the media to stop saying it’s a hoax on channels that 30% of the people watch, we’re gonna have to really do some changing” (Focus group 8).

She perceived that solutions would require people to lobby their politicians because government would be key to addressing the issue. Anthony, a 46 year old, Black man with a GED also noted that citizens much get involved and make sure policies are enacted and that politicians represent their issue of the topic. He noted “And my thought when we talk about the government, we got to remember, we are the government. We got to pay attention to them. We got to pay attention to people’s policies that we elect in the office to represent us” (Focus group 1). While respondents say it is important that individuals be engaged in actions such as recycling, they did not see the complex problem being solved by such small-scale actions.

There were also important divergences evident along racial lines. Black residents of the neighboring community often drew upon religion and faith to make sense of and to cope with what they saw as detrimental effects of climate change.

## 6 Conclusion

This study indicates that universities may engage in several climate-positive actions on their campuses that mitigate the effects of climate change, but there is much work that can be done off campus. The results have implications for CWRU, but also to urban universities more broadly, and reveal that Universities, in multiple capacities, have special responsibilities when it comes to creating cultural changes around climate change. Climate change literacy is a potential area where universities can play a role in engaging with community members. But universities may also call for policies and inform the public on advocacy efforts may be a role universities play.

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## Methodological Appendix

This paper presents preliminary results from the study "Culture Change for Climate Change: Community Attitudes and Perceptions of Climate Change", CWRU IRB study number STUDY20211054 (Brian Gran, PI).

The aim of this study is to conduct focus groups through which we can listen and learn from Glenville and East Cleveland residents, as well as members of the Case Western Reserve University campus, including students, administrators, staff members, and faculty members, about their experiences with and knowledge and perceptions of climate change as well as strategies they employ to improve quality of life for their communities and themselves. Two research questions drive this study: (1) How do residents perceive climate change and its impact on their communities and daily lives, if any? (2) What type of responses do Black residents think should be taken to reduce the impact of climate change and harmful environmental conditions (e.g., poor air quality)?

The study was designed in two phases. In Phase I, we conducted focus groups among residents of Cleveland and East Cleveland neighborhoods near to CWRU. Phase II extended the study to focus groups of CWRU students, faculty, staff, and administrators.

We sought to enroll 5 - 8 people per focus group (5 focus groups total) and to recruit a total of 25 to 40 participants study wide from areas around the CWRU campus. For the CWRU focus groups, we sought to enroll 5-8 people per focus group (5 focus groups total) and to recruit a total of 25-40 participants from the campus community. The present paper presents some early results from analysis of these focus groups.

It may be important to note that while the study was proposed prior to the advent of COVID pandemic shutdowns, it wasn't funded until the fall of 2020. This posed the challenge of how best to conduct focus groups at a time when it was not possible for participants to meet in person. This was particularly challenging in the context of participants from the neighborhoods near CWRU. Appropriate protocols for recruitment and focus groups were developed and approved by the CWRU IRB.



Phase I focus groups were conducted over zoom, with participants able to call in by telephone. Phase II focus groups were conducted in-person after Covid isolation requirements had lifted. In both cases, the focus groups were recorded, the recordings were transcribed, and participants were de-identified. The de-identified transcripts were then coded in the Dedoose qualitative data analysis software.

## Abbreviations

- **CEJST:** Climate and Economic Justice Screening Tool
- **CEQ:** Council on Environmental Quality
- **CWRU:** Case Western Reserve University.
- **CWRU CAN:** Case Western Reserve University Climate Action Network.
- **GED:** General Education Diploma
- **NOACA:** Northeast Ohio Areawide Coordinating Agency

## Biographical Note

Cassi Pittman Claytor is an associate professor in the Department of Sociology at CWRU. Using qualitative methods her work uncovers contemporary processes that perpetuate racial inequalities. In Pittman Claytor's book *Black Privilege: Modern Middle-Class Blacks with Credentials and Cash to Spend* (2020), she enriches our understanding of the Black middle class, examining their economic reality and experiences as consumers. She has investigated Blacks' experiences "Shopping while Black" in retail settings, as well as their experiences of discrimination in the mortgage market. Her expertise on retail racism resulted in a research venture with the beauty retailer Sephora, where she led a national study on racial bias and retail racism. Additionally, her work on retail racism has been frequently spotlighted in the media, and in 2020 Business Insider named her one of 100 People Transforming Business. Currently, she is undertaking several projects that aim to promote environmental justice. Her second monograph, tentatively titled *Being Black and Being Green*, examines Blacks' experiences navigating the green economy, both as producers and consumers. This line of research builds on her previous work, examining questions of race, class, and consumption, while advancing a new focus on middle-class Blacks' sustainability-driven consumption.

Brian Gran is a sociologist and lawyer on the faculty of the Sociology Department, Law School, and Mandel School of Applied of Social Sciences of CWRU. A Fulbright Scholar, his scholarship concentrates on human rights, including children's rights, law, and social policy. Gran has published journal articles,

opinion editorials, and the book, *The Sociology of Children's Rights* (Polity) and with Agnes Lux the edited book, *The Roles of Independent Children's Rights Institutions in Advancing Human Rights of Children* (Emerald). Awarded the Jefferson Science Fellowship, Gran consults the US Department of State. His scholarship seeks to advance dignity, equity, and inclusivity.

Dr. Ina Martin serves as the Director of Research Cores & Operations at CWRU in Cleveland, Ohio. An Adjunct Associate Professor in the Department of Materials Science & Engineering, her research explores the chemistry and physics of materials deposition, characterization, and degradation processes. Her work spans diverse materials applications - from efficient and durable photovoltaics to technical art history. Her passion for education and outreach focuses on advocacy fighting the climate crisis and promoting scientific literacy. Dr. Martin received her Ph.D. in analytical chemistry in 2005, from Colorado State University, researching low-temperature plasmas. Her keen interest in renewable energy led to postdoctoral work in applied physics. She researched thin-film photovoltaic devices, first with the Eindhoven University of Technology Plasma Materials and Processing Group, and then with the National Renewable Energy Laboratory Silicon Materials and Devices group. She joined the research community at CWRU in 2010. She is a founding member of the CWRU Climate Action Network. Dr. Martin's leadership efforts focus on initiating and supporting cross-disciplinary, cross-school collaborations, including the efforts presented at this conference.

Cyrus Taylor is the Albert A. Michelson Professor in Physics at CWRU. He served as Dean of College of Arts and Sciences at CWRU from 2006 through 2018. He is a Truman Scholar, a John Simon Guggenheim Fellow, and a Fellow of the American Physical Society. Taylor has worked in both theoretical and experimental high-energy physics, serving as co-spokesman of the MiniMax collaboration (FNAL T-864) at Fermilab and as co-spokesman of the FELIX collaboration at CERN. Taylor is currently a member of the TOTEM collaboration at the Large Hadron Collider (LHC). He has also carried out research on perceptions of inequity in faculty resource allocation, and on how male and female faculty members construct job satisfaction. On stepping down as Dean, Prof. Taylor returned to the faculty; he is redirecting his research from experimental particle physics to issues related to climate change.

## **Notes**

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## Student Citizens' Assemblies, Politics, Sustainability and Socio-ecological Practices

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**Abstract:** *More students now express eco-anxiety and frustration about outdated teachings and jobs supporting neoliberal practices contributing to overrunning planetary boundaries. Individual teachers and researchers have experimented and transposed climate citizens' assemblies into the classroom with the purpose of updating courses for the Anthropocene, making students reflect on the urgent need to transform and make campus compatible with the Paris agreements, the relevance of deliberative practices for democratic life and attempting to represent future generations. The student citizens' assembly (SCA) at Paris Est Créteil University (UPEC) is an experimental deliberative process that aims to involve students and give them a voice on the complex issue of transitioning to sustainability. This yearly transposition of the French Climate Citizens' Assembly in academic settings compels 450 students from different fields and levels to get multi-faceted training, deliberate and produce recommendations for living in a more ecological and inclusive society at the level of the university (42,000 students) and beyond. Students are participating up to 100 hours to reflect, problematize, raise awareness and act on our environmental impact through making concrete proposals for action but also through writing and playing forum theatre scenes during the process. Each year, the SCA delves on a specific topic. The variety of approached topics and the thematic overlaps that incessantly emerge help students become aware of the systemic dimension of the ecological crisis and the need for ecologically embedded (Whiteman and Cooper, 2000) political actions. This paper written by academics who have organized the SCA for three years investigates how the process intends to re-politicize climate change and sustainability through making visible and inclusive the decision-making process and empowering students to create, adopt and propagate socio-ecological practices.*

**Keywords:** *Sustainability, deliberation, empowerment, students*

Concern about the climate crisis is high – and growing – across the world (Pew Research Center, 2022). More students now express eco-anxiety and frustration about outdated teachings and jobs supporting neoliberal practices contributing to overrunning planetary boundaries. Individual teachers and

researchers have experimented and transposed climate citizens' assemblies into the classroom with the purpose of updating courses for the Anthropocene, making students reflect on the urgent need to transform and make campus compatible with the Paris agreements, the relevance of deliberative practices for democratic life and attempting to represent future generations.

The student citizens' assembly (SCA) at Paris Est Créteil University (UPEC) is an experimental deliberative process that aims to involve students and give them a voice on the complex issue of transitioning to sustainability. This yearly transposition of the French Climate Citizens' Assembly in academic settings compels 450 students from different fields and levels to get multi-faceted training, deliberate and produce recommendations for living in a more ecological and inclusive society at the level of the university (42,000 students) and beyond. Students are participating up to 100 hours to reflect, problematize, raise awareness and act on our environmental impact through making concrete proposals for action but also through writing and playing forum theatre scenes during the process. Each year, the SCA delves on a specific topic. The variety of approached topics and the thematic overlaps that incessantly emerge help students become aware of the systemic dimension of the ecological crisis and the need for ecologically embedded (Whiteman and Cooper, 2000) political actions.

This paper written by academics who have organized the SCA for three years investigates how the process intends to re-politicize climate change and sustainability through making visible and inclusive the decision-making process and empowering students to create, adopt and propagate socio-ecological practices.

## **1 Re-politicizing through climate assemblies**

The scientific case for swift action on climate change and biodiversity is compelling and is accepted by nearly all national governments (UN negotiations, Paris Climate Agreement). However, no major country has a national climate plan compatible with its Paris pledges. Current tracking of climate pledges suggests that the world is on course for 2–3 degrees of warming (Climate Action Tracker, 2024). This can be explained by the fact that the forces driving the global environment emergency are embedded in social structures and institutions (Haraway, 2019), cultural values and beliefs, and social practices (Kitcher and Keller, 2019). This can also be explained by strong resistance to change on the part of most of the industry, farmers, consumers, materialized in on-going practices and electoral backlashes.

The conducts and products of the technosphere, including new digital and information technologies but not only, are the source of very strong attachments on the part of their users. Indeed, there is a strong link between practices, produced objects and the users, a link which means that users are attached to the objects for all the services they provide, but at the same time, users are also attached to the objects on which they depend, at a time when digital services have become an absolute necessity for any interaction with public services, for example. These links require us to question the values with which we are equipped, and the conditions of existence to which we are attached (Bidet, Quéré, Truc 2011; Henion 2004, Bonnet, Landivar, Monnin 2021). Even if these productions are deleterious and lead us to disaster, we inherit them and they are essential to us. This double movement – inheritance and necessity – makes dis-attachment and the necessary re-attachment to objects and practices compatible with planetary limits not only difficult to achieve, but also reliant on a sophisticated process of political elaboration and deliberation, a process that the SCA can realize.

Since current democratic systems and practices are failing to respond adequately to the climate crisis, deliberative processes like climate citizens' assemblies, which are now taking place all over Europe at local and also national levels, when hard decisions need to be made, it seems all the more urgent to involve young generations in decision-making processes

We define deliberation as Landemore (2011) and Manin (2005) do: deliberation is a mental action that consists of weighing up arguments carefully with a view to make a decision. Collective deliberation is the process of confrontation and collective evaluation of the strength of arguments. During this process, the group generates ideas or arguments and evaluates options in order to make a choice or solve a problem. Deliberation has four chore pillars : inclusiveness, rationality (giving reasons that all can accept in pursuit of the common good); reciprocity (a commitment to listen to others, take their views into account and therefore respect them as moral equals in the decision-making process) and flexibility (citizens are open to the force of the better argument, and therefore to being shaped by the deliberative process itself (Hendriks, Dryzek, & Hunold, 2007)). Deliberation is a process that can occur in many different contexts and cover a wide range of subjects. It may include topics such as public policy, social, environmental, economic, technological, and ethical issues. The context of deliberation in which we find ourselves is a citizens' assembly. Citizens' assemblies are mini-publics gathering a randomly sorted group of citizens to deliberate on policy solutions to pressing public problems (Smith, 2009). In our case, the participants are students whose participation is made compulsory because the process takes place during class time. This allows us to avoid self-selection and the participation of "usual suspects" (the best informed, trained,

active and confident) while ensuring stable presence in a university where half of the students have a professional occupation. A well-known challenge with mini-public deliberation is how these micro-level processes can be scaled up, or integrated into wider systems of representative politics, and what the impacts are on the maxi-public – those outside of the assembly (Curato & Böker, 2016). In order to play a positive role in democratic polities, these deliberative processes need to gain resonance beyond the deliberative mini-public itself and inform public debate more widely (Setälä, 2017). In the case of the student citizens' assembly, the maxi-public mainly corresponds to the larger student body as well as the administrative and academic staff.

The student citizens' assembly (SCA) is a deliberative experiment that aims to involve students and give them a voice on the complex issue of transitioning to sustainability (Willis, Curato & Smith, 2021). The University of Paris-Est Créteil (UPEC) has organized a SCA delving into a different theme every year since 2021. The process transposing the French Climate citizens' assembly to the university was first co-designed with students. The aim of the mini-public (450 Bachelor and Master students in political science, IT, energy and environmental biology engineering as well as digital law, education science, economics divided into deliberative groups of 12 with one moderator) to reflect, problematize, raise awareness and act on our environmental impact through making concrete proposals for living in a more ecological and inclusive society at the level of the university (42,000 students) and beyond. The purpose is to decide what sustainability is, to grasp the nuts and bolts of its systemic dimension and how to become more sustainable in a democratic manner, through changing the decision-making process and questioning hierarchies existing in academia (between students and academics, between subjects, research and training, expertise and lay knowledge etc.). The first SCA focused on food, with a systemic approach integrating environmental, health, political, economic and social issues. Its mandate was to define a series of measures that would lead to the creation of an alternative food system on university campuses and in their surroundings (El Karmouni & Frenkiel 2023). By participating in this decision-making process, students were taking part in a process of horizontalization to resolve an imperfectly satisfied need. In the fall of 2022, the second SCA focused on the sustainability of our digital practices through proposals, measures and recommendations decided in a democratic and horizontal manner through four themes: inclusion, education, citizenship and health (Delorme & Frenkiel 2024; Frenkiel 2024). Two fundamental themes – the impact of digital practices on the environment, and on their impact on rights and fundamental freedoms. The last SCA focused on the future of the university with a particular focus on the commons.

The first phase, a three-day launching event, takes place in October. During

the alternating plenary and small group sessions, the participants receive training through conferences, roundtables and testimonies. They exchange, debate and formulate a first series of proposals (usually over 100) to respond to the challenges they have identified as preventing the university from being sustainable and inclusive. The second deliberation phase lasts two months. Students gather during a dozen of smaller events and share their work online on the open-source participatory platform Decidim. During this phase, participants not only discuss and amend the first proposals drawn up at the end of the first meeting, they also submit new proposals and write forum theatre plays. During this deliberation phase, numerous events are organized and various thematic meetings allow participants to continue the reflection initiated in the different working groups. These workshops take different forms, such as deliberations, conferences, forum theatre or hackathon. They are sometimes organized with partners and secondary schools in their premises, but also in various university campuses, and online. The third and final stage of the assembly is a two-day event in Créteil, which allows participants to complete and vote on a set of ambitions, proposals and measures.

Two specificities of the student citizens' assembly must be highlighted: the public is relatively homogeneous in terms of location, age and education. Besides, students are neither drawn by lot nor self-selected. Participation is compulsory for students because the citizens' assembly has been formally integrated in their curriculum. This means that the students who are participating are not environment activists or elected representatives and their involvement in the process through their studies is quite unexpected.

## 2 How empowering?

SCAs can be empowering as they place students on an equal footing with academics, university leadership, local government representatives and civil society in order to co-build actions. Students get the habit of being included in the making of decisions which affect them and therefore feel more legitimate to speak up. If their proposals for action are heard and transformed into implemented policy, their sense of political efficacy is consequently boosted. The process therefore not only helps them gain the confidence to listen to others, speak in public and engage in complex debates. It potentially activates their citizenship and makes them eager to take part in civic life, beyond the usual representative rituals (elections). We have indeed observed a transformation in participants, who have each year asked for more training, for more power – for instance to choose the yearly topic and themes, to design the process – and for stronger impact. They are wary of false promises and demand that their work led to concrete action.



The objective of the SCA is to get students to create, adopt and propagate socio-ecological practices. The process aims to make them aware of the systemic aspect of the environmental crisis, and to allow them to reconnect studies and outside concerns. Their participation to the SCA contributes to their awareness of the necessary embedding all their actions and the action of the university in natural and ecological processes, with the mandate not to transgress planetary boundaries.

The limitation of the empowerment engendered by SCAs is that decision-makers may support them as long as they contribute to reinforcing the socio-political and economic status quo. When students' proposals explicitly re-politicize the discussion on climate change, biodiversity and the environment, and therefore critically assess power relations and institutional processes that have led to the environment crisis, they are more likely to be discarded as unrealistic by existing institutions and representatives and decision-makers, which make their institutionalization and bindingness all the more necessary.

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## From eco-anxiety to eco-social action: exploring repertoires of eco-pedagogical praxis in francophone Belgium

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**Abstract:** *How can pedagogies of community-based environmental education convert emotions of eco-anxiety into empowering forms of solidaristic collective action geared toward combatting the global environmental crisis? Rooted in pedagogical and social constructionist strands of social movement theory, this paper considers how the repertoires of eco-pedagogical praxis mobilized by grassroots social movement actors in the context of francophone Belgium work to [i] generate empowering pathways of participation to the environmental movement and [ii] help to combat social experiences of eco-anxiety. Drawing on qualitative case study from an ongoing project, the discussion focuses on two similar but distinctive sets of social movement actors in Belgium working in the context of community-based environmental education. Key questions that guide the discussion include: What objectives and expectations are behind the mobilization of specific eco-pedagogical repertoires? Through what kinds of practice do grassroots actors mobilize repertoires of eco-pedagogical praxis? In what concrete ways do the localized repertoires of eco-pedagogical praxis contribute to the broader environmental and climate justice movement?*

**Keywords:** *Social movements, environmental education, eco-anxiety, Belgium*

### 1 Introduction

Emotions play a critical role in driving social movement activity. Negative sentiments of frustration and outrage as well as positive feelings of empathy and hope play a key role in triggering people's initial involvement in social movements, and they also keep people committed to social movement agendas over the longer term (Castells, 2011; Jasper, 1998). However, the presence of shared emotions alone cannot fully explain sustained participation in social movements. It is necessary to identify and understand the social mechanisms that help translate emotions into sustained forms of solidaristic action. In contemporary environmental movements, for example, eco-anxiety is a powerful emotion that stems from people's perceptions of the impacts

of global climate change and environmental degradation. In this paper, I explore how participation in community-based environmental education can transform sentiments of eco-anxiety into forms of collective action geared toward combating the global climate crisis. Drawing on exploratory case study data from research in francophone Belgium, I examine how the repertoires of pedagogical practice deployed from within several community-based environmental education organizations (CBEEOs) have the potential to transform sentiments of eco-anxiety into pathways of participation to environmental action. In particular, I stress two pathways: ecological literacy and ecological citizenship. Overall, the initial findings of my research suggest that creating robust systems of institutional support for CBEEOs can transform nihilistic or paralyzing forms of eco-anxiety into impactful forms of civic action geared toward tackling serious environmental problems, such as pollution and food insecurity.

## 2 Conceptual Framework

### 2.1 Eco-Anxiety

Eco-anxiety refers to the enduring emotional states of distress, fear, or worry experienced by individuals in response to perceived dangers of climate change and environmental degradation (Kurth and Pikhala, 2022; Pikhala, 2020). It is increasingly recognized as a legitimate public health concern that has detrimental impacts on people's mental health, especially among younger generations. From a sociological perspective, eco-anxiety is not merely a problem of individualized pathologies or disorder. Rather, it is a collective or 'structural' experience that centers on the social circulation of people's shared trepidations and uncertainties about the future due to looming environmental threats. Key issues of concern that trigger eco-anxiety in society include the loss of wilderness and biodiversity, extreme weather events, rising sea levels, food insecurity, increased toxicity of air/water and many other kinds of environmental threats to planetary life. Eco-anxiety circulates in society as a series of understandings and relations that center on the experience of ontological and existential insecurity. It typically arises through forms of social interaction and communication that center on people's shared insecurities and trepidations about the future. While the social genesis of eco-anxiety can be linked to highly localized environmental problems, such as the destruction of a forest or a polluted beach, eco-anxiety is often based on a heightened consciousness about the existence of a much larger and impending global environmental emergency. Indeed, it is precisely the colossal and seemingly uncontrollable nature of a massive environmental emergency that makes it feel so overwhelming and hopeless. Moreover, the complex entanglement

and interplay of environmental problems with other forms of societal crises, such as political crises of democratic representation and economic crises of capitalism, are especially influential in generating feelings of powerlessness and hopelessness that underlie and give shape to social experiences eco-anxiety.

Eco-anxiety has both negative and positive consequences for environmental social movements. On the one hand, it can have a paralytic impact on individuals by inhibiting their willingness to engage in environmental movements. On the other hand, however, it can serve as a catalyst for participation, inspiring people to engage in group-based actions geared toward combatting the environmental crisis. The goal of my research is to understand how community-based environmental education can help to convert paralyzing forms of eco-anxiety into its positive forms of eco-social action. By 'eco-social action', I refer to collective efforts aimed at addressing both environmental and social justice issues, which recognize the interconnectedness of ecological sustainability and human well-being. Eco-social action involves initiatives that strive for equitable and sustainable solutions to environmental challenges while advocating for fair distribution of resources and opportunities among all members of society.

## 2.2 Eco-Pedagogies

Educational practices are an essential feature of social movements. If knowledge is power, as the old adage states, then knowledge-seeking is empowerment. Following the work of scholars such as Choudry (2015) and Mayo (2020), the educational aspects of social movement activity can be understood as the forms of social interaction through which people work to engage in processes of collective inquiry, learning and knowledge-building. From a sociological perspective, the 'repertoires' of educational practices deployed in social movements can be seen as resting heavily upon discursive practices characterized by more or less structured processes of interpersonal communication and meaning-making. When coupled with movement-based emotions of anger and hope, educational practices become essential to the production of the agency-laden solidarities and empowering notions of togetherness that are inevitably needed to keep social movements going let alone growing over time. In times of crisis, when collective emotions are especially intense, it is through educational practices that groups of individuals can work collaboratively to make sense of macro-structural instabilities as well as to contemplate collective strategies of resistance and empowerment (Heidemann, 2018). Moreover, research on education and social movements has shown that a dedication to critical inquisitiveness and knowledge-building are integral to the formation of what Ganz (2004) has termed "strategic capacities". This refers to the ability of a given collectivity of actors to effectively undertake

tactical decision-making and mobilize material and symbolic resources in the pursuit of collective interests and objectives. Strategic capacities emerge from discursive processes of knowledge-building as grassroots activists work to evaluate and engage with a wide array of emergent situations and structural realities in the pursuit of long and short-term goals. Indeed, a purposeful dedication to educational practices is what helps activists to forge the kinds of strategic savviness and acumen that are needed to overcome obstacles and seize opportunities. Educational practices are also essential to a variety of social movement activities, which range from kicking off mobilization campaigns, generating media visibility and building inter-movement alliances to coping with political repression, combating counter-movements and transcending periods of demobilization.

Building on these insights, my Belgian case study explored how educational practices rooted within environmental movements can empower individuals and transform eco-anxiety into empowering emotions of hope and, in turn, stimulate the genesis of eco-social actions. I operationalize the concept of “repertoire of eco-pedagogical praxis” to refer to the particular set of pedagogical actions deployed by a given group of actors in their efforts to promote social movement agendas such as environmentalism and climate justice. Within this context, community-based environmental education organizations (CBEEOs) are defined as the sites where formal and non-formal educational practices are deployed to encourage civic engagement on issues of environmentalism and climate justice.

### 3 Case, Context and Method

My study was situated in the context of francophone Belgium, specifically the *Fédération Wallonie-Bruxelles*. This region has a long history of industrialization with a strong socialistic political culture and a powerful labor movement, all of which have contributed to the development of robust traditions of community-based adult education with sturdy links to social movement activities, such as environmentalism (see, Heidemann and Del Hierro, 2023). The French term typically used to refer to this type of adult education is *éducation permanente*. My study looked at two distinctive CBEEOs based in francophone Belgium, *Écofuture* and *Le Réseau d'Action Agricole (RAA)*.<sup>1</sup>

*Écofuture*, established in 1991, focuses on ecological citizenship and addresses issues of pollution and the destruction of green spaces in urban areas. They offer training sessions for educators and work closely with primary and secondary school students, particularly those from ethnic minority migrant backgrounds. *Écofuture* employs collaborative and experiential learning

methods and produces its own didactic resources. While they do not organize mobilization campaigns or protest events, they do help to promote such events and many members participate in social movement activities.

RAA, established in 2016, focuses on issues of food sovereignty and sustainable agriculture. They utilize principles of community education they work to build urban-rural alliances and social networks. RAA emphasizes encounters, mobilization campaigns, protest events, and other direct actions aimed at promoting alternatives to industrial-capitalist food production. They draw on existing academic and non-academic sources in their eco-pedagogical practices. RAA's activities and members are deeply embedded within existing networks of environmental movements.

In order to explore how the repertoires of eco-pedagogical praxis mobilized by the two aforementioned CBEEOs in francophone Belgium generated pathways of participation to environmental movements, I conducted a qualitative case study based on the "extended case study method" (Buroway, 1998). The extended case study method emphasizes understanding the specificities of a particular empirical case, or interlinked set of cases, as it exists within a broader social, cultural, political and/or economic context. It is very well-suited for understanding how a given set of actors and practices align with and feed into broader-level social movement activities and agendas. Drawing on this method, I collected two basic types of data linked to Écofuture and RAA. On the one hand, I conducted interview with key informants (n=7) from both CBEEOs. On the other hand, I collected and analyzed didactic resources (n=51) that were developed and utilized by both CBEEOs. This entailed a wide range of educational materials published in both print and digital formats. While some of these were largely informational in nature and geared toward creating awareness of environmental issues, others were in the form of more carefully crafted lesson plans and activities with a more sophisticated pedagogical framing tied to collaborative, participatory and experiential learning methods. Combined, these data provided important insight on the environmentalist visions and discourses emphasized by both sites as well as specific information on the types and frequency of specific activities that they organized. Cumulatively, this helped me to understand how eco-anxieties are converted into empowering pathways of collective action that feed into a broader environmental movement.

## 4 Findings

My preliminary analyses found that the eco-pedagogies mobilized by Écofuture and RAA show strong potential in combating paralyzing forms

eco-anxiety circulating in Belgian society. On the one hand, the repertoires of eco-pedagogical praxis deployed at the grassroots of civil society can help to provide individuals with empowering forms of awareness and knowledge that are needed better understand and cope with environmental problems and challenges. This can be labelled as fostering 'ecological literacy' or 'eco-literacy'. For example, Écofuture runs workshops and outreach programs that seek to help people understand the science behind environmental problems, including the causes, impacts, and potential solutions to problems of industrial pollution or extreme weather events. In 2022, Écofuture developed an educational tool-kit that was designed to introduce members of the public to different ways of engaging in ecological actions. The goal of the tool-kit was to address a recurring question that activists encountered from the public: "how do I support the ecological transition in a tangible and realistic manner". The tool-kits were developed through the research of educational practitioners at Écofuture and then deployed in a series of workshops, forums and encounters. One of the ways in which this tool-kit worked to convert negative sentiments of eco-anxiety into more hopeful and impactful forms of eco-social action was by "deconstructing the idealized image of the super-activist" and addressing the importance of building an environmental movement that is comprised of many different but yet inter-linked roles and forms of action. Such actions were intended to help people overcome the widespread feeling that the scale of the ecological crisis is simply too colossal to be effectively addressed.

In a similar vein, RAA works to promote ecological literacy by using many hands-on methods of participatory and experiential education that seek to familiarize participants with both the science and practice of sustainable agriculture. For RAA, developing "an increased awareness of alternative farming techniques" and "acquiring knowledge of scientific research on sustainable farming" are important goals because they help to provide people with a more clear and concrete understanding of the issues at hand, thus reducing fears and uncertainties. By showing people that another method of farming and food production is possible, RAA works to combat forms of eco-anxiety that dwell in sentiments of hopelessness and foster view of environmental action as a noble but ultimately lost cause. For example, RAA organizes a regular series of educational actions known as *chantiers*, which refers to place where something is built or constructed. These actions bring people from urban areas to rural farms in order to gain first-hand experience with practices of sustainable agriculture. During the *chantiers* people do not merely learn about farming, but they actively participate in processes of soil cultivation, planting and harvesting. In addition to allowing urbanites to gain direct knowledge of farming practices, the *chantiers* also work to foster interaction and build relationships between people from rural and urban areas of Belgium, thus bolstering the network power of the Belgian environmental movement.



In sum, my investigation of both Écofutur and RAA showed how CBEEOs can foster forms of eco-literacy, which enable individuals to make more informed decisions about issues related to sustainability, conservation, or environmental policy. Through understanding of scientific research and data, citizens can develop coping strategies that allow them to manage eco-anxiety more effectively, such as by supporting or actively engaging in practices of sustainable agriculture and urban greening projects.

On the other hand, my research also showed that the repertoires of eco-pedagogical praxis mobilized by both of the CBEEOs that I investigated in Belgium often seek to convert people's negative emotions of eco-anxiety into solidaristic forms of transformative collective action on environmental problems. This can entail the deployment of educational practices that actively encourage forms of civic engagement and participation in social movements in ways that are geared toward embodied processes of ecological activism, protest and mobilization. For example, during spring 2023 RAA worked with participants to organize a series of protest events to condemn several large-scale construction projects, which would result in the destruction of hundreds of hectares of arable and forested lands. The organization was also involved in recent protests by Belgian farmers to protest neoliberal free-trade policies promoted by the European Union. While Écofutur does not engage in the orchestration of such protest events, it does organize 'greening' initiatives whereby participants work collectively to increase the presence of vegetation and green spaces within urban environments. These initiatives are designed by Écofutur to improve environmental quality, enhance urban aesthetics, promote biodiversity, and provide numerous social, economic, and health benefits to residents. These actions are often paralleled by hands-on activities, such as urban gardening projects. RAA promotes these very same values, but emphasizes forms of experiential and participatory education by helping to orchestrate civic actions with social movement actors.

By deploying educational actions that generate various kinds of civic advocacy and collective action, CBEEOs can channel negative emotions of eco-anxiety into hopeful forms of collaborative eco-social action that contribute to the construction of 'eco-citizenship'. This involves individuals actively engaging in environmental advocacy, community organizing, and civic participation to address environmental challenges within their communities. As a form of political subjectivity, eco-citizenship emphasizes the role of citizens as agents of change who are capable of shaping environmental policies, fostering civic action on ecological problems, and advancing the common good for both present and future generations. In this regard, CBEEOs, such as Écofutur and RAA can be seen as generating social mechanisms that convert potentially paralyzing emotions of eco-anxiety into forms of eco-social action that contribute to the power and presence of environmental movements in society.

## 5 Conclusion

By deploying eco-pedagogical practices that promote ecological literacy and ecological citizenship, community-based environmental education organizations can serve as a powerful tool in transforming negative sentiments of eco-anxiety into environmental action. Firstly, CBEEOs can offer individuals opportunities to deepen their understanding of environmental issues by providing them with forms of critical literacy and knowledge that allow them to evaluate and engage with the climate crisis in collaboration with others. By working collaboratively to understand root causes and potential solutions to local-level environmental challenges, individuals can feel more capable of making a positive impact, thereby converting isolating feelings of helplessness and anxiety into solidaristic sentiments of hope and courage. Moreover, CBEEOs can often involve hands-on activities and projects, which not only enhance learning but also cultivate a sense of agency and efficacy. When people participate in activities like community clean-ups, tree planting initiatives, or sustainable agricultural projects, they experience firsthand the tangible effects of their actions, reinforcing a sense of purpose and control over their environment. These educational initiatives foster a sense of community and belonging, creating civic spaces where individuals can share concerns, ideas, and support. By building strong social connections and networks, people are better equipped to channel feelings of eco-anxiety toward group-based forms of ecological citizenship that center on deploying modes of collective action to combat large-scale ecological problems in local-level settings.

In conclusion, by providing strong levels of material support to community-based environmental education, policy-makers can build public support and political will for environmental initiatives. The current provisions for adult education in Francophone Belgium offer a nice example of how this might work. Governments that prioritize community-based environmental education are more likely to garner public support for their environmental agendas and sustain political momentum for transformative change.

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## Biographical Note

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## Notes

1. For ethical reasons of privacy and to protect the identity of research participants, pseudonyms have been utilized to refer to the two community-based environmental education organizations in my case study.



## Formación superior y empleo en el camino hacia la sostenibilidad: el caso de los programas de posgrado en España

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**Resumen:** *El cambio climático afecta e impacta sobre el empleo, tanto en cuanto a tipos y formas de empleo, condiciones laborales, como respecto a competencias y habilidades necesarias para su desempeño. Las universidades vienen proponiendo nuevas ofertas formativas relacionadas con la urgente transición ecológica, con el objetivo de formar profesionales con las competencias necesarias para afrontar los retos que plantea la emergencia climática. La pregunta que nos hacemos es cómo se están configurando los cambios en las tendencias formativas y laborales orientadas a la sostenibilidad y al cambio climático. Para ello, se analiza la relación entre las formaciones universitarias a nivel de posgrado, y la creación y demanda de puestos de trabajo específicos en este ámbito. Se ha realizado un mapeo a nivel nacional de estas formaciones en universidades públicas y privadas, y de ofertas de empleos verdes en distintos portales de búsqueda de empleo. Obtenemos así un panorama de las diferentes tipologías de formaciones y las diferentes características de los perfiles profesionales más demandados. Una de las contribuciones más significativas de este análisis, es que a pesar de que existe un amplio abanico de formaciones que buscan capacitar a los conocidos como trabajadores de cuello verde, su articulación con las demandas de las empresas no es tan clara. Asimismo, constatamos la necesidad de generar una reflexión que sitúe la creación de nuevos perfiles profesionales en una dinámica que no responda únicamente a un modelo productivo en el que prima el beneficio económico a corto plazo, sino en un escenario más amplio, en el que la sostenibilidad sea el camino esencial por el cual transitar y poder afrontar las complejas demandas de la emergencia climática.*

**Palabras Clave:** *Transición ecológica, empleo verde, sostenibilidad, nuevos perfiles profesionales, formación de posgrado*

## 1 Introducción

El cambio climático afecta e impacta sobre el empleo, tanto a nivel de las formas y las condiciones en las que trabajamos, como a nivel de las competencias y habilidades necesarias para su desempeño. Es por ello que la formación en temas de sostenibilidad y medioambiente se ha convertido en una demanda prioritaria que viene reclamándose desde distintos organismos nacionales e internacionales y que afecta a todos los ámbitos educativos, abarcando todos los niveles y tipos (escolar, universitaria, profesional, laboral, incluso, ciudadana). Por su parte, en el ámbito laboral apunta a que se mantendrá en el tiempo como un elemento clave de formación continua.

Prueba de la relevancia que tiene la formación en sostenibilidad son las iniciativas de la Organización de las Naciones Unidas (ONU) con la Agenda 2030 y los 17 Objetivos de Desarrollo Sostenible (ODS) y sobre todo, de su organismo especializado en Educación, la UNESCO, con un programa detallado sobre educación para el desarrollo sostenible (UNESCO, 2020).

De la misma manera, los acuerdos establecidos a nivel europeo incentivan este tipo de formación. Y es una de las acciones prioritarias, por ejemplo, en el Pacto Verde Europeo. A partir de este acuerdo, surge la necesidad de establecer un marco competencial para ayudar a instituciones y entidades a definir programas formativos que desarrollen competencias para la sostenibilidad, las conocidas como GreenComp. Este marco pretende contribuir a que las personas adquieran los conocimientos, destrezas y aptitudes necesarias para afrontar los retos relacionados con la crisis ambiental y el cambio climático en la esfera personal, social y laboral (CE, 2022).

Nos encontramos inmersos en una transición hacia economías que, pese a las dificultades, obstáculos y reticencias de ciertos grupos de presión están intentando ser más sostenibles. En esta transición, las transformaciones del empleo y del trabajo tienen un papel relevante, no únicamente porque habrá empleos que desaparecerán, por no ser sostenibles, sino también porque necesariamente se generarán nuevos empleos y perfiles profesionales que se concentrarán en el fomento de la descontaminación y en favor de la sostenibilidad (OIT, 2017; IMF, 2022) como por ejemplo las energías renovables o la economía circular.

Por su parte, la Organización Internacional del Trabajo (OIT) ha señalado en numerosos informes la constante necesidad de adaptación de los trabajadores y trabajadoras al cambio climático y también al cambio tecnológico, así como la necesaria adquisición de nuevas competencias y el aprendizaje permanente, impulsando la creación de negocios y de empleos verdes a partir de los cuales

potenciar también la justicia social (OIT, 2016, 2017). Según un informe de Forética, el ranking de sectores que lideran el empleo verde en España son los siguientes: 1. Energías renovables 2. Gestión y tratamiento de residuos 3. Tratamiento y depuración de aguas residuales 4. Agricultura y ganadería ecológicas 5. Gestión forestal sostenible 6. Actividades del sector público basadas en el seguimiento del cumplimiento de normativa y legislación o en iniciativas de educación ambiental. Las energías renovables y la gestión y tratamientos de residuos concentran el 47% de los empleos verdes hasta el momento (Forética, 2022, p. 12- 13).

Los cambios esperables en el empleo pueden enmarcarse en dos ejes. El primero de ellos se mueve entre dos extremos, la destrucción de empleos y la creación de nuevos puestos de trabajo, desconocidos hasta ahora. Por su parte el segundo eje se mueve entre los extremos de adaptación de puestos de trabajo y empleos, y la transformación de los mismos. Ante este panorama de cambio y de transición, nos preguntamos qué oferta de formación superior relativa a los nuevos perfiles profesionales orientados a la transición ecológica existe, concretamente cuales son las formaciones universitarias de posgrado que los capacitan.

La introducción de las competencias en sostenibilidad en la educación superior en España ha sido un proceso gradual y progresivo, que viene desde su proceso de adaptación al Espacio Europeo de Educación Superior (EEES). Aunque no existe una estrategia única a nivel nacional, son varias las iniciativas y políticas de organismos diversos que han contribuido a promover la integración de la sostenibilidad y el tratamiento de la emergencia climática en los planes de estudio.

De forma general, se puede destacar que, en la educación superior, las competencias para la sostenibilidad se introducen mediante la responsabilidad y principios éticos en las profesiones para que sean útiles en una visión global en torno a la sociedad y al planeta (Ramos Torres, 2020). Pero la integración en los planes de estudio de las universidades españolas aún enfrenta desafíos, como destacan algunos estudios, que señalan que, a pesar de los esfuerzos realizados hasta el momento, los avances han sido lentos e insuficientes (Valderrama-Hernández *et al.*, 2020).

## **2 Diagnóstico: resultados del mapeo de las formaciones de posgrado y de las ofertas de empleo en el ámbito de la sostenibilidad**

### **2.1 Mapa de las formaciones de posgrado**

Se contabilizaron un total de 371 titulaciones de máster relacionadas con la sostenibilidad y el abordaje de la crisis o emergencia climática en las universidades públicas y privadas a nivel nacional, bajo los criterios de búsqueda explicados en el apéndice metodológico. Teniendo en cuenta los últimos datos del Ministerio de Universidades (2023) sobre la oferta de títulos correspondientes al curso 2021-2022, en los que las titulaciones de máster suman un total de 3.735, el porcentaje de estudios de especialización en este ámbito dirigidos a la sostenibilidad representaría casi un 10% de la oferta total de másteres.

La oferta de másteres universitarios (270) es considerablemente superior respecto a la de másteres de formación permanente (83). Esto puede deberse a que las universidades tienden a ofertar titulaciones oficiales y en el caso de oferta propia se focalizan en titulaciones con menor número de créditos como los diplomas de especialización y los diplomas de experto universitario. También se localizaron 18 titulaciones Erasmus Mundus. Del total de titulaciones acotadas existen 32 que se imparten en una modalidad interuniversitaria, es decir, entre varias universidades nacionales. También se constata que en algunos títulos existe colaboración entre universidades, centros de investigación, centros tecnológicos y empresas.

Se observó que en general las universidades han introducido de manera transversal un gran volumen de titulaciones en Economía Circular y Objetivos de Desarrollo Sostenible, pero en la mayor parte de los casos éstas se ofrecen en formato de diplomas de experto y cursos cortos que no llegan a los 30 ECTS. Dentro de las universidades privadas y en concreto en las Escuelas de Negocios destacan las formaciones relacionadas con Responsabilidad Social Corporativa (RSC) y Environmental, Social and Governance (ESG).

Atendiendo a una clasificación por ramas de conocimiento entre estas titulaciones predominan las que se ubican dentro Ingeniería y Arquitectura (172), seguidas por Ciencias (93), Ciencias Sociales y Jurídicas (73) y en último lugar, Artes y Humanidades (4). Cabe destacar que la suma de las titulaciones ubicadas en Ingeniería y Arquitectura junto con las de Ciencias supone un 71,4% del total. Un pequeño porcentaje de titulaciones (7,8%) no tienen un encaje claro en ninguna de estas ramas, bien porque se trata de programas propios que no lo especifican o bien porque son programas interdisciplinares.

El reparto de titulaciones por ramas de conocimiento resulta muy significativo al compararlo con la totalidad de la oferta de másteres. Mientras que el número de másteres de ciencias sociales y jurídicas es el más voluminoso entre los másteres en general (42,2%), en los másteres centrados en la sostenibilidad los de las ramas de ingeniería y arquitectura (46%) son los que ostentan la mayoría. En la rama de ingeniería y arquitectura tienen especial peso aquellas titulaciones dedicadas a las energías renovables y a la transición energética, así como a materiales renovables y sostenibilidad medioambiental. En la rama de ciencias, encontramos titulaciones enfocadas en clima, biodiversidad y ecosistemas. En la rama de ciencias sociales y jurídicas, predominan las titulaciones de las disciplinas de economía y empresa, relacionadas con economía circular, responsabilidad social corporativa y con la gestión sostenible.

En cuanto a la distribución de la oferta formativa por espacios geográficos, encontramos que la mayor parte se concentra en Comunidad de Madrid (87), Comunidad Valenciana (84) y Andalucía (71), por ese orden, sumando el 65% de la oferta de titulaciones de máster enfocadas en la sostenibilidad a nivel nacional.

Situar los resultados de este mapeo de titulaciones en el ya mencionado eje adaptación-transformación puede ser significativo para entender el tipo de formación que se oferta desde las universidades. En el polo adaptación nos encontramos titulaciones que han incorporado a sus programas un enfoque más sostenible, renovable, o verde en el afrontamiento de los retos que plantea el cambio climático. Sin embargo, no hay un cambio de base en las respuestas que se ofrecen, que tienden a responder a la misma lógica que problematizan. Un ejemplo de ello podría ser el máster universitario en Minería Sostenible de la Universidad Politécnica de Madrid, ya que a pesar de resaltar lo sostenible desde la propia denominación del título del máster, la práctica de la minería está en controversia en cuanto a su compatibilidad como una actividad sostenible. En el polo de transformación encontramos titulaciones que, más allá de centrarse en la mitigación de los efectos del cambio climático, abogan por una transformación que permita recorrer otros caminos. Ejemplo de ello podría ser el máster en Humanidades ecológicas, sustentabilidad y transición ecosocial de la Universidad Autónoma de Madrid y la Universidad Politécnica de Valencia.

## 2.2 Mapa de las ofertas de empleo verde

En cuanto a la oferta de empleo se han encontrado un total de 89 resultados, bajo los criterios de búsqueda explicados en el apéndice metodológico. LinkedIn ha sido el portal que más resultados ha arrojado (48), seguido del SEPE (21) e Infojobs (20). Los perfiles más demandados son los de técnicos,



gestores y asesores especializados en la gestión de proyectos relacionados con la eficiencia energética o las energías renovables, generalmente con el requisito de estudios mínimos en Ingenierías Químicas, Ingenierías Industriales o Ciencias Ambientales.

Respecto a la distribución geográfica de la oferta de empleo, cabe destacar que no se encontraron ofertas en todas las comunidades autónomas, quedando fuera de este recuento las Islas Canarias, La Rioja y el Principado de Asturias. La comunidad autónoma que más empleo enfocado en la sostenibilidad concentra es la Comunidad de Madrid (37), seguida de lejos por Región de Murcia (16) y Cataluña (15), en ese orden. En las comunidades restantes se encontraron entre cero y cinco ofertas. Por otra parte, cabe destacar que la oferta de puestos en modalidad 100% teletrabajo es completamente minoritaria, no obstante, no se trata de una información disponible por igual en todos los portales de empleo, mostrando resultados con mayor detalle en LinkedIn, seguido por Infojobs y, por último, en el SEPE.

### 3 Conclusiones preliminares

El tema de la sostenibilidad está teniendo cada vez un peso mayor en las formaciones de posgrados de las universidades españolas. En el curso 2023-2024, más de cien titulaciones reflejan en la propia denominación del título los términos sostenible o sostenibilidad. Son titulaciones mayoritariamente de la rama de conocimiento de ingeniería y arquitectura y de la rama de ciencias. Están enfocadas a cuestiones que tienen que ver tanto con la gestión y el desarrollo sostenible de determinados bienes y servicios (agua, energía, empresas y organizaciones, etc.) hasta con sectores como el transporte, la movilidad, la construcción, la alimentación, el urbanismo, etc. También hay titulaciones enfocadas en aspectos más específicos, como el cine, el turismo o los derechos humanos.

No obstante, existen evidentes lagunas en las titulaciones de la rama de conocimiento de ciencias sociales y jurídicas y en la de artes y humanidades, lo que sugiere que el componente social de la sostenibilidad, tan necesario a tener en cuenta, tiene todavía poco peso en cuanto a las titulaciones de máster. Las formaciones de posgrado en temáticas específicas que apelan a la sostenibilidad desde lo social son más bien escasas, lo que nos indica que existen oportunidades formativas que requieren atención y acción en este campo.

Si atendemos al perfil profesional demandado en las ofertas de empleo seleccionadas la prevaleciente demanda de perfiles técnicos, gestores,

consultores e ingenieros se encuentra muy relacionada con el ámbito de la consultoría a nivel de empresa y con la gestión de proyectos de I+D+i. Las empresas con mayor oferta son consultoras (PwC), de gestión de residuos (PreZero) o corporaciones de ingenieros (COGITI).

En las ofertas en las que se especifican requisitos, las demandas se enfocan en un nivel formativo mayoritariamente en estudios de grado (52), siendo menos frecuente los que piden una formación de posgrado específica (15) o formación profesional (6). Dentro de los estudios de grado el más demandado es Ingeniería, seguido de cerca por Ciencias Ambientales. En cuanto a otros requisitos, casi la mitad de las ofertas de empleo acotadas (41) buscan un perfil de trabajador que tenga conocimientos de inglés. Otro requisito que se tiene en cuenta en casi la mitad de las ofertas seleccionadas (50) es la experiencia mínima previa. De entre las ofertas que especifican este requisito, la demanda se concentra en perfiles con trayectorias consolidadas, pidiendo desde 2 años de experiencia (10 ofertas), a 3 años (17 ofertas) o 5 años (10 ofertas). Se constata que la demanda de puestos se concentra en profesionales que han ido orientando y especializando su trayectoria hacia este campo, por tanto, responde a una posible movilidad de perfiles ya formados y empleados y no destinada a puestos de nueva creación que acojan a los recién graduados. Se hipotetiza por tanto que lo que correspondería a formación de posgrado más específica se pueda estar adquiriendo a nivel de formación interna en las empresas.

Otra cuestión de interés a explorar es la conexión entre el trabajo orientando hacia la sostenibilidad medioambiental y la sostenibilidad de la vida, desde perspectivas más ecofeministas. En esta línea de indagación se busca entender cómo se manifiesta el género en la práctica tanto en la elección de carreras de posgrado, como en las decisiones de contratación laboral. Es relevante destacar la brecha de género en las preferencias educativas, especialmente evidente en disciplinas técnicas como las STEM (Science, Technology, Engineering, and Mathematics) (Sáinz, 2017), lo cual se ve reflejada en una menor presencia de mujeres en profesiones de estos ámbitos, en los que actualmente existen más formaciones y ofertas de empleo relacionadas con la sostenibilidad.

Otra conclusión a extraer de este diagnóstico es la constatación de cierto desfase entre la oferta formativa y la demanda del mercado laboral. Se están implementando y ofertando formaciones de especialización que aparentemente no se traducen en una demanda específica de empleo. Queda planteada una línea de investigación por explorar en una segunda fase de trabajo de campo a través de entrevistas cualitativas para profundizar desde donde se plantean las nuevas titulaciones de especialización y como se reciben desde el ámbito empresarial, así donde tienen cabida estos nuevos perfiles profesionales.

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## Apéndice metodológico

Para el abordaje metodológico se definieron y acotaron cuáles serían las formaciones y las ofertas de empleo a analizar con la intención de realizar un primer mapeo en ambos ámbitos, de formaciones y ofertas de empleo, relacionadas con la sostenibilidad, ya que ambas pueden ser enmarcadas como prácticas socioecológicas.

En primer lugar, se tuvo en cuenta cuál era la oferta formativa que se estaba ofreciendo en el ámbito académico español para determinar, a partir de ahí, cuáles podrían resultar de mayor interés para enfocar la investigación de manera más específica.

En el ámbito de la formación profesional, la presencia de formación en temas de sostenibilidad también está presente, y entendemos que será cada vez más significativa, ya que en la nueva Ley que regula las enseñanzas de Formación Profesional en España incluye el módulo de sostenibilidad aplicada al sistema productivo en los grados medio y superior. Sin embargo, en esta primera aproximación a las formaciones nos decantamos por formaciones universitarias, al considerar prioritario focalizarnos en aquellas titulaciones que permitieran una especialización y actualización de perfiles profesionales, más que en formaciones de base. Por eso, los estudios de grado también se descartaron desde un primer momento, al tratarse de formaciones más estandarizadas, cuya evolución y transformaciones pasan por procesos más paulatinos.

El foco se situó por tanto en los estudios de posgrado. Como estudios de especialización, dentro de esta categoría se encuentran, por un lado, los másteres universitarios oficiales (entre 60 y 120 créditos ECTS) y por otro, los másteres de formación permanente (entre 60 y 120 ECTS)<sup>1</sup>. Las principales diferencias entre ellos, es que los másteres universitarios oficiales están acreditados por el Ministerio de Educación y Formación Profesional y homologados en todos los países del Espacio Europeo de Educación Superior (EEES), y a su vez se dividen en profesionalizadores y orientados a la investigación, dando, estos últimos, acceso al doctorado. Por su parte los másteres de formación permanente están diseñados por los centros educativos que los imparten. También encontramos entre los estudios de posgrado con un menor número de créditos, los diplomas de posgrado o especialización (entre 30 y 59 ECTS), los diplomas de experto universitario (de menos de 30 ECTS) y otros cursos propios.

De entre esta variedad de oferta formativa de posgrado se optó por focalizar la investigación en másteres, tanto universitarios como de formación permanente, por su capacidad de innovación y renovación frente a los estudios de grado y al mismo tiempo por ser formaciones dirigidas a la especialización, que cuentan con cierta consolidación que se refleja en su número de créditos (de 60 ECTS o más). También se incluyeron los másteres Erasmus Mundus, caracterizados por ser impartidos a nivel internacional por diversas instituciones de educación superior a nivel europeo, que finaliza con la concesión de un título conjunto.

Partiendo de esta acotación del ámbito formativo y de los datos mencionados acerca del panorama global, se hizo un primer mapeo de las titulaciones existentes en el curso académico 2023-2024 en el territorio nacional relacionadas con la sostenibilidad. Con el objetivo de conocer qué volumen suponen respecto al total de la oferta de posgrado acotada, en qué ramas de conocimiento se distribuyen y en qué espacios geográficos se localizan. Y sobre todo, pretendiendo conocer el tipo de formación de posgrado que se está ofertando desde las universidades españolas.

Según los datos más recientes del Ministerio de Universidades (2023), el Sistema Universitario Español (SUE) estuvo compuesto durante el curso 2021-2022 por 86 universidades, que se dividen en 50 públicas y 36 privadas. Las titulaciones de Máster en el curso 2021-2022 fueron un total de 3.735, impartándose el 74,5% en universidades públicas. Respecto al curso anterior el número de títulos de máster total se ha incrementado en un 3,4%. Al igual que en las titulaciones de Grado, predominan los másteres de la rama de conocimiento de Ciencias Sociales y Jurídicas (42,2%), que concentra 1.575 títulos de los 3.735 del total. La distribución de títulos en las demás ramas de conocimiento es la siguiente de mayor a menor: Ingeniería y Arquitectura (827); Ciencias de la Salud (549) y Artes y Humanidades (429). Más del 96% de los Másteres de Ciencias se imparten en universidades públicas.

En la búsqueda se usaron las siguientes palabras clave: agenda 2030, cambio climático, crisis climática, desarrollo sostenible, eco, ecológico, ecologización, emergencia climática, empleo verde, economía circular, economía verde, ecosocial, energías renovables, ODS, Objetivos de Desarrollo Sostenible, sostenibilidad, transición ecológica y transición energética. La mayoría de titulaciones incluyen algunos de estos términos en su denominación, pero también se seleccionaron titulaciones que responden a la demanda de abordar la crisis o la emergencia climática tanto en su enfoque, como en las competencias, en los resultados de aprendizaje y/o en las salidas profesionales. Se incluyeron universidades públicas y privadas de todo el territorio nacional para llevar a cabo una revisión extensiva de sus fichas técnicas y los objetivos a los que estaban orientados los títulos que ofrecían, sobre la base de las palabras claves mencionadas anteriormente. En la búsqueda se tuvieron en cuenta formaciones clásicas en las que se ha introducido o añadido un enfoque en la sostenibilidad, así como aquellas más innovadoras que han surgido específicamente como respuesta a las nuevas necesidades y retos medioambientales.

En cuanto al ámbito laboral, el objetivo principal ha sido conocer la demanda de puestos de trabajo en los que destacan aspectos relacionados con la sostenibilidad y el abordaje de la crisis climática. Se realizó una búsqueda de ofertas de empleo en tres importantes portales de empleo a nivel nacional: Infojobs, LinkedIn, y el Servicio de Empleo Público Estatal (SEPE). En este caso las palabras clave fueron: agenda 2030, abogado/a, abogado en energías renovables, ambiental, biodiversidad, derecho ambiental, economía circular, eficiencia Energética, energías renovables, ingeniero en energías renovables, ordenación territorial medioambiental, responsable en eficiencia energética, sostenibilidad. También se tuvo en cuenta todo el territorio nacional y se recogió qué perfil profesional se demandaba, para que tipo de cargo, qué funciones se esperaba que realizarse, cuáles eran los estudios mínimos requeridos para el mismo, y que otros requisitos se tenían en cuenta (como conocimientos, idiomas o experiencia mínima).

Esta primera fase de diagnóstico fue realizada durante el año 2023 (durante un período de 5 meses, desde mayo hasta septiembre) y pretende servir para orientar una selección posterior de titulaciones y de empresas para realizar un trabajo de campo cualitativo a través de entrevistas con informantes clave y focus group del ámbito académico y laboral.

## Fuentes de datos

- Ley Orgánica 3/2022, de 31 de marzo, de ordenación e integración de la Formación Profesional Pacto Verde Europeo

## Abreviaturas

- **CE:** Comisión Europea
- **COGITI:** Consejo General de Colegios Oficiales de Graduados e Ingenieros Técnicos Industriales de España
- **ECTS:** European Credit Transfer and Accumulation System
- **EEES:** Espacio Europeo de Educación Superior
- **ESG:** Environmental, Social and Governance
- **I+D+i:** Investigación, desarrollo e innovación
- **IMF:** International Monetary Fund
- **ODS:** Objetivos de Desarrollo Sostenible
- **OIT:** Organización Internacional del Trabajo
- **ONU:** Organización de las Naciones Unidas
- **PwC:** PricewaterhouseCoopers
- **RSC:** Responsabilidad Social Corporativa
- **SEPE:** Servicio Público de Empleo Estatal
- **STEM:** Science, Technology, Engineering and Mathematics
- **SUE:** Sistema Universitario Español
- **UNESCO:** United Nations Educational Scientific and Cultural Organization

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se sitúan en los campos de las transformaciones del trabajo, precariedad laboral, políticas de empleo, juventud, género, configuración de subjetividades y procesos de desigualdad.

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Grado en Sociología y Máster en Análisis Sociocultural del Conocimiento y la Comunicación por la Universidad Complutense de Madrid. Actualmente forma parte del programa de doctorado Modelos y Áreas de Investigación en Ciencias Sociales, en la UPV/EHU. Su trayectoria académica abarca líneas de investigación centradas en procesos interseccionales en torno al cambio social, los movimientos sociales y las identidades emergentes dentro de las diásporas contemporáneas. Concretamente abordó la influencia de las producciones culturales y artísticas, particularmente en el análisis del rap femenino en Latinoamérica como vehículo de cambio social, donde se despliegan cuestionamientos ecofeministas, anticoloniales y antirracistas, estrechamente vinculados con los movimientos sociales emergentes. Paralelamente, ha investigado la conformación de identidades migrantes en el contexto español, entendidas como expresiones colectivas e históricas, considerando diferentes elementos fronterizos como el cuerpo, el habla, la movilidad social, el género y la racialización. Actualmente está incorporando perspectivas socioecológicas en torno a los ejes de movilidad, sostenibilidad y trabajo.

## Notas

1. Anteriormente conocidos como Másteres oficiales y Másteres propios o Títulos propios.

Este estudio forma parte de la investigación Socioecos: Construyendo la sociedad sostenible. Movilización, participación y gestión de prácticas socio-ecológicas, financiada por el Ministerio de Ciencia, Innovación y Universidades, PID2021-126611NB-I00, para el periodo 2022 – 2025, cuyo Investigador Principal es Benjamín Tejerina.

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## The Role of Green Areas for the Well-being of University Community: Perceptions and Possibilities for a More Sustainable Campus

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**Abstract:** *Green spaces play an important role in protecting human health by providing multiple benefits for physical and mental well-being. They also contribute to climate change mitigation and biodiversity conservation. Green spaces are therefore relevant for urban contexts where the quality of life can be compromised by several pressures, such as climate change or social issues. Moreover, in educational settings green spaces can facilitate opportunities for stress reduction and socialization, thus increasing the well-being of the university community, while supporting actions that enhance biodiversity and contribute to the provision of essential ecosystem services.*

*In this regard, university campuses are ideal settings for interventions focused on green space studies and green design. They are very often integrated into the urban fabric, and they can provide multiple benefits, i.e. ecosystem services that are essential of our well-being, such as clean air, temperature control or teaching and learning opportunities. Understanding the advantages of including and ensuring equitable access to green spaces within university environments is crucial for informing design and planning efforts with a focus on sustainability. For this reason, this study was carried out at the University of the Basque Country (UPV/EHU) by means of an online anonymous survey released for all the university. The survey was divided in three parts and was released in Basque and Spanish: the first part related to respondent general information, the second part pertains to the green areas visited and the reasons behind these visits, and finally, the third part was designed to understand the perceived benefits that these green areas are thought to provide.*

*Up to now, 342 answers have been gathered. Most of the answers come from the campus of Bizkaia, (70%) followed by those from Gipuzkoa (21%) and finally from Araba (9%). More than 50% of the respondents go to green areas in the campus because they are close and allow them to relax*

*and unwind. Respondents usually spend around 15 minutes in the site. In general, more than 30% of the respondents gave the maximum value to most of the ecosystem services presented. The ecosystem services most recognized by the respondents are those related to regulation, such as habitat for biodiversity, temperature and flooding regulation. The least are those related to the benefits we can get in relation to education and knowledge.*

*In conclusion, the study shows that the university campus should have green areas that help mainly to relax, unwind and feel better, but they need to be close to the sites where people are working or studying. Moreover, the respondents are aware of the benefits they get from the green areas for their well-being even if the cultural services are less considered than the regulatory ones.*

**Keywords:** Ecosystem services, well-being, green spaces design, campus management, stress reduction

## 1 Introduction

The World Health Organization (WHO) defines health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO, 1948). The 2019 report of the European Environmental Agency "Healthy environment. Healthy lives: how the environment influences health and well-being in Europe" clearly states the importance of green areas for the population. However, the assessment based on 2012 data of Maes et al. (2019) suggests that less than half of Europe's urban population lives within 300m of a park, with large differences across Europe. Thus, in cities like Stockholm, more than 80% of the population has access to a public park within a short walk (300m), while in cities like Heraklion, in Greece; under 20% enjoys such access.

The presence, access, quality and distribution of green spaces are related to life expectancy, mortality, and morbidity, especially with regard to cardiovascular and respiratory diseases, diabetes and obesity (Lachowycz and Jones, 2011; Gascón et al., 2016; Rojas-Rueda et al., 2019). Green space are also related to mental health outcomes, for instance to conditons such as depression and stress, as providing psychological restoration and stress reduction (Kaplan, 1987; Ulrich et al., 1991; Dadvand et al., 2016; Menatti et al., 2019; Wen et al., 2019). In addition, the presence of green spaces in work and educational environments is related to improvements in learning and cognitive development (Korpela and Hartig, 1996; Hartig et al., 1997; Zijlema et al., 2017). Furthermore, there is a tendency to emphasize the role of green areas in fighting climate change

effects, given their active contribution to atmospheric carbon sequestration, air purification (Coutts and Hahn, 2015), the cushioning of high temperatures, as well as the attenuation of noise levels, all of which have an effect on people's health (WHO, 2017). Therefore, it is of particular importance to address the protective role of green areas for health and to integrate it in the planning and design of spaces to enhance the provision of such benefits, as well as to take measures to limit global environmental deterioration, restore biodiversity and ecosystem services to protect human health (Atwoli *et al.*, 2021). Ecosystem services are those benefits that ecosystems provide to human beings to enable them to fulfil themselves in all aspects. They are classified as provisioning (products obtained from ecosystems), regulating (benefits obtained from regulatory ecosystem processes), and cultural services (non-material benefits obtain from ecosystems).

University campuses are sites where students, academics and administrative personnel can go through high stress and anxiety periods, namely during exams or project writings periods, that demand a lot of attention. Green areas can help to release this stress and reduce the probability of having health problems (Bailey, 2017). Moreover, in educational settings green spaces can facilitate opportunities for socialization, increasing the well-being of the university community, while supporting multiple benefits such as habitat for biodiversity, clean air, noise reduction, temperature control or teaching and learning opportunities (Barton and Rogerson, 2017). Nevertheless, the university community usually is not involved or their needs are not usually addressed in the design of the campus. Involving local communities in the design and management of green spaces has been found to foster a sense of ownership and promote their use.

All of this is particularly relevant in the context of a global pandemic and the ongoing climate crisis. It also aligns with the move towards the One Health approach, where green areas play an essential role more than ever (Hipp *et al.*, 2016).

For all these reasons, we have designed a study aimed at understanding the relationship of the community of the University of the Basque Country (UPV/EHU) with the green areas of their campuses and their general preferences for green spaces in order to better design them. Moreover, the study enquires in relation to the perception that the university community has of the benefits that the green spaces provide in the current climate crisis.

## 2 Results

So far, 342 answers have been gathered, 111 in Basque and 231 in Spanish, most of them from the campus of Bizkaia (70%), which is the campus that has more green spaces than the others. Students were more than half of the respondents (51%) followed by academics (37%). In relation to the gender, 61% were answered by women, 35% by men, 2% by non-binary, and 2% by those not specifying the gender. The group of age better represented was that between 18-34 years old (53%), especially women (32%) (Table 1).

Table 1. Percentage Values of the Respondents by Gender and Age (%).

Gender	<18 years	18-34 years	35-54 years	55-64 years	> 64 years	Total
Women	3.22	31.58	16.67	9.06	0.88	61.40
Men	1.17	19.88	9.06	3.22	1.46	34.80
Non-binary	0.29	1.46	0.29	0.29	0.00	2.34
Don't say	0.29	0.29	0.29	0.58	0.00	1.46
<b>Total</b>	4.97	53.22	26.32	13.16	2.34	

The main reasons for the respondents to go to the green spaces were their proximity to their faculty (22%), and the capacity to make them calm down (16%) (Table 2), not being much difference among women and men. In general, respondents do not go to green spaces alone (46%), however, this option was 15% higher in the case of women. The time spent in the green spaces is between 15-30 minutes, even if women seem to be closer to 15 minutes and men closer to 30 minutes. When answering how they felt after being in the green areas of the campus, 41% felt better than before going, while 27% said they felt the same and 32% did not know what to answer. Natural areas were the main choice for leisure (78%), namely forest (25%), peri-urban parks (18%), beach (14%), walks close to the sea (12%), grasslands (6%) and rivers (3%), and the rest was for artificial areas, canteens, coffeehouses, or other.

Table 2. Percentage Value of the Respondents by Gender to the Reasons for Visiting the Green Spaces in their campus (%).

Gender	Beauty	Easy to go	Close by	Help to calm down	Recover attention	Reduce stress	Forget worries	Other motive	Not answer
Women	2.34	7.89	14.62	10.53	0.88	2.63	4.68	1.46	16.37
Men	2.34	2.05	8.48	7.31	0.58	0.88	1.75	0.58	10.82
Non-binary	0.29	0.00	0.88	0.58	0.00	0.00	0.29	0.29	0.00
Don't say	0.00	0.29	0.00	0.00	0.00	0.29	0.00	0.00	0.88
<b>Total</b>	4.39	10.23	22.22	16.37	1.46	2.92	6.73	1.46	34.21

The perception of the benefits that green spaces provide had the lowest value for the provisioning services (5.25), this value being higher for women than men (Table 3). The highest mean values were 8 out of 10, and they were mainly for benefits classified as regulating services, namely regulation of clean air, temperature regulation and climate regulation, and two related to their cultural value, namely recreation and aesthetic value. Habitat for biodiversity and pollination, which are relevant for the resilience of the biosphere, did not reach a mean value of 8. The cultural benefits such as knowledge providers or educational benefits had mean values lower than 7.5, the same as erosion control, water regulation or noise reduction. In all the benefits but noise reduction, recreational value and knowledge providers, the mean value of women was higher than that given by men, even if the difference was very small.

### 3 Discussion and conclusions

Our results show how the community of the university campuses uses the green spaces to feel better, even if the time they spend on them (15-30 minutes) is not very long. This could be either because they visit the green spaces during break times or because this period is enough for them to feel better. Nevertheless, the visits are mainly done in company, higher in the case of women than men. This result is in line with the well-known importance that socialization has on our well-being (Barton and Rogerson, 2017; Harris, 2022), yet the reason women tend to go in groups more often than men could be related to the feeling of security, a factor that has not been addressed and should be included in future considerations. Moreover, forests are the main natural areas used for leisure.

In general, the university community utilizes natural areas for their leisure time (Peña *et al.*, 2015), a trend that may have always been present, or may have increased following the Covid-19 pandemic. The benefits that the university community perceives about green spaces shows how the respondents value nature for positive health and well-being outcomes. Clean air, habitat for biodiversity and climate regulation are essential for sustaining life, but natural environments also provide us with space for recreation, relaxation and social interaction (EEA, 2019). The respondents of our study recognized most of these benefits as relevant. Finally, in order to increase the provision of the ecosystem services in the university campuses there is a need to improve the green spaces by increasing their sizes and planting more native trees in them, especially close to the faculty buildings.

Table 3. Mean Values Perceived by Respondents by Gender to the Different Benefits that the Green Spaces of the Campuses Provide.

Gender	Provision	Habitat for biodiversity	Climate regulation	Water filtering	Clean air	Water regulation	Noise reduction	
Women	5.25	8.08	8.28	7.76	8.45	7.50	7.50	
Men	4.77	7.94	7.95	7.29	8.20	7.39	7.72	
Non-binary	6.00	7.00	7.37	7.12	6.50	6.25	5.62	
Don't say	2.80	4.00	4.40	3.60	3.00	3.60	4.20	
<b>Total</b>	<b>5.06</b>	<b>7.95</b>	<b>8.09</b>	<b>7.52</b>	<b>8.24</b>	<b>7.39</b>	<b>7.39</b>	
Gender	Temperat. Reduction	Erosion control	Pollination	Aesthetic value	Soil fertility	Recreation	Education	Knowledge
Women	8.17	7.58	8.17	8.50	7.82	8.29	7.68	7.35
Men	8.05	7.37	7.82	8.34	7.57	8.34	7.38	7.42
Non-binary	6.50	5.80	6.87	7.00	6.25	6.75	6.25	6.63
Don't say	4.80	4.60	4.40	5.60	3.60	3.20	3.00	2.80
<b>Total</b>	<b>8.04</b>	<b>7.42</b>	<b>7.96</b>	<b>8.37</b>	<b>7.64</b>	<b>8.19</b>	<b>7.47</b>	<b>7.28</b>

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## Methodological appendix

Data collection was carried out by means of an online survey, an instrument that allowed us to, systematically and anonymously, measure opinions and evaluations and to generate information to underlying aspects of behaviour (López-Roldán and Fachelli, 2015). The questionnaire was developed using Google Forms and was structured around three axes (use, perception and proposals for an ideal campus), with 29 closed questions divided in three parts: personal data, questions related to the green areas, and finally questions related to the sustainability of the campus and how to improve it. Regarding the perception of benefits, respondents were asked to assign a score from 1 to 10, with 10 being the highest score due to the relative importance granted to each of the benefits proposed. The use of the term “benefits” in favour of the term “ecosystem services” was used in order to make the message more understandable and avoid potentially biasing responses in relation to the previous knowledge of the respondent (López-Roldán and Fachelli, 2015).

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**SOCIOECOS**

Climate Change, Sustainability  
and Socio-ecological Practices

## **TRACK 6**

### ***The human dimension of socio-ecological practices in the age of climate emergency: Awareness, consciousness, wellbeing and care***

*Awareness and sensitisation practices centred on the climate emergency; emotional and mental health effects of climate threats and ecological loss; tools and practices to deal with climate crisis worry, eco-anxiety, ecological grief, and environmental guilt; social practices of self and collective care; politics of life sustainability; climate crisis and ecological disaster-based displacement, climate refugees*



## Sostenibilidad *Inside Out*. La Emergencia del Movimiento de los Inner Development Goals (IDG) en el País Vasco, Navarra y Aragón

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**Resumen:** La presente comunicación tiene como objetivo analizar las dinámicas de implementación de prácticas socioecológicas que se enmarcan en el movimiento Inner Development Goals (IDG) en el norte del Estado español. Surgida en Estocolmo en 2020, la IDG se presenta como una iniciativa sin ánimo de lucro y de código abierto que “investiga, recopila y comunica habilidades basadas en la ciencia” para tender puentes entre el ‘desarrollo interior’ o ‘crecimiento personal’ y la transformación global, particularmente en las áreas ligadas a los Sustainable Development Goals (SDG) de la Agenda 2030. La Iniciativa IDG parte de un diagnóstico negativo sobre el cumplimiento de los SDG hasta la fecha, y de la sospecha de que este fracaso se debe, principalmente, al tratamiento de los mismos como problemas “meramente técnicos”, a resolver mediante instrumentos de política estructural u otros “métodos externos”. Ante esto, la Iniciativa propone abordar un “punto ciego”: la mentalidad (mindset), las limitaciones emocionales y cognitivas, y las barreras psicológicas que han causado estos problemas, y que actualmente nos llevan a la inacción ante los mismos. Con este objetivo, tras una amplia consulta a expertos internacionales, la Iniciativa ha creado una hoja de ruta, el IDG Framework (23 habilidades organizadas en cinco dimensiones), y está desarrollando el IDG Toolkit, una “caja de herramientas” que permita escalar la difusión y adquisición de dichas competencias, entendiéndolas como “aceleradores para alcanzar los SDGs”. Paralelamente, la Iniciativa ha tejido una red en constante expansión de científicos/as, profesionales del ‘adult development’, corporaciones y gobiernos concebidos como “change-makers”, es decir, líderes en puestos clave a través de quienes se busca promover la integración de los IDG en políticas, estrategias y operaciones del sector público y privado. A este desarrollo top-down, centralizado en Estocolmo, se ha sumado en los últimos tres años un movimiento bottom-up que ha cristalizado en la constitución de 450 Hubs IDG en 75 países, 17 de ellos en el Estado español, integrados por distintos profesionales.

*Nuestra comunicación propone un diálogo entre la literatura sociológica sobre la sostenibilidad, la conciencia climática, los cuidados, la teoría feminista y los movimientos sociales, y un estudio de caso del denominado Hub del Norte, que actualmente abarca las comunidades autónomas del País Vasco, Navarra y Aragón. Más específicamente, intentamos, primero, describir la genealogía y trayectoria de la Iniciativa; segundo, analizar el marco teórico sobre el cual se sustenta; y, por último, rastrear los procesos de institucionalización y desafíos generados para implementar estos IDG en el Hub del Norte y, a través de sus miembros, en otras organizaciones. Los datos cualitativos provienen de un trabajo de campo desarrollado durante el año 2023 que abarca: (1) seis entrevistas en profundidad con integrantes del Hub, responsables públicos y activistas; (2) observación participante y no participante en sus reuniones, seminarios, encuentros y canales de comunicación; (3) análisis de documentos oficiales del Hub y la Iniciativa en Estocolmo; y (4) el análisis netnográfico. Los datos recolectados a través de estas múltiples técnicas son analizados siguiendo los principios del análisis cualitativo de contenido.*

**Keywords:** *Inner Development Goals, Sustainable Development Goals, hub, sostenibilidad, teoría feminista*

## 1 Introducción

En 2015 la Organización de las Naciones Unidas (ONU) presentó 17 Sustainable Development Goals (SDG; en castellano Objetivos de Desarrollo Sostenible, ODS). Éstos tienen por objetivo generar un campo de pensamiento y acción, y proponer métodos para resolver los problemas globales. El objetivo final de los SDG, vinculados a la Agenda 2030, es construir un futuro más equitativo, próspero e igualitario. En este marco surge en 2021 la iniciativa Inner Development Goals (IDG; en castellano Objetivos de Desarrollo Interior, ODI), como consecuencia de la dificultad para aplicar los SDG (Sachs et al., 2023).

Esta iniciativa llega a la conclusión de que para articular sociedades más ecológicas y sostenibles es necesario producir "cambios internos" en cinco dimensiones, a saber, en las del "ser", "pensar", "relacionarse", "colaborar" y "actuar", desplegando 23 competencias prácticas en los niveles individual, organizacional y colectivo. En este sentido, los IDG son planteados como soluciones de "rango medio" mediante los que generar "liderazgos conscientes" y "territorios de sostenibilidad".

Nuestro trabajo realiza el primer análisis empírico de la implantación de la iniciativa IDG en España. Planteamos un marco teórico articulado en torno al concepto sociológico de “resonancia” (Rosa, 2019), haciendo confluír el pensamiento feminista (atendiendo sobre el sentido relacional del cuidado) con la sostenibilidad de la vida (Morton, 2021). Seguimos las dinámicas constitutivas y constituyentes del Hub del Norte (en adelante HdN), que reúne a personas y organizaciones con base en las comunidades de País Vasco, Navarra y Aragón.

## 2 Pregunta, metodología y trabajo de campo

Nos preguntamos por las habilidades que promueven los IDG y su potencial para generar concienciación en torno a los cuidados y la sostenibilidad de la vida. Entendiendo que “los sujetos y las conciencias<sup>1</sup> se desarrollan siempre ya dentro y a partir de relaciones de resonancia entre un centro de experiencia y un algo que sale al encuentro” (Rosa, 2019, p. 575).

Dada la falta de investigaciones sobre este movimiento incipiente, nos parece pertinente realizar una aproximación cualitativa multi-método basada en: 1) Observaciones: entre 2022-2024 participamos en la conformación de los espacios físicos y virtuales que surgen durante todo el proceso de creación e institucionalización del HdN; 2) Netnografía: a) webs vinculadas a los IDG, y canales de Instagram y Youtube; y, b) canales de comunicación oficiales tanto de la IDG como del HdN; y 3) Entrevistas: a activistas del HdN y personalidades de referencia del campo (ver Tabla 1 en el apéndice metodológico).

## 3 Genealogía y desarrollo de la Iniciativa IDG

El origen del IDG se produce en 2019 en torno a la Ekskåret Foundation. El manifiesto “Growth That Matters” es su primera publicación, y tiene por objetivo servir “como una llamada a la acción, destacando la necesidad apremiante de trabajar sistemáticamente con el crecimiento humano de los adultos para responder mejor a la complejidad acelerada de los retos de la sociedad” (Ankrah et al., 2023, p. 84). Poco después se suma The New Division, agencia que desarrolla el lenguaje visual para los SDG, y 29k, organización abocada a crear apps sobre salud mental.

De esta colaboración surge en 2020 la IDG con sede en Estocolmo. A estas primeras organizaciones pronto se les suman otras, que acabarían articulando un “ecosistema” más amplio en torno a los IDG, que a su vez se alinean con la Agenda 2030 (ver Imagen 1).



Imagen 1. Red de organizaciones que integran la Iniciativa IDG  
Fuente: Iniciativa IDG<sup>2</sup>



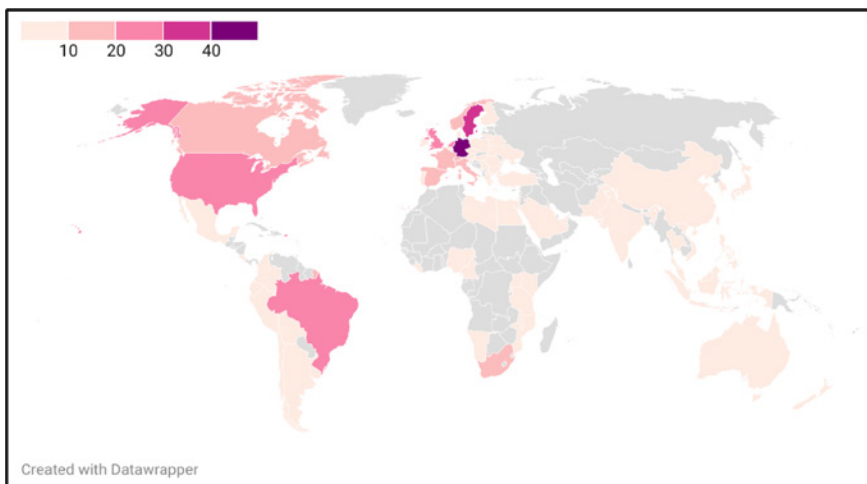
Estas organizaciones se proponen desarrollar las habilidades “interiores” que ayudarán a lograr los SDG. El objetivo es que éstas sean incorporadas en la vida personal de los miembros del movimiento, creando espacios para cultivar las relaciones personales, pero que también se expandan hacia diferentes instituciones públicas y privadas. Para ello, la iniciativa desarrolla el IDG Framework y el IDG Toolkit, estructurados en torno a las 5 dimensiones y las 23 capacidades mencionadas (ver Imagen 2).

Imagen 2. Las 23 habilidades organizadas según las dimensiones  
Fuente: Iniciativa IDG<sup>3</sup>



Este marco y herramientas son diseminados de manera *top-down* por la Iniciativa, que busca promover la integración de los IDG en políticas públicas y corporaciones, “marketineándolos” como “aceleradores para alcanzar los SDG”. Por otro lado, en los últimos tres años ha surgido de manera *bottom-up* un rizoma de hubs alineados con los IDG en todo el mundo (ver Imagen 3). Estos hubs buscan también modos de co-crear y compartir vínculos entre los participantes.

Imagen 3. Frecuencia de Hubs IDG por país, 2023  
Fuente: elaboración propia a partir del trabajo netnográfico



La imagen 3 muestra la extensa red de hubs integrados en la red IDG. Estos se abocan a crear eventos locales, días de acción y programas, y establecen alianzas con organizaciones públicas y privadas. En la actualidad existe una comunidad de más de 500 hubs distribuidos en 80 países (con unos 35.000 miembros), 17 de ellos en España. Como hemos mencionado, estos operan de manera autónoma, basándose en los principios de co-creación y autogobierno.

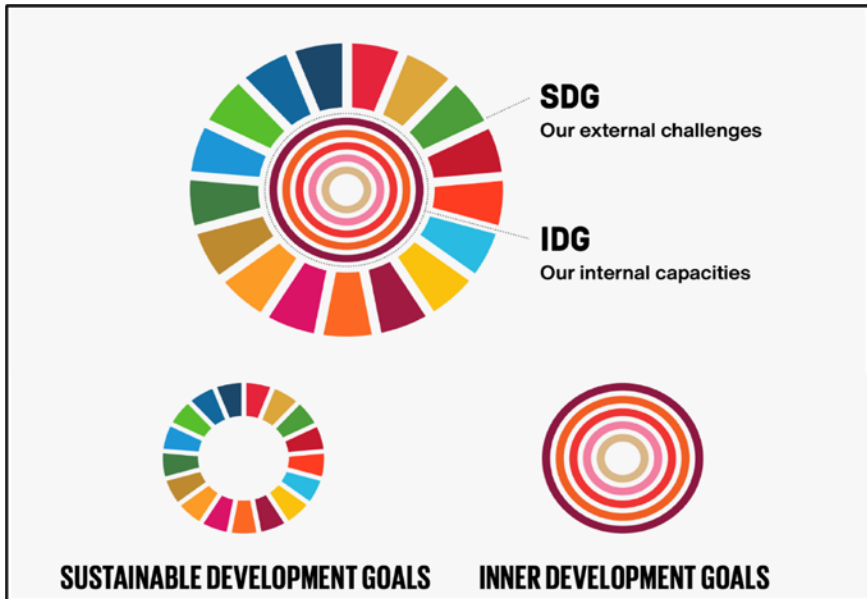
#### 4 Aproximación sociológica a los SDG/IDG: sostenibilidad y resonancia

La sociología aporta cuestiones ventajosas para abordar los retos del actual régimen climático (Latour, 2017), localizando en estructuras, instituciones y prácticas sus causas, consecuencias y soluciones (Haraway, 2021). Académicos, investigadores y profesionales han identificado la “desconexión” entre los individuos, y de éstos con el mundo como la base de la “crisis ecológica” (Rosa, 2019). Los IDG intentan combatir esta desconexión desde lo que denominan

“mentalidades subyacentes” (Sachs et al., 2023, p. 82). Para ello, generan una simbología y una marca fácilmente identificables basada en imágenes, formas y colores, que se acopla estéticamente con la iniciativa de la ONU.

Los IDG centran su atención en transformar estas mentalidades y, en última instancia, también el comportamiento humano, a la luz de investigaciones que apoyan la idea de que el ser humano puede desarrollar “habilidades y competencias internas” desde las que contestar retos complejos (ver Imágenes 2 y 4). Esta postura es apoyada por el último informe del Panel Intergubernamental sobre Cambio Climático (PICC).

Imagen 4. Relación entre IDG y SDG, según The New Division  
Fuente: Iniciativa IDG<sup>4</sup>



## 5 Procesos de institucionalización y desafíos del Hub del Norte

En nuestra investigación las personas entrevistadas, de acuerdo a su grado de implicación personal y/o profesional en los procesos de institucionalización globales y/o locales del movimiento, invitan a explorar caminos de resonancia en los tres tipos apuntados por Rosa (2019, pp. 105-109), a saber, la horizontal, la vertical y la diagonal. La primera, “supone el encuentro con la alteridad. Escuchas una voz diferente a la tuya (...) y nos promete a cada uno de nosotros que se oirá nuestra voz (...) es una promesa de la democracia”. La resonancia

vertical, por otro lado, es “la necesidad de resonar como algo anterior a la fe y a la religión, es su origen”. El tercer tipo, la resonancia diagonal, supone la presencia de una materia sobre la que podamos obrar, y acciones que nos “ofrecen esa sensación de dar forma al mundo y, a la vez, de ser moldeados por él”. La resonancia así entendida se expresa sin mandatos, articulando respuestas que aportan novedad y que, por tanto, no son planificables (Rosa, 2023).

La primera reunión del HdN se celebra en Pamplona (2022) en formato online/presencial. Participan personas y organizaciones vinculadas a movimientos sociales, al ámbito educativo, empresarial, y al desarrollo personal. Para avanzar en la definición de los objetivos y gobernanza del HdN se acuerda realizar reuniones mensuales en las que participan unas 30 personas, de las cuales siete conforman el denominado “Grupo Motor”. Algunas de ellas están vinculadas a la IDG, participando en las cumbres y encuentros formativos.

Además, tras una serie de presentaciones de los IDG y del HdN ante universidades, administraciones públicas, empresas y particulares, se inician encuentros semanales entre los miembros del hub para profundizar sobre las dimensiones de los IDG. En este proceso co-creativo se generan visiones diferentes sobre la misión del HdN, los modelos de liderazgo y su implementación en los territorios.

El tema del liderazgo es un punto relevante dentro del HdN que surge sistemáticamente en las entrevistas y las observaciones. Los participantes hablan de versiones “femeninas” o “masculinas”, y de diferentes tipos (“transformacional” o “consciente”) de liderazgos. En el liderazgo descansa gran parte de los argumentos que permiten vincular los SDG con los IDGs y su capacidad para el cambio social:

“Nosotros apostamos por un modelo de liderazgo que llamamos transformacional porque primero [trabaja] lo que es interior de la persona” (E07).

“A ver, yo enseñé la teoría U y el liderazgo consciente como base para decisiones en pro de la sostenibilidad. (...). [Y] las cinco dimensiones [de los IDG] se sitúan perfectamente en los cinco movimientos básicos de un proceso U” (E05).

Asimismo, se habla de “disputas” por el liderazgo entre la Iniciativa y los hubs, y también dentro de los propios hubs. Así, las cuestiones de liderazgo circulan desde lo local a lo global y viceversa, cuestionando los centros de poder y en clave de género:

“La cúpula es muy masculina, pero toda la comunidad en torno a los hubs es súper femenina, y la diversidad es muy fértil (...). [Sin embargo] ¿cómo puedes imponer una estrategia de arriba a abajo que implica un centro en cada país para centralizar no sé qué cosas? ¿Y qué pasa con los hubs que hemos estado trabajando todo este tiempo? En estos momentos está ese tira y afloja... (E05).

En el HdN emergen diferentes liderazgos y visiones sobre el territorio, los vínculos y la construcción comunitaria que van dando lugar a tensiones dentro de los procesos de institucionalización del hub. Esto dificulta generar un pensamiento ecológico consciente de los retos del cambio climático:

“Ha sido un problema el cómo se ha entendido el liderazgo (...). El liderazgo requiere inspirar y que otras personas te sigan, y el motivo por el que te siguen es porque hay una coherencia entre tu forma de sentir, de pensar, enraizada en tus valores profundos, y de actuar” (E05).

“Llevo muchos años con el tema territorial y nadie se da cuenta que el territorio es un bien que es finito (...). Con lo cual, la sostenibilidad del territorio es la principal sostenibilidad de todas, y sin embargo no es lo que más se entiende” (E01).

“Había criterios (...) de cómo se iban a implementar las cosas, que si la territorialidad por aquí, la territorialidad por allá... Yo me sentía excluida... Yo cuando hablaban ciertas personas y ponían en su boca la territorialidad, mi pecho se contraía y me sentía excluida. Y otras personas que hablaban de comunidad, mi pecho se expandía y me sentía abrazada” (E05).

## 6 Conclusiones

El surgimiento de los IDG se comprende desde la necesidad dar respuesta a la “policrisis” ambiental, social y económica. Los IDG ponen el foco sobre la interrelación entre mentalidad y valores individuales y la acción colectiva. Analizar esta iniciativa desde una perspectiva sociológica implica plantearnos si la ‘crisis ecológica’, entendida como “desconexión” o trastorno en la relación del ser humano con el “medio ambiente” no humano o la naturaleza, encuentra en los espacios de los hub el carácter transformador necesario para que surjan nuevos modos de resonancia, de habitar el mundo, de potencial para generar concienciación en torno a los cuidados y la sostenibilidad de la vida.

En la actualidad, las iniciativas de los distintos hubs se mueven en modo de resonancia en el que las personas implicadas se sienten afectadas por distintas situaciones, inquietudes e intereses y desde concepciones de territorio y comunidad diferentes. La tensión entre el principio de co-creación, que no responde a encargos, ni a planes predefinidos, basado en la creatividad, horizontalidad, los cuidados y la necesidad de garantizar la sostenibilidad de los hubs plantea desafíos para el movimiento y a la vez lo nutre.

También lo hace el ímpetu centralizador e “institucionalizador” de la Iniciativa central. En este contexto, las disputas en torno a la cuestión del liderazgo parecen reflejar, en este momento, un “techo de cristal” que se interpone entre la promesa transformadora de los IDG y su propósito: reconectar a los individuos consigo mismos, con los otros, y con la naturaleza, y de esa manera alcanzar los objetivos de desarrollo sostenible. De ahí la relevancia de su exploración desde una mirada sociológica, alejada de tradiciones individualistas, pegada a un suelo, mundo, empaquetando los vínculos que forman lo colectivo, que lo sostienen, los liderazgos compartidos que permiten sondear los caminos para la transformación social (Rosa, 2019, p. 457).

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## Apéndice metodológico

Tabla 1. Listado de personas entrevistadas  
Fuente: elaboración propia

#	Hub en el que participa	Org. a la que pertenece	Cargo	Ocupación	Edad	Género	Fecha de la entrevista
E1	Barcelona	SeaCircular	Fundadora	Coach	40+	F	11/10/2023
E2	del Norte	Nasuvinsa	Directora general de Innovación	Directora de Proyectos	50+	F	31/10/2023
E3	del Norte	UN Etxea	Expresidente	Psicólogo y director de colegio; jubilado	67+	M	28/11/2023
E4	del Norte	El Buen Vivir	Fundadora	Asesora	35+	F	07/12/2023
E5	del Norte/ Liderazgo Consciente	Universidad de Zaragoza	Profesora universitaria	Economista	53	F	12/12/2023
E6	del Norte	UN Etxea	Responsable de Education for Sustainable Development (ESD); Buscador de recursos	Business Administration	45+	M	22/12/2023
E7	del Norte/ Liderazgo Consciente	Universidad Politécnica de Madrid	Profesora Universitaria	Economista	53	F	18/01/2024

Fuente: elaboración propia

## Notas biográficas

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## Notas

1. El tema de la concienciación climática posee una enorme literatura internacional, con denominaciones muy variadas, como destacan Ramos y Callejo (2023) o Stevenson y Dryzek (2014).
2. Disponible en: <https://www.innerdevelopmentgoals.org/>. Consultado el 14/12/2023.
3. Disponible en: <https://ap6r.short.gy/cDj6KS>. Consultado el 04/03/2024.
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## Climate-displaced people arriving in Spain

Justo Corti Varela and Carmen Lozano-Cabedo

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**Abstract:** *Climate change negative effects, especially in places with ecological or institutional fragility, may impact on people's way of life in such manner to force them to move elsewhere. In such cases relocation would be an adaptation measure in itself (Kronlid 2014, Corti and Jarillo 2022). When these forced displacements include border crossing, involved people may suffer lack of protection if they are not offered an adequate framework at their destination, either through the law on foreigners or through International Refugee Law and/or subsidiary protection.*

*Since there is not a specific recognition of a "climate displaced person" in such legal framework, it is necessary to develop new interpretations of current regulations to face the new circumstances. In this sense, if we can provide climate displaced people adequate protection with the current legal framework, this intellectual work itself could be considered a (derivative) adaptation to climate change and, therefore, an ecological transition measure (Borràs and Villavicencio, 2021). One of the main shortcomings of the state of the art, and an essential precondition for developing the legal re-interpretation process, is the lack of conceptual clarity of the profile of these climate displaced people, what are their necessities and vulnerabilities.*

*This communication is part of the project ADAPtation and climate displacements: Actions for their protection (ADAPTAR) (TED2021-130570B-I00). This paper aims to explore the concept of climate displacement through the (self-)perception of migrants who can be considered as such, as well as members of associations/NGOs for the protection of migrants, and staff of the asylum and refugee office who process applications for protection. We will also analyze the profile of climate displaced people arriving in Spain who could be potential applicants for asylum, subsidiary protection and temporary residence for climatic reasons. The project is based on a qualitative methodology through 15 semi-structured in-depth interviews with the different actors mentioned above.*

**Keywords:** *Climate migrations, climate change, asylum applications, Spain*

## 1 Introduction

Adverse effects of climate change may alter people's livelihoods enough to force them to move, especially in places with ecological fragility or a lack of institutional capacity to mitigate its effects. In such cases, displacement would be an adaptation measure (Kronlid and Grandin, 2014; Corti and Jarillo, 2022). When these displacements are international, people may suffer a lack of protection if they are not offered an adequate framework at their destination, either through the law on foreigners or through the international regulation of asylum and subsidiary protection. The necessary adaptations, including new interpretations of current regulations, to provide them with a legal framework that offers them adequate protection is also a (derivative) adaptation to climate change and, therefore, an ecological transition measure (Borràs and Villavicencio, 2021).

When the origin of the displacement was an adverse event derived from climate change, we would not be dealing with a general case of economic migration but a specific one. However, no specific regime exists for climate-displaced persons (Corti, 2023). Two solutions have been proposed by the literature (Felipe 2019): the creation of a new specific regime for this climate migrants; or the interpretation of the current framework in order to provide them a sufficient protection. The both cases, the principle of common but differentiated responsibilities could modulate the level of protection to climate migrants (Borràs and Villavicencio, 2021).

One of the main shortcomings of the state of the art for moving forward any of these two solutions is the lack of conceptual clarity on these movements of people. The literature uses broad concepts such as climate migrants or the more restricted concept of climate refugees (for many, inadequate due to the lack of real persecution). The content is also undefined, including, depending on the source, internal, international, temporary, permanent, cyclical, circular, exclusively climate-driven or multi-causal movements, and even possible cases of statelessness, as in some Pacific islands at risk of disappearing due to rising sea levels. Other authors prefer to lump them under displacement due to natural disasters and/or environmental causes. Even recognising that climate change exacerbates the adverse effects of all movements of people, including refugees *strictu sensu*. Conceptual weaknesses prevent adequate quantification of climate migration, which international agencies (IOM, IPCC, UNHCR) have recognised as increasing, and which the World Bank has put at 216 million by 2050 and the IPCC at 250 million by the same date (Rigaud et al., 2018). This report points out that Spain's southern border (including the Canary Islands), given the ecological and institutional fragility of the Sahara and the Sahel, is particularly sensitive to these flows. It also points to Latin America as

a region that is a source of climate migrants. The phenomenon could impact Spain despite its geographical remoteness because it is the leading destination for Latin American emigration to Europe.

This communication is part of the project ADaptation and Climate Displaced People: Actions for Their Protection (ADAPTAR) (TED2021-130570B-I00). This paper aims to explore the concept of climate displacement through the (self-) perception of migrants who can be considered as such, as well as members of associations/NGOs for the protection of migrants and staff of the asylum and refugee office who process applications for protection. We will also analyze the profile of migrants arriving in Spain who could be potential applicants for asylum, subsidiary protection, and temporary residence for climatic reasons.

## 2 Theoretical and methodological approach

The project used qualitative methodology and is based on semi-structured in-depth interviews. In this paper, we present the results of 15 interviews conducted with staff working in different positions (legal advice, territorial coordination, etc.). On the one hand, technicians of 4 NGOs and 2 international organisations working with migrants. On the other, officers who process applications for protection. The fieldwork is taking place between February and June 2024 in different areas of Spain (Madrid, Andalusia and the Canary Islands).

## 3 Results

The results show that the conceptual debate is reproduced among interviewees. Many focused exclusively on the concept of refugee, which meant that they did not enter into a detailed discussion of the climate dimension, pointing out that this is not one of the assumptions on which asylum and refuge can be requested. Furthermore, they left out the concept of migrant, as it is associated with economic motivation. However, some interviewees recognised that it is difficult to distinguish between the two concepts clearly. They stressed that the motivations for displacement are multiple and mutable. So, the climatic dimension may have been at the origin of the displacement, and these people may have subsequently suffered violence or persecution.

In relation to migrants' knowledge of climate change, the technicians agree that these people do not know what climate change is, nor are they aware of how it is affecting their lives and that it is one of the reasons why they have lost crops, suffered famine and have had to move from their territories of origin. Even less are they aware that anthropogenic factors (and the differential responsibility of countries) are at the root of the phenomenon.

When asked whether this issue comes up in interviews during the processing of asylum and refugee applications, they remarked that it is not an issue that is specifically asked about. Even if the applicant raises it incidentally, it is not usually taken up as it is not a dimension that directly affects the processing of the application. Further, they point out that, even if it is recorded, access to proceedings files is very restricted. Therefore, there are still significant problems in understanding the magnitude of the phenomenon, given the lack of available data. However, some of the people interviewed consider that the climate dimension is an issue that could be relevant to knowing the context of that person. One official said that, according to his memories, there was a strong increase of arrivals of migrants from Morocco during a strong drought. Moreover, associations and NGOs working on these issues are beginning to consider it in light of the (unproven) perception that climate change could be behind the increase in displacement.

Regarding the profile of people arriving in Spain who could be considered climate-displaced, they point out that special attention should be paid to people coming from Latin America for different reasons. Although the news and reports, such as the World Bank's Groundswell report (2018-2021), point towards the Sahel and the Canary Islands route, most asylum and refugee applications in Spain come from people from Latin America, who arrive by plane. Whereas migrants using the Canary Islands route do not mention climate issues, among the latter there is a greater awareness of the impact of extreme weather events on their initial displacement (hurricanes, floods, etc.), which also emerges in their discourse. In addition, there is a refugee profile, which includes those persecuted for their defense of the environment, which would certainly fit the 1951 Geneva Convention refugee concept.

"We see three cases where the causality is not climate change, but climate change could have caused persecution... These three cases are, I think, the most obvious for everyone, and it is what we were saying at the beginning, um... the scarcity of resources, for example, how a drought can create, generate a conflict, and that conflict generates persecution that allows you to request international protection through the Convention. Or it could be that you are, I don't know, you belong to a certain collective, that causality of belonging to a certain social group, which is harmed and persecuted by, uh... an authority or by another group in a situation where climate change or an environmental disaster has had consequences. For example, well, I don't know..., there's a flood, you've had to move, you have to be given food, but you, because you belong to this indigenous tribe or because you're a member of this tribe, or because you've been displaced, you have to be given food So we would have that causality of persecution, that causality. And the third,

well, uh... we normally talk about environmental defenders, especially in Latin America, North and Central America, but also in Colombia, where they are killed for trying to defend their lands or to defend, let's say, an order... that is affected by, whether it is drug trafficking or not, or even governmental pressure groups." (Interview no. 2).

## 4 Conclusions

The data collected so far show that there is a lack of data collection, a lack of access to available information and, probably, an underestimation of the phenomenon due to a lack of knowledge on the part of the displaced themselves, which is more pronounced in the sub-Saharan profile than in the Latin American profile. Underestimation and lack of legal protection strategy are, probable, phenomena that feed on each other.

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## Biographical Note

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Carmen Lozano Cabedo is Associate Professor of Sociology at Universidad Nacional de Educación a Distancia (UNED) in Spain. Her research focuses on sustainable food systems, food citizenship and social food movements, climate migrations, territorial governance, rural development, organic agriculture and food quality certifications. She has recently published in journals as: *Food, Culture & Society* (2023), *Trends in Food Science & Technology* (2020), *Sustainability* (2019), *British Food Journal* (2019), *Journal of Agricultural and Environmental Ethics* (2017). Visiting researcher in the Autonomous University of the State of Mexico (México), in the University of Pelotas (Brazil) and in CIRAD (France). President of the Sociology of Food Research Committee of the Spanish Federation of Sociology (FES). III Award "UNED-Sustainable Development Goals" (2021); XXII Research Award "Memorial Blas Infante" (2010); VII Research Award in organic agriculture "Andrés Núñez de Prado" (2005).

## Notes

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## Risks and Benefits of Technological Applications in Times of Climate Emergency. Citizens' Social Perception, Science Enthusiasts, and Civic Engagement.

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**Abstract:** *In this research note, we explore citizens' perceptions of climate change and the risks and benefits associated with various technologies, attending to citizens' interest in science and technology and their civic-ecological engagement. We focus on technologies such as energy generation, medical experimentation and genetic modification, artificial intelligence, and work robotization, emphasizing the complexity of the socio-ecological dimension of contemporary society. Using data from the Science and Technology Perception Survey (EPSCT) 2022, we analyse the association between civic engagement activities, interest in science and technology, climate consciousness, and these technologies. Our findings indicate that citizens' perceptions of technology risks and benefits are associated with civic involvement and interest in science and technology. Active participation in public debates, NGO activities, or expressive civic actions tends to be associated with more positive perceptions of technology benefits, independently of the higher risk generally associated with some of them, for example, nuclear energy. However, significative differences emerge when considering climate consciousness and the perception of technologies as risks, with science and technology enthusiasts and engaged citizens potentially shaping public perceptions differently. Activating socio-ecological civic engagement and cultivating scientific culture can play a role in persuading public opinion on the perceptions of technology risks and benefits, highlighting the need for inclusive and informed decision-making processes in addressing contemporary socio-technological and socio-ecological challenges, such as climate change.*

**Keywords:** *Climate change, civic engagement, risk, technology, science enthusiasts*

## 1 Introduction

Social scientists converge on the complex interaction between modernity, unintended consequences of social action, and the risks of technological development in contemporary societies (Giddens, 1991; Beck, 1992; Beck, Giddens and Lash, 1994; Ewald, 1996) as well as classics, such as Max Weber and Robert K Merton, did calling our attention to these issues in the past. It is well known that from Beck's perspective, the modernization process has generated a series of global risks due to the axial role played by scientific and technological progress in social organization, something that Daniel Bell (1976) somewhat advanced in the coming of postindustrial societies. These risks challenge traditional notions of security and control, showing the complexity of our societies, and that modernization does not eliminate uncertainty, turning them into reflexive societies.

Additionally, we must be attentive to the socio-natural roots of the risks we face nowadays. For example, the original source of both the COVID-19 pandemic and climate change are purely biological, and regardless of whether their causes are of a zoonotic or human (anthropocentric) nature (Arias-Maldonado, 2022), both inform the socially constructed definition and political implications of the risks we deal with (Díez García and Sribman, 2024). Public debates around COVID-19 pandemic management were a clear example of the collective definitions we face in our global society regarding scientific (epidemiological) controversies, political and national security measures, public health strategies, or collective behavioural patterns by citizens. These collective definitions and how we act based on them have a direct effect on biological reality itself, in its indissoluble interdependence with social reality, i.e., the number of infected and deceased by the outbreak.

Although there is no optimal and completely adequate theoretical perspective on risk to face a socio-natural global threat of both premodern and modern nature, such as the pandemic (Arias-Maldonado, 2020), social risks are, following Beck (1992), a consequence of the very process of modernization that seeks to control them. In complex societies, risks are not easily assessable or controllable through the scientific-technical logic that generates or fuels them, in their interrelationship with the economic and political institutions of the globalized world. Political institutions are unable to respond, leading to increased distrust towards institutional (or formal) politics, and new conflicts arise.

The perception of risks does not depend on how the physical world is or on individuals' cognitive systems but on the sociocultural factors linked to social structures (Douglas and Wildavsky, 1982; Dake, 1992; Slovic, 1999). Social



context significantly influences risk assessment and risk-taking behaviours, in connection to cognitive and emotional individual processes (Lyng, 2008; Diez García, Belli and Márquez, 2020). This makes climate change (or climate risk) a moral and political issue (McCright and Dunlap, 2011; McCright, Dunlap, and Marquart-Pyatt, 2016), as certain factors, such as ideology, but also income, age, habitat, or sex–, can shape the interpretation of risks and make the differences among certain social groups (Weber, 2016). Therefore, multiple cultural and subjective perspectives can determine levels of morality and social justice (Morito, 2010; Gardiner, 2011) in this regard. All this highlights the suitability of the sociological approach in political risk management.

## 2 Aims and Research Questions

Climate change, as understood by some social and environmental movements, tends to simplify, and mask in their discourse and political action a socio-ecological complexity that involves intertwined dynamics and dimensions, underestimating potential unintended consequences of action driven by urgency and alarmism. One of these dimensions is the pros and cons of the implementation and application of technologies in building sustainable societies. Only a more composed perspective on climate risk, distant from alarmism and passionate warnings about ecological collapse (Santiago, 2023), seems useful in facing a challenge of this magnitude.

A suitable way to approach this challenge from the realm of social persuasion activities leading to collective definitions of environmental issues to influence public opinion (Laraña, 2001; Wynne, 2004) is to study how citizens perceive complex technologies, considering the relationship between the perception of risks and the benefits they entail. Confronting the fight against climate change should not be understood as a zero-sum game but approached through a lens that, from a substantive socio-ecological perspective, is also capable of rationalizing political action, public policies, and applying technologies in instrumental terms. This involves considering a means-end approach focused on the relation between the cost (risks) and substantive benefits of the actions to be implemented, including their perception by citizens.

In this research note, we approach what happens when we focus on technologies that can affect both the environment and the social organization of our societies, in contrast to the perception of climate change (or climate risk) viewed as a monolithic concern that citizens must either fully endorse or not, –that is, a thing about citizens have to be, yes or not, or to a greater or lesser extent, concerned about as a whole (climate consciousness).

The aim is to explore how citizens' perceptions of the risks and benefits associated with various technologies, in contrast to this climate consciousness operationalization, may vary depending on their interest in science and technology and degree of socio-ecological participation. Specifically, attending meetings or public debates on science and tech, joining activities of a non-governmental organization dealing with scientific and tech issues, and signing petitions or participating in related issues demonstrations, e.g., nuclear energy, biotechnology, the environment, or climate change.

We focus on technologies applied in the field of energy generation (wind<sup>1</sup>, nuclear, or fracking), animal experimentation for medical purposes, or genetic modification of plants (GM plants) and flu vaccine. But also we address other key technologies shaping our societies, such as artificial intelligence (AI) or work robotization<sup>2</sup>, highlighting the complexity of the socio-ecological dimension of contemporary society.

From the database of the Science and Technology Perception Survey (EPSCT), 2022, promoted by the Spanish Foundation for Science and Technology (FECYT), we report on the relationship between perceived risks and benefits of technological applications, and the relationship between civic engagement activities and the perception on i) climate change, first, and ii) the risks and benefits of these technologies, secondly<sup>3</sup>.

The **research questions** guiding our analysis are:

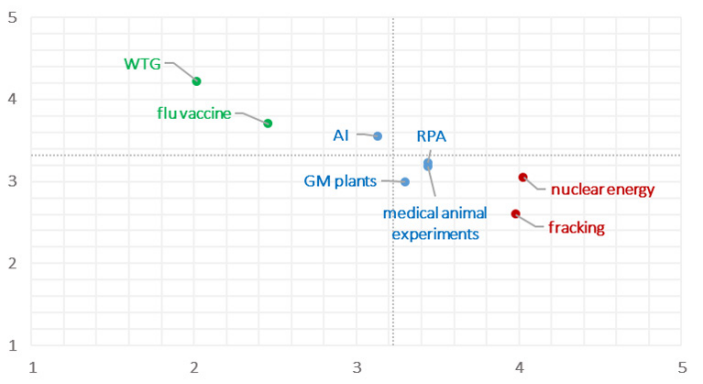
1. What is the relationship between the perceived risks and benefits of technology?
2. What relationship exists between different types of civic engagement, the interest in science and technology, and climate consciousness?
3. What happens in the case of technology?
  - 3.1. Which technologies, and the citizens' perception regarding the risks their application poses, are most influenced by interest in science and tech and different civic activities?
  - 3.2. Is there a similar relationship between citizen participation concerning the perception of risks as there is concerning the benefits?
4. An additional question, which we do not explicitly explore in this research note, is: What other issues may be associated with unequal perceptions of climate change and the risks and benefits of these technologies, considering the interconnection between civic engagement and ideological, socio-demographic, and socioeconomic factors? <sup>4</sup>.

### 3 Results

#### 3.1 What Is the Relationship Between the Perceived Risks and Benefits of Technologies?

Figure 1 reflects citizens' perceptions of the risks and benefits associated with various technologies, where the horizontal axis represents the risks perception and the vertical one the benefits. Observations based on these scores indicate varying attitudes towards different technologies, with three main typologies: i) technologies perceived as beneficial (WTG) or effective (flu vaccine) and involving low risks; ii) conversely, technologies perceived as less beneficial and involving higher risks (nuclear energy and fracking); and iii) those with a more balanced risk-benefit relationship, (AI, medical animal experimentation, GM plants, and RPA), falling in between the two extremes.

Figure 1. Perceived Risks and Benefits of Technological Applications<sup>5</sup>



Note: Own elaboration from EPSCT, 2022.

#### 3.2 What Relationship Exists Between Different Types of Civic Engagement, the Interest in Science and Technology, and the Perception of Climate Consciousness?

In the case of climate change, as one might expect, concern is much higher among those who are more participative and have a greater degree of socio-ecological engagement, as suggested by the data in Table 1. Individuals perceive the seriousness of climate change, varying in their involvement in environmental actions, regardless of the expressive or online and offline character of the activities. Those who actively engage in demonstrations, boycott products for ethical-environmental reasons, or post on digital social media and sign online manifestos related to the environment tend to view climate change as a more pressing issue.

Table 1. To What Extent Do You Believe Climate Change Is a Serious Problem? <sup>6</sup>

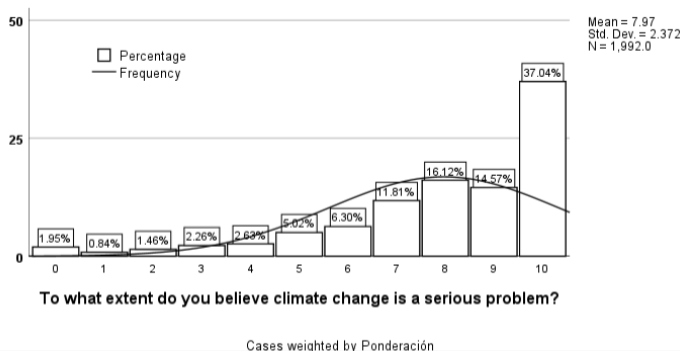
		<b>T-Student</b>	<b>Mean</b>	Std. Deviation	N
Participate in a demonstration or protest against climate change	Yes	3.865***	<b>8.61</b>	2.206	190
	No		<b>7.92</b>	2.353	1778
Buy or refrain from buying products due to ethical concerns or to support the environment	Yes	15.335***	<b>8.82</b>	1.820	893
	No		<b>7.28</b>	2.502	1060
Sign manifestos related to environmental or climate issues online	Yes	10.783***	<b>8.88</b>	1.800	551
	No		<b>7.66</b>	2.420	1411
Posting images or videos related to environmental themes on social media	Yes	6.134***	<b>8.57</b>	2.183	455
	No		<b>7.81</b>	2.376	1502
Science and technology as the main issue, first theme, of interest	Yes	n.s.	<b>8.12</b>	2.374	92
	No		<b>7.96</b>	2.372	1900

\*p ≤ 0.1, \*\*p ≤ 0.05, \*\*\*p ≤ 0.01. n.s. = not significant

Note: Own elaboration from EPSCT, 2022.

However, science and tech enthusiasts<sup>7</sup> do not display significant differences compared to non-enthusiasts-related issues evaluating climate change as an important problem. A problem that in general terms is perceived as very serious by a majority of the population, with more than two-thirds scoring equal to or greater than 8 (Figure 2).

Figure 2. Histogram of Climate Change as a Serious Problem



Note: Own elaboration in SPSS from EPSCT, 2022.

### 3.3 What Happens in the Case of Technology?

In particular, the question is whether certain technologies and the citizens' perception regarding the risks their application poses are linked to these same citizenry's actions and genuine interest in science. Table 2 presents data on perceived risk differences among science and tech enthusiasts, and those who

attend meetings, public debates, and NGO activities. Sciences enthusiasts or attendees of civic activities and tech events tend to perceive slightly higher risks associated with WTG, but not with animal experimentation since joining or not such activities does not make a difference. Conversely, non-enthusiasts or those not attending such events perceive higher risks associated with nuclear energy, fracking, GM plants, AI, and RPA.

Table 2. To What Extent Do You Consider the Following Technologies to Be Risky? <sup>8</sup>

		<b>Nuclear</b>	<b>Fracking</b>	<b>WTG</b>	<b>GM plants</b>	<b>Animal exp.</b>	<b>AI</b>	<b>RPA</b>
Science and technology as the main issue, first theme, of interest	Yes	3.55	n.s.	n.s.	2.85	n.s.	2.75	3.06
	No	4.05	n.s.	n.s.	3.32	n.s.	3.15	3.46
Attend meetings or public debates on science and technology	Yes	n.s.	3.77	2.20	n.s.	n.s.	n.s.	3.24
	No	n.s.	4.00	1.99	n.s.	n.s.	n.s.	3.46
Join NGO's activities on science and technology	Yes	n.s.	n.s.	2.25	n.s.	n.s.	n.s.	n.s.
	No	n.s.	n.s.	2.00	n.s.	n.s.	n.s.	n.s.
Sign petitions or attend demonstrations on these topics <sup>9</sup>	Yes	n.s.	4.06	n.s.	n.s.	3.60	n.s.	n.s.
	No	n.s.	3.93	n.s.	n.s.	3.37	n.s.	n.s.

n.s. = not significant

Note: Own elaboration from EPSTC, 2022.

Citizens who follow science and tech public debates tend to emphasize the less positive aspects of technologies that generally present a lower risk in general terms (such as WTG). In contrast, the most enthusiastic perceive more, or potentially, controversial technologies as less risky (e.g., nuclear energy, fracking, GM plants, AI, or RPA). On the other hand, individuals participating in expressive actions, such as signing petitions or attending demonstrations, tend to highlight the risks of controversial technologies, such as fracking and animal experimentation.

Meanwhile, Table 3 illustrates the perceived benefits of these technologies. Interestingly, individuals who prioritize science and technology as their foremost area of interest or join events on such topics tend to rate all the technologies significantly higher in terms of perceived benefits compared to non-enthusiasts. Similarly, those engaging in more expressive forms of participation, such as signing petitions or attending demonstrations regarding these topics, also tend to perceive technologies more favourably in terms of their benefits.

Table 3. To What Extent Do You Consider Following Technologies to Be Beneficial? <sup>10</sup>

		<b>Nuclear</b>	<b>Fracking</b>	<b>WTG</b>	<b>GM plants</b>	<b>Animal exp.</b>	<b>AI</b>	<b>RPA</b>
Science and technology as the main issue, first theme, of interest	Yes	3.50	3.44	3.53	n.s.	n.s.	3.83	3.58
	No	2.98	3.03	3.18	n.s.	n.s.	3.54	3.21
Attend meetings or public debates on science and technology	Yes	3.30	3.25	2.76	n.s.	3.46	3.87	3.48
	No	2.97	3.02	2.56	n.s.	3.16	3.52	3.20
Join NGO's activities on science and technology	Yes	3.17	n.s.	n.s.	n.s.	n.s.	3.75	3.52
	No	2.99	n.s.	n.s.	n.s.	n.s.	3.54	3.21
Sign petitions or attend demonstrations on these topics	Yes	3.12	n.s.	n.s.	4.33	n.s.	3.75	3.42
	No	2.95	n.s.	n.s.	4.19	n.s.	3.48	3.16

n.s. = not significant

Note: Own elaboration from EPSCT, 2022.

## 4 Conclusions

Addressing climate change requires a nicety understanding of the benefits and risks associated with implementing technologies for building sustainable societies. This perspective advocates for an approach that rationalizes political action and public policies through a means-end analysis, considering both the substantive benefits and the perceived risks by citizens. The conclusions drawn from our analyses shed some light on the intricate relationship between public perceptions, civic engagement, and attitudes toward science and technology. The data reveals varying attitudes towards different technologies, with some perceived as beneficial and involving low risks, while others are seen as less beneficial with higher risks.

This nuanced understanding draws attention to the multifaceted nature of public perceptions, associated with factors such as knowledge levels, interest in science and technology, and socio-ecological civic engagement. It highlights the importance of considering both the perceived benefits and risks associated with technologies in addressing socio-ecological challenges like climate change. Active participation in public debates, NGO activities on science and tech, or just a genuine interest in these fields, as well as civic engagement through signing petitions and attending demonstrations, are associated with perceiving technologies as intrinsically beneficial (including more controversial ones, such as nuclear energy and fracking given the risks associated to them), compared to non-civic concerned citizens.

This general trend changes when referring to risks of technologies, highlighting the different association between expressive and non-expressive civic involvement and public perceptions depending on the technology, tending to value more in detail risks, as observed with WTC in the case of non-expressive activities, but tending to value more the risk of fracking and animal experimentation in the case of more expressive activities. Whereas genuine interest in science and tech does not make a difference in climate consciousness, those more engaged tend to perceive a climatic serious problem.

While scientific evidence and consensus on climate change continue to grow and its perception as a serious problem seems to resonate with a significant portion of the citizens, the ways citizens face it are widely heterogeneous (Orriols and Galindo, 2022; Ramos and Callejo, 2022). Our findings suggest that there exists a constructive and practical-rational relationship between socio-ecological civic engagement leaning toward science and technology-related issues and the risk-benefit perception of some controversial technologies studied in this note. Would it be possible to tip the balance so that cultivating a genuine interest in science and tech makes a difference in framing necessary socio-ecological challenges as beneficial socio-technological shifts, and reasonably also considering a means-end approach regarding climate change, from a practical standpoint?

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## Methodological Appendix

The statistical analyses included in this research note are based on a study consisting of a survey of 6,054 participants aimed at the general population residing in Spain aged 15 or older. Analyses on SPSS using climate change as the dependent variable come from a subsample of 2,018 participants, while those carried out on the risks and benefits of technologies as dependent variables derive from a subsample of 2,040 participants. Fieldwork was carried out between October 3<sup>rd</sup> and November 11<sup>th</sup>, 2022.

## Data Source

The study is the “Social Perception Survey of Science and Technology in Spain (EPSCT), Spanish Foundation for Science and Technology. Microdata 2022 - edition 1.0.: [doi.org/10.58121/msx6-zd63](https://doi.org/10.58121/msx6-zd63).

## Abbreviations

- **AI:** artificial intelligence
- **EPSCT:** Science and Technology Perception Survey
- **FECYT:** Spanish Foundation for Science and Technology
- **GM plants:** Genetic modification of plants
- **WTG:** Wind turbine generator (wind energy)
- **RPA:** Robotic process automation (work robotization)

## Biographical Note

Rubén Díez García is a Professor of Sociology at the Department of Applied Sociology at the Complutense University of Madrid. He has done fieldwork research and published on political sociology, civic culture and social movements, youth culture, social reflexivity, risks, and emotions. His last published works include “How Did the Pandemic Shape the Dynamics of Two Civic Communities?” in Routledge (with Ariel Sribman) [2024]; “A propósito de ‘Frontlash/Backlash: The Crisis of Solidarity and the Threat to Civil Institutions’, de Jeffrey Alexander. En defensa de la democracia liberal” in *Política y Sociedad* (with J. Alexander) [2021]; “La COVID-19, pantallas y reflexividad social” in *Revista Española de Sociología* (with S. Belli e I. Márquez) [2020]; or “More than a Copy Paste: The Spread of Spanish Frames and Events to Portugal” in *Journal of Civil Society* (with Britta Baumgarten) [2017], and “The ‘Indignados’ in Space and Time. Transnational Networks and Historical Roots” in *Global Society* [2017].

He has published a book, "Democracia, dignidad y movimientos sociales" (with Enrique Laraña), Centre for Sociological Research [2017]. Some of them have been presented in Courses, Seminars and Conferences at universities such as Harvard University (Real Colegio Complutense, 2016), California University (Berkeley, 2017), or Cambridge University (Faculty of History, 2018).

## Notes

- 1 We use the acronym WTG for Wind turbine generators.
- 2 We use the acronym RPA for Robotic process automation, i.e., work robotization.
- 3 See Data Sources at the end of this note.
- 4 Some preliminary results may be presented at the 'International Conference Socioecos. Climate Change, Sustainability and Socio-ecological Practices', Bilbao, June 6-7, 2024.
- 5 Scales from 1 to 5, where 1 signifies "no risks / no benefits" and 5 "many risks / many benefits"; in the case of flu vaccine, 1 signifies "very low risk of serious side effects / very low effectiveness" and 5 "very high risk of serious side effects / very high effectiveness".
- 6 Scale from 0 to 10, where 0 means "not a serious problem at all", and 10 is "an extremely serious" one.
- 7 As the first topic of interest when asked openly about it, in the first question of the survey: "Every day we receive information and news about very diverse topics. Please tell me three topics that you are particularly interested in".
- 8 We include only items with statistically significant differences in their means on the reference scale.
- 9 Topics related to science and technology, for example, nuclear energy, biotechnology, the environment, or climate change.
- 10 We include only items with statistically significant differences in their means on the scale from 1 to 5.

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## Cross-Generational Perceptions on Climate Change: Resolute Insights from Youth and Elder

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**Abstract:** *In a world increasingly dominated by conversations about climate change, this research delves deeper, exploring the disconnect between widespread awareness and the implementation of concrete actions to mitigate global warming and adapt to the energy transition. The study investigates this gap by focusing on the concerns of two distinct demographic groups: teenagers and adults.*

*Conceived during the Zientzia Azoka event and developed through other events and sessions, the project actively engaged over 131 participants in a series of workshops. These participants spanned various age groups: 16 individuals under the age of 18, 110 adults between 18 and 65 years old, and 5 adults over 65 years old. The workshops employed qualitative methods, presenting participants with a range of potential climate crisis scenarios encompassing environmental challenges, energy shortages, and mobility restrictions. These scenarios explored situations such as insufficient renewable energy development leading to electricity shortages, extreme weather events causing food scarcity, and disruptions to travel due to fuel shortages. Participants' responses to these scenarios were then subjected to a process of semi-quantification, enabling a more nuanced analysis of their concerns.*

*The analysis revealed not only a clear awareness of these impending challenges among both teenagers and adults, but also a recognition of the substantial barriers hindering proactive solutions. These barriers encompassed economic constraints, a perceived lack of general awareness about the gravity of the situation, and the ever-evolving social landscape shaped by recent global events like the COVID-19 pandemic and the war in Ukraine. However, amidst these anxieties, a glimmer of hope emerged. Participants identified a potential shift in societal behavior, possibly driven by these very crises. Thematic analysis of their responses revealed a strong emphasis on the crucial role of sufficiency in mitigating climate change. This highlights the importance of reducing consumption and waste rather than solely relying on technological advancements as the*

*solution. Additionally, peer influence was recognized as a significant force in shaping attitudes and behaviors, suggesting a powerful avenue for promoting positive change. The political dimension of climate action also came into sharp focus. Participants demonstrated a sophisticated understanding of the complexities surrounding political processes and the challenges they present. They emphasized the need for clear and effective communication from political leaders, while acknowledging concerns about political motivations and the influence of special interest groups. This underscores the intricate relationship between politics, media, and public perception, highlighting the need for a multi-faceted approach to climate communication.*

**Keywords:** *Climate change, participatory sessions, policy making, societal awareness*

## 1 Introduction

The present study is framed within a social context marked by a growing public awareness of climate change. Discussions, news, and scientific information regarding this matter have become ubiquitous (IPCC, 2022). However, this awareness does not always translate into concrete actions to mitigate global warming and adapt to the energy transition.

This research focuses precisely on that disconnect between widespread awareness and the implementation of solutions. It analyzes the concerns of two key demographic groups: teenagers and adults.

In the context of the growing discourse on sustainable consumption, recent decades have seen a notable shift towards acknowledging the environmental impacts of global consumption patterns. The notion of sustainable consumption has gained traction alongside unprecedented growth in consumption levels, prompting a reevaluation of generational attitudes towards consumption practices and their environmental implications (Nursey-Bray, 2020). Contrary to prevailing generational narratives that often depict younger generations as increasingly consumer-driven and environmentally destructive, a cross-generational study in Sheffield, UK, involving participants from diverse age groups ranging from 16 to 96 years, offers a more nuanced perspective on sustainable consumption (Diprose, 2019).

This research underscores the importance of exploring cross-generational touchstones and the evolving emphasis on sustainable consumption over time, rather than solely focusing on generational differences in consumption practices

(Diprose, 2019). While common tropes such as thrift and the throwaway society have traditionally characterized generational differences, the study highlights the cross-generational appeal of various sustainability concerns and the reworking of thrift by younger generations into an ethical lifestyle choice rooted in deeper notions of frugality and environmental consciousness (Diprose, 2019).

Moreover, the study emphasizes that generational differences in sustainable consumption practices are often overstated or influenced by changes in life circumstances and societal trends (Diprose, 2019). For instance, considerations such as “generational geographies” play a role in shaping sustainable consumption practices, including how having children influences shopping habits or the extent to which individuals prioritize health in consumption choices (Diprose, 2019).

In terms of policy implications, the research suggests that campaigns and policy initiatives aimed at promoting sustainable consumption should adopt a cross-generational approach rather than segmentation (Diprose, 2019). Emphasizing intrinsic values associated with economic stability, wellbeing benefits, and environmental protection can serve as effective communication strategies to engage individuals across generations in sustainable practices (Diprose, 2019).

Furthermore, the study underscores the importance of framing sustainable consumption as a collective practice that transcends individual consumer choices, highlighting the significance of appeals to citizenship and collective action in fostering sustainable consumption behaviors (Diprose, 2019). However, the challenge lies in framing sustainability concerns, such as health, localism, and protectionism, in a manner that aligns with intrinsic values without inadvertently undermining broader appeals to sustainable consumption (Diprose, 2019).

This proves, once again, the importance of highlighting the active participation of the public in formulating the research question. The following project emerged from the Zientzia Azoka, an event that promotes scientific exploration and citizen participation and was developed next month over several sessions and data-gathering methods. This initiative involved over 130 people of different ages in a series of workshops, allowing for a representative view of society to be collected.

The workshops were based on qualitative methods, presenting participants with different potential scenarios of climate crisis. These scenarios encompassed environmental challenges, energy shortages, and mobility restrictions. Situations such as insufficient development of renewable energies, extreme weather events leading to food shortages, and disruptions in travel due to fuel shortages were explored.

The analysis of participants' responses to these scenarios reveals a clear awareness of the impending challenges, both among teenagers and adults. However, it also highlights the existence of significant barriers hindering the implementation of proactive solutions. These barriers include economic limitations, the perception of a lack of general awareness about the severity of the situation, and the changing social landscape shaped by recent global events such as the COVID-19 pandemic and the war in Ukraine.

## 2 Results

Following the activity described in the methodology section, a total of 131 responses were obtained, of which 16 came from young people under 18 years of age, 110 from adults between 18 and 65 and 5 from adults over 65. These qualitative responses were semi-quantified as expressed in the following tables.

Table I. Clustered Answers (5 Groups) In Response To The Question #1.

		Youngs	Middle age	Retirement	
<b>Q1: What actions would you be willing to do to avoid this scenario?</b>	<b>Sufficiency</b>	70%	59%	57%	Change habits, reduce consumption, spend less
	<b>Efficiency</b>	17%	26%	14%	Be more efficient, buy a hybrid car, PV panels
	<b>Policy Making</b>	9%	13%	29%	Regulate prices/ consumption
	<b>Nothing</b>	0%	1%	0%	I don't know
	<b>Others</b>	4%	2%	0%	

By transferring the values from the tables to a more graphical model, we obtain the following Figureures, allowing us to better understand the relationships between generations and interests on a larger scale.

Table II. Clustered Answers (8 Groups) In Response To The Question #2.

		Youngs	Middle age	Retirement	
<b>Q2: Why do you think you are not taking these actions right now?</b>	<b>Regulatory</b>	13%	2%	0%	Economic/governmental interests
	<b>Economic</b>	13%	6%	0%	Low salaries, high prices
	<b>Old-patterns</b>	13%	4%	20%	Customs, traditions, habits, peer-pressure
	<b>Unawareness</b>	30%	6%	20%	I am not aware of it, it is far from happening
	<b>Pretexts/Excuses</b>	13%	25%	20%	It's difficult, I don't want to, I can't, I don't believe it
	<b>Unknowledge</b>	9%	0%	40%	I have no problem now
	<b>Comfort</b>	9%	13%	0%	Laziness, convenience
	<b>Others</b>	0%	44%	0%	

### 3 Conclusions

Closely examining the collected data reveals an interesting dynamic among different age groups regarding the perception of sustainability-related actions. Younger individuals, when evaluating the actions of those outside their age bracket, tend to believe that others could be doing more than they actually are, which could explain the pessimistic outlook that some exhibit. In contrast, older individuals tend to place less importance on others' actions and focus more on their own.

This discrepancy highlights a significant generational gap in the definition and evaluation of actions promoting sustainability. Young people, raised in an environment where ecological practices are more prevalent, perceive similar actions by older individuals as less valuable contributions. Furthermore, young people often use role models as references to follow, while older individuals may admire these role models but not necessarily aspire to emulate them.

It is also notable that a significant number of respondents do not have a negative view of high-involvement sustainability actions. This suggests that the presence of role models in this area encourages the transition to a more sustainable model.

Regarding mandates, young people show a greater tendency to oppose, while older individuals tend to have more trust in Figureures who have made decisions in this regard. This correlation between age and trust in institutions is a notable trend that emerges from the analyzed data.

Table III. Clustered Answers (6 Groups) In Response To The Question #3.

		Youngs	Middle age	Retirement
<b>Q3: What do you think others (e.g. your family or friends) would do in this situation?</b>	<b>Hoard resources</b>	10%	2%	0%
	<b>Do nothing</b>	35%	9%	0%
	<b>Do whatever is possible</b>	15%	38%	40%
	<b>Change gradually</b>	10%	32%	40%
	<b>Protest</b>	5%	3%	0%
	<b>Actively participate / contribute / solve problems</b>	25%	17%	20%

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## Methodological Appendix

To better understand their needs, desires and barriers to Figureht global warming and adapt to energy transition, a series of workshops were organised in the context of the Zientzia Azoka outdoor science fair held in Bilbao, Spain, in June 2022, and lately extended through a series of survey. In these workshops, some researchers from the University of Deusto, who lead the EU-funded H2020 project WHY, designed a set of futuristic scenarios and asked the young attendees questions related to the individual or collective actions they would be willing to take to avoid the scenarios of collapse. Six catastrophic scenarios were designed, all sharing the view that the economy cannot continue to grow in a world of finite resources:

1. **Electricity shortage.** Renewable energy deployment has been insufficient and there are global electricity supply problems due to the depletion of fossil fuels.
2. **Reduced food production.** Due to a series of disastrous events, some everyday foods become very expensive whereas others cannot be found anywhere.
3. **Reduced fuel for travel.** Frequent cuts in the supply of fuel appear. Many petrol stations close and the few that remain open have kilometres-long queues to fill up. Transport by road becomes complicated and by plane impossible.
4. **Energy shortage for heating the home.** Climate change has generated an atypical winter of extreme cold and energy sources for heating homes become scarcer and more expensive. Most families cannot afford to heat their homes.



Table IV. Clustered Answers (5 Groups) In Response To The Question #4.

		Youngs	Middle age	Retirement	
<b>Q4: If a friend of yours was already doing these actions, what would you think of him/her?</b>	<b>Reluctance</b>	9%	6%	0%	Disapproval, bad perception
	<b>Unawareness</b>	4%	0%	0%	Others would also be unaware
	<b>Admiration</b>	43%	41%	40%	Intelligent, supportive, responsible, collaborative
	<b>Exemplarity</b>	22%	12%	0%	My idol, I would support him/her
	<b>Approval</b>	22%	41%	60%	It's OK, I'm fine with that

5. **Drought.** Climate change causes a very long period of drought that reduces the amount of water available for food and industry. Many companies stop production, crops are at risk and often no water comes out of the tap.
6. **Raw material shortage.** A scarcity of raw materials leads to the collapse of supply chains, resulting in shortages of some commodities, higher prices for others, as well as widespread delays in providing services.

Upon arrival at the fair stand, the young people (aged around 14) were seated in small groups of 3 or 4 people and given information sheets on one of the topics above, written in Spanish and Basque so that they could choose according to their mother tongue. On one side of the sheet was brief and easily readable information about climate change (current situation, causes, impact on our lives, etc.) and on the other side was one of the six scenarios above (see Figure. 1). They were then asked to read the sheet, discuss among themselves and write on different Post-it notes the answers to the five following questions, which were common to all the scenarios:

1. What actions would you be willing to take to avoid this scenario?
2. Why do you think you are not taking these actions right now?
3. What do you think others (e.g. your family or friends) would do in this situation?
4. If a friend of yours was already doing these actions, what would you think of him/her?
5. How would you feel if someone imposed these actions on you instead of you making the decision voluntarily?

Around twenty young people took part in the workshop. Once all their answers were collected, they were analysed by two researchers from the University of Deusto. All answers to the same question, regardless of the scenario provided, were either grouped and labelled by similarity (questions #1, #2 and #4) or ordered according to a scale of values (questions #3 and #5) (see Figure. 2).

This same methodology was replicated over the following months in various

sessions with other demographic groups, including a broader age range, thus enabling a comparison across different generations. By extending the scope to include a wider demographic spectrum, the study aimed to capture a more comprehensive understanding of attitudes and perceptions towards climate change and the challenges it presents. This expanded approach not only allowed for a more nuanced analysis of the diverse perspectives held by individuals across different age groups but also facilitated a deeper exploration of potential solutions that could resonate with various segments of society. Furthermore, by examining how attitudes and awareness vary across generations, the study sought to identify potential patterns and trends that could inform more targeted and effective interventions aimed at addressing climate-related issues.

Table V. Clustered Answers (5 Groups) in Response to the Question #5.

		Youngs	Middle age	Retirement	
<b>Q5: How would you feel if someone imposed these actions on you instead of you making the decision voluntarily?</b>	<b>Oppression</b>	33%	10%	0%	Manipulated, enslaved, oppressed
	<b>Irritation</b>	42%	52%	40%	Bad, angry, sad
	<b>Expectance</b>	4%	19%	40%	Depends on the kind of imposition
	<b>Rationalism</b>	17%	18%	0%	It is understandable
	<b>Confidence</b>	4%	1%	20%	Very well

Figure. 1. Distribution of Responses to Question #1 Across Generational Groups.

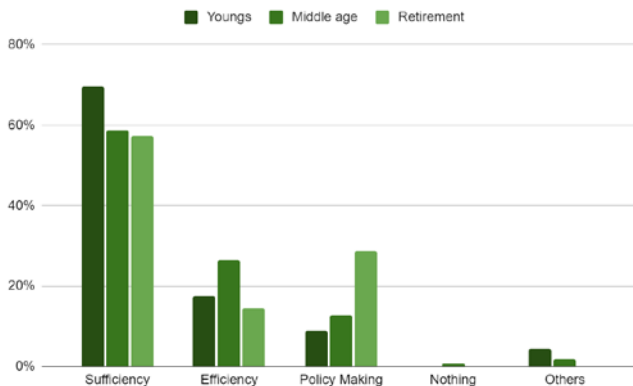


Figure 2. Distribution of Responses to Question #2 Across Generational Groups.

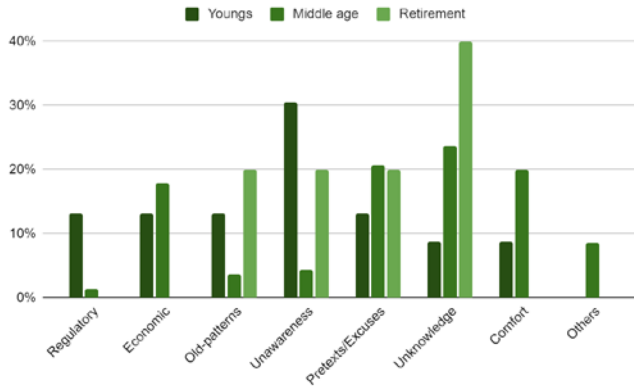


Figure 3. Distribution of Responses to Question #3 Across Generational Groups.

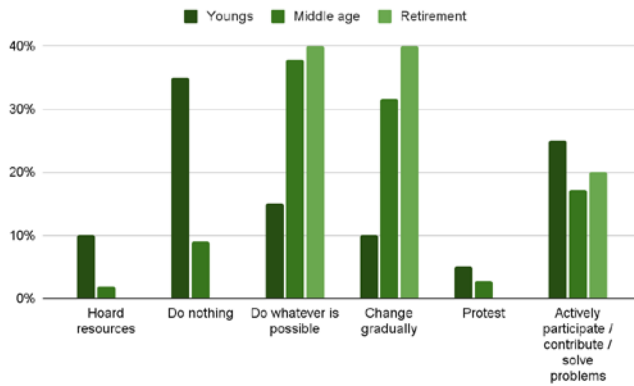


Figure 4. Distribution of Responses to Question #4 Across Generational Groups.

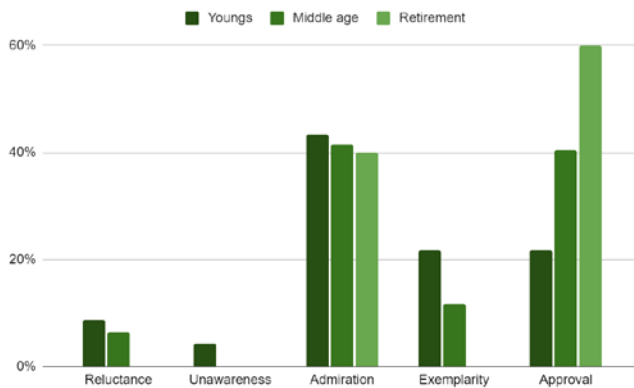


Figure 5. Distribution of Responses to Question #5 Across Generational Groups.

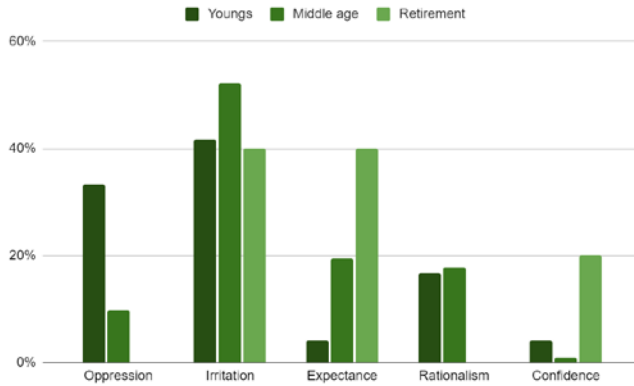


Figure 6: Information Sheets Handed Out to Attendees: On the Left, Front in Spanish with Common Information on Climate Change; on the Right, Back in Basque with an Outline Of Scenario #3.

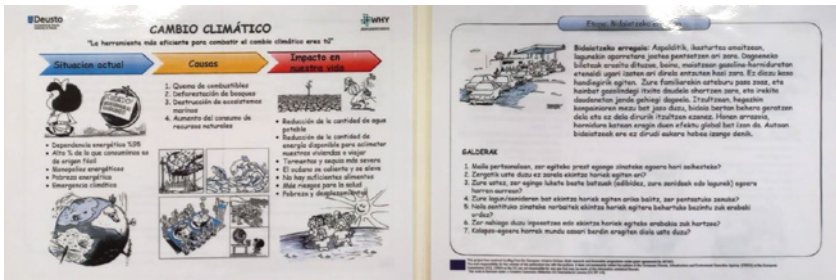


Figure 7: Process Of Grouping and Labelling Participants' Answers To Question #2.



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## Contradictions in Ecological Behaviour among Urban Youth: Multimodal Insights into Climate Anxiety and Social Responsibility

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**Abstract:** *The urgency of the environmental crisis has necessitated a significant shift away from anthropocentric views, recognising the extensive impacts of human activities that surpass both material and ethical boundaries (Villa, 2020; Lorenzini and Raugi, 2020; Blasutig and Delli Zotti, 2020). The challenges posed by climate change, air pollution and waste management necessitate a transformative approach in human behaviours to ensure a sustainable future for all generations. In this context, youths emerge as key actors, displaying a range of attitudes from active defence of the planet to a state of vulnerability, influenced by various socio-environmental factors.*

*In the urban setting of Catania, where negative perceptions are amplified by the #Satania hashtag on social media, the portrayal of the city as uncivilised is linked to a lack of social and educational institutional responsibility and the harmful actions of small criminal groups, further deteriorating the environmental quality.*

*Our study, part of a larger research project started in 2021, considers an up-to-date 2024 dataset taken from social media platforms to scrutinise the media representations of contradictions in the ecological behaviours of young people in Catania, focusing on the disparity between their stated commitments to environmental sustainability and their actual behaviours. A semiotic multimodal approach was employed, incorporating an expanded range of photographic images and audio-videographic recordings, all gathered in the Mediterranean urban context of Catania, Sicily. The framework for analysing these data was based on Kress and Van Leeuwen's (1996; 2006) model, which facilitated the interpretation of the visual representations of youth behaviour in relation to instances of vandalism and institutional neglect. Our analysis showed the relevance of an interplay between environmental degradation and social elements, highlighting the important role of youth engagement in tackling the environmental crisis. The study emphasised how perceived government inaction and social disenfranchisement influence the actions of urban youth towards the environment. It was observed that*

*these social conditions do not only lead to inaction; they can also inspire youth to engage in activism and environmental stewardship, despite the challenging context that often hampers these efforts (Gislason, Kennedy and Witham, 2021; Pihkala, 2020). By exploring these behavioural contradictions, the study offers useful insights into the sociopolitical aspects of urban youth's engagement with environmental issues. It also underscores the value of semiotic analysis in understanding the complex narratives surrounding youth and environmental engagement.*

**Keywords:** Ecology, climate, youth, eco-anxiety, multimodal semantic

## **1 Introduction - Eco-anxiety and the contradictions of ecological behaviour**

The phenomenon of climate change presents itself as an undeniable reality, which is manifested through an increasing number and heightened severity of catastrophic events globally (Seneviratne *et al.*, 2021). Italy, with its geographical positioning in the Mediterranean, faces significant risks due to its urbanisation dynamics, often unregulated and extending into areas susceptible to hydrogeological, seismic, and volcanic hazards; on the other hand, this unsettling trend emphasises the vulnerability of communities, highlighted by the data released by the Italian national environmental protection system (*Istituto Superiore per la Protezione e la Ricerca Ambientale*, 2022). The implications of climate change introduce a complex layer to the syndemic phase we are currently navigating, linking the weakening of the Earth's resources directly to the fragility of global social order and growing inequalities (Pichler *et al.*, 2017).

The conventional focus on youth involvement and participation in addressing the environmental crisis, extensively discussed in the scientific arena (Boulianne, 2020), is no longer adequate. Young people are now acknowledged as frontline defenders of the planet, demonstrated by initiatives such as the #FridaysforFuture movement and the A21 network. These groups have embraced civil disobedience to articulate their protest visually and on social media platforms, highlighting their susceptibility to climate anxiety – a condition characterised by the distressing awareness of the impact of climate change (Ballantyne, Wibeck and Naset, 2015). The institutional responses to this anxiety have been deemed insufficient (Hickman *et al.*, 2021), contributing to a chronic stressor that influences the young generation's engagement or disengagement with environmental issues.

This state of anxiety is prevalent in environments where environmental crises become palpable in the everyday lives of young individuals, spanning both

physical and digital realms of social interaction, such as schools and social media, as well as intergenerational relationships (Daher, Gamuzza and Scieri, 2022). The urgent need to explore potential scenarios for change has become evident, revealing a widespread resistance to integrating sustainability with established lifestyles across various social categories (Mazzette, Pulino and Spanu, 2020). The discourse on the climate crisis within educational settings and the media amplifies feelings of fear, anxiety and despair among the young (Cunsolo and Ellis, 2018; Ojala, 2012; Schreiner, Henriksen and Kirkeby Hansen, 2005), necessitating a more nuanced understanding and approach to environmental education and awareness.

This research paper builds on a prior study examining the relationship between youth and urban decorum in Catania, extending the data collection to February 2024, looking at the waste management crisis as a metaphor for a broader, ongoing environmental challenge (Gamuzza, Leonora and Nicolosi, 2023). Implementing a multimodal socio-semiotic analysis of a database comprising images and videos from thematic Facebook groups dedicated to Catania, this study extends the analytical journey. Following the model proposed by Kress & van Leeuwen (1996; 2006), this work delves into the multi-semiotic nature of visual messages, applying a social semiotic perspective to user-generated content on social media related to sustainability, civic engagement, and urban environmental care. This analytical lens allows for a critical interpretation of the visual narratives that emerge on digital platforms, offering insights into how semiotic resources – visual, textual and audio – are employed in communicative acts to address, reflect, and potentially transform public discourse on environmental sustainability and urban life (see Methodological Appendix).

## **2 Youth and eco-anxiety: data analysis and discussion**

### **2.1 Image analysis through the interpretative model of Kress and van Leeuwen**

The interpretative model of Kress and van Leeuwen comprises four dimensions: interactive meaning, narrative structure, compositional meaning, and conceptual meaning.

The contradictions concerning the ecological behaviour of young people of Catania are particularly evident in the 'interactive meaning' dimension (Kress and van Leeuwen 1996; 2006), which explicitly shows the relationship between the photographer and the social reality observed by him or her. The presence of rubbish in some of Catania's most popular haunts for young people can be



detected in 30<sup>1</sup> of the collected images: by employing a top-down perspective in these images, the photographer focuses on the rubbish in the streets and meeting places frequented by young people in Catania (O'Brien, Selboe and Hayward, 2018). Instead, in 21<sup>2</sup> images, certain photographers use the foreground perspective to point out actions that are uncivilised and destroy the urban landscape and to highlight the vandalised *DOTT* scooters left in fountains or public areas.

In this regard, the 'narrative structure' dimension has been advantageous in examining the uncivilised actions taken by young people in Catania against environmental decorum, taking into account the presence and orientation of the vectors of the action (Kress and van Leeuwen, 1996; 2006): in image 2, a young tourist, in an amused pose, is sitting in front of a pile of garbage; images 5-25-37 show a significant number of young people waiting for a public event on the pavements near the *Giardino Bellini*, a large public park, carrying towels, personal items, and umbrellas to protect themselves from the sun.

A further current social problem is vandalism by young people, which could have negative psychological effects on members of society: (1) in image 42, the vector of the action is evident in the young man who is attempting to climb the elephant statue in Piazza Duomo, seen as an act of vandalism against the city landmark; (2) image 29 shows young people enjoying the fireworks in *Piazza Vincenzo Bellini*, unaware that they are polluting the sky, while image 67 depicts them intent on vandalising the plant pots in the same square by throwing cigarette butts in them.

Some of the images just described, present in Facebook channels, have received a consistent number of reactions, as can be seen by image 2 (1054 reactions, i.e. 506 like, 103 anger, 272 sorry, 132 laughs, 6 love, 4 support and 31 wow). Feelings like sorrow and anger seem to be more favourable to 'eco-anxiety', which can make people, particularly the young, unable to react to ecological problems that are considered insurmountable (Soutar and Wand, 2018).

The dimension of 'compositional meaning' (Kress van Leeuwen, 1996; 2006) additionally emphasises the widespread nature of these acts of vandalism: 'salience' is part of this dimension and highlights the danger of such vandalism, like the bright red colour of the fires depicted in images 70 and 92, while images 96 and 75, which demonstrate the impact of vandalism in certain areas of Catania, illustrate the use of 'framing' to connect the photographic content with the posts: '*in this city we are at a level of infinite human misery*' (image 96). '*In the neighbourhood of Cibali, the signs of a primitive civilisation are clearly evident*' (image 75).

Moreover, the 'compositional meaning' dimension (*ibid*) highlights the lack of commitment from institutions, particularly educational ones as in the post: '*in Piazza Santa Maria di Gesù, new forms of life are being created*', an ironic remark made regarding a filthy fountain in image 21. In the immediate vicinity, there is the Istituto Tecnico Industriale Statale Archimede. In this case, one wonders why this school, located near the fountain, does not intervene in a useful way to address this emergency<sup>3</sup>.

The disengagement of the City Council regarding ecological issues is particularly visible in images 5-57-80-87-93-94-97-98-107-116, which present cement as a 'salient aspect', which could lead to the phenomenon of 'waterproofing' of the soil, hindering the natural hydraulic outflow of water<sup>4</sup>.

Moreover, the dimension of 'conceptual structure' (*ibid*) also indicates the fact that political authorities are not engaged in environmental issues. In 21<sup>5</sup> images, we can observe piles of garbage placed haphazardly in front of the bins. These images show the piles of rubbish as conceptual vectors, which have a symbolic meaning in relation to their position within some major areas of Catania: the ineffective waste disposal system is a result of the public's lack of interest in their urban environment, while also demonstrating the City Council's non-compliance with timely bin emptying and waste cycle management.

Two of the most complex challenges faced by political institutions are urban waste management and environmental issues, which can be addressed by developing pro-environment projects that encourage both institutions and citizens, particularly the young, to take more responsible and effective actions (Mathews, 2014). In this regard, the same analysis was carried out in the videos to highlight the importance of making people more aware of ecological risks, in order to promote environmental protection behaviours.

## 2.2 Video analysis through the interpretative model of Kress and van Leeuwen

The videos were analysed through the dimensions developed by Kress and van Leeuwen, namely: the 'visibility regime', the three 'micro, meso and macro frames', and the 'field of view' (Kress and Van Leeuwen, 2006). The 18 videos collected use ironic language, which clearly underlines how awareness of environmental protection issues is internalised by the network communities and reworked in alternative ways and is often irreverent.

Video n.15 has a high visibility regime: the young person interacts with the community in a direct manner; in fact, he is a prominent figure in the narrative: the author is visible in the video and wants to show the behaviour of some

people who do not respect the rules for protecting the decorum of buildings with regard to waste management and separate rubbish collection. If we analyse video n.1, we can certainly notice that the visibility regime is medium. The creator of the video focuses on the rubbish that has accumulated over several days and interacts with the community through a certain control of its visibility. During his visit to the streets of Catania, the narrator expresses his dissatisfaction with waste management for the presence of building waste – including doors, windows and mattresses – on the streets. The aspect that emerges in the interaction between context and author in video n.8 is the low visibility regime. The author is not very visible, so the public may have difficulty in evaluating the reliability or authoritativeness of the information presented. The creator of this video shows us the road that leads to the Playa, which is cemented, inaccessible, and obviously dirty because of the large amount of rubbish.

As highlighted by the ‘visibility regime’ dimension, which intersects with the ‘interactive meaning’ dimension (Kress van Leeuwen, 1996; 2006), the authors want to describe the ineffective waste management service. However, the ‘narrative structure dimension’ (*ibid*) describes the actions to the detriment of the environment through micro, meso, and macro frames. Micro frame level is present in videos n.2, n.4, n.5, n.6, n.7, n.9, n.10, n.11, n.14, n.16. In this type of video, we can see denunciation of the acts of vandalism carried out by some inhabitants of the community of Catania, such as setting overflowing bins alight. The level of the Meso Frame is present in videos n.15, n.17, n.18: they highlight the uncivilised acts of vandalism of some community members who do not respect the rules of waste management. The level of the Macro Frame is present in videos n.1, n.3, n.8, n.12, n.1: they concern the expectations and political dynamics related to waste management, which can influence daily interactions between people.

Through the analysis of the dataset of the videos, it can be stated that ‘compositional meaning’ and ‘conceptual structure’ (*ibid*) have the specific role of highlighting the contradictions in youth behaviour, even with regard to what the previous dimensions have shown: the authors and viewers of the videos mentioned above express feelings of anxiety, particularly concerning waste management and environmental degradation in the streets and squares of Catania and the areas where young people gather. The presence, or lack of presence, of the video creator and the relationship with the user also condition the ‘field of view’.

The structure that determines the ‘compositional meaning’ and the ‘conceptual structure’ (*ibid*) of the videos mainly follows these visual parameters:

- Very Long Field: the framing is very wide, favouring the overall vision of the area of Catania, featuring a large pile of rubbish. The viewer can perceive the concern about waste management in the region. It is present in 3 videos<sup>6</sup>.
- Total Camp: greater importance is given to the totality of the environment that shows the squares and meeting places of young people characterised by a significant amount of rubbish, demonstrating the disinterest of the community towards the collection of waste. This parameter is present in 2 videos<sup>7</sup>.
- Medium Field: the subject occupies about a third or half of the height of the frame, in order to rebalance the relationship between the environment and the human figure, to make the action the central point of the frame. With this visual parameter, rubbish represents the disengagement of the community towards the environment while the author tries to provide the community with constructive suggestions<sup>8</sup>.
- Subjective Detail: only a part of the environment is framed and focused on the point of view of the subject to raise awareness and inform the public about the importance of differentiated rubbish collection<sup>9</sup>.

The analysis carried out shows that the continuous exposure to environmental issues has influenced the sensitivity of young people to these issues (Delli Zotti and Blasuting, 2020). Although the feeling of anguish and impotence at their inability to implement practical solutions is evident, young people feel the need to denounce behaviours of ecological uncivility, highlighting the real contradictions between the ideality of statements favourable to the care and protection of the environment and the concrete realisation of individual and collective behaviours capable of making a lasting change.

### 3 Conclusions

As illustrated in previous sections, the multimodal socio-semiotic approach works with a selection of visual objects, considering the image as synonymous with a representation that has an objective meaning, yet also a 'chosen' one (Toti, 2009; Peirce, 1980) of social reality. In this context, visual contents are relevant data sources and an integral part of the research process. The use of the visual tool is limited neither to a simple description of human and social reality nor merely to its discovery. The added value of the illustrated journey lies in the equitable dialogue between the visual data itself and the researcher's hermeneutic analytical criterion, capable of identifying significant aspects of reality in its daily manifestation.

The analysis presented in this work shows that the visual translation of the relationship between young generations and care and protection of the

environment is anything but didactic, both in themes, contents and modes. The representation and association of emotions such as anger and a sense of injustice are visually translated into shared contents, narrating a story suspended between tragedy and comedy. According to the analytical model proposed by Kress and Van Leeuwen, these elements are identifiable in the dimension of narrative structures (meso frame sociological level) showing disapproval of witnessing events that hurt not only the sense of the perceived urban decorum but also the symbolic meaning system of the city. At the same time, the youths appear vulnerable and prone to expressing pessimistic opinions, sometimes millenarian in tone, about the planet's future. In this regard, as shown by the examination of the interactive meaning dimension, the intrusive and pervasive presence of rubbish in the gathering places of young people transforms trash into a symbolic element of a context where social disorganisation becomes the substrate for real social pathologies. The recurrent presence of specific vectors reveals young people's sense of disappointment regarding the management of urban decorum, demonstrated by the image of a young tourist deliberately choosing to be photographed next to garbage.

In conclusion, the multimodal socio-semiotic approach thus provides a profound and 'meaningful' perspective to understand the complexity of social and cultural reality, which is inextricably linked to the environmental context. Treating images as primary data sources, not just as illustrations or auxiliary documents, enables the essence of human interactions to be captured and unveils the historical and cultural elements that influence visual representations over time. Through the interpretation of these images, it is possible to gain deeper knowledge of social dynamics, collective mentalities, and the transformations occurring in society. The dialogue between visual data and the researcher's analytical rigour thus becomes essential for developing a comprehensive and scientifically founded understanding of social reality.

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## Methodological Appendix

Multimodal socio-semiotics analysis by Kress and van Leeuwen. Research aims and methodology.

As previously mentioned, the focus of the research group's work was to describe and analyse: (1) the dynamics of environmental awareness in the Catania area; (2) the main actors of these actions and their social roles (civil or institutional); (3) the preferred interlocutors of these dynamics and the modes of interaction; and (4) the most immediate impacts of these interactions.

To this end, the research design was structured into three macro-sections which,

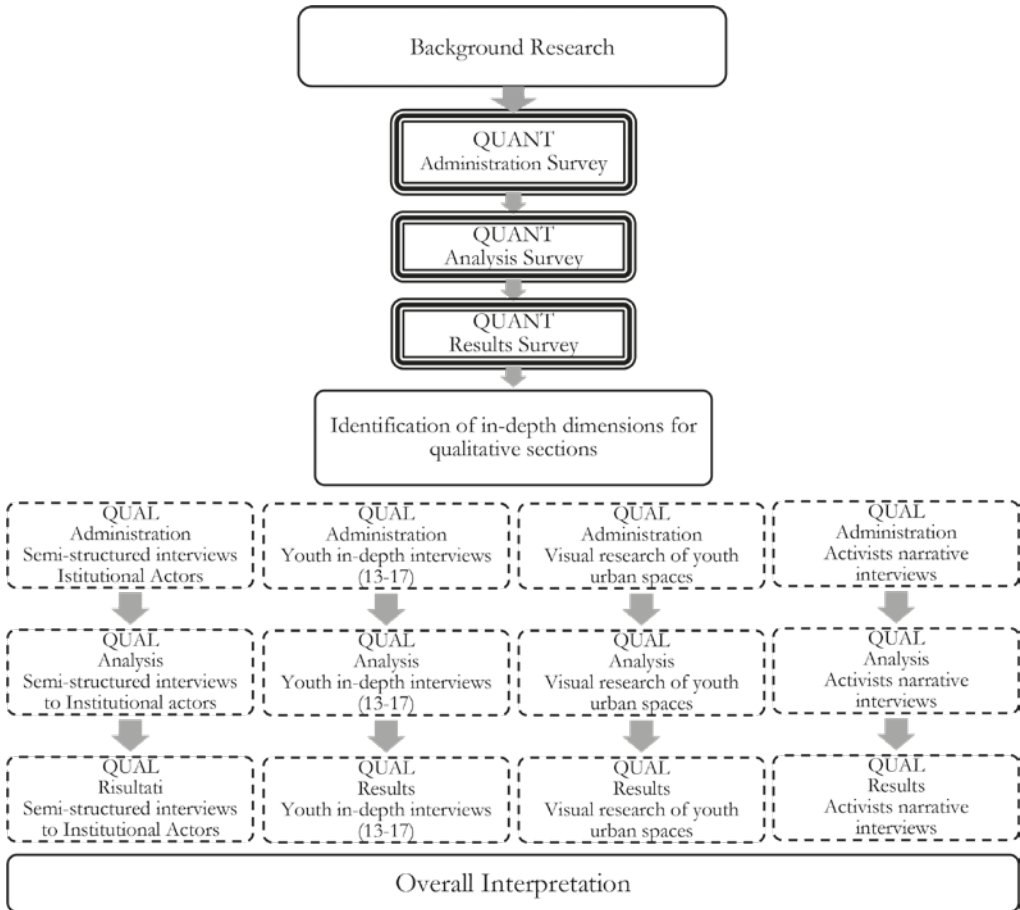
from a methodological standpoint, position this work within the mixed-method research paradigm (Creswell and Plano Clark, 2007). Specifically, a sequential path was adopted, with an analytical weighting implementing quantitative and qualitative tools with a preference for the latter (Fig. 1).

The section of the research based on the visual approach aims to analyse – through an approach that views visual/material images as elements of signification that permeate social reality in multifarious ways, translating and producing meaning – the contradictions in young people's ecological behaviour and the discrepancies between declarations of action in favour of environmental sustainability and actual behaviour. The research database contains videos and digital photographs related to a Mediterranean urban context: the city of Catania. More formally, the research, of which the main findings are reported, stems from the multimodal socio-semiotic analysis of a database of images (N=121) and videos (N=18), sampled on Facebook<sup>10</sup> from a selection of thematic groups dedicated to the city of Catania, covering the period November 2021–November 2022. Specifically, the research focused on analysing representations of climate anxiety extracted from posts tagged with #Satania, with a further sub-categorisation classifying the images as follows: (1) places where young people gather and socialise, to investigate the iconic representation of contradictions between pro-environment action statements and actual behaviour, sustainable or otherwise, in daily life practices; and (2) the relationship between ecological behaviours adopted by the Catania community, especially by young people, and the actions of public institutions (educational and political).

In line with the applied mixed method, the visual approach enriches the research journey and captures the web of meanings underlying forms of action aimed at ecologically responsible behaviours. The photographic and visual document becomes useful for constructing social narratives (Faccioli, 2006; Stagi, 2005) immediately, focusing attention even on the smallest details. Indeed, the visual approach is characterised by a series of values: the instantaneous testimony of a glimpse of reality, which is hermeneutically reconfigured both by the subject who captures the image and by its viewer (Becker, 1983; Gariglio, 2010; Faccioli and Losacco, 2010).



Figure 1. *The research design*  
Source: Daher, Gamuzza, and Scieri, 2022



The image analysis follows the interpretative model of the four dimensions outlined by Kress and van Leeuwen (1996; 2006):

- (1) Interactive meaning: highlights the relationship between the photographer and the image object, namely the relationship between the chosen representation of reality and the observer to whom this choice is addressed;
- (2) Narrative Structure: detects the vectors of action contained/represented in the image, prompting the observer to adopt the visual and expressive perspective of the represented interaction;
- (3) Compositional meaning: considers two substantial characters of the iconographic content, the framing and the salience, i.e., the connection between the image and the comment/text that connotatively delimits the meaning of the image and text;

- (4) Conceptual structure: considers the conceptual vectors relative to the position occupied by objects, relating them to a hypothetical composition of agency.

The video analysis follows the same dimensions, taking into account:

- (1) the visibility regime, which aligns with the Interactive meaning dimension: according to Frisina (2013), the visibility regime is linked to the capacity of social actors to make themselves visible in the public sphere, becoming active subjects and thus claiming rights and recognitions, within a 'see-be seen' relationship.
- (2) the three micro, meso, and macro frames, which align with the Narrative structure dimension: (a) the macro frame refers to the broader level of social analysis and focuses on social structures and institutions; (b) the meso frame examines the social dynamics occurring within contexts such as organisations or communities; and (c) the micro-frame focuses on interactions and social processes at the individual or small group level.
- (3) the field of shooting, which aligns with the Compositional meaning and Conceptual Structure dimensions: this level of analysis allows for the examination of a specific portion of space within which the action takes place.

The chosen methodological option is grounded on the aforementioned model by Kress and van Leeuwen (1996; 2006), authors who proposed an innovative approach: starting from a substantive critique of the Barthesian reading (which locates this interpretive mechanism exclusively in textual language), a social semiotics aimed at exploring the multi semiotic characteristics of visual messages is proposed. The multimodal socio-semiotic analysis by Kress and van Leeuwen serves as a comprehensive tool to scrutinise the synergistic interaction between visual and textual languages within a communicative context. This analytical methodology encompasses the various modes of communication present in a text, such as images, colours, layout, shapes and written texts, subjecting them to a thorough interrelational analysis. Within the panorama of multimodal communication, the concept of text is no longer understood as a mere sequence of words, but as a complex interweaving of elements that join and operate in synergy to convey meanings. A distinctive feature of this analysis is the attention to the social and cultural dimensions of the communicative act. Kress and van Leeuwen argue that meanings are not intrinsic to visual or textual elements but are shaped by the surrounding social and cultural context. Specifically, this analysis, applied to the aforementioned research, aims to investigate how communication reflects and perpetuates power relations, dominant ideologies, and specific social contexts by examining communication exhaustively and considering the social and cultural dynamics

that condition the production and interpretation of visual and textual messages (*ibid*).

## Data Sources

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## Biographical Notes

Augusto Gamuzza is associate professor in Sociology at University of Catania, Department of Education and researcher at ISIG (Institute of International Sociology of Gorizia) and CURÉ (Interdepartmental Research Center for the Community University Engagement - University of Catania). Since 2016, he is the Scientific Director of the research laboratory 'OfficinaSociale' and board member of NGO COPE Cooperazione Paesi Emergenti, Catania. Engaged in the coordination of transnational research on European competitive calls since 2010, his current research interests focus on four main areas: interational cooperation for development as cosmopolitan practice; identity dynamics in contexts of cultural contact; radicalisation phenomena and extreme behaviour among young people; methodological and epistemological aspects of action-research strategy

Davide Nicolosi is a Research Fellow in Sociology at the Department of Education Catania. His current research interests focus on the theme of the collective action and on several forms of protests, such as those of second generations of migrants and prosocial activists. He collaborates, and has collaborated, as Junior Researcher in several national and European projects (e.g. Horizon 2020 PARTICIPATION; CURSEMON; TIEREF KA3 Erasmus +; Unaccompanied and Separated Children in their Transition to Adulthood in Italy, UNICEF, UNHCR, IOM; NORADICA KA2 Erasmus +).

Simona Rita Coco is a PhD Candidate in 'Sociology' at the Department of Education Sciences in Catania, Italy. Her current research interests focus on the topic of the role of third sector actors in combating educational poverty.

## Notes

1. Images nos. 3-4-6-7-13-15-17-18-19-20-27-33-34-40-43-44-45-46-60-61-62-76-79-81-82-102-103-109-110-115.
2. Images nos. 8-9-22-26-31-36-39-49-65-66-74-83-85-86-91-95-104-105-111-112-114.
3. Images nos. 47-52-53-54-64-117-119-120 show the same problem: 'we are near the Monastero Dei Benedettini. In this area, the walls are ugly and stained' (images 47); 'we are close to a school called Manzoni where the school administrators seem absent' (image 64).
4. The institutions' lack of commitment is also reflected in the following images: (1) image 16, which indicates the low presence of lighting in some areas of the Sicilian province, such as the Lungomare di Ognina; (2) image 63, which denotes the presence of public works not yet completed and unsafe; (3) image 12, showing a fountain not working, used by the community of Catania as a trash can; (4) images 58-73-106-108 which highlight the absence of trees in some streets, gardens and squares of Catania, thus encouraging ecological degradation.
5. Images nos. 1-14-28-30-35-41-48-50-51-55-59-68-69-71-89-90-99-100-113-118-121.
6. Video n.1, n.8, n.12
7. Video n.3, n.13
8. Video n.15, n.17, n.18
9. Video n.2, n.4, n.5, n.6, n.7, n.9, n.10, n.11, n.14, n.16
10. Inciviltà a Catania; Catania merita di più; Lungomare Liberato; RipuliAMO Catania; We All Love Etna Riviera; Dusty; Catania indecorosa; Il Catanese incivile; Che bedda Catania.



## The Case of ODSlocal in Portugal - Results of a Monitoring Survey

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**Abstract:** *The 2030 Agenda, proposed by the United Nations in 2015, was adopted and adapted by the ODSlocal (the local SDG) Platform. Thought to support municipalities and municipal communities in pursuing local sustainability, ODSlocal is based on a comprehensive and intense mobilisation of local authorities, stakeholders, and local actors while monitoring the progress of Portuguese municipalities concerning various SDG targets through national key performance indicators. At the same time, it also maps the innovative and sustainable practices that municipalities and other local actors are implementing in each territory.*

*Listening to the protagonists of this assisted but endogenous change is thus a sine qua non of the ODSlocal from an early stage. This paper presents some results of the first ODSlocal questionnaire survey conducted to acquire a baseline knowledge of local policy engagement strategy and action within member municipalities of the Platform. Given the spatial-cultural differences between regions (e.g., inland, coastal) and dimensions (number of inhabitants), the survey was conducted online, gathering information about how municipal actor groups perceived local sustainability. Moreover, to ensure a robust sample that portrayed the universe of respondents, we relied on the help of ODSlocal focal points in each municipality, who secured a reasonable number (1,310) of valid responses, including 70 from political decision-makers, 1,029 from municipal technicians, 58 from focal points and 153 from local stakeholders.*

*The results provide a preliminary diagnosis of SDG localisation regarding policy planning and implementation as well as community mobilisation and enforcement. In particular, this paper will focus upon the critical role of monitoring and transparency for sustainable development (Chowdhury & Kushwanth, 2017) as well as municipal and stakeholder evaluations of political priorities and outcomes. Our findings confirm the existence of gaps in knowledge and collaboration, both between local governments and their communities and within municipal structures. Nevertheless, all consulted groups, notably the municipal technicians who directly engage with localising sustainability, view these challenges as surmountable and prioritize addressing them as a pathway forward.*

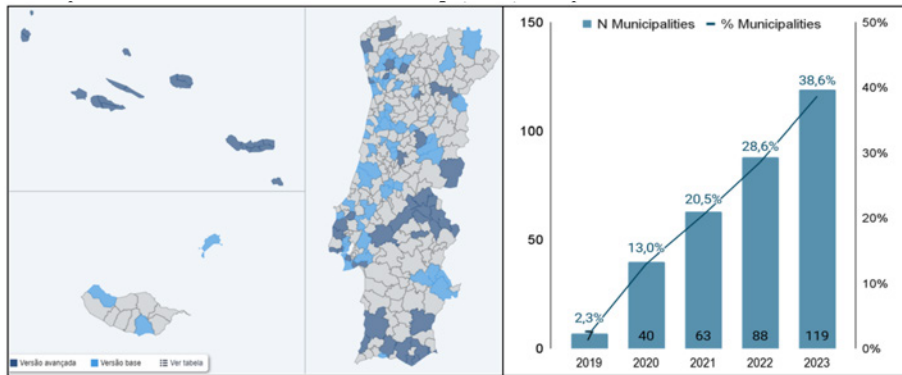
**Keywords:** 2030 Agenda; localisation of the SDGs, Portuguese municipalities, questionnaire survey

## 1 Introduction

Social, environmental, economic, cultural, and many other dimensions of sustainability are all part of the same process, and technical and political discourses have long advocated such intricate factors. However, the practice in public policies has shown the opposite: a segmentation that jeopardises the effectiveness of policies beyond good intentions (Schmidt & Guerra, 2018) despite the warnings that have emerged over the last four decades (e.g. Daly, 1990; Redclift, 1995). The 2030 Agenda (UN, 2015) seeks to reverse the situation with a more transversal and comprehensive action program. Indeed, partly due to “the embracement across nations, cities, companies and organisations of the Sustainable Development Goals (SDGs), sustainable development has gained new interests, themes and objectives around socioeconomic issues that parallel and, perhaps more importantly, relate to climate and environmental issues (UN,2015, Bulkeley, 2021; Hofstad, 2023).

The ODSlocal – Municipal Platform on Sustainable Development Goals – contributes to this exact purpose but focuses attention on the local level. This Portuguese project aims to support monitoring the goals and targets proposed for the 2030 Agenda locally within the Portuguese municipalities. By so doing, it stimulates a participatory and transparent construction of “municipal agendas” with defined objectives and concrete and measurable targets, as well as the engagement and empowerment of municipalities, stakeholders and citizens in a ‘community practice’ that “encourages people to share responsibility for their environment, raising issues of concern and working in partnership to create solutions that work for local communities” (Gilchrist & Taylor, 2022, p. 31). The project is developed within a transversal and transdisciplinary consortium led by the National Council of Environment and Sustainable Development (CNADS). Over the last five years, as shown in Figure 1, the network of ODSlocal municipalities has expanded considerably; as of March of 2024, it encompasses 121 municipalities, representing over one-third of this level of government in Portugal (39,3%).

Figure 1. Current ODSlocal Network Map (2024) and growth between 2019 and 2023



Source: [www.odslocal.pt](http://www.odslocal.pt)

To monitor the performance of municipalities concerning SDG targets, considering national and local specificities, ODSlocal analyses of available indicators and datasets that are (or can be) disaggregated at a municipal level. Currently, 119 out of the 169 targets of the 2030 Agenda are covered and can be analysed at the municipal level while adapted and structured according to dimensions, objectives, themes, and indicators established by the UN. Through an application programming interface (API), the Platform can display and update a set of reference indicator data for all Portuguese municipalities. In contrast, network municipality members may link their proprietary databases to the API and thus display specific indicators for their territories. Moreover, the ODSlocal Platform enables the mapping and monitoring of SDG initiatives developed at the local, municipal, and regional levels to provide a more complete and comprehensive portrait of reality. By integrating all this information and georeferencing functionalities and self-evaluation metrics (Key Performance Indicators and Impacts on the SDGs), the ODSlocal Platform provides a means for municipalities and stakeholders to guide action and disseminate sustainability projects and good practices (Figure 2).

Figure 2. Georeferencing functionalities and self-evaluation metrics



Source: [www.odslocal.pt](http://www.odslocal.pt)

Seeking to further the objectives of empowerment, ODSlocal tailors support to the needs of local communities and governments, stimulating participative measures and partnerships for sustainable development at municipal and inter-municipal levels through 'Living Sustainability Laboratories', workshops and training materials. The consortium also seeks to disseminate knowledge via regular publishing in diverse mediums, from scientific means, project reports, interviews in news media, and social media presence to training materials and a newsletter. Additionally, the ODSlocal annual Congress, hosted by municipalities, is mobilised as an event that a) holds debates and lectures by politicians and experts in sustainability, b) attributes awards for Municipalities' SDG performance (current and evolution trajectories), and c) highlights the most innovative initiatives developed by municipalities and by civil society.

In sum, community sustainable development (i.e., a localised Agenda 2030) could be seen as a broad but endogenous movement for social change, which implies supporting people to work together from open-ended realities. ODSlocal fully embraced such a commitment, including opening perspectives based on local knowledge, unveiling roads based on local communities' specificities, and enabling local actors to organise around issues uncovered, valued, and promoted for themselves. (Gilchrist & Taylor, 2022)

## 2 The ODSlocal Survey

In line with the 2030 Agenda goals, a survey was developed to assess the impact of participation in the ODSlocal Network. The questionnaire was conducted online and disseminated to all municipalities in the network and stakeholders whose initiatives are mapped in the ODSlocal Platform. Hence, four different questionnaires were created, adapted to four distinct target groups: Decision-Makers, Focal Points, Municipal Technicians and Stakeholders (Table 1), which are set to take place in two rounds, with the second being set to commence in 2025, in order to gauge evolution and the project's impact within them. However, this paper will only analyse the first round of questioning, so the monitoring aspect will not be included.



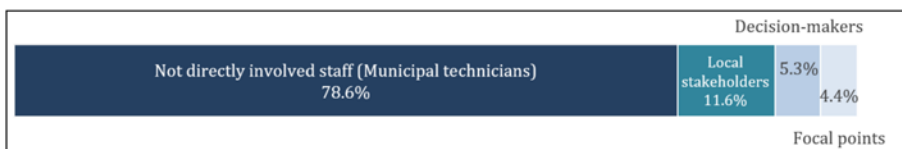
Table 1. Respondent typologies, descriptions, and respective data collection periods

Typologies	Description	Data Collection
Municipal focal points	Municipal technicians nominated by the executive to implement and accompany the SDGs in the municipality and the ODSlocal Network.	December 2020 March 2022
Municipal technical staff	Municipal technicians that are not directly involved in ODSlocal and promoting sustainability at the local level	June 2021 March 2022
Municipal decision-makers	Elected politicians (mayor, deputy mayor and councillors) who assume decision-making roles at the municipal level	June 2021 March 2022
Local stakeholders	Representatives of non-governmental entities that act at a local or regional level that are key to sustainability	May 2022 March 2023

Source: Guerra et al., 2023

The first round occurred between 2020 and 2023, a context shaped by COVID-19 and, paradoxically, also by the considerable growth of the ODSlocal network. Therefore, the data collection period and scope of participation were expanded, soliciting the participation of recently-joined municipalities. This endeavour was largely successful, as the reach of 58 municipalities represented 145% of the network’s universe in 2020, although by the end of 2022, it represented around two-thirds (65,9%) of the network. The first ODSlocal Survey reached a total number of 1.310 respondents across the four target groups, of which 11,7% were Local Stakeholders and a majority represented the 58 municipalities that took part in this survey; 78,6 were Technicians, 5,3% were Decision-Makers and 4,4%, within all respondent municipalities, were Focal Points (Figure 3).

Figure 3. Percentage of Target-Groups respondents



Source: Guerra et al., 2023

A majority of decision-makers are male (54,3%), between 41 and 50 years old (46%), have attained higher education (73,7%) -primarily in the fields of Social Science (47,4%), STEM (21,0%) and Medical sciences (15,8%)- and hold positions as councillors (66,7%), mayors (12,9%) and vice-mayors (21,4%). However, there is considerable diversity regarding qualification levels and age; the most significant representation of secondary school qualifications (18,6%) and doctoral degrees (15,0%); and lacking ages under 30 whilst 11% are over 60. We also find that, on average, more than one decision-maker took part in the survey within the municipalities of the autonomous regions of Azores and

Madeira, as well as the region of the continental south (Algarve), which perhaps reflects a more significant political investment in the ODSlocal Platform.

The profile of the Focal Points, the municipal technicians that accompany the progress of the ODSlocal activities at the local level (spearheads for the Platform in the municipalities), is overwhelmingly feminised (70,7%), young (46% are under 40 years old) and highly educated (100% has at least a bachelor's degree). They predominantly work in environmental departments (41.4%) or other areas (36.2%), act as assistants to political decision-makers (17.2%) or are themselves policy-makers (5.2%). Much like the decision-makers, most municipalities are represented by one to two focal points, although a municipality in the Algarve Region (Loulé) distinguishes itself by having three focal point respondents.

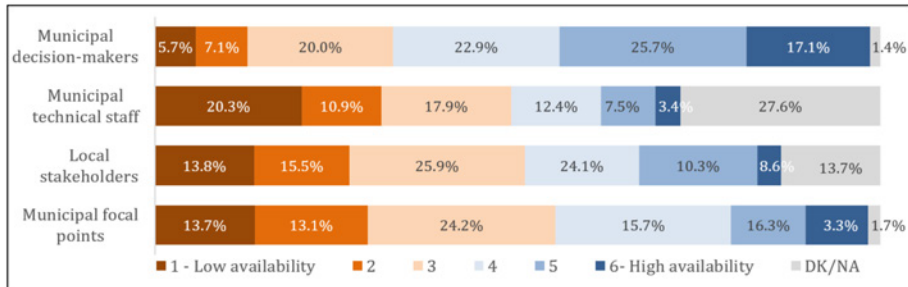
The municipal technicians who are not directly engaged with the ODSlocal network are primarily women (64,9%) over the age of 40 (78%), with higher education qualifications (86,7%) within the fields of the social sciences (49,1%), STEM (21,8%) and Humanities (20,8%). On average, the municipalities in the North (15,4) and Centre (14,4) had the most respondents and fewer in the insular regions of Madeira (6,0) and Azores (5,0).

Among the stakeholders who promote sustainability, a majority are within civil society (56,8%), followed by the for-profit private sector (17,7%), educational and research institutions (13,1%) and non-municipal levels of governance (7,8%). On average, each municipality was represented by 2,6 stakeholders, the most within the regions of Algarve (4,3) and Centre (3,9), and unfortunately, there were no responses from the insular Regions. A majority of those respondents are women (54,9%) with tertiary education (92,8%) within the fields of Social Sciences (34,8%), STEM (18,8%), Humanities (14,5%) and Natural Sciences (15,2%). However, we find the most diversity in education levels – the attainment of doctoral degrees (15,0%) and primary school education (2,0%) – and ages – with 16% over 60 and 5% under 30 years old.

### 3 Evaluating policies and practices

Due to the critical role of information in promoting sustainable development, particularly the SDGs and evaluating municipal practices (Chowdhury & Kushwanth, 2017), the following pages will focus on this aspect. Focal Points (the link between municipalities and the ODSlocal Platform) were the most critical of the low availability of information. With an average of 2,8 in a maximum of 6, a majority (51%) chose the three lowest levels of availability of information on the SDGs in their municipality. Indeed, the groups most directly involved in promoting sustainability – within or without ODSlocal – had similarly critical evaluations.

Figure 4. Degree of information available in municipalities on the 2030 Agenda

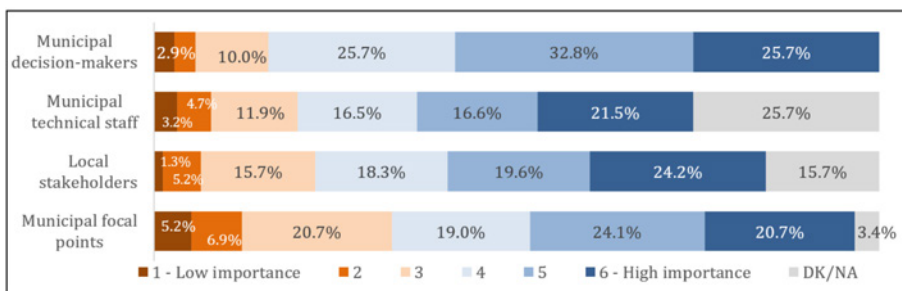


Source: Guerra et al, 2023

It is interesting to note (Figure 4) that decision-makers stand out, with an average evaluation of four out of six and a robust in-group agreement (33,4%), a position mirrored negatively by technicians. These findings indicate a considerable gap between the perspectives of decision-makers (who seem to defend the outcome of the decision) and the other groups, including stakeholders (who seem to assume their role as users). In any case, everyone seems to value the availability of information to guide action towards the 2030 Agenda. The difference comes down to the daily use of it, with those working in the field feeling the most significant gaps.

In this regard, we will analyse how respondents considered SDGs an important guideline in planning activities, projects and actions in municipalities (Figure 5).

Figure 5. SDGs importance for planning activities

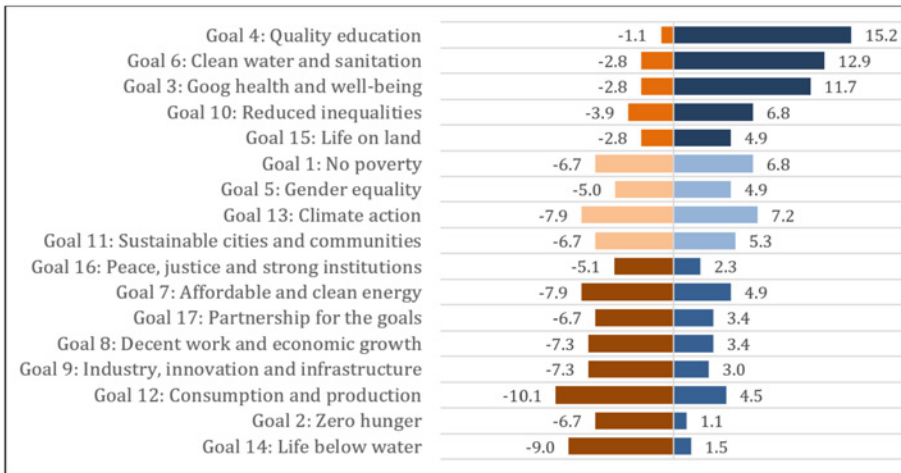


Source: Guerra et al, 2023

Although all groups attributed high average values (4, 5 and 6 on a scale of 6), they also shared a relatively low agreement in their evaluations. Focal Points are the most critical (with an average of 4,2 and 32,8% of responses on a negative ground). Once more, decision-makers have the most significant

optimism (average of 4,6 out of 6 with a large majority taking a positive stance. Additionally, when we take into consideration the high level of non-responses in both technicians (25,7%) and stakeholders (15,7%), we may consider that there is a pervasive lack of dissemination of the information, both internally and externally, even if those who are closer to the power of decision, or closer to the matters under discussion, feel more at ease.

Figure 6. Best and worst achieved SDGs, identified by "Municipal Focal Points"



Source: Guerra et al., 2023

In recognition of such a situation and of the Focal Points' role as experts on local sustainability, these respondents were asked to identify the five SDGs that were the best and worst achieved in their municipalities (Figure 6). The most positive evaluations lie within essential public services traditionally handled at the local level by municipalities: education (15,2%), sanitation (12,9%) and healthcare (11,7%). At a second level, which is divided between good and bad evaluations of achievements, we find more problematic areas that somehow either fall (partially or totally) outside the municipal remit (e.g. inequalities, poverty) or within emerging or too complex areas to let them assume a clear and unequivocally position (e.g., climate action, urban sustainability, gender equality, or poverty). As far as the other areas are concerned (from the more environmentally related issues (e.g. energy, life on land, life underwater) to the more pressing social and economic issues (e.g. decent work and economic growth, industry and innovation, consumption and production) they invariably deserve a primarily negative assessment, with the worst net values for 'life underwater' (7,5), and 'consumption and production' and poverty with a net percentage of 5,6%.

To ascertain whether this diagnosis matches the views of the other groups of respondents – Municipal decision-makers, Municipal technical staff, and Local stakeholders – we asked for the five SDGs they consider with the highest priority (Table 2).

Table 2. Given the reality of the municipality, which five SDGs should be prioritised

	Municipal decision-makers	Municipal technical staff	Local stakeholders	Average
Goal 4: Quality education	76,8%	49,7%	49,0%	58,5%
Goal 3: Good health and well-being	71,0%	50,7%	41,2%	54,3%
Goal 11: Sustainable cities and communities	42,0%	46,7%	51,6%	46,8%
Goal 13: Climate action	60,9%	40,3%	39,2%	46,8%
Goal 1: No poverty	34,8%	40,4%	28,8%	36,7%
Goal 6: Clean water and sanitation	43,5%	29,5%	24,2%	32,4%
Goal 8: Decent work and economic growth	10,1%	35,8%	28,8%	24,9%
Goal 10: Reduced inequalities	27,5%	25,6%	28,8%	23,3%
Goal 7: Affordable and clean energy	13,0%	30,1%	22,9%	22,0%
Goal 12: Consumption and production	13,0%	22,4%	30,7%	22,0%
Goal 2: Zero hunger	7,2%	26,5%	29,4%	21,0%
Goal 9: Industry, innovation, and infrastructure	14,5%	15,4%	22,9%	17,6%
Goal 5: Gender equality	33,3%	11,7%	7,2%	17,4%
Goal 17: Partnership for the goals	11,6%	8,9%	15,7%	12,1%
Goal 14: Life below water	7,2%	9,7%	17,6%	11,5%
Goal 16: Peace, justice and strong institutions	4,3%	14,8%	11,1%	10,1%
Goal 15: Life on land	8,7%	8,0%	13,1%	9,9%

Source: Guerra et al., 2023

This time, beyond healthcare and education, there is a clear prioritisation of climate action (SDG 13) and sustainable cities and communities (SDG 11), particularly by decision-makers. No poverty (SDG 11) and clean water and sanitation (SDG 6) join them to form a sextet of priorities that respond both to more traditional problems and to emerging ones, such as climate change, which are already showing signs of concern, especially, but not only, in coastal municipalities. However, globally, the environmental area remains outside the priorities of the three groups. In effect, SDGs 14 and 15 (life on land and life below water) join the SDGs 16 and 17 ('peace, justice and strong institutions' and 'partnerships for the SDGs') that respondents tended to consider outside the scope of municipal action, despite the institutional weight expressed in SDG 16. These results align with previous studies on the Portuguese population (Schmidt et al., 2018), indicating that decision-makers, technicians, and stakeholders share the same cultural mix, although they maintain some differences. For example, municipal technicians tend to side with stakeholders, except for a lesser priority attributed to underwater life (SDG 14), Infrastructure (SDG 9) and partnerships (SDG 17), which they share with decision-makers.

## 4. Final remarks

Sustainability information and the promotion of instruments for the involvement and engagement of populations emerge in our days as the heads and tails of sustainability. Such a condition is even more true regarding local sustainability, where municipalities – the political power closest to the populations and problems – play a crucial role. Ensuring a successful endeavour in this area (i.e., general community mobilisation for SDGs localisation) implies the use of appropriate technologies, tools, standards, methods, policies, and practices so that sustainability can be achieved from all and for all.

Through ODSlocal's multi-pronged approach, we seek to help respond to such challenges and facilitate more sustainable, participatory and transparent local governance. The results of this survey confirm that lack of transparent monitoring measures and participatory governance are critical difficulties for implementing local sustainability, and all the consulted groups (particularly the municipal technicians who work near the population) call for conditions that will allow them to surpass such difficulties. Therefore, ODSlocal should further acknowledge these gaps to promote outreach and collaboration between local governments and their communities and interdepartmental and hierarchical transparency within municipal structures.

These results deserve a more in-depth analysis and a new survey round to understand the evolution inside and outside the Municipal Councils. Nevertheless, we already know that knowledge comes from experience and that municipalities more involved in sustainability issues become privileged actors in a societal change that emerges as inalienable and unpostponable in the second decade of the 21st century. The role of ODSlocal is to ensure that such a change occurs, and that decision-makers, municipal technical staff, and local stakeholders come together to guarantee it. Knowing their desires, fears, and expectations is just the first step.

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## Intertwined Vulnerabilities: a Comparative Analysis of Climate Change, Gender Inequalities, and the Search for Holistic Ecology in the Laudato Si Movement

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**Abstract:** *The Laudato Si Movement is a transformative social movement, inspired by the profound ethos articulated in Pope Francis's 2015 first encyclical focused on environmental issues. This movement transcends the mere environmental activism, embodying a paradigm shift towards holistic ecology, a concept that interweaves ecological awareness with social justice: distinctively global in reach, simultaneously spiritual and political, thereby uniting activists across the globe in a shared mission (Chu, 2022). Central to this movement is the Laudato Si Initiatives Platform (PILs) that functions as more than a virtual space for dialogue and coordination. It represents a movement's operative dimension, fostering a global community of practice, where the shared values of responsibility, solidarity, and mutual care translate into tangible actions (McCallum, 2019) underlining an egalitarian ethos combined with an emphasis on individual commitment that fuels a particular focus on gender perspectives.*

*Starting from the Laudato Si assumptions, this work examines the intersectionality of vulnerability (Ammirati, 2016) in the context of climate change and gender inequalities through a theoretical deep-dive into the Laudato Si holistic ecology crossed with Alaine Touraine's perspective on the "fourth wave" of feminism (Touraine, 2006).*

*This challenging analytical exploration proposes a comparative analysis that see the ecological crisis through the lens of vulnerable subjects (Touraine, 1998) highlighting the intersectionality at the core of this relation. In this way, it will be possible to unveil convergences and resonances with feminist perspective within the seven goals of cultural change outlined by Laudato Si. Comparing them with perspectives on mobilization and everyday change shared on the PILs it will be possible to go beyond the perspective of ecofeminism (Mie & Shiva, 2014) and its nuances (Bohrer, 2019).*

*This work wants to clarify possible participatory dynamics of grassroots collective action involving vulnerable subjects highlighting the shared challenges and necessary categories of action for a transformation towards a more equitable and sustainable society.*

**Keywords:** *Integral ecology, laudato Si Movement, vulnerable subject, women empowerment.*

## 1 On the Side of the Vulnerable Subject: Women as well as Nature

In Pope Francis' encyclical *Laudato Si* and its follow-up *Laudate Deum*, there appears to be no specific, dedicated attention to women. However, this sparse focus on the female gender in Pope Francis' ecological writings aligns with his equitable and integrated approach to the subjectivity at the forefront of change: the author of *Laudato Si* and *Laudate Deum* consistently speaks in terms of "men and women" and demonstrates a radical rejection of gender ideology. Moreover, the encyclical and subsequent exhortation focus on the imbalanced relationship between humanity and nature, highlighting the critical points of this unbalanced and predatory relationship from humans towards nature. The absence of direct references to the distinction between men and women should be interpreted in line with Pope Francis' overall thought: a perspective already well-outlined from his early days as a Jesuit, keen to avoid the "temptation" of establishing dichotomies and reductionisms in defense against the overwhelming changes of globalized post-modernity (Bergoglio, 1982). In Bergoglio's vision, the Christian message in postmodernity must rediscover its missionary and innovative character "not by insisting" on certain moral issues (abortion, same-sex marriage, use of contraceptives) but rather by overcoming ethical ideology to give priority to empathetic proximity, to the physical and loving dimension of Christianity.

From an ecological standpoint, the originality of Bergoglio's thought is expressed in the desire to mend tensions and asymmetries, prioritizing the poor, the weak, the limited, and the incomplete, as only through this can a relationship of mutual listening and acceptance manifest (Borghesi, 2017:122). In this light, the global climate crisis, accelerating its devastating effects, denounces a relativism that favors immediate interests, causing both environmental and social degradation.

The practical relativism behind the failure to recognize the right to the environment for future generations entails a lack of consideration for human life in all its forms and manifestations, including the most fragile and vulnerable. Bergoglio's thought is based on two substantive assumptions: 1) everything is reducible to the fallacy of capitalist values of profit at any cost and the power entanglements generated by this goal; 2) the effects of climate change are more intensely experienced by the most vulnerable people, and this cannot be considered an ideological issue but a drama of civil and democratic nature.

The disruptive novelty of this thought compels a stance (for or against) not in ethical terms but in factual terms: the lives of others, especially if they are weak or defenseless subjects, concern us, and everyone is called to seek and demand justice for the defenseless. The recognition and acceptance of vulnerability and failure, on one hand, expose the subject to painful sensations, and on the other hand, through the conscious processing of this pain, allow the experience of deeper feelings such as solidarity and responsibility towards those who suffer, towards those who endure a condition of degradation.

Bergoglio's Latin American cultural roots, his Jesuit membership, and his deep admiration for social justice movements (Dell'Olio, 2020) characterize the perspective from which Pope Francis observes and addresses social and environmental problems, recognizing in the poor, the vulnerable, the capacity to organize and the dignity to fight to direct change. A vision close to populism, as understood by Mudde and Kaltwasser (2012) and Hawkins (2009), but without succumbing to anachronistic Manichaeisms, recognizes in the civil subject (in opposition to the institutionalized elite) a complex of ideas and morality capable of directing political action towards the common good (Meny, Surel, 2002). According to Bergoglio, the vulnerable subject is and must be recognized and supported as a protagonist of change, a seed of change, and the catholic church stands by their side.

## 2 The Laudato Si Movement

In our perspective, the Laudato Si movement (LSm) is a particular form of "movement of movements" (Cox and Nilsen, 2007; Ceri 1999) composed of two types of members: organizations and grassroots members; even if every collective subject maintain a precise identity and focus, LSm works as a hub in order to catalyze attention and mobilize about broader global issues such as ecological crisis global inequality. The LSm as a legal entity was officially founded in July 2021, absorbing the Global Catholic Climate Movement (GCCM) founded in 2015, which already constituted an international network of catholic organizations committed to promoting innovative campaigns to implement the Laudato Si encyclical. The transformation into the LSm corresponds to a change in the mission of the encyclical's supporters (McCallum, 2019), who now more clearly express the desire to mobilize the catholic community to care for the Earth and achieve climate and ecological justice. The LSM, as a legal entity, comprises over 8000 Laudato Si Animators and nearly 900 Member Organizations, present in 115 countries across five continents, organized into 30 chapters (work sections) that work daily to give behavioral substance to the principles contained in Laudato Si in everyday life. The LSM functions as a movement of movements (Ceri, 1999) and, through its various articulations, works on different programs:

- Laudato Si' Circles (a global community of small religious groups) pursue a path of moral and cultural deepening.
- Laudato Si' Contemplation Training (an inter-religious group) holds a 5-week training annually, to be introduced to meditation and contemplative practices as a way of prayer;
- World Council of Members and Secretariat (international and interreligious representation of movements adhering to the LSM) organizes "Season of Creation" an annual event from September 1 to October 4, to deepen our ecological conversion;
- Laudato Si' Initiatives Platform (virtual community) through digital sharing of projects, information, and action lines, fuels the network of institutions, communities, and families that implement actions of true sustainability and integral ecology;
- Secretariat and individual members (individuals or entities, associations, and movements adhering to the LSM) implement programs of mobilization and prophetic denunciation at the territorial, regional, and national levels.

The movement expresses its global and participatory pragmatic dimension through the Laudato Si' Initiatives Platform created by the Vatican Dicastery for Promoting Integral Human Development: it is a virtual space for discussion, exchange, information, and coordination of programmatic actions aimed at changing the established habits and behaviors of production and consumption based on the principles of responsibility, solidarity, and mutual care.

### **3 Cultural Change from the Strength of the Vulnerable Subject in Alain Touraine's Thought**

«Being a woman is not merely the acknowledgment of a state of fact, but the will to be a woman, in the sense that each individual woman gives to this word. [...] Defining oneself as a woman means placing at the center of one's life a particular relationship with oneself, implying the construction of an image of oneself as a woman» (Touraine, 2006:31). The statement "I am a woman", according to Touraine, introduces a universal question asking whether there exists a reality of woman that transcends ideological and political interpretations as well as historical stereotypes. This statement is actually ambivalent and fundamental (Touraine, 2006: 32-33): it is ambivalent because the awareness of being a woman yields positive judgments as confirmations of one's identity belonging and negative judgments that threaten self-affirmation; it is fundamental because it implies a priority scale where the woman herself is placed at the top, not in egocentric terms but as a recognition of a necessary attentiveness to the still hidden and unrecognized part of humanity. This is the positive affirmation of a subjectivity, albeit vulnerable, that is a social

actor opposing dominant thought and wishing to establish its own thought, which is continuous, innovative reflection, without succumbing to reductive dichotomies and controversies.

The increasing assertion of female consciousness (Touraine, 2006:35) once again calls for organizational dynamics through which the exaltation of values and cultural roots intertwines with democratic principles, fueling self-reflexivity and the desire to be protagonists of one's own change. Like Pope Francis, Touraine finds in populist resonances the ability to identify in this emotionally charged dimension an irreplaceable resource for genuine change. A change that seems slow as much as it expresses already acquired awareness and emancipation. This is a conquest of post-modern subjectivity where the subject, however vulnerable, perceives its own right: the woman, also thanks to already consolidated achievements, claims the right to experience femininity on her own terms, highlighting her ability to define herself, to act accordingly, and to autonomously evaluate the consequences of this freedom (Touraine, 2006: 36).

This emergence of subjectivity, however, does not intend to obscure the factual presence of still asymmetric conditions and widespread disparities between men and women, but seeks to claim the right to difference, considering otherness not as opposition but as a dialogical articulation of identities. On one hand, women are aware of their dependent position and the male control they are subjected to. On the other hand, they can confidently identify themselves based on their own traits and capabilities. This dual evolutionary line of feminist thought laboriously seeks to unburden the load of individual or collective behaviors against women from the organizational and structural dimension historically given. «When the members of a society define themselves in relation to their ability and willingness to change rather than preserve a certain established order, they can no longer be defined solely by their social belonging. A social actor is born» (Touraine, 2006: 41).

The constant appeal to subjectivity implies both the idea of personal rights and the idea of democracy as a form of government serving the development of the person. As in Pope Francis' integral ecology where the care of nature cannot be separated from social and intergenerational justice, as in Touraine (1998), the emancipation of women cannot be separated from the right of individuals to have rights. The importance for women to speak to women comes down to this: women want to act on themselves, speak and reflect on themselves, and act as subjects who consider themselves subjects, grounding this awareness in the cultural change this idea introduces. Once again, the resonance between Touraine's vision of female emancipation and Pope Francis' preference for the poor, for the defenseless, is clear: even in this case, there is a reversal of

perspective where the pressing unheeded needs (the cry of the Earth) coalesce into movements without protest and transversally cultural that speak first and foremost to themselves, the vulnerable and hetero-directed portion of society but still healthy and imbued with moral principles, thus constituting conscious subjects (Villa, 2010).

These subjects, although weak because still lacking imposing strength in political terms, realize alternative behaviors, new practices, and even new ethics that become social facts (Touraine, 1997). Recognizing the weak subject means ensuring not only protection, care, development but above all the right to have rights (Arendt, 1979: 298): this applies to women, children (Bergoglio, 2023), as well as nature that still awaits to emerge from the Anthropocene era, which is “andropocene” (Mies, Shiva, 2014; Lai, 2020). In the encyclical and in the follow-up *Laudate Deum* (2023), a certain type of anthropocentrism is clearly questioned, which, by placing the (strong) man at the center of existence in a distorted way, ignores the rights of other living beings (not strong) and the environment. This attitude leads to underestimating the importance of care towards the most vulnerable subjects, such as the poor, women, children, or people with disabilities (Touraine 1997).

#### **4 Reflecting on Women is Reflecting on the Relationship with Nature: Empowerment of the Vulnerable Subject in the Laudato Sì Initiatives Platform**

There are numerous references to the concept of the vulnerable subject in the *Laudato Sì* encyclical; although not explicitly named with this expression, a complex approach intertwines ecological concerns with socio-economic justice issues and the well-being of the most vulnerable subjects (Kothari et al., 2021; Deriu, 2016). The peculiar reading of the *Laudato Sì* Initiatives Platform, through the lens of populist social movements, underscores how the platform mobilizes support and awareness around the environmental issue, linking religious and spiritual values with concrete and politically significant actions for social and environmental change (Chu, 2022). Indeed, the *Laudato Sì* Initiatives Platform relies on a clear collective identity, that of the global catholic community, committed to ecological action understood as “care for our common home”. This identity is traceable to the moral and spiritual foundations contained in *Laudato Sì*, and, in particular, the populist character manifests in its emphasis on bottom-up action that encourages the active participation of ordinary individuals and local communities. This approach reflects a central characteristic of populism, namely the appeal to ordinary people, even the smallest subjects, against elites perceived as irresponsible, skeptical, or even cynical (Meny, Surel, 2001). Furthermore, the narrative framing of initiatives and proposals flaunts

an engaging narrative aimed at inspiring action and change at multiple levels. In this sense, the presence of women and the weight of women's participation in the initiatives reported and promoted through the Laudato Si' Initiatives Platform has been critically investigated.

Given the central role that women often play in the management of natural resources and the promotion of sustainability at the community level (Alam et al., 2015), one would expect explicit support and unequivocal recognition of practices favoring gender equality and female empowerment. Thinking from a global perspective, in rural local communities, women are entrusted with water, food production, and the care of the family and community, whereas in technologically more complex communities, women are responsible for organizing daily family activities and in the educational sphere. Also, regarding ecological education, the focus is on rethinking accessible education for all, to promote environmental awareness and transformative actions that align with the goal of a new way of thinking about human beings and their relationship with nature (Del Gobbo, 2023 a, b).

However, this redundancy of an integral approach, which includes the overall goal of achieving gender equality, overshadows the substantial importance of the self-reflective dynamic highlighted by Touraine: the vulnerable subject must want to act on itself and trace within itself the evolutionary lines of cultural change. Beyond the widespread female presence, especially in education (Benadusi, Pentimalli, 2010), on the LSM and the Platform, women do not speak to women. Yet, if female consciousness is inseparable from social change (Touraine, 2006), promoting gender equality and female emancipation can lead to a paradigm shift (Bianchi 2012; Alam et. Al., 2015) towards more inclusive and cooperative governance models, valuing care, dialogue, and mutual respect, fundamental principles for a sustainable environmental ethic (Ammirati, 2016).

If the goal is to build fairer and more sustainable societies where every individual, regardless of gender, can actively contribute without oppressions, without falling into extremes (Bohrer 2019) of opposite nature, the starting point remains: dismantling power structures that exploit, control, and suppress the most vulnerable social parts. Patriarchy, with its emphasis on dominance and control, is also reflected in the exploitative approach towards the environment. According to Touraine vision the vulnerable subjective' approach is rooted in the construction of counter- narratives which are informed by a profound understanding of the others, an empathetic and informed insight into different perspectives and life experiences. *From the women to the women* extends a peculiar role of seed of change to the ecological domain addressing the environmental challenges of our time while also promoting a more equitable



and just society. The dialogue among women, therefore, is not just about environmental activism; it is a profound sociological process that carries the potential for transformative social change.

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## Forest Therapy and Forest Bathing: Exploring the Socioecological Connection in the Era of the Climate Emergency

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*By having reverence for life, we enter into a spiritual  
relation with the world. By practicing reverence for  
life, we become good, deep, and alive.*

Albert Schweitzer

**Abstract:** *The climate crisis and the global emergency pose complex challenges that extend beyond environmental aspects, basically their impact on individuals and society's emotional and mental health. Ongoing analyses of the planet's physical, economic, and social developments reveal data and clarify cause-and-effect relationships. These findings are driving the emergence of various proposals for the reconfiguration of social dynamics. Emerging concepts such as biomimicry, ecofeminism, organic Gaia theory, agroecology, and regeneration, among others, share the common thread of repositioning individuals within nature. They also share ethical and moral assumptions such as holism, diversity, empathy, compassion (in its etymological sense of "suffering with the other"), and reciprocity.*

*This communication theoretically and analytically reviews nature immersion therapies, focusing on forest bathing, as an innovative response embedded in these new logics to address the human dimension of the global emergency. Forest bathing, also known as Shinrin-yoku, has emerged as a socioecological practice that offers physical benefits and opportunities to strengthen the connection between individuals and nature.*

*The relational approach in forest therapy, which views the forest as a healing entity, is presented as a valuable transcendent perspective beyond traditional pharmaceutical approaches. This vision proposes a symbiotic connection between the individual and their natural environment, fostering a mutualistic relationship where the person, feeling cared for by the forest, may develop protective attitudes towards nature that contribute to their well-being. Forest bathing is a holistic solution and*

*systemic vision that provides a framework for addressing environmental concerns, eco-anxiety, and ecological grief. These findings have significant implications for improving strategies that promote personal and collective care in the context of the global emergency.*

*This communication analyses the contributions from different disciplines involved in personal and environmental health care, and individuals' self-perception of their place in the territory and the planet have been reviewed and assessed. The literature review has been complemented with ethnographic data.*

**Keywords:** *Forest therapy, forest bathing, shinrin-yoku, human well-being, global emergency, tree-connection*

## 1 Introduction

One of the dimensions of the global emergency, marked by extreme weather events, biodiversity loss and pandemics, has to do with the interdependence between human health and the health of the planet. This text proposes a way to reconnect or reintegrate people into nature, based on the close relationship between human well-being and environmental sustainability, through forest therapy and forest bathing. We believe that, beyond an effect on the health of practitioners, forest therapy and forest bathing can contribute to a change in worldviews that help in the environmental transition.

We understand global change as the set of environmental changes generated by human activity that are affecting, on a local, regional, and planetary scale, the bio-geophysical processes that sustain the global functioning of our planet (Duarte, 2009), but also, their belief frameworks or the ideological motivations behind them.

It is in and from these frameworks that we focus on this communication. Thus, we theoretically and analytically review Forest Therapy (Miyazaki, 2003) and Forest Bathing (Shinrin-yoku)<sup>1</sup>, as a modality of Nature Therapy as a socio-ecological practice in expansion and innovative response that connects human health with the health of the planet and that also has implications in terms of environmental sociopolitical and cultural agency.

In addition to being healing therapies, practiced in institutionalized or non-institutionalized health contexts, we consider that they can be relevant in terms of political action, due to their desire for cultural transformation, and one more proposal among those that are being launched to sustain the ecosocial transition.

Originating in Japan in the 1980s, forest bathing is a “sensory experience” to absorb the stillness of the forest environment so that *it* “influences your mood and makes you forget the constant movement of the city” (JNTO, n.d.). This practice has gained global recognition and is backed up by research showing its benefits in reducing stress, improving the immune system, and promoting overall well-being. Physical benefits include lowering blood pressure, boosting the immune system, and improving cardiovascular health. On a psychological level, this practice contributes to the reduction of anxiety, the increase of emotional well-being and the improvement of mood, based on relevant scientific studies.

For our analysis, we have opted for a methodology that combines the review of scientific production, from anthropological, sociological, political, and territorial keys, related to Nature Therapy, particularly forest therapy and forest bathing, with the performance of ethnographic fieldwork, and autoethnography, in three forest bathing experiences carried out in the regions of Lancashire and Cumbria (United Kingdom) between January and March 2024. The work is presented as an exploratory theoretical and methodological proposal to carry out research of greater extension and scope.

## 2 Global environmental crisis and people’s reintegration into nature

The economic activity of industrialized societies has caused severe environmental impacts and a growing awareness of the deep gap that has opened between people and nature. In this sense, the global emergency is also an emergency in the social and cultural order that makes us wonder about possibilities of action that facilitate a change of course that reintegrates people into nature, making them aware of the effect of their daily actions.

There are several practices that share ethical and moral assumptions such as holism, diversity, empathy, compassion (in its etymological sense of “suffering with the other”) and reciprocity. Some of these practices, individual or collective, involve a strong awareness of the importance of not harming other living beings, for example, opting for veganism or vegetarianism, but also choosing consumption options that are more respectful of the life of those beings, opting for meat, eggs or fish that are not only ecologically produced, but “respectfully produced” (e.g. through livestock management models that are more respectful of natural or extensive cycles, in which the offspring are not separated from their mothers, in what some farmers call “happy” lives). They are proposals that aim to re-build a relationship with the planet in the key of personal and collective healing, reintegrating people with the natural world.

We know that many cultures construct worldviews of nature that facilitate such re-integration with nature (Ingold, 1992; Rye, 2000, cited in Martín Páez, 2024, 107). This is not unusual, not even in the Western tradition, as Rodríguez and Quintanilla (2019) show in their analysis of Heideggerian philosophy and its possibilities for constructing re-integrative forms of relationship and thoughts for action. Forest therapy and/or forest bathing, star bathing or yoga practice, mindfulness in nature and biodance are other new practices.

### **3 Nature Therapy as a General Framework for a Response**

Nature Therapy, also known as nature-based interventions, ecotherapy, green therapy, and forest therapy, is an umbrella term to describe the use of nature or natural elements to improve mental and/or physical health. It is innovative because of its critical component in the face of the challenges of modern life and the growing awareness of the interconnection between human health and the natural environment, taken up in part in decolonizing processes and the co-creation of knowledge of traditional medicines from different cultural fields (Aparicio Mena, 2005), and represents a paradigm shift by proposing itself as an adjuvant therapy to the institutionalized health therapies of conventional medicine.

Basically, Nature Therapy consists of carrying out planned interventions to achieve specific health improvement objectives, individually or in groups, in direct contact with elements and beings present in the natural environment, such as Earthing or grounding (Chevalier *et al.*, 2012), forest therapy and forest bathing (Shinrin-yoku), water (Foley, 2015), air, and smells (or garden Smellscape–Experiences, Pálsdóttir *et al.*, 2021), animals (equine therapy, Clark, 2024), stars (stargazing) or in therapeutic, olfactory or sound landscapes, among others.

Some of these interventions are linked to traditional (indigenous, folk) medicine, understood by the World Health Organization (WHO) as “the sum total of knowledge, skills and practices based on indigenous theories, beliefs and experiences of different cultures, which are used in the maintenance of health and the prevention, diagnosis, improvement or treatment of physical and mental diseases” (WHO, 2023). Traditional medicine and holistic medicine share the premise that health cannot be understood in isolation, allowing for a more complete and balanced approach to health care.

On the other hand, Nature Therapy challenges the conventional narrative of health-disease processes by arguing that establishing a connection with nature not only allows us to heal wounds, but also to prevent diseases, reduce cortisol

levels, reduce blood pressure, improve cardiovascular function or stimulate the immune system, highlighting the complementarity of these approaches with conventional therapies (Li et al, 2006; 2009; Wen et al., 2019; Antonelli et al., 2019; Bikomeye et al., Chae et al., 2021, Andersen et al., 2019).

### **3.1 Forest Therapy and Forest Bathing as a Model of Prevention and Healing**

Silvotherapy, forest therapy, forest bathing or Shinrin-yoku have been described as “a short excursion into the forest at a leisurely pace” (Li, 2018), but also in a more metaphorical way as the “practice of immersing oneself in nature using the five senses” (Hansen, Jones and Tocchini, 2017).

The verification of the beneficial effects of forest walks on health has led to the consideration of silvotherapy as a new alternative-preventive medicine, being institutionalized in numerous national health programs, inspired by the model of the national health program of Japan (Van Keymeulen, Claessens and Ligot, 2022) and, in many cases, incorporating elements of native or traditional local cultures, as in the experiences of Chile and Canada. In Canada, since 2020, and in Scotland, since 2023, doctors have been prescribing forest walks to patients suffering from anxiety, to reduce their stress and improve their quality of life.

The health problems that move a person to engage in forest bathing can be multi-causal. Some interviewees say that they have been recommended by their family doctor, psychological therapist, or a best friend. In other cases, informants report experiencing strong emotional responses, such as fear, sadness, or despair, to the perception of a future threatened by climate change, which Kurth and Pihkala (2022) call “eco-anxiety” and incorporate forest bathing into their other daily practices related to sustainability.

Regular contact with nature, as part of forest bathing, has been positively associated with several improvements in physical health, such as significant reductions in participants’ blood pressure and, following exposure to essential oils released by trees (phytoncides) improvement in the immune system, increasing the production of natural killer cells. An improvement in cardiovascular function has also been observed, with reductions in heart rate, as well as positive impacts on lung function and respiratory capacity, being highly recommended for people with respiratory conditions.

On the other hand, forest bathing shows interesting effects on mental health, with stress reduction being one of its most notable benefits, by decreasing the levels of cortisol, the stress hormone, and improving the response of the autonomic nervous system, leading to a general feeling of calm and relaxation,

and has been shown to be effective in reducing anxiety and depression (by increasing serotonin and depression levels). improved mood and self-esteem).

Mindfulness, an essential component of forest bathing, also contributes to improved cognition and concentration. Conscious participation in natural experience, stimulating the senses and focusing on the present moment, also appears to have positive effects on brain function, including memory and problem-solving.

## 4 Forest Bathing and Symbiotic Person-Environment Connection

The term 'Shinrin-yoku' is a neologism coined in the 1980s by technicians from the Japan Forestry Agency, which literally means "absorbing the atmosphere of the forest." The concept is inspired by Shintoism, which reveres the spirits of nature and attributes spirits or energies to natural elements such as trees, forests, rivers, and mountains. As in other cultural and spiritual traditions, Shinto shares the central idea that nature is animated by spiritual entities or energies that can influence human life and well-being, namely kami, supernatural spirits, some local, others representing natural processes.

Forest bathing contributes to forging a deeper and more meaningful relationship between individuals and the natural environment by allowing total immersion in it, facilitating self-knowledge and knowledge through the attentive sensory perception of flora, fauna, sounds, smells, temperatures, or textures, thereby nourishing ecological awareness (Li, 2018).

From a perspective of ecological awareness and environmental responsibility, numerous studies collect evidence of the link between the subjective feeling of "connection with nature" and pro-environmental behaviour (PEB). Since emotions are antecedents of behaviors (Schneider *et al.*, 2017), it is essential to understand them to extend a conscious awareness (Lu and Schuldt, 2015) to the social group that facilitates PEB. Or, as Orr (2008: 821) puts it, "improving people's psychological health and sense of connection to nature" is part of the transition to a "sustainable society".

### 4.1 The Forest as a Healing Entity

When we talk about the forest as an entity, we are assuming an epistemological proposal that decolonizes the hegemonic ecological gaze. To do this, we need to know the processes of meaning-making that underlie experiences of reconnection with the environment and adopt examples that already

exist. For different cultural groups, intellectual and sentimental life, bonds, and relationships between individuals and within the group have the same characteristics regardless of whether their protagonists are plants, animals, or people. Any subject participates in the social life of the collective (Pignocchi, 2017) and the relationships that are established between people and other beings do not differ from those between people, as Ingold (2013) has studied in hunter-gatherer groups.

In this sense, some approaches propose to transcend pharmaceutical approaches to forest bathing. For example, the Association of Nature and Forest Therapy Guides and Programs (2020) starts from a relational approach that refers to the forest as a healing entity in itself: the forest forms a sensitive network of different but integrated realities (soil, air and living beings) inseparably united, with sensitivity, awareness and that responds by questioning us when we enter it. As an integrated system, it sickens and heals in the same way as an organism, although the whole may help to heal a part. Or, in the words of a 60-year-old informant who practices immersive mindfulness in the forest, “when I practice in the forest, it’s not that I feel better, it’s that I feel part of the whole: my body is the planet, what hurts it, hurts me, and vice versa”.

## **5 Socio-Political Derivatives: Connected People and the Agency to Protect Nature**

In the last few decades, all these different perspectives that propose that people retake their place within nature (the environment/the environment) seem to be sedimented. Capra (1996) argues that this paradigm shift has to do with the adoption of an ecological vision of the world, based on the deep ecology of the Norwegian philosopher Arne Næss (1973), which does not set boundaries between ‘human beings’ and the environment, influencing, since then, environmentalist thought and action around the world.

When people are more connected to nature, they do more to protect it. In this regard, Mackay and Schmitt (2019) conducted a meta-analysis on the relationship between subjective feeling of ‘nature connection’ and pro-environmental behaviour (PEB), revealing a strong and robust association between connection to nature and PEB, supporting the idea that connection to nature is a promising avenue to foster PEB, and recommending further targeted studies.

Different studies show that the practice of forest bathing can contribute to a more complete and sustainable response to the global environmental crisis, by promoting a re-integration into nature, acting as catalysts, fostering ecological



awareness, environmental responsibility, and a deeper connection with the natural environment. It may be that these new needs will be channelled towards their commodification and exploitation with the logic of accumulation. Or it may be that these new needs will give rise to land-use planning interventions for the creation of healing sanctuaries.

## 6 Conclusions

The interconnectedness between human health and the health of the planet is recognized and embraced in the different modalities of Nature Therapy, and very specifically in forest bathing.

The scientific and institutional recognition of the benefits of these practices has made it possible, so far, to include them as health practices in the official systems of different cultural areas (Catalonia, Japan, Chile, Scotland, Canada). This circumstance is expected to act as a catalyst for its scaling up and implementation as a model for training and raising awareness among people (as happened in the 80s with the promotion of recycling, in the 2000s with the reduction of consumerism, or, since the last ten years, with movements such as vegan or second-hand clothing, avoiding fast-fashion). If it reaches volume of use and economic activity, it is also foreseeable that co-optation will act by trivializing and trivializing its concepts and capitalizing on its benefits through the privatization of natural areas with the best qualities and the commodification of the practice with capitalist criteria.

In this sense, protecting this resource, both in concept and method, should involve the dissemination of its meaning and social scope and the dissemination, through social programs, of the reconnection with the environment with a two-way nature-person healing spirit.

Finally, forest bathing is presented as an opportunity for the development of forest tourism beyond the proposal of such and such as an "emerging type of rural tourism (...) to create income and opportunities" (Ohe *et al.*, 2017), but as one more strategy to promote regenerative tourism initiatives, by promoting the close link of visitors with the spaces visited, and not mere "more pins on the map" (Mancinelli, 2009).

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## Methodological Appendix

Research Design: The research design for this study involves a qualitative approach, utilizing participant observation, ethnography, and autoethnography methods. These methods enable a deep exploration of the experiences and interactions within the chosen natural settings.

**Primary Data Collection Methods:** Participant observation is employed extensively throughout the study. Researchers actively engage with participants during their forest walks, observing their behaviors, interactions, and responses to the environment. Ethnographic techniques such as informal interviews (5) and group discussions (1) are utilized to gather rich, contextual data about participants' experiences in the forest settings. Additionally, autoethnography is incorporated, allowing researchers to reflect on their own experiences and perspectives as they engage in the research process, thereby enriching the interpretation of the data.

**Secondary Data Sources:** While primary data collection forms the cornerstone of this study, secondary data sources are also consulted to provide additional context and background information. These sources may include relevant literature, previous studies on forest ecosystems, cultural perspectives on nature, and historical accounts of the selected forest areas in Lancashire and Cumbria.

**Sampling Strategy and Sample Size:** The sampling strategy involves purposive sampling, targeting participants who have an interest in nature and are willing to engage in forest walks. Each forest walk comprises a group of 10 individuals, ensuring a diverse range of perspectives and experiences. The sample size is determined based on the feasibility of conducting in-depth observations and capturing a breadth of experiences within each group.

**Place and Time of Fieldwork:** The fieldwork for this study is conducted in three forests located in Lancashire and Cumbria. The specific forests chosen for the study were Brown Robin Nature Reserve and Bowness on Solway, both in Cumbria (UK), and Lord's Lot Wood in Carnforth, Lancashire (UK). Fieldwork is carried out in February and March 2024.

## Abbreviations

- **PEB:** Pro-environmental behaviour

## Biographical Notes

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## Notes

1. In this paper we will understand Forest Therapy and forest bathing as essentially equal activities, although it is necessary to clarify that the expression "Forest Therapy" (Miyazaki, 2003) has been seen both as a euphemism that seeks to present the practice of *Shinrin-yoku* in a more serious and therapeutic way, avoiding or softening some of the more informal or literal connotations of the term "Forest Bathing" (such as possible connotations of nudity in the forest, uncomfortable for certain audiences). Thus, forest therapy is a *Shinrin-yoku* backed by scientific data, as Miyazaky advocates.



## Exploring the Eco-Peace Nexus with ASMUPROPAZ: between socio-ecological practices and the reintegration process of ex-combatants in the Colombian Amazon

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**Abstract:** *In the aftermath of armed conflicts or war, the reintegration of ex-combatants is a complex social process that involves numerous challenges at various levels, necessitating innovative and comprehensive approaches. These reintegration mechanisms need to go beyond traditional notions of social rehabilitation, encompassing a broader understanding of the multifaceted challenges that individuals and communities face when the conflict ends. Thus, the integration of both social and ecological dimensions in order to create a successful reintegration process becomes crucial for sustainable and holistic post-conflict recovery. In other words, by acknowledging the interconnectedness of social and ecological dimensions in post-conflict reintegration, innovative approaches can be developed to address the root causes of conflict, promote sustainable development, and contribute to lasting peace.*

*In this context, this short paper explores the dynamic and complex relationship between peacebuilding efforts and environmental sustainability, with a particular focus on the challenges, opportunities, and lessons learned in the pursuit of holistic reintegration of FARC ex-combatants in post-conflict Colombia. The study centres around the women's grassroots organisation ASMUPROPAZ, situated in the municipality of La Montañita within the Department of Caquetá, a vital part of the Amazon Region of Colombia. ASMUPROPAZ, as a women's grassroots organisation, emerges as a compelling case study illustrating the interplay between socio-ecological practices, community development, reintegration of ex-combatants and environmental sustainability.*

*After conducting twelve structured interviews with members of this organisation, this paper explores how ASMUPROPAZ catalyses innovative approaches to reincorporation addressing socio-ecological activities, incorporating environmental conservation with community empowerment and economic development. The organisation's commitment to environmental and gender-inclusive strategies provides an additional layer of complexity and richness to the reintegration process,*

*addressing the unique needs and contributions of women in post-conflict settings. Also, this paper unpacks the synergies between peacebuilding and environmental sustainability, offering insights into best practices and potential pitfalls. By shedding light on ASMUPROPAZ's journey, this study contributes to the broader discourse on post-conflict reintegration, emphasising the importance of grassroots initiatives in achieving a harmonious balance between societal healing and environmental protection in conflict-affected regions.*

*Furthermore, in this paper, we present and explore the term Eco-Peace Nexus. It refers to the interconnected relationship between environment protection, community development, quality of life, ex-combatants' reintegration, and the promotion of peace. The paper's main contribution rests in the idea that the Eco-Peace Nexus perspective suggests that promoting environmental sustainability can be a means of fostering long-term peace after armed conflicts, and conversely, that peacebuilding efforts should take into account environmental and socio-ecological contexts. For us, this interconnected approach acknowledges that the well-being of communities and ecosystems are intertwined and that addressing environmental concerns can contribute to long-term stability and conflict prevention.*

**Keywords:** *Eco-Peace Nexus, Colombia, ASMUPROPAZ, post-conflict, ex-combatants' reintegration*

## 1 Introduction

In recent decades, Colombia has undergone significant socio-political and cultural transformations. On September 26th, 2016, the Colombian government, and the Revolutionary Armed Forces of Colombia (FARC) concluded over 60 years of armed confrontations by signing a peace agreement. Despite an initial 50.2% rejection in a polarised referendum, subsequent negotiations led to the Colombian Congress approving a revised peace agreement on November 29th, 2016. This date officially marked the end of the Colombian armed conflict, initiating a process for the disarmament, demobilisation, and reintegration (DDR) of former FARC combatants into Colombian society. The peace agreement established three state-led mechanisms for implementing a transitional justice process addressing local and international law frameworks: the Special Peace Jurisdiction (JEP), the Truth and Reconciliation Commission (CEV), and the Search Unit for Disappeared People (UBPD) (Tamayo Gomez, 2022).

It is crucial to emphasise that the protracted armed conflict in Colombia ranks among the lengthiest in global history, spanning six decades. Approximately 20% of the population is estimated to be direct victims of this prolonged conflict, resulting in a staggering toll (Comisión de la Verdad, Bogotá, 2022; CINEP-CERAC, 2021). The consequences include nearly nine million internally displaced individuals, 200,000 instances of enforced disappearances, approximately 47,000 kidnappings, over 17,000 cases of child soldiers, nearly 9,321 recorded landmine incidents, and 16,324 acts of sexual violence (Human Rights Watch, 2022; The National Centre of Historical Memory of Colombia, 2018). The National Centre of Historical Memory of Colombia has meticulously documented over 1,982 civilian massacres between 1980 and 2012. Furthermore, the Special Peace Jurisdiction has authenticated 6,402 extrajudicial executions committed by the Colombian Army from 2002 to 2008 (Jurisdicción Especial para la Paz, 202; The National Centre of Historical Memory of Colombia, 2013).

In this context, the reintegration process of FARC ex-combatants into Colombian society has been a complex and ongoing endeavour. It has involved different stages and efforts from both the ex-combatants and the government, as well as the support of local communities and international organisations. According to Orejuela and Restrepo-Plaza (2021), Gluecker, Correa-Chica and López-López (2022), and Hart and Tamayo Gomez (2023), it is possible to identify seven steps regarding the reintegration process of FARC ex-combatants in Colombia. The first step was the laying down of weapons and demobilisation. The initial step involved the FARC ex-combatants formally setting aside their arms and leaving their bases. This process began in 2017 with the signing of the Final Peace Agreement. The second step was the creation of concentration zones and disarmament. After demobilisation, ex-combatants were brought to designated concentration zones called 'Zonas de Verificación' (Verification Zones), which served as temporary camps where they received basic needs including food, shelter, and healthcare. The United Nations Verification Mission oversaw the disarmament process, which involved the collection and destruction of weapons. The third step was the process of identification and registration. Each FARC ex-combatant went through an identification and registration process, which allowed the Colombian government to gather data for assistance and reincorporation programmes and legal purposes. This step ensured that ex-combatants could access support tailored to their needs.

The fourth step is called the mechanism for reintegration assistance. The Colombian government, with the support of international organisations, multilateral bodies, and NGOs, provided various types of assistance to facilitate the reintegration process. This assistance included *physical and mental health support* (ex-combatants received medical and psychological care, including rehabilitation for injuries and trauma resulting from the conflict), *education*



and vocational training (many ex-combatants lack formal education and employable skills, therefore, educational programmes and vocational training were provided to enhance their chances of finding sustainable employment or starting businesses), access to housing and land (initiatives were implemented to ensure ex-combatants having access to housing and land ownership opportunities), economic support and livelihoods (financial aid, grants, and microcredit programmes were available to former combatants, enabling them to establish income-generating activities, support cooperatives, or participate in community projects) and social reintegration initiatives (various social programmes aimed to reintegrate ex-combatants into their communities by facilitating their interaction and collaboration with local residents, fostering trust and promoting reconciliation).

The fifth step was the development of a supportive alliance between local communities, FARC ex-combatants, and stakeholders. The successful reintegration of former soldiers requires the cooperation and acceptance of local communities (Hart and Tamayo Gomez, 2023). As a consequence, different efforts were made to raise awareness, promote dialogue, and foster understanding among community members and ex-combatants to reduce stigmatisation and promote social cohesion. ASMUPROPAZ is an example of this fifth step. The sixth step is called monitoring and verification. The implementation of reintegration programmes is monitored by government agencies, international organisations, and civil society groups to ensure the proper utilisation of resources, assess impact, and provide ongoing support and adjustments when needed. The final step is termed reconciliation and peacebuilding. Reconciliation is an essential component of the reintegration process. Since 2017, different initiatives have been launched in Colombia at national and local levels to encourage dialogue, truth-telling, and the restoration of relationships between ex-combatants, victims, and the wider society. The long-term aim of these efforts is to rebuild the social fabric and heal the wounds of the armed conflict.

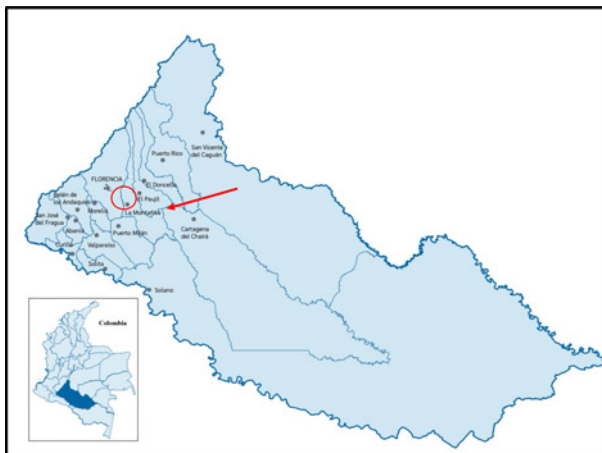
As we expressed in the abstract, this paper focuses on the experience of ASMUPROPAZ and the Eco-Peace Nexus. In order to address this case and topic, this short article contains three sections. The first revisits the case of ASMUPROPAZ, a women's grassroots organisation formed by FARC ex-combatants situated in the municipality of La Montañita within the Department of Caquetá, a crucial part of the Amazon Region of Colombia. We argue that this is a relevant case study to illustrate the interplay between socio-ecological practices, community development, reintegration of ex-combatants and environmental sustainability. The second section presents the term *Eco-Peace Nexus*. It refers to the interconnected relationship between environment protection, community development, quality of life, ex-combatants' reintegration, and the

promotion of peace. We state that the *Eco-Peace Nexus* perspective suggests that promoting environmental sustainability can be a means of fostering long-term peace after armed conflicts, and conversely, that peacebuilding efforts should take into account environmental and socio-ecological contexts. The final section concludes with some views on understanding how to comprehend the importance of grassroots initiatives in achieving a harmonious balance between societal healing and ecological preservation in post-conflict contexts.

## 2 The case of ASMUPROPAZ in Caquetá, Colombia

ASMUPROPAZ is a women's grassroots organisation formed by ex-combatants that emerged from the demobilisation and reintegration process of the Southern Bloc of the FARC. ASMUPROPAZ was established in 2017 in the municipality of La Montañita, Caquetá, as a platform to promote the social, economic, and political integration of former FARC combatants into civilian life. As of April 2024, forty women and five men are active members of this initiative. All members of ASMUPROPAZ used to belong to the Territorial Training and Reincorporation Space (ETCR) *Héctor Ramírez*. The ETCR were councils located in rural areas of Colombia for the implementation of the reincorporation policy, based in territories that used to be controlled by FARC-EP. Twenty-six councils across Colombia were responsible for coordinating the work of authorities, communities, and international organisations around the reincorporation needs of FARC-EP ex-combatants (Hart and Tamayo Gomez, 2023). The *Héctor Ramírez* ETCR is well-known as one of the best examples regarding the successful integration between local communities and former combatants.

Map 1  
Municipality of La Montañita, Country of Caquetá, Colombia



Source: DANE (2024)

Since 2018, ASMUPROPAZ has focused on different aspects of ex-combatants reintegration, including educational programmes, environmental and agricultural projects, and grassroots initiatives to promote ecological and socio-cultural integration. There are five key features of this organisation and its work. First, is the education and training programme. ASMUPROPAZ provides educational training that aims to improve the skills and knowledge of ex-combatants. This includes basic literacy, technical training, vocational courses, and professional development programmes that focus on environmentalism, ecology, and sustainable development. By enhancing their educational qualifications, former combatants have more opportunities to reintegrate into the workforce and to develop, at the same time, environmental projects in order to protect and conserve the Colombian Amazon. The second feature is the development and implementation of situated ecological and agricultural projects. ASMUPROPAZ supports and promotes agricultural and ecological initiatives as a means of providing sustainable livelihoods for ex-combatants. They encourage the former guerrillas to engage in productive agricultural activities and ecological projects including reforestation, sustainable farming, livestock rearing, and agribusiness projects such as natural oils and plant-based products. This helps them generate income and become self-sufficient.

The third feature is the socio-ecological development aspect. ASMUPROPAZ plays a significant role in facilitating the social reintegration of ex-combatants through environmental projects. Through its programmes and initiatives, this grassroots organisation promotes community engagement, environmental sustainability, and social cohesion at the local level. Also, this organisation encourages the participation of former guerrillas in regional socio-ecological developmental projects including the preservation of natural reserves, the protection of Amazonian ecosystems, and the security of clean sources of water. This third feature helps to break down barriers and build understanding and trust between ex-combatants and the civilian population through environmentalism and socio-ecological practices.

The fourth feature is cultural integration. ASMUPROPAZ promotes local and regional cultural initiatives that encourage the blending of former combatants with the local population. By organising cultural events, festivals, and artistic performances around ecological and environmental concerns (e.g., the negative impact of pollution and deforestation, or the importance of preserving native local species of birds, frogs, or butterflies), this organisation aim to foster unity and understanding between different communities, thereby promoting peacebuilding, environmentalism, and social cohesion. The final feature is political participation and green politics. ASMUPROPAZ is playing a vital role in promoting local political participation and representation of ex-combatants through a political 'green and conservation' political agenda. It supports former

FARC members who wish to engage in politics, helping them navigate the process of political integration and encouraging their involvement in democratic institutions.

To sum up this section, ASMUPROPAZ's work is crucial in ensuring the successful reintegration of FARC ex-combatants into Colombian society by addressing ecological and environmental initiatives, and local projects. By providing educational, social, economic, and environmental opportunities, this grassroots organisation helps former guerrillas rebuild their lives and contribute positively to their communities. Through this reintegration process, it is clear that ASMUPROPAZ aims to contribute to peace-building efforts in Colombia through socio-ecological practices and create a more inclusive and harmonious society.

### 3 Unpacking the Eco-Peace Nexus

After analysing the interviews conducted with members of ASMUPROPAZ, it became clear that this grassroots organisation is a successful case aiming to integrate five elements: environment protection, community development, quality of life, ex-combatants' reintegration, and the promotion of peace. We are calling this effort the *Eco-Peace Nexus*. From our perspective, the Eco-Peace Nexus can be seen as a framework that emphasises the interconnectedness between these five elements, recognising, at the same time, that environmental degradation and resource scarcity can lead to conflicts and exacerbate existing ones. We also acknowledge that armed conflicts can have devastating impacts on ecosystems and natural resources, as the Colombian case is showing us (Clark, 2023; Ordóñez, Peralta, and Prieto, 2023; Ortiz-Correa and Dinar, 2022). Therefore, the reintegration of ex-combatants can also be seen as an opportunity to address local environmental problems and encourage the development of socioecological practices.

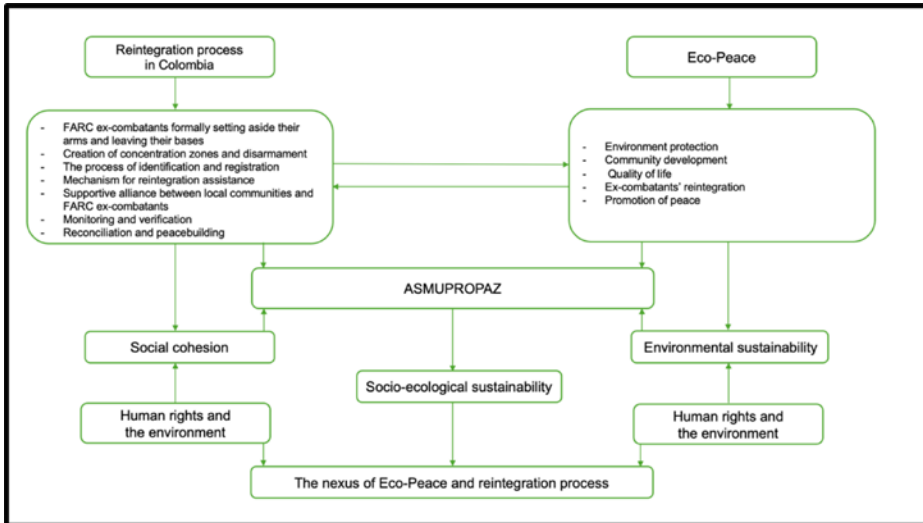
In this context, we also argue that the Eco-Peace Nexus addresses environmental issues hand in hand with peacebuilding efforts and the improvement of the quality of life to contribute to a more sustainable and lasting peace. It recognises that environmental challenges, including water scarcity, deforestation, land degradation, and climate change, are often root causes or catalysts for environmental conflicts, armed conflicts, and war. Moreover, armed conflicts themselves can lead to environmentally destructive practices, including resource looting, illegal mining, and the destruction of habitats and natural ecosystems, as the Colombian case is proving. Thus, the Eco-Peace Nexus perspective encourages integrating environmental considerations into peacebuilding processes, post-conflict reconstruction, and

long-term development strategies. It underscores the importance of including local communities, especially those directly affected by armed conflicts and environmental imbalances, in decision-making processes to ensure their participation and ownership.

From our perspective, and after analysing the case of ASMUPROPAZ, the Eco-Peace Nexus viewpoint emphasises five key components. The first component is related to conflict-sensitive environmental management in post-conflict settings. The Eco-Peace Nexus perspective promotes environmentally sustainable approaches to natural resource management and infrastructure development in post-conflict scenarios, taking into account potential conflict triggers and ensuring that environmental considerations are integrated into decision-making processes during the implementation of transitional justice mechanisms. The second component is the importance of environmental peacebuilding. This component highlights the role of environmental cooperation in conflict resolution and post-conflict peacebuilding. It recognises that joint management of shared resources, such as water or forests, can foster trust, dialogue, and cooperation among conflicting parties, thereby contributing to peacebuilding efforts. The third component is community engagement between ex-combatants and local populations. It promotes community involvement and local participation between these two parties in order to achieve environmental conservation efforts. It also encourages the inclusion of local communities and former soldiers in decision-making processes related to natural resource management.

The fourth component is sustainable development. The ASMUPROPAZ case shows us that the Eco-Peace Nexus perspective should acknowledge the importance and relevance of integrating sustainable development practices into post-conflict recovery and long-term peace development plans. It promotes economic activities that are environmentally sound, socially inclusive, and economically viable to increase the quality of life and to build prosperous and peaceful societies after armed conflicts. The final component is related to climate change adaptation and resilience in post-conflict countries. This component aims to recognise the importance of building resilience to climate change and environmental shocks as part of peacebuilding initiatives. It emphasises the need to address vulnerabilities and enhance adaptive capacities to reduce the potential for future conflicts rooted in environmental changes and resource scarcity.

Figure1  
An overview of the Eco-Peace Nexus relationship with ASMUPROPAZ



Overall, from our perspective, the Eco-Peace Nexus brings crucial attention to the mutually reinforcing relationship between environmental stewardship, sustainable development, socio-ecological practices, and peacebuilding efforts. We argue that addressing environmental challenges within peacebuilding processes aims to prevent conflicts, reduce vulnerabilities, and promote long-term peace and resilience in the aftermath of armed conflicts. Also, we believe that this perspective can reinvigorate other paradigms including *peace ecology* (Kyrou, 2007), and *environmental peacebuilding* (Dresse, Fischhendler, Nielsen, and Zikos, 2019). By addressing and analysing the case of ASMUPROPAZ, we are attempting to provide a located specification of the pathways connecting reintegration of ex-combatants, environmental cooperation, and management to peace, one of the biggest challenges in this field (Ide, 2021). The emphasis on links between the environment and the reintegration of former soldiers makes the Eco-Peace Nexus an interesting approach to exploring achieving a more peaceful world and sustainable planet.

## Conclusion

In this short paper, we have argued that the process of reintegrating ex-combatants after armed conflicts requires innovative and comprehensive approaches that extend beyond traditional social rehabilitation. Thus, in this manuscript, we have explored the intricate relationship between peacebuilding and environmental sustainability, focusing on the challenges and opportunities

in the reintegration of FARC ex-combatants in post-conflict Colombia. Figure 1 provides a navigable and structured overview of this research.

The study centred on the grassroots organisation ASMUPROPAZ, reveals how the group incorporates socio-ecological activities, environmental conservation, and community empowerment to catalyse innovative approaches to reincorporation. Through twelve structured interviews, the paper highlights ASMUPROPAZ's commitment to gender-inclusive strategies, emphasising the unique needs and contributions of ex-combatants in post-conflict settings. The research contributes to the discourse on post-conflict reintegration by showcasing the significance of grassroots initiatives in achieving a harmonious balance between societal healing and ecological preservation. Additionally, the paper introduces the concept of the Eco-Peace Nexus, underscoring the interconnected relationship between environmental sustainability, community development, quality of life, ex-combatant reintegration, and peace promotion. The Eco-Peace Nexus perspective suggests that promoting environmental sustainability can foster long-term peace, emphasising the need for peacebuilding efforts to consider environmental and socio-ecological contexts.

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## Methodological Appendix

We conducted twelve structured interviews with members of ASMUPROPAZ. The main aim was to reconstruct the motivations, reasons, interests, and understandings behind their particular roles inside this grassroots organisation. The sample of interviews comprised ten women (90% of the sample) and two men (10% of the sample). The length of the interviews was between forty-seven minutes to one and a half hours. In order to categorise the information, a conceptual clustering analysis was developed. This method was used to classify interviews as clusters of information, following a conceptual description to group narratives together by similarity into classes and to generate a classification structure. This approach allowed the creation of diverse clusters of information to manipulate the qualitative data by combining a dialectical inductive/deductive reasoning process and a hypothesis-generating method.



## Biographical Note

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## Fostering Sustainable Wellbeing via Socially Conscious Ecosystems- An Interventional Framework

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**Abstract:** *As humans, we often treat ourselves and our psyches as objects to be manipulated. In doing so, we miss the importance of inner lives and start relying on the “magic bullets” of behaviour change mechanisms having quick-fix solutions. The past 30 years have seen a drastic change in the way society exists. This change is not just in gadgets but in our nature of perceiving things. The velocity with which the world around us is shifting perspective, there is an urgent need to step back and consciously evaluate the choices and preferences that are moulding our behaviour patterns. Recent years have seen the emergence of focus on the social evolution of consciousness, where consciousness refers to an individual’s inner life, including their thoughts, attitudes, emotions, motivations, and spiritual experiences. Understanding consciousness and its different aspects that reflect societal paradigms becomes pertinent in every context that deals with sustainable wellbeing.*

*The paper proposes an interventional framework to build sustainable ecosystems that facilitate holistic wellbeing through social consciousness. The proposed interventional framework for behavior changes combines theories and concepts of social consciousness, focusing on reflexive and participatory consciousness. It further integrating with transtheoretical model, risk perception and nudge. These concepts are unified into an onion framework, where the core components are participatory and reflexive consciousness. Participatory consciousness is the sense of aliveness and belonging to the world, where reality is experienced as animate and organic. Reflexive consciousness allows for objective understanding enhancing our ability to take control of our environment. In the proposed intervention suggests that conscious awareness of immediate environment, identifying the influencers of thoughts process and evaluating them rationally could lead an individual through the stages of change. This further integrated with nudge, and risk perception would help an individual to build consciousness, by sifting through the various stages of change.*

*The proposed framework is based on the results of the quantitative survey study with 696 women and interviews with 30 women between the age of 26-65 across various geographical locations in India. The objective*

*of the study was to understand the knowledge of female participants towards their reproductive health and well-being, and the influence of consciousness towards taking self-agency of their well-being. The findings of the data indicated the lack of awareness due to sociocultural influences, lack of self-agency and vision of future implications on health. The framework emerged from indicators identified from the results of the analysed data.*

*The components of the framework are grounded on developing a mechanism for wellbeing towards sustainable health. It becomes applicable in the larger context of any sustainable behavior change, as holistic wellbeing embraces the notion of long-term and multi-level participation of stakeholders' engagement which can work as a sustainable model towards wellness within any ecosystem. This approach not only reflects upon collective wellbeing but also focuses on individual consciousness. The framework is thus an attempt to build an ecosystem towards sustainable wellbeing based on social consciousness.*

**Keywords:** Social consciousness, interventional framework, sustainable wellbeing, wellbeing and care, awareness

## 1 Introduction

The society is going through a paradigm shift. This change is not just in the inclusion of technological devices in everyone's life, but in our nature of adapting and including it in every aspect of our life. The rapidity with which the world around us is evolving, it has become imperative to consciously evaluate our choices that are moulding the behaviour patterns.

Discussions around behavioural change for wellbeing are gaining popularity, where the notion of behavior change is defined as a mechanism that can be controlled by tweaking certain behavior patterns. Here technology becomes the monitoring agent that can control and manipulate certain behaviours. As an outcome of the universal health coverage by United Nations Sustainable Development Group (2023) 'Leave no one behind' there is a proliferating growth in the development of technological interventions that facilitate behavior change. The implications of health promotion practices are continually subjected to scrutiny and evaluation. Multiple factors contribute to and influence such behaviour. While some of these behaviours are willingly adopted by individuals who are interested in improving their physical fitness and health; in other cases, agencies are appointed to conduct health interventions among specific target groups (Lupton, 2015; Reddy et al., 2020).

Existing literature suggest that self-management and self-responsibility are contribute to the success of any health promotion strategies. This contends the thought that suggest individuals or social groups as ignorant, lacking self-control, and having the capacity to take appropriate responsibility for their health. This shift in outlook is changing the discourse of health care towards personal agency of selfcare. (Chapin et al., 2016).

Recent years have seen the emergence of social evolution of consciousness, where consciousness refers to an individual's inner life, including their thoughts, attitudes, emotions, motivations, and spiritual experiences (Earley, 2002). Understanding consciousness with awareness and conscience that reflect societal paradigm becomes pertinent in for sustainable wellbeing in any context. Hence, personal agency accompanied with awareness may foster behaviour change are risk perception and social consciousness.

Risk perception refers to an individual's subjective assessment of the level of risk associated with a particular hazard (e.g., health threat). It varies according to factors such as past experiences, age, gender, and culture. (Rimal & Real, 2003). An individual's thoughts and feelings about the risks they face are an important determinant of protective behaviour. Risk perceptions are characterised by two main dimensions: the degree to which a risk is dreaded and unknowns. The estimation of risk perception or people's judgement about future outcomes that may result from an analytical or experiential process (Hoorens, 2020).

The above definition connects risk perception with social consciousness. As in this context social consciousness or awareness of society is referred as the social mind that distinguish roughly between, of conscious and unconscious relations. Unconscious relations are defined as the actions whose implications we are not aware of as it escapes our notice. It is derived from the culture, government and other institutions with whom we are indirectly and unconsciously related. Social consciousness hence becomes what we are aware of in a more or less complex personal or social whole, something that is experienced in a wide-awake state of mind. (Cooley, 1907)

The paper proposes an interventional framework to foster sustainable ecosystems that facilitate holistic wellbeing through social consciousness. The proposed interventional framework for behavior changes combines theories and concepts of social consciousness, focusing on reflexive and participatory consciousness (Earley, 2002), further integrating it with the transtheoretical model (Prochaska and DiClemente, 1983), risk perception (Rimal & Real, 2003), and nudge (Thaler & Sunstein, 2020). The proposed framework is derived from an empirical study to understand the knowledge of female participants towards their reproductive health and well-being. While the overall study is on developing a social communication model for reproductive health and wellbeing

amongst adolescent females. The current paper focuses on the influence of consciousness towards taking self-agency of their well-being. The subsequent sections discuss the methods, key finding, formulation of the framework with the underpinning of social consciousness, future scope of the study.

## 2 Method

To study the factors influencing information seeking and knowledge building towards reproductive health and well-being among women, concurrent mixed methods was used to acquire a qualitative and a quantitative data.

Qualitative semi structured interviews were conducted with 30 women between the age of 26-65 across various geographical locations in India. Quantitative survey data were collected from 736 participants across various geographical locations in India, of which data of 696 participants were included for the study.

Triangulation method was used to converge the qualitative and quantitative studies. The findings were backed with psychological theories and concepts to develop a comprehensive framework that could facilitate an individual mechanise their health behaviour change.

## 3 Findings of the study

Women's understanding of their bodies and various reproductive issues is significantly shaped by their lived experiences. These experiences are diverse and unique; while certain events such as menstruation, conception, reproductive health issues, and menopause are common among women, the individual implications and lived experiences surrounding these events differ markedly.

The data suggested strong evidence of sociodemographic settings impacting information seeking regarding reproductive health. Information seeking depended on an individual's keenness towards wellbeing. This was influenced by the cultural, demographic, and environmental setting in which the females resided.

### 3.1 Quantitative Study

The quantitative survey included 18 questions. This section briefly discusses the aspects that are relevant for the paper. The findings revealed a significant deficit in knowledge concerning reproductive health and wellbeing across women of all age groups, as no participant could accurately respond to all the questions (Table 1).

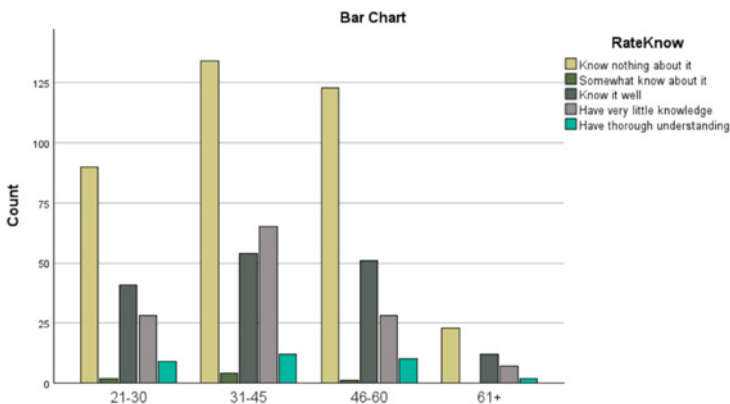
Table 1 Descriptive Statistics for Responses by Age Range

Age Group	count	mean	std	min	25%	50%	75%	max	
0	21-30	170.0	6.047059	2.072108	2.0	5.0	6.0	8.0	12.0
1	31-45	269.0	6.479554	2.014071	2.0	5.0	6.0	8.0	13.0
2	46-60	213.0	6.286385	1.927373	2.0	5.0	6.0	7.0	12.0
3	61 +	44.0	5.931818	1.822313	3.0	5.0	5.5	7.0	11.0

In response to the question how much they would rate their knowledge, 53.2% of the participants admitted knowing nothing about the topic. Notably, older respondents (those above the age of 60), who comprised 6.3% of the quantitative sample, indicated having gained knowledge primarily through self-experience. Their knowledge encompassed topics such as PCOS, the ovaries, uterus, and common problems related to reproductive health and conception. Conversely, participants below the age of 45 did not exhibit knowledge that reflected their access to various information sources. Interestingly, those under the age of 30 demonstrated an awareness of the influence of mental health on reproductive health and wellbeing, indicating a willingness to consider mental health as a contributing factor (Figure1).

4.7% of the total sample of people said they ‘have a thorough understanding of reproductive health and wellbeing’, most belonging to the age group of 21–30 years. However, their scores on questions to evaluate the understanding was less. This was indicative that although the young adults aged 21-30 felt they have better understanding, the scores did not validate it. Further, 52.3% of the participants said they ‘know nothing about the topic’, of whom 57.7% were aged 46–60 years, however they had scored higher in the questions leading to understanding.

Figure 1. Graph of Perceived Knowledge of Reproductive Health and Wellbeing



### 3.2 Qualitative Study

The qualitative data unearthed several underlying factors that contributed to the identified knowledge gaps. These factors included experiential learning, influence of socio-demographic settings, and information exposure. Most significantly, the qualitative findings indicated that the knowledge obtained and educational gaps during adolescence hampered the understanding of reproductive health and wellbeing.

While 25 out of 30 participants experienced some reproductive health issues, and only a few of the, made conscious attempt to be mindful about their health-seeking behavior. Seven respondents were aware of their well-being and consciously tried to stay healthy. Of them, one had learnt from a parent, four had learnt from self-education, and two had learnt from lived experience. 39-year participant's narrative encapsulated a belief in the body's natural rhythm, emphasizing a balance between embracing physical processes and adopting a disciplined lifestyle. She shared, *"Periods are natural processes, so let them occur naturally. ... The more you interfere, the more you harm your body. Sometimes, the flow was heavy, and sometimes, it was delayed, but I never tried to do anything about it and just let myself be. I focused on good nutrition, regular exercise, and proper hygiene. My parents insisted on a balanced lifestyle. I love cycling; feeling the wind in my hair is very romantic. Walking lets me connect with my daughter and husband and catch up and chat with close friends."*

On the other hand, 31-year participant's journey reflected a resilience that emerged from confronting health challenges head-on. She explained, *"After facing several issues over the years, I became more comfortable with my body and ideas. Therefore, I was okay with experimenting and seeing what happens. I was diagnosed with PCOD at approximately the age of 35 and had a cyst in my ovary that needed removal. I was also told that I would be unable to have children or find it difficult to conceive because the cyst was in a particular position. I was already married for 11 years by then, though, and we had decided we didn't want children and were okay with not undergoing laparoscopic surgery and seeing how the cyst could be managed on our own. After that, I went on a path of self-discovery and tried different things: I went gluten-free, dairy-free for a few years, exercised, started walking more, and became more conscious of what I was eating. ... I cut down on sugar and went for yearly check-ups to see if the cyst was growing. In summary, I was trying to do both things together: take a natural path to manage the cyst while also being conscious that scientific information was available. I wanted to see if what I was doing was working. ... I became stronger emotionally, probably because of several factors. It was the healthiest I had been in 20 years, and I was also more mindful"*.

The narratives of both the participants demonstrate the various paths individuals can take towards self-reliance and well-being, shaped by personal experiences, beliefs, and the support systems around them.

Lived experiences profoundly shaped the participants' lifestyle choices. A 30-year participant reflected on past choices, *"Previously, my lifestyle was severely imbalanced: little to no exercise and unhealthy eating habits. Even after medical interventions, I failed to make the necessary changes immediately. However, the accumulated stress pushed me to re-evaluate and adopt healthier habits"*.

The narrative of a 48-year demonstrated how age can serve as a wake-up call: *"didn't exercise until I hit 40. The persistent aches and pains became hard to ignore, and walking became my go-to solution"*. Meanwhile, 30-year highlighted the sharp contrast between her active school days and the detrimental habits she picked up in college, *"School was all about sports, long walks, and healthy eating, but college brought a shift. I indulged in drinking and smoking, which was fun initially, but soon, my health suffered. Now, frequent visits to the gynaecologist have become the norm"*. These accounts highlight that while guidance can set one on a path, lived experiences often serve as the most potent motivators for lasting change.

As the journey towards self-reliance and better reproductive health unfolded, participants highlighted various factors that drove them to modify their lifestyles. These shifts played a vital role in their overall well-being, whether through the influence of family or their own experiences. For some, maternal guidance was a foundational pillar. A participant, 42-year, shared the following about her mother's influence on her wellness journey, *"My mother always stressed the importance of yoga. While I couldn't commit to practising it daily, I ensured it was part of my weekly routine. My parents inculcated healthy habits early on"*.

The findings of the data indicated that individuals who took self-agency, were better informed about their choices. Scenarios where there was strong sociocultural influence lacked awareness, self-agency and vision of future implications on health. The proposed framework emerges from the indicators mentioned above.

## **4 Establishing Social Consciousness in the Framework**

The components of the framework are constructed to develop a mechanism for wellbeing towards sustainable health. It becomes applicable in the larger context of any sustainable behavior change, as holistic wellbeing embraces



the notion of multi-level participation of stakeholders. Such engagement can facilitate building an ecosystem that could lead towards long-term sustainable wellbeing. This approach not only reflects upon collective wellbeing but also focuses on individual consciousness which leads to their wellness in return. Thus, the framework is an attempt to build an ecosystem towards sustainable wellbeing, integrating it with the core principles of social consciousness, with emphasis of participatory and reflexive consciousness. The proposed framework is designed as an onion framework that integrates psychological theories and concepts in a gamified format (Roy; Biswas; U.N, 2023).

The integration of social consciousness with the stages of change, nudge, and risk perception positions the framework as a mechanism to develop self-reflection, facilitating self-agency. The core component of the framework revolves around Participatory and Reflexive consciousness. Here participatory consciousness involves a profound sense of vitality and connection with the world, where individuals primarily engage with the world through intuition, emotion, sensory experience, and the immediate present, and reality is perceived as vibrant, organic, and instilled with a spiritual essence. In contrast, reflexive consciousness involves the capacity to comprehend both ourselves and the world through mental images and abstract ideas. Over time, there has been a noticeable shift from reflexive to participatory consciousness.

Figure 2. Interventional Framework for Health Behavior Change



The subsequent loss of meaning may result in a 'detached' consciousness that impairs empathy, causing individuals to perceive everything in an objective and mechanistic manner (Tarnas, 1991).

In the proposed intervention conscious understanding of the surrounding and its influence on their own knowledge and wellbeing would lead an individual through the stages of change using nudge and risk perception. Hence nudge, and risk perception are used to build consciousness, that would probe them to question the conventions, further sift through the various stages of change. It further instils the relevance of social consciousness to build and ecosystem taking self-agency towards wellbeing.

## Future Scope

As humans, we often treat ourselves and our psyches as objects to be manipulated. In doing so, we miss the importance of inner lives and start relying on the "magic bullets" of behaviour change mechanisms having quick-fix solutions. Understanding social consciousness and its different aspects is pivotal in the context of sustainable wellbeing. With increasing reliance on artificial intelligence for monitoring, supervision, and decision making, humans may be approaching a cyborg-like existence. This shift is driven by the perceived unreliability of extant practices, leading to a lack of understanding of simple and logical phenomena. This further exacerbated by the external cultural influences and norms. The proposed framework aims to promote wellbeing by not only informing and raising awareness but also devising a self-development mechanism grounded in informed choices. Given that discussions on reproductive health and wellbeing remain stigmatised in several parts of the world, interventions based on the framework has the potential to allow female adolescent to take ownership of their health and well-being. The framework could be used to construct self-directed, technological interventions for female adolescent girls with an emphasis on choice autonomy.

While the framework is based on data concerning reproductive health and wellbeing, the components of the framework could be used in any context related with fostering sustainable behaviour change.

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## Methodological Appendix

The original study was divided into two phases. In Phase 1, the existing knowledge of reproductive health and well-being was evaluated among women at different stages of life, and their information sources and retention were identified. In Phase 2, a social communication model for female adolescents was constructed to promote knowledge about reproductive health and well-being. The current paper discusses the findings from Phase 1 of the study, that lead to the formulation of the framework.

Phase 1 was further divided into two parts: Phase 1A and Phase 1B. Phase 1A involved a qualitative study where interviews were conducted with 30 women between the ages of 25 and 65. In Phase 1B, a quantitative study was conducted using an online survey questionnaire. Both studies focused on understanding participants' current knowledge, awareness regarding their reproductive health and well-being, health information-seeking behaviour, and information retention.

### *Sample.*

Qualitative - Purposive sampling was used to identify a population that would represent the diversity of India. Emphasis was placed on the location where the participants had spent their adolescence. The purpose was to understand the influence of sociodemographic settings in the formative years of life and compare it with their current social environment and exposure to knowledge. The sample was spread across tier-1 and -2 cities covering the primary zones of India. Sample selection depended on the attitude of the participants towards the topic and their willingness to participate in the study.

Age group (in years)	26–30	31–35	36–40	41–45	46–50	51–55	56–60	Total
Number of participants	5	3	5	5	6	4	2	30

Quantitative - An initial pilot study was conducted with 136 participants, who could also participate in the qualitative study. After gathering sufficient qualitative data, the quantitative study was continued without the qualitative study questions. The quantitative study sample comprised 736 participants, of which 696 were included in the final analysis.

Age. The age ranges were divided according to the stages of ageing among women, that is, 21–30 years, 31–45 years, 46–60 years, and 61 years and above (see Figure 11). Of the participants, 38.6% were aged 31–45 years; 30.6%, 46–60 years; 24.4%, 21–30 years; and 6.3%, 61 years and above.

### *Tool*

Qualitative - The interview was designed using open-ended questions that would make the participants reflect on their self-journey towards understanding reproductive health and well-being. The interviews started with ice-breaker questions about demographics, followed by direct questions about terms such as sexual health, reproductive health, and hormones. These were then followed by reflective questions about the participant's experiences through the various stages of life in relation to the evolution of their knowledge and understanding

through experience. Finally, probing questions were asked to understand the context better.

The first 10 interviews were conducted in person with a prior appointment, and the remaining 20 interviews were conducted telephonically or through Jitsi Meet<sup>1</sup> as they were conducted during COVID'19. All the interviews were conducted in English, Hindi, and Bengali, depending on the language preference of each participant. The audio recordings of the 30 interviews comprised 970 minutes, and the average interview duration, which varied by the openness of the participant, was approximately 33 minutes. The shortest and longest interviews lasted 23 and 57 minutes, respectively.

**Quantitative** - A survey questionnaire was developed with 22 items, of which 20 were multiple-choice and two were short descriptive questions. Some of the questions had multiple correct answers to confirm that the participant had a conceptual understanding of the topic. The questions were divided into the following categories: Awareness about reproductive health, Issues related to reproductive health, Conceptual understanding of reproductive health, Source of information and its influence.

Qualitative Data was collected from January 2019 to April 2021.

Quantitative Data was collected from June 2019 to January 2022.

## **Biographical Note**

Debjani Roy is a faculty member at Srishti Manipal Institute of Art, Design and Technology. She is the Head of Studies for the master's program in Human Centered Design. Her practice is in design research, user experience design focusing on Public Health and Healthcare communication design. She has worked in developing several technologies based public health Interventions in collaboration with J&J and IDC, IIT Bombay. As a program manager she has implemented technology based public health intervention on HIV/AIDS in public hospitals of Mumbai, also collaborated with health agencies as independent consultant. She has been invited as a TEDx speaker where she talked on "How do we design interventions that work in urban slums" as part of TEDx Dharavi, 2019. The current work presented is part of her Doctoral Research, titled 'Social Communication Model for Reproductive Health Awareness and Wellbeing among Adolescent Females, completed from Maharaja Sayajirao University, Vadodara, India.

## Notes

1. <https://jitsi.org/jitsi-meet/>

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## Emotional Burden of Climate Change: The Case of Turkey

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**Abstract:** *The sociology of climate change provides an important perspective for understanding and explaining how individuals and societies approach environmental issues. This study will focus on the position of individuals in the context of the climate crisis. The participants of the study were selected among individuals with postgraduate education in Turkey; in-depth interviews were conducted with the participants using qualitative research methods. In the study, the effects of the systematic and potentially irreversible the consequences of the climate crisis on individuals are discussed and evaluated in the context of concepts such as eco-anxiety, eco-guilt, solastalgia. The results of the study will provide valuable information about the emotional responses of educated people in Turkey to climate change and the social impacts of these responses. This study aims to contribute to the literature as a basis for understanding the psycho-social effects of climate change on individuals and for generating social solutions.*

**Keywords:** *Sociology of climate change, awareness, eco-anxiety.*

### 1 Introduction

Climate change is one of the earth's natural processes when human influence is excluded. Due to some structural features of the world such as ocean movements, surface extent of glaciers, volcanoes, atmosphere, etc., climates have changed at different speeds in different periods (Kurnaz, 2019). However, the crisis we are in today is one of the consequences of the human relationship with nature. Anthropogenic effects such as the use of fossil fuels, deforestation, uncontrolled emission of greenhouse gases have increased the rate of change in the climate and made the destruction inevitable. In this context, climate change has turned into a anthropogenic crisis and in this perspective, it has become the subject of sociology. In this study, the social sources of climate change on individuals' mental health will be revealed. Although the mental health of individuals is not the issue of sociology, the relationships of feelings such as anxiety and guilt caused by climate change with social phenomena require a sociological explanation. If we need to mention some of the concepts discussed in the study, these are the concepts of eco-anxiety, eco-

guilt, solastalgia. "Eco-anxiety, which is used to describe the emotional and mental states associated with increased awareness of climate change and simultaneous distress in the face of threats to the future, operates together with a chronic fear of environmental disaster" (Yilmaz, 2023, p. 82).

"I dont think that I will be exposed to the very serious effects of climate change throughout my life. However, when I think about the next generations, I worry more." (Interview no: 4)

"My feelings about climate change are tension, stress and anxiety. Especially when I see the condition of animals in melting glaciers or burning forests, sadness is added to these." (Interview no: 27).

"I get anxious assuming that future generations might live in conditions that are unfamiliar to the world as we know it" (Interview no: 14).

"Eco-guilt represents the feeling that arises as a result of not being able to do anything despite the belief that something can be done to help the environment or reduce the environmental threat. It is associated with the perception that people cannot meet their own standards or social standards in terms of acting environmentally sensitive" (TPD Bulletin, 2003: p. 3).

"In fact, the devaluation of living things other than human beings and the normalisation of this destruction, the lack of respect for life and the lack of value of life cause me to empathise with living things that have no defence and I feel bad." (Interview no: 1)

"I feel bad because I think I am being irresponsible." (Interview no: 13)

"Solastalgia has its origins in the concepts of 'solace' and 'desolation'. Solace is derived from solari and solacium, with meanings connected to the alleviation of distress or to the provision of comfort or consolation in the face of distressing events. Desolation has its origins in solus and desolare with meanings connected to abandonment and loneliness. As indicated above, algia means pain, suffering or sickness. In addition, the concept has been constructed such that it has a ghost reference or structural similarity to nostalgia so that a place reference is imbedded. Hence, literally, solastalgia is the pain or sickness caused by the loss or lack of solace and the sense of isolation connected to the present state of one's home and territory." (Albrecht, 2005, p. 45).



"It used to snow, for example. We were buried up to our knees. Or when we looked out of the window, there was an empty land, storks used to come there in spring. All this was happening in Istanbul. Now, when I look at that land, I see a construction site, and the storks have not been coming for a long time. For example, we used to go to the forest and pick mushrooms, chestnuts, etc. I don't know, we used to see hedgehogs, snakes or squirrels in our neighbourhood. Now there are none. These are not very distant dates, I'm talking about 10-15 years ago. What affects me the most is the disappearance of places I have visited before. For example, you went camping there. In the trees. Then they came and cut down the trees. Maybe I cannot describe this feeling as mourning, but one misses it" (Interview no: 24).

## 2 Results and Conclusion

1. Awareness of climate change in Turkey can be explained by a complex relationship. There is a widespread understanding that the effects of climate change on daily life, which develop very slowly, "do not exist" or "go unnoticed". The understanding of global climate change has not yet been established; on the contrary, it is thought that climate change has regional consequences.

"I don't think that the majority of the individuals around me, no matter how much intellectual knowledge they have, are aware of anything other than the change in seasonal norms. At least I have not witnessed them expressing it or continuing these discussions" (Interview no: 8).

"In order for climate change to affect the society, it needs to develop fast enough to create sudden breaks, but we will only be able to see the clear results of climate change a generation from now, by comparing it with the present. Rules, not awareness-raising strategies, are necessary to raise social awareness on any issue. Rules will already become consciousness after a few generations" (Interview no: 12).

"I think the direct effects of climate change are limited for now. It affects limited regions and communities. In addition, climate change mostly emerges as a result of a certain type of lifestyle. In this case, I am not sure whether the direct effects are caused by climate change or this way of living. However, the indirect effects are felt more. I do not yet think that climate change directly affects my daily life in a serious way. Yes, temperatures are increasing, precipitation is decreasing, and we encounter unstable climatic conditions. However, these do not have an impact that would require me to change my daily life" (Interview no: 10).

**2.** Psychological problems caused by climate change were observed at the level of anxiety. Although the participants thought that a change in their everyday lives would not have an impact on climate change, they stated that their anxiety levels increased when they thought about possible climate-related disasters in the future. In addition, it is seen that the participants experienced a retrospective solastalgia, associating the human factor as the driving force of climate change.

"It is hard not to see the city where I was born and raised covered with green areas in past photographs and think "humanity is the greatest evil that has happened to this world". The feeling this gives is anger, sadness and fear as well as general guilt." (Participant 16).

"When I was a child, I used to go with my friends to collect hedgehog arrows. It was difficult to see hedgehogs with arrows, but it was possible to find their arrows in the woods. Now it is very difficult to find those arrows even as an adult. Wildlife has fled to deeper areas. This is sad for me. Also, big projects that have a direct impact on the environment (such as dams, harbours, roads, construction) sometimes cause sadness. Finally, some companies buy garbage from abroad for disposal, but instead of disposing of it under appropriate conditions, they either burn or bury it. This is a very sad example for me" (Participant 26).

"I feel very sad and mourn especially during forest fires. I feel very sad when trees are destroyed or animals die in fires. When such big disasters happen, I talk to my friends and I cry all the time" (Interview no: 3).

**3.** Most of the participants associate the reasons why climate awareness is not high in Turkey with other social problems in the country. They state that the economic crisis the country is going through, political problems, wars in the region and the political agenda regarding refugees in the country prevent them from thinking about a problem such as "climate".

"Lifestyle change is necessary, but I think it is difficult for sustainability to become an agenda in financially weak countries like us. I am sure that there would be a much different environment and nature if everyone lived accordingly" (Interview no: 25).

"I don't think that individual struggles in countries like Turkey, when there are problems such as the economy, have much value" (Interview no: 32).

"We have personal responsibility, of course, but there is also the fact that as a country we are in a very difficult economic period to make this a priority" (Interview no: 11).

"I think that the fact that climate change does not have a direct and dramatic impact on people causes this issue to remain behind more prioritised issues such as economy and health. I also think that the policies on this issue are not reassuring. ... But worrying situations such as wars, migrations, technological dangers override my concerns about environmental situations. The current state of the world affects me more at the moment." (Interview no: 14).

4. Participants recognize that climate change raises individual concerns, but believe that individual efforts to solve this problem will fail. Almost all of the participants state that it is the multinational companies and political powers that need to take steps on climate change.

"I don't think sustainable lifestyle has an impact on the climate crisis except that it makes people more anxious and sensitive. Sustainable lifestyle requires attention, patience and care in today's hustle and bustle, so it is difficult. I reduce personal waste by not cooking much, I avoid shopping a lot, everyone has started to turn off the water while brushing their teeth, etc. but I don't think this has a transformative effect on the environment. Let Mc Donalds and Burger King do more for the climate" (Interview no: 1).

"Higher budgets should be allocated for compliance with the targets set by the EU and UN. Above all, in order for the activities carried out and the money spent to be efficient, the public internal structure must be more qualified" (Interview no: 17).

"I believe that the implementation of activities aimed at preventing environmental damage seriously by large companies, rich people and politicians will be effective in society" (Interview no: 15).

"I think I should emphasise the inequality in the climate crisis. Even if we gather the whole world, we cannot produce the carbon emissions produced by the richest 1%. That's why I think that it is that small minority that needs to do something, and the small footprint numbers we calculate do nothing but stress ourselves. ... the media never talks about the impact created by the extremely rich elites or the states that do not comply with the Paris Climate Agreement. What am I going to do in 2024, not use an aeroplane to travel? Jeff Bezos is a space traveller. Will the amount of carbon emitted by his rockets be the same as the carbon emitted when I get on a plane? For example, what is a tax on carbon emissions? Let those who have money or power do what they want. As if this world belongs to them and they pay extra money to

consume it. This seems like hush money to me. If they are really sincere, for example, they can support the Green Belt project in Africa. Apart from that, the Paris Climate Agreement or climate crisis summits do not have much sanction. Last time they held a climate summit, the United Arab Emirates was the leader of the summit. I mean, it cannot be done so blindly... I think the most extreme example will be wars. Water wars, energy wars... For example, I read a news report recently that Russia is starting to search for oil or gas in areas opened up by melting glaciers. The same areas are also attracting the attention of the USA and China. In other words, their problem is not the melting of the glaciers, but the new fossil resources. This reminds me of a vulture picking at a carcass. Therefore, for myself, I prefer not to reproduce by doing something for the future." (Interview no: 3).

"I try it sometimes, I feel good for a while. Then when twenty luxury cars pass by me, I question the meaning of what I am doing. Unless sustainability becomes a state policy, I think it can only remain as an individual and pleasant habit, a hobby. If it is transferred to the next generations, perhaps as a culture, the benefits that will affect the result can be seen in the future. Changing individual habits is not completely meaningless in this respect" (Interview no: 18).

"I think that it negatively affects mental health, causes future anxiety in individuals and they feel loss of control, and although I think that people can feel better by making preventive contributions, I think it will not be enough" (Interview no: 21).

"The majority of the world needs to change policy and behaviour to solve this problem. However, I don't think this is very possible under today's conditions. This is scary. When the effects of climate change become much more obvious, we will all try to adapt to those conditions and live under those conditions as we do today. As long as there is no lethally dangerous Climate change, the Earth system can continue to sustain itself by encompassing it. This is a little bit comforting" (Interview no: 14).

**5.** The participants expressed the necessity of raising social awareness on what can be done socially regarding climate change.

"The most basic thing that should be done regarding an issue such as climate change that will directly affect the future may be to include the issue in the curriculum of education programmes in primary and secondary education institutions and to aim to raise individuals who

have a high sense of responsibility regarding the issue and who establish their daily life practices in this context" (Interview no: 12).

"I believe that climate change creates a concern for people when it is thought about. I think that in underdeveloped societies such as Turkey, awareness of climate change is lower than in developed countries. Of course, I also think that there is a contradiction at this point. In fact, it is a fact that developed countries have the most impact on the climate crisis. Nevertheless, an ecological literacy education is a must for countries like us. But this is a long-term process. I don't know if the climate crisis can be so patient" (Interview no: 8).

Research on climate change in Turkey, which evaluates the mental state of individuals, has revealed that the level of anxiety has increased, indicating a pre-traumatic stress disorder. This anxiety disorder, which is not due to a trauma experienced in everyday life due to climate change, but due to possible future events and situations, manifested itself with stress and anxiety about the future in almost all of the participants in our interviews. It is also among the results of the study that the participants in the study have practices that are not environmentally friendly in their everyday lives and that they feel guilty about this at various levels.

In the context of climate sociology, why is it an important problem for people to experience psychological changes due to climate change? Climate change, being an anthropogenic problem, is an area where individual measures are crucial. In this context, understanding the social relations of individuals' behaviour and attitude and doing this in the perspective of emotions will contribute to the practical studies of climate change. Climate change studies are an area where multidisciplinary studies should be carried out; based on this study, it can be said that one of the intersection areas of psychology/psychiatry and sociology is marked.

The fact that the concern about climate change in Turkey is not about today is a social phenomenon that requires urgent socio-political measures. Awareness trainings should be realised that the consequences postponed to the future are directly related to the current practices of individuals. In addition to this, it was observed that the participants left the responsibility to organisations such as "big companies" and "the state" and by transferring this responsibility, they neglected the individual measures to be taken on climate change. It should be stated that social responsibility projects to be developed in the context of eco-responsibility are a stage in the solution of this problem. At the same time, the importance of social responsibility initiatives in terms of both adaptation and mitigation methods should be emphasized.

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## Methodological Appendix

The participants of the study were selected among people with postgraduate education in Turkey, and in-depth interviews were conducted as one of the qualitative research methods. The selection of people with this level of education for the study is based on the assumption that people with easy access to information are aware of climate change, since the phenomenon of climate change is not an important topic of discussion in everyday life in Turkey. The data were analyzed using thematic analysis to understand participants' experiences and emotional responses. The study was conducted in December 2023 and January and February 2024 with 32 people over the age of 30 living in Ankara. The participants were reached by snowball method among the people with postgraduate education level living in Ankara, the capital of Turkey, and several snowballs were carried out together at the same time to prevent the participants from being from the same social environment. In-depth interviews were conducted face-to-face and/or online with the participants.

## Biographical Note

I work as a Research Assistant Doctor at Artvin Çoruh University. My research areas are sociology of culture, sociology of literature, environmental sociology and climate change. Some of my studies published in 2023 are as follows: Cultures of Taste in Turkey: Intersections and Divergences, Everyday Life and Everyday Life Sociology: The Literature Review, Erving Goffman and Frame Analysis.

## Notes

1. Artvin Çoruh University.









**SOCIOECOS**

Climate Change, Sustainability  
and Socio-ecological Practices

# TRACK 7

## **Social-ecological practices in culture, media and communication**

*Climate emergency in cultural production  
(music, cinema, video, literature); cultural  
representations of climate emergency;  
climate emergency-based imaginaries;  
communicating climate crisis; social media-  
supported practices in the age of climate  
crisis*



## The possibility of the rural: a new journalism as a socioecological practice in Spain

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**Abstract:** *In Spain, rurality has been narrated in a frame of endemic decline due to complex social factors (such as the demographic challenge) and economic factors (such as the crisis of the primary sector). Nevertheless, this frame has found an alternative narrative that I have named the resituated rural. This new discourse is being significantly generated in the realms of culture (literature, cinema, museums) and the media (local, specialized journalism, social networks). These cultural spheres are triggering new insights into rural opportunities and challenges. The resituated rural opens innovative narrative flows, differing from the stereotyped and victimized accounts of rurality. In the resituated story, countryside dwellers are empowered in what I identify as being an agentic rural. In this contribution I illustrate these concepts—previously discussed—with two cases that exemplify what I call the new journalism of the resituated rural.*

*To do so, I analyze two printed magazines: Salvaje and Arrels. I apply a qualitative text analysis, in-depth reading of materials, and hold two short interviews with their editors-in-chief. The results permit to identify six of the common elements of this new journalism as a socioecological practice: small productive structures; slow-paced journalism; a sociocultural approach to rural realities; pragmatic grounds to knowledge generation; a focus on people; a diaphanous and minimalistic layout with generous images and blank spaces that provide an airiness for reflective reading. The genres they produce—reports, portraits and essays are important—, the tone of the articles—sensitive to ecology, memory, heritage, community—, the format and physical layout—both are printed on paper—, give the reader an experience that is far from the hectic, fast, and saturated style of current cultural consumption. This is not traditional (pre-resituated) agri-food journalism, nor the regular mainstream coverage of the primary sector. I argue that, despite this new journalism of the resituated rural participating in what in the field of ecology or the environment other authors have identified as transformative journalism, these alternative, small-scale magazines go beyond this label. Their production characteristics, the construction of a community of readers supporting their notions, and the abovementioned formats, styles or design, distinguish these projects from the mainstream*

“green” or environmental journalism that have a transformative purpose. In this paper, I argue that this is a story that could be understood as a socioecological journalistic practice that imagines a “possibility of the rural”, but is highly conscious of the difficulties and the toughness of living and working in the countryside. Hence they overcome the discourse of the rural idyll. This possibility is grounded in both a story on the restoring rural life, and the understanding of journalism as the opportunity to make visible a place (rural and physical but also a symbolic constructed site) that has little space in the mainstream media stories.

**Keywords:** Journalism, resituated rural, rural agency, socioecological storytelling, communication

## 1 Introduction

In Spain, we are faced with a strong and hegemonic discourse about the rural attached to decay and crisis. Such narrative is deeply rooted in cultural and social practices, from literature to film, from popular culture to television. Some of the labels that we recognize as referring to these narratives are *la España profunda* (deepest [Spain]), *negra* (black [Spain]) or, more recently, *vacía* (empty [Spain]). The latter was successfully introduced by the remarkable essay by Sergio del Molino (2016), but rapidly mutated to a more politicized version of *vaciada* (emptied), an expression implicitly claiming that some agent was involved in the depopulation and impoverishment of the countryside. It was since the late 2010s that I annotated the presence of a new discourse that started to renovate social accounts of the rural (Castelló, 2023a, 2023c). I named this the *resituated rural*, a narrative movement that implies a renewed conceptual approach to agriculture, land, and animals. It implies a discursive relocation of rurality beyond the victimization, the stereotyping, and the advocacy for social justice, environmental aware and gender perspectives. One of its characteristics is the empowering of rural communities in a narrative choice that gives greater capacity to the locals, the dwellers of small villages, to transform their realities and to work and live in the rural. I named this storytelling choice the *agentic rural* (Castelló, 2023b), and it is a way of narrating in which individuals are conscious subjects that decide to live and develop in their places.

My aim here is to explore the elements of the *resituated rural* in two relevant publications, as they are the magazines *Salvaje* and *Arrels*. *Salvaje* has received several awards and recognitions, including being a finalist in the European Press Prize (2021). The director is Guillermo López, and the editor-in-chief is Annabel Roda. *Arrels* is a publication that belongs to the group Abacus, which is a cultural cooperative established in Barcelona. The magazine is published in

Catalan and is part of a broader project, including an on-line farmers' market<sup>2</sup>. The main editor is Anna Llacher and the director of the magazine is Josep Sucarrats.

To achieve the goal, I conducted a qualitative textual analysis focusing on the main topics and the coverage of the magazines, specialized in the rural life, a thorough reading of a corpus of items and a reflection on their design. For the qualitative textual analysis, I selected five issues per magazine (issues 2, 7, 8, 13 and 18 for *Salvaje* and 1, 2, 4, 7 and 11 for *Arrels*) and analyzed the layout, the genre of the articles and their topics and conducted a close reading of the pieces. Finally, I resort to two short interviews with their principal editors, Annabel Roda and Josep Sucarrats. They were closed questionnaires done online on February 2024.

This journalism *partially* practices what other authors have identified as *transformative journalism*, which promotes social transformation that fosters sustainability (Brüggemann et al., 2022). However, I stress the use of *partially* because, these small media projects are different from those in bigger companies that moved towards "sustainable journalism" or "green journalism". Differing completely from corporate journalism's "green" models, these smaller projects, which are grounded in subscription and small-scale promoters and advertisers, are an example of a journalistic practice that, I argue, is a socioecological practice.

## 2 A new rural

The socioecological practice of journalism demands going beyond the coverage of topics like eco-agriculture, "green" energies and biodiversity. It takes a critical approach, considering the rural as a value (symbolic and material) under great pressure. In this sense, journalism storytelling is a productive way to generate new conceptions and give voice to those silenced by the mainstream media. This journalism proposes alternative means of production and consumption that challenge the imagination of ultracapitalism to generate a new, affirmative imaginary of the relations between culture, nature and society. Overall, *socioecological journalism practice* is rooted in a new postgrowth narrative (Jackson, 2022). It is, moreover, slow journalism (Le Masurier, 2015), in the sense of productive pace and reflective tone; therefore, the socioecological is not just a matter of the topics covered but also the way these stories are produced. In the following sections I will develop on how *Salvaje* and *Arrels* approach this challenge. The analysis will lead to a short discussion of the elements that characterizes socioecological journalism practice.

## 2.1 *Salvaje*: a counter-hegemonic story

*Salvaje* offers around 11-12 items per issue. Since it is a magazine with few pages dedicated to advertising, it is worth noting the average number of pages that the magazine devotes to each item (between 7.8 and 9.1). It is a remarkable effort and a sign of how the magazine gives space to quality pieces. The longest piece that we found in the analyzed corpus was a long photo report on the making of hand-crafted street decorations (Fernández Ramos and Rua, 2022), that filled 23 pages of pictures and text. One of the salient elements of the publication is the broad range of genres that it cultivates. In the corpus we identified a predominance of reporting (23 items) and essay (10), but also other creative pieces on photo-essay or photo reporting (6), people portraits (3), and literature (3). We are dealing with a cultural magazine in which rural issues are the background on which to expose a diverse range of topics. In our analysis, the category “Life” was predominant. These pieces cover lifestyle stories in the countryside, sometimes under the epigraph “De pueblo” (village life). Although we find topics that are expected in this sort of publications, like “Agriculture”, “Environment”, “Nature”, “Animals”, or “Species”, we also find pieces devoted to “Professions”, “Mythology”, “Astronomy”, “Art” or “Memory”.

In the interview, Annabel Roda mentioned an accurate definition of her magazine’s conception of the rural: “Rurality, for us, encompasses all those stories that occur on the margins of the great poles of power which are located in large cities”. The concept of “periphery” goes beyond the physical here and refers also to the symbolic and the sociocultural. In this sense, Roda states that “rurality is opposite to the *discourse of progress*” [our emphasis]. The editorial criteria are then consistent with searching for “other ways of living and being in the world”. Therefore, the journal explores “the relationship between humans and nature”. Consistently, it seeks stories “far from clichés” and it is especially open to “small stories”, its scope is “from small to big”. This focus on pragmatism, on experience, on materiality, is highly relevant for the magazine. For this to succeed, it is in direct contact with the rural, it is not a journalism produced from the city, or from the office. Although the magazine shows many positive aspects of rural life, Roda clarified that in the countryside there are many “tough elements”: “We are not looking to idealize or romanticize rurality, but to show the many facets of each village, county or province”.

Analyzing the issues in the corpus we see that advertising is scarce although some sponsored items do appear—that were included in the count because they are two reports and one piece about one bird species. The magazine is subscription only and is issued only in hard copy. Roda explained that they take care of the reading experience of their subscribers: “We get our readers to

slow down their day-to-day". Mentioning its subscribers, Roda talked about a "community"; it is not just a commercial relationship, their work is not a product, it is a shared forum.

The magazine has a literary style and is carefully edited. The design is diaphanous, with a great prominence of images. In the corpus analyzed, the photo-essay "Lumens" is remarkable: it offers fifteen pages of photography and a reflection by the author about silence, plants and light (Hernández, 2020). These are not only innovative contents but also connect material beings and reflect on human perception. Roda remarked the "splendid" work of their Art Director. This fanzine-like design offers many moments for reader reflection (for example, with single pictures or quotations on a page, or blank spaces throughout the magazine). Overall, *Salvaje* offers a counter-hegemonic story on the rural adopting a soft style and an easygoing design.

## 2.2 *Arrels*: rooted people and community-making

*Arrels* was launched in 2020 by the cultural cooperative Som, which in 2021 merged with the educational cooperative Abacus, that markets educational material and books. Although this structure is bigger than in the case of *Salvaje*, *Arrels* is also produced by a limited team of journalists and a network of collaborators. The issues have around two-hundred pages, of which between 140 and 160 are of journalistic content. The rest are dedicated to advertising or project self-promotional information. The average item length is between 4.3 and 6.3 pages, with around 31-23 items per issue. Therefore, we are dealing with a different publication in many aspects, but as I explain, one that shares quite a similar journalistic ecosophy.

Another particularity is language: *Arrels* is published in Catalan. It is relevant to note that the socioecological journalistic projects pay attention to linguistic pluralism and are aware of respecting cultural diversity. *Arrels* means "roots" and the subtitle of the magazine is "el món que torna" (the world that (re)turns). However, we are not facing a melancholic view of a rural past, or a lost world; the tone is positive. There is a substantial content dealing with people who live successfully in the countryside, how they farm their orchards, how they manage their small business, how they make a life in the mountains.

Overall, this is a people-oriented project with concern for non-human agents (animals, material and immaterial elements, geology and landscapes, etc.). Each issue is devoted to one topic. The five in the corpus were "The forest", "Orchards", "Mountains", "Night", and "Fire". Some interesting examples are the report "El país de les fagedes" (The country of beech trees), a piece about trees, fungi, birds and how the place historically evolved (Vilaseca and Rodríguez,

2020); or “El pagès a la Lluna” (The peasant on the Moon), exploring biodynamic agriculture and the influence of the Moon explained by a small farmer (Ripoll and Vendrell, 2022).

When inquiring about journalistic genres, we note that people portraits (38) are dominant, even more than reporting (35). There is a thin, interpretative boundary between the two genres, because portraits involve aspects that are close to reporting (in some cases they are reports focusing on people, their job, their way of life). Consistently, I labelled them “portrait” when the piece was clearly focused on people. This is one of the main features of *Arrels*: this magazine pays a great deal of attention to inhabitants developing projects in the rural. The publication has a section entitled “Arrelats” (Rooted) that focuses on how people make a living, and many other reports are also devoted to explaining people’s projects and professions. Among the topics, the most salient are “Culture”, “Professions”, and “Life”. It should be noted that here, “Culture” includes expressions of folklore, festivities or traditions, meanwhile “Life” would be closer to an ethnography of peoples and communities than to the English notion of lifestyle. In this regard it is important to understand the sense of community in this project. This applies not only to the people living and working in the Catalan countryside, but we find reports or interviews explaining experiences in South America, Africa or Asia. Similarly to *Salvaje*, but with a different style, layout design is diaphanous and minimalistic. They give great care to the output and pay attention to detail.

Josep Sucarrats, director of the journal, remarked in the interview that the magazine’s conception of the notion of the rural is a “diverse space where non-urban social, economic and cultural alternatives develop because the urban environment does not favor them, or because cities directly expel them”. This is a definition that we could even identify as somehow Lefebvrian in the sense that the rural is more than a physical place and becomes the mixture of the material and the symbolic place (where these alternatives take place). The journalist noted that *Arrels* is quite centered on “portraits”, “personal stories”, and the “bond that people’s projects generate”. This style and focus are different from other “urban-centric” media. Interestingly, the team reflected on what Sucarrats named “solution journalism” (*periodisme de solucions*). The journalist noted that in the rural there are “communitarian solutions” or “small-scale economic” projects. The idealization is seen as “a risk” of this sort of journalism, but Sucarrats was aware that many of the magazine protagonists are living close to many people who saw their projects fail. *Arrels* has some on-line pages and activities, and a greater presence on the Internet than *Salvaje*. Being in Catalan (a smaller reader community), they rather talk about “members” (*socis*). They try to combine advertising and membership, but Sucarrats stated that they are also open to sponsored content that will not clash with the magazine’s

editorial line. He ended remarking that among its future goals they want to grow their community and to strength alliances with organizations and enterprises that will engage with its quality standards.

### 3 Conclusions

This paper is too short to offer a more in-depth comparison of the case studies analyzed and a grounded reflection of journalism as a socioecological practice. However, I have identified some elements that I summarize below:

- *Core production structures are small*, and they work by activating a network of collaborators and experts. Moreover, they are not corporation oriented; their aim is to cover costs and generate a sustainable product, adding more than economic value.
- They accurately edit the content and produce what is considered an *expression of slow journalism*. The result is an in-depth coverage of each topic which deserves space and time to be delivered.
- The main topics are not about agriculture or farming, as might be expected for a magazine that focuses on the rural; but they have a *sociocultural approach*. The reader experience is the experience of someone who is reading about culture and society.
- There is a consciousness of material and immaterial agents. The elements and landscapes play a role in the stories, in the experience. It is a *pragmatic, experiential storytelling of the rural*.
- There is a *focus on the people* living in the rural and their projects; it is a story about the possibility of the rural. Sometimes there is an ethnographic tone, also in journalistic techniques, in the sense of understanding and giving voice to people and communities.
- *Layout is simple, diaphanous, minimalistic*. This helps for a reflective tone, distancing this alternative media product from the hectic, saturated current digital or audiovisual content.

This journalism has a social and ecological dimension that grounds what I defined as the *resituated rural* (Castelló, 2023a): socioecological narratives (documentary, journalism, cinema, literature) that overcomes the limitations of harmful imaginaries of the unsustainable growth fantasy applied to rural life and work. They are narratives of the possibility of the rural in what Anna Tsing (2015) identified as the ruins of capitalism.



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## 5 Methodological Appendix

This paper focuses on a journalistic case study of two quality magazines on rural issues: *Salvaje* and *Arrels*. I conducted an analysis on the main topics of the journal using a qualitative textual analysis. I did a close reading of a corpus of items (10 issues containing 194 pieces). In parallel, I conducted two short qualitative interviews with the editor-in-chief of each magazine. It is a qualitative approach to test practical applications of the concept of the *resituated rural*—that has been previously proposed and discussed (Castelló, 2023a, 2023c)—and to identify how journalism can become a socioecological practice.

## 6 Biographical note

Enric Castelló is professor of Journalism and Media Analysis in the Department of Communication Studies at Universitat Rovira i Virgili (Tarragona). He has been a guest researcher at Glasgow Caledonian University and Loughborough University. He currently specializes in the study of rural imaginaries, media and culture. He is the principal investigator of the project Ruralim: <https://ruralim.wordpress.com>

## Notes

1. This paper is part of the research project Nuevos imaginarios del rural en la España contemporánea: cultura, documental y periodismo (PID2021-122696NB-I00) funded by the MCIN/AEI/10.13039/501100011033 and ERDF "A way of making Europe".
2. <https://www.mercatarrels.cat/>, last access 3 Feb 2024.



## When Culture Meets Sustainability

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**Abstract:** *Social change towards more sustainable lifestyles is not caused and implemented by normative directives and political decisions alone. Cultural production can act as a factor that promotes or prevents public awareness of the worldwide challenges we face today. On the one hand, high and popular artworks attract local and global audiences and impact the social imaginaries of many. On the other hand, what we call culture has a long-term effect. Culture constitutes accumulated resources, material or immaterial, which individuals inherit, use, change, add to, and transmit. When socially recognised and valued, the cultural elements handed down from generation to generation become heritage, linking the already-dead to the not-yet-born.*

*This brief essay explores why culture matters for sustainability and how creative and artistic endeavours may sharpen people's consciousness of their actions and aspirations, promote feelings of responsibility for the environment, and trigger civic agency in the face of a climate and ecological emergency. The argumentative framework draws from recent developments in the disciplinary subfields of the sociology of culture and the arts and the interdisciplinary field of cultural studies.*

*These pages also approach the so-called ecological turn in the arts, demonstrating its plausibility through empirical analyses of examples from the plastic, visual, and performing arts that currently cover an array of environmental topics, from natural disasters to climate change, helping us cope with the precariousness of near and distant scenarios. All art pieces were selected from a single-case study conducted in Quinta do Pisão, a nature park on the outskirts of Cascais, a coastal town west of Lisbon, in Portugal. Three open-air art installations or interventions, part of the broad movement known as land art or environmental art, are briefly reviewed and contextualised.*

*The findings, even if quite provisory and limited, reinforce the idea that environmentalism is already established within the art world. The ecological ethics of twenty-first-century artworks are, in fact, integral to their overall aesthetic value. However, further research is needed to understand how artworks may reach individuals and society and how their webs of significance can be bequeathed to future generations.*

**Keywords:** *Arts, culture, sustainability, land art, Quinta do Pisão, Cascais, Portugal*

## 1 Preliminary Insights

Anthropogenic climate change is a pressing societal issue that requires immediate action. Its irreversible impacts will last for centuries and can no longer be overlooked. Such ecological disequilibrium requires an unprecedented metamorphosis involving both the macro-level of the world and the micro-level of daily existence (Beck, 2016). There is little doubt that truly transformative actions must have, as their horizon, an environmentally sustainable way of living. At least sustainability has been the buzzword of the last decades, but we still struggle to determine how it will be reached. This is also a serious cultural challenge.

Art is essential in highlighting the imperfections of our world, disturbing assumptions taken for granted, and encouraging us to consider new perspectives. Once publicly accessible, art compels us to look for deeper cultural meanings that the aesthetically shaped surfaces often conceal more than reveal (Alexander, 2008). Art might call attention to the most controversial, urgent issues and catalyse conversations around utopian or dystopian representations of future scenarios. More nuanced, art is not entirely self-sufficient and does not merely reflect the artist's concerns. Various factors contribute to how a work of art is conceived and perceived, including its possible appearance, purpose, intended audience, and the questions it raises.

Over the last few years, I have been interested in the influential role of heritage, culture, and the arts (e.g. Gonçalves, 2013, 2022). This short essay represents a new step in a long-lasting journey. Yet, the coronavirus pandemic played a significant role in this small-scale, low-budget study. During the lockdown, people were not authorised to leave their homes or walk further than a few kilometres. All moments outside were restrained to the orbit of the housings, for example, in the nearby public parks. One of those became my improvised research setting.

In the pages ahead, I will generically address the ecological turn in art based on an exemplary empirical case study and drawing from the conceptual apparatus of the disciplinary subfields of the sociology of culture and the arts and the interdisciplinary field of cultural studies (e.g. Kagan, 2011; Baker, 2019).

## 2 Setting Up the Terrain: Quinta do Pisão, Cascais, Portugal

Quinta do Pisão (literally, fulling mill farm)<sup>1</sup> is a 380-hectare nature park located on the southern slope of the Sintra Mountain at the western edge of the Cascais municipality. Whilst anthropised it may be, Pisão is covered by overlapping protection types and levels, being fully inserted in the Sintra-Cascais Natural Park and 2000 Natura Network. As a pleasuring area attracts visitors for the mosaic of ecosystems – forest, meadows, woodlands, farmlands, streams and ponds – offering just as many ecological opportunities for a large number of species and enabling wide-ranging experiences, such as hiking, cycling or donkey riding; birdwatching, wildlife watching, plant observation; harvesting organic crops straight from the farm; and the chance to contemplate recent land art installations.

Throughout history, the area had various landowners, residents, and forms of land utilisation. The oldest evidence of human occupation comes from the natural cave of Porto Côvo, which is thought to have been used, albeit not continuously, as a necropolis in prehistoric times. As may be supposed, such a vast territory comprises vestiges of historic rustic properties, such as the Casal de Porto Côvo, the Quinta do Copeiro (also known as Pisão Velho) and the Quinta dos Perrinhos (or Pilrinhos).

For a decade and a half now, Quinta do Pisão has been hosting a regularly recurring exhibition that promotes artistic works rooted in environmental aesthetics. This cultural event has brought clear benefits to publicising the nature park and presenting and promoting a mode of artmaking called land art.

It is worth emphasising that land art, also known as earth art, ecological art, or art in nature, has boomed since the late 1960s, with the simultaneous rise of environmentalism, especially in Western societies. The artists classified under these labels explore crossovers between art and environment, creating site-specific artworks and using natural elements to intervene and modify the landscape. The artworks are made outdoors, in situ, destined to perish, to be naturally degradable and assimilable by nature. By taking concrete form in the public space and becoming accessible to all, the art installation pieces suggest that their creators also seek to establish a closer connection with the audience. Rather than an aesthetic experience in the traditional sense, this art form is as much to be seen as it is to be explored, given that it is a hodological experience that involves a journey and incorporates travel constraints (Riado, 2020).

Table 1. Artists Exhibited at LandArt CASCAIS from 2009 to 2022

Artists	Editions	2009	2010	2011	2012	2013	2014	2016	2018	2020	2022
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	
Alberto Carneiro		•									
Ana Vieira					•						
André Banha						•					
António Bolota							•				
Armanda Duarte											•
Bruno Cidra								•			
Catarina Câmara Pereira					•						
Cristina Ataíde			•								
Edgar Massul								•			
Eduardo Malé					•						
Fernanda Fragateiro				•							
Filipe Feijão										•	
Hamish Fulton	•										
Ilda David'										•	
Inês Botelho									•		
João Castro Silva			•								
João Ferro Martins							•				
Joaquim Pombal			•								
José de Guimarães									•		
José Pedro Croft						•					
Luís Valente					•						
Manon Harrois											•
Manuel Rosa										•	
Manuela Pacheco			•								
Maria José Oliveira										•	
Mariana Dias Coutinho								•			
Mariana Gomes											•
Marisa Alves			•								
Marta Wengorovius							•				
Meireles de Pinho			•								
Miguel Ângelo Rocha						•					
Orlando Franco						•					
Paulo Neves			•								
Pedro Cabral Santo									•		
Rablaci					•						
Ricardo Lalanda					•						
Robert Smithson (1938-1973)				•							
Samuel Rama				•							
Sara Bichão											•
Susana Anágua			•								
Susana Neves		•									
Susana Tereso					•						

Note: The author elaborated this table using secondary data available in exhibition catalogues from 2009 to 2022.

The first edition of the LandArt Cascais exhibition was held in the late 2000s in the town centre. It was organised by the Cascais Natura Agency and the Environment Department of Cascais Town Council, with artistic supervision by the D. Luís I Foundation. According to the deputy mayor's statement at the time, Land Art – hand in hand with another art show, ArteMar Estoril – intended to instil the crucial value of sustainable development in the people of Cascais, particularly the exhibitions' visitors. It would also ensure the quality of life for all and democratise culture, opening art, in all its many forms, to all generations and social strata.

In 2010, the organisers of the Land Art exhibition decided to move the event to the Pisão area. They invited several reputable Portuguese artists to showcase their work in the new location. The art productions have clustered around installation and sculpture, implying venues able to provide the resources, scale, and public prominence required by these works. Since the second edition, LandArt Cascais has become the most recognisable cultural event in Quinta do Pisão, and from the mid-2010s onwards, it became an art biennial.

### **3 In the Land of Art: outlines from Three Sculptural/ Installation Works**

In close association with the biennial exhibition of Land Art, in the second decade of the twenty-first century, the Cascais City Council delegation of the European Environment Agency has invited internationally renowned artists to create site-specific works during artistic residencies at Quinta do Pisão. As we will see, these are the cases of *Rise and Fall*, authored by Stuart Ian Frost; *Daydreamer*, by Will Beckers; and *One Seed Created a Forest*, by Roger Rigorth. All three artworks share common traits: they boldly cross the boundary between sculpture and installation art, incorporate the surrounding environment in their very form, and, therefore, cannot be moved from where they were created and displayed.

To gain a deeper understanding of each work of art, I gathered information from various sources, including the artwork captions, artists' websites, reviews in periodicals, and statements by mayors, curators, and artists themselves. These sources gave me valuable insights into the artists' perspectives and intentions. Additionally, during the fieldwork in the Quinta do Pisão, I took photographs, shot short videos, and wrote notes to document my observations systematically. The following review of the selected artworks has been prepared using the data collected.

*Rise and Fall*  
Stuart Ian Frost, 2018

Following the Porto Côvo trail, close to the historic lime kiln, a single eucalyptus trunk, smooth, slightly twisted, with several branches, bare of foliage, stands out in the natural scenery (figure 1). Tragically, this 15-meter Tasmanian blue eucalyptus (*eucalyptus globulus*) died due to the severe drought that hit the region in the summer of 2017. Stuart Ian Frost, a British artist based in Norway, has etched deep into the trunk's and broad limbs' surface hundreds of clusters of four cylindrical holes with different diameters, forming symbolic raindrops or tears (figure 2). If the drops of water are a vital resource, the tears express attachment and loss. One sustains or regenerates with rain, drizzle, dew, and droplets; with the welling-up and overflowing of the eyes, one surrenders or succumbs. *Rise and Fall* is not a general metaphor for the natural life cycle and the passing of time as it might sound. Instead, it displays the telluric vulnerability of all living beings and prognoses that the climate is already changing. This artwork is quite disquieting and evokes contrasting feelings of hopefulness in the desired nature and hopelessness in the face of the feared nature.

More recently, the tree trunk was cut down for safety reasons. According to the Quinta do Pisão's staff, the weather-beaten, lifeless eucalyptus was in danger of falling. Surprisingly, this unfortunate amputation adds more *gravitas* to Frost's initial contribution (figure 3).

Figure 1. Standing Eucalyptus  
(11 September 2011)



Photograph by the author.

Figure 2. Detail of the Drops  
Falling (1 April 2024)



Photograph by the author.

Figure 3. Amputee Eucalyptus  
(3 February 2024)



Photograph by the author.



Figure 4. Fallen Eucalyptus (23 March 2024)



Photograph by the author.

*Daydreamer*  
Will Beckers, 2019

Climbing the stone steps that lead to the top of the decommissioned lime kiln and walking along the path accessible to blind and visually impaired outdoor enthusiasts, a small clearing appears on the right, surrounded mainly by maritime pines (*pinus pinaster*), some oaks and a bursting eucalyptus tree. In that spot, environmental artist Will Beckers created a hut-like structure, mostly made of skilfully interwoven tree branches (Figure 5), supported by a row of wooden columns stretching around the entire interior enclosure (Figure 6). At the heart of the fragile shelter, a skylight-like opening allows a glimpse of the sky, clouds, and trees (Figure 7). This artisanal structure, called *Daydreamer*, serves as a doorway to self-reflection, retrospection, and nature contemplation. It's a rustic refuge to slow down, sit quietly, close your eyes, and breathe in the natural scents that follow the season's rhythms while listening to the wind in the pines and birds chirping on branches. Beckers' project is sensitive to impermanence and aims to represent the fleeting nature of life and the cyclical process of regeneration in the natural world. Visitors are invited to take a place and feel part of the environment. By immersing ourselves in nature, we can let it resonate within us and reconcile us with it. Light filters through the interwoven branches. The interplay of light and shadow, the natural textures, and the surroundings' soundscape gives everyone — impaired or otherwise — an aesthetic and sense experience of the sculpture.

Figure 5. External entwinement (3 February 2024)



Photograph by the author.

Figure 6. Internal entwinement (3 February 2024)



Photograph by the author.

Figure 7. The skylight-like opening (3 February 2024)



Photograph by the author.

*One Seed Creates a Forest*  
Roger Rigorth, 2024 –

On the right bank of the Porto Côvo stream, alongside a narrow-leaved ash (*Fraxinus angustifolia*), and just a few steps away from the former lime warehouse, which now houses the interpretation centre and the farm shop, is an art installation created by Swiss (now living in Germany) environmental artist Roger Rigorth. The artist has installed two hand-woven acorn-like structures of different dimensions to a Quercus Sober oak, an endemic tree species safeguarded by Portuguese law (figures 8, 9, 10, 11). The shape of the acorn (a seed as much as a fruit) takes on symbolic importance, summoning the ecosystem's invisible mechanisms and strategies for reproduction, which allow it to protect itself, adapt, and evolve. A seed hypothetically grants species survival and generational renewal. Seed dispersal and seedling establishment – often animal-mediated – may lend to an endless forestation (or reforestation) process. And so, the artwork *One Seed Creates a Forest* reminds us that proper regeneration can occur.

The hand-twisted ropes, made of natural fibres, and skilled crafted iron structure used in the sculptural work are reminiscent of ancient craftsmanship. The elements catch the viewer's attention, arousing their curiosity and leaving them free to decide the meaning of what they see.

Figure 8. The cork oak (*quercus suber*) (23 March 2024)



Photograph by the author.



Figure 9. Two acorns (*achene*), handwoven using plant-based fibres (3 February 2024)



Photograph by the author.

Figure 10. Bigger acorn (*achene*), handwoven using plant-based fibres (1 April 2024)



Photograph by the author.

Figure 11. Smaller acorn (*achene*), handwoven using plant-based fibres (23 March 2024)



Photograph by the author.

## 4 Closing remarks

This essay uses the question recently raised by Fabian Holt (Holt, 2022) – “How (...) might the arts be a meaningful and relevant subject of sociological inquiry in the era of climate change?” – to pursue a brief empirical exploration. Even if there are no easy answers or ready-made solutions, there is a need to fashion case studies suitable for the ecological crisis that could yield a deeper understanding of how and why culture matters. The arts can no longer be seen as a frivolous matter.

By bringing the community’s concerns into the public realm, contemporary artworks still have the potential to critique and emancipate society. Art can often alter our perceptions of what is and is not visible, thinkable, and understandable. Such is the latent power of cultural stuff.

It is quite questionable whether the artists’ work might achieve the intended effects. At best, it will only accomplish a little in public opinion; at worst, it will be pointless. Yet, we must make room to acknowledge the artworks’ impacts (as opposed to the artists’ intentions). What kind of commitment to the environment does the artwork elicit in their putative audiences? Will passive or caring art receptors change their priorities and do something different in the face of everyday situations? These are still now open problems.

To conclude these few remarks, we must look beyond, address more questions, and conduct detailed examinations to clarify the transformative power of art in the journey towards sustainability, how it operates and what variables are involved.

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## Methodological Appendix

This explorative research is based on an in-depth case study analysis, which involves collecting data and making empirical observations in one setting: Quinta do Pisão, a natural park in Cascais, a coastal resort town west of the Portuguese capital. The fieldwork began during the COVID-19 pandemic and is ongoing. New advancements will depend on applications for research funds and should investigate how the artworks are received and their effects on the visitors.

Many sources and research data have fed the study. The primary data embrace a wide range of forms (e.g., video recordings, photographs, field notes, casual

conversations and email correspondence with key informants). The secondary data sources used include the Land Art Cascais exhibition catalogues (2009-2022) deposited in the digital library of the D. Luis I Foundation and on the Cascais City Council websites, artwork captions, artists' websites, and reviews in periodicals. All provide accurate data on each work of art, including statements by the mayors, curators, and artists, offering insights into their artistic perspectives and political intentions.

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## Biographical Note

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## Notes

1. The place name is associated with evidence of fulling mills in the area, although Quinta do Pisão has not preserved any of these structures or machinery. When the Real Fábrica de Lanifícios de Cascais (Royal Wool Factory of Cascais) was founded in 1774, the looms were manual, and the cloths were loosely woven and easily unravelled. For this reason, they had to be beaten to tighten and amalgamate the fibres and remove excess hair and fat. Fulling mills were, therefore, infrastructures designed to crush fabrics. They were rustic constructions in which a wooden mill used two large water-powered mallets, alternately beating the fabric. As they were not abundant in the country, the Royal Factory had to find a water mill that could be adapted for the task. As the Copeiro farm, in Pisão Velho, already had a water mill, the wool fabrics were first macerated there and later, probably to make the operation more profitable, at the neighbouring Perrinhos (or Pilrinhos) farm, where two new fulling mills were installed.



## “Wind Energy Yes, but Not Like This”: The Media Repercussions of the Wind Energy Conflict Raised by the Film *As Bestas*

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**Abstract:** *On the night of February 11, 2023, after going up to collect the Goya award for best director for the film *As Bestas* (2022), Rodrigo Sorogoyen thanked the people of the place where the film was shot, Sabucedo, and the non-professional actors who participated in it for the award. He ended his speech by claiming the conservation of the fauna and flora of this Galician territory, threatened by the project to build four wind farms, with the slogan “Wind energy yes, but not like this”. On March 1, 2023, an article in *El País* reported the words of the Secretary of State for the Environment, Hugo Morán, in the following headline: “The phrase ‘wind energy yes, but not like this’ actually means ‘wind energy yes, but not here’” (Planelles, 2023).*

*The conflict raised here arises from the planning of a massive implementation of wind farms in the Galician community (a situation that is replicated in other parts of the Spanish territory), taking advantage of the wind capacity and the characteristics of the territory. The magnification of the projects (the creation of macroparks), their effective implementation (sometimes bordering and cheating the current legality) and the consequences that this has on a territory that is presented as emptied (in a clear perversion of the label “emptied Spain”, when this territory is not empty, people still live in it), have generated a social movement, largely disintegrated and local, against it. The protest involves a rethinking of the impact and consequences that this type of energy production can have (not only on the rural population, but also on the cultural and natural heritage of the affected areas), questioning its “green” character (a label that would underline an ecological nature now called into question) and the lack of information and transparency about its implementation and its consequences. It is a protest in multiple spaces and from various agents that questions the energy model that is actually to be implemented and the real character of the energies defined as “renewable”.*

*In the proposed case, an artistic-cultural creation, the film *As Bestas*, portrays and problematizes the impact that a so-called “renewable” form of energy generation, wind power, has on a specific territory. The director’s discourse goes beyond the screen and collaborates to make a conflict*



*visible, to question and reflect on how the ecological transition should be (or should not be) and to support social mobilization. This discourse obtains a response, critical from the public authorities and grateful from the social mobilization.*

*The main objective of this paper is to reflect on the debate on the wind power conflict arising from a cultural product such as *As Bestas*, beyond the film itself. To this end, we will describe and analyze the emergence and development of the controversy in the media, compiling and analyzing the news published in three newspapers, one national, one regional and one online. Thus, it is proposed to illustrate one side of the imaginary of the wind power conflict.*

**Keywords:** *Renewables, As Bestas, Sorogoyen, wind energy conflict, Goya*

## 1 Introduction

On November 11, 2022, the film *As Bestas* was released. It narrates the life of a French couple, Antoine and Olga, settled in the Galician countryside, dedicated to organic farming and repairing abandoned houses. The conflict with a neighboring family, the Anta, generated by disagreements over the installation of a wind farm nearby, causes violence to erupt. Their interests are opposed, the outsiders' is to maintain the habitat by preventing the installation of windmills, the locals' is to obtain an economic gain, thanks to the sale of land for the project, which is enough to allow them to escape from the territory that keeps them anchored in misery. In the end, both motivations are linked to the concept of survival. The insiders want to leave to improve their existence, the outsiders want to stay and reinterpret the possibilities of livelihood in the territory.

Its plot is based on the free adaptation of a real crime that occurred in January 2010 in the Galician parish of Santoalla in Petín (Ourense), placing it in a different space, not specifically defined, but with references to the area of Sabucedo (Pontevedra) through the recurring images in the film about *A rapa das bestas*. This is a Festival of International Tourist Interest that takes place in this area and consists of a curro where the young people of the area, the *aloitadores*, shave and mark the wild horses that live free in the bush.

But the concrete scenario is not so important. The exercise proposed in the film is based on the idea that "the filmmakers do not try to "copy" this reality; they transpose it, they give it a vision of perspective that reveals its mechanisms and clarifies its approaches" (Sorlin, 1985, p. 41). In this sense, its plot tries to capture conditions that can be extrapolated to a broad general context,

that of the Galician countryside, specifically the one located in the interior of the community, in the outskirts of the coastal area delimited by the AP-9 highway, the umbilical cord that connects the most populated Galician cities that constitute the economic and political center of present-day Galicia. The socioeconomic and demographic transformations suffered by the rural areas of the Galician interior since the 1960s means that “approximately 80% of the country’s surface area is inhabited by only half of the Galician population, resulting in the depopulation of the villages, the aging of the population and the abandonment of the houses, the countryside and the mountains, a perfect cocktail with which to transform the Galician landscape into ashes.” (Novas and Paleo, 2019, p. 81). The changes in the traditional ways of life of this territory imply modifications in its space with a clear impact on its population, affected by deagrarianization, rural exodus and aging.

From this film, emerges the case study “The creation of the imaginary of the wind conflict in *As Bestas*. The linking of current cinema with social mobilization and the territory”, linked to the project “Socioecos. Building sustainable society. Mobilization, participation and management of socio-ecological practices” (PID2021-126611NB-100). This case study portrays and problematizes, from the analysis of this film product, the impact that a form of energy generation called “renewable”, wind power, has on a specific territory and how this image is linked to the territory and its inhabitants. Taking this research and this case study as a framework, this paper has a more limited main objective, which focuses on reflecting on the debate of the wind power conflict arising from a cultural product such as *As Bestas* and its reception in the press, trying to illustrate one of the multiple aspects of the imaginary of the wind power conflict.

The film’s impact on this controversy is not limited to its plot. On the night of February 11, 2023, after going up to collect the Goya award for best director for the film *As Bestas*, Rodrigo Sorogoyen thanked the people of the place where the film was shot, Sabucedo, and the non-professional actors who participated in it for the award. He ended his speech by claiming the conservation of the fauna and flora of this Galician territory, threatened by the project to build four wind farms, with the following words:

“The wild horses that appear in the film have lived for centuries in freedom. They are from the mountains of Sabucedo, in Galicia, and the people of Sabucedo have taught us to love the fauna and flora, the animals in a way that I had never seen before. Well, in that area, they are planning four gigantic wind farms, the truth is that they are irreparably damaging the fauna and flora. So nothing, all my support to the people of Sabucedo for their defense of the horses and their mountains (...) Wind energy yes, but not like this” (Radio Televisión Española Play, 2023).

A few days later, on March 1, 2023, an article in the newspaper *El País* included the words of the Secretary of State for the Environment, Hugo Morán, in the following headline: “The phrase ‘wind power yes, but not like this’ actually means ‘wind power yes, but not here’” (Planelles, 2023). This political position responded in a veiled way, without expressly mentioning the film or its director, but also in a very evident way, to the claim formulated in the speech of gratitude, which made its own a formula that impelled to rethink the way of implementation of wind energy.

In an attempt to analyze the echo of Sorogoyen’s discourse and its translation into a debate on the wind power issue, the main objective of this paper is to reflect on the discussion of the wind power conflict arising from a cultural product such as *As Bestas*, beyond the film itself, through the press. Thus, it is proposed to illustrate one side of the imaginary of the wind power conflict focusing on the construction of the narrative of the controversy that starts from the speech of the director of the film at the Goya awards, taking into account its chronology. For this purpose, the content of the articles of three newspapers, *El País*, *El Confidencial* and *La Voz de Galicia*, is analyzed in a specific chronological period, taking as initial reference the date of the film’s release, November 11, 2022, and as final date, February 15, 2024, one week after the celebration of the Goya Awards 2024, paying special attention to the moment of media focus that the vindictive speech of its director at the Goya Awards, February 11, 2023, represents. Through the Factiva program, the press news that appeared during this period in these newspapers was located and their contents were analyzed on three thematic axes: the film, the problems and the social mobilization around wind farms in Galicia, focusing on the discourses on the wind energy issue.

Among the resulting news items, an analysis was carried out to distinguish the different discourses expressed in these texts. Taking into consideration the characteristics of the object of study, the technique used in this research is a content analysis of the news published on the film and the wind energy issue and an analysis of the discourse on the conflict. It is possible to differentiate “three basic levels of approach to discourse analysis: an informational/quantitative level, a structural/textual level and a social/hermeneutic level.” (Alonso, 1998, p. 189), in this paper we opt for the latter perspective. We try to trace the materialization of social positions through the discourses and the reception of the conflict approach in the film and in the discourse of its director, being aware that “It will be necessary to consider audiovisual documents in a field of forces of conflicting social groups that struggle to defend their interests and impose their way of perceiving and valuing the world, as well as their possibilities of transformation” (Lewandowski, 1992, pp. 242-243).

## 2 Analysis of Results

In general, it is in *El País* where we observe a greater consistency in the construction of the story chronologically. We see how it goes from an interest in the plot of the film and the more or less sensational reference to the original crime on which the plot is based, to the attention paid to the vindication based on the Goyas' speech (which is a before and after the journalistic treatment of the film) and the approach to the conflict using the speech as a reference to show the different positions around it. And this through a multidimensional look made possible by the different perspectives adopted by each of the sections in which the news is published. It is not the same if the news is published in "Culture" as in "Economy", since the content, emphasis, tone and treatment in general will follow the "own" characteristics of each section.

In the case of *La Voz de Galicia*, at a regional level, it offers a clear position on the subject, which can be glimpsed in the treatment given to the debate generated, sensationalist and focused on opinion articles that question the controversy (and even ridicule it). The news that appear in the search before the Goya speech have a sensationalist aspect, recalling its link with the real crime (without establishing differences between its argument and the original case). The first mention after the gala alludes in an aseptic and descriptive way to the speech, to later become clearly critical. However, at a local level (in the news belonging to this section), this newspaper indirectly recognizes the importance of Sorogoyen's speech and its recognition by the *Rapa das Bestas* association. In a subsequent brief local note, it includes the gratitude of the *Rapa das Bestas* association: "The *Rapa das Bestas* association thanked the director for his strong support in prime time, insisting that the collective is not against wind energy, but it is against wind farms forged at the cost of anything" (La Voz, 2023). Also local is the news that the association granted the *As Bestas* team the *Aloitador de Honra* award (Benito, 2023).

In *El Confidencial*, among the articles prior to the speech and focused on the description of the plot of the film, Crespo's (2022) stands out, where it is emphasized that the thematic coincidence on renewable energies of *As Bestas* and *Alcarràs* (2022) "translates the social impact that its implementation is having". The film's analysis ceases to be self-referential and allows it to introduce the debate on the application of legislation on the subject. But it is from the Goya speech onwards, where the debate on the wind energy issue is picked up in more complex articles that are in tune with the director's message, such as those of Crespo (2023), and in articles that use a certain ridicule of the position against wind energy. A paradoxical example of the latter is the article by Pichel (2023), in which, despite recognizing the negative consequences of the implementation of wind farms (on the fauna of the area, on the increased

risk of fires or electromagnetic radiation that can produce interference), the text begins by pointing out the conspiratorial nature of some of the fears on which the growing opposition in rural areas to this type of project is based, especially those related to risks to human health. To this end, he mentions studies whose results can be summarized as “people are sick with worry”.

As a summary of the content analyzed, four issues stand out in the treatment of the topic in the articles considered:

It is clearly perceived how the Goya discourse makes the controversy visible and this is recognized even by the people who are interviewed in the articles. A before and after the speech is established, which is significant to assess its impact on the debate through the journalistic treatment of the issue. It also raises the question of to what extent a scenario such as the Goya awards ceremony can be constituted as a platform for political and social vindication and what echo it has.

A regional (and state) and local distinction is detected in the news, within the same newspaper, in the positioning with respect to the conflict. Perhaps this has to do with the influence exerted on the construction of the news by the proximity or remoteness with respect to the territory. The distance of the space and the perception of it seem to influence the construction and focus of the news.

It appears the construction of a version of the story of the questioning of the current implementation of renewables, pointing it out as “anti-renewable”, by its critics, when what is really questioned is the way, the way of doing it, evidencing (from the opinion of the scientific-technical experts, of the European policies in this regard) that another way of doing it is possible.

The use of the terms in which the polemic is formulated also stands out. The expression “parque eólico” is used (and abused) instead of “polígono eólico” and there is talk of energy justice, of sacrifice versus solidarity of the territory.

### **3 Conclusions**

The conflict raised here arises from the planning of a massive implementation of wind farms in the Galician community (a situation that is replicated in other parts of the Spanish territory), taking advantage of the wind capacity and the characteristics of the territory. The magnification of the projects (the creation of macroparks), their effective implementation (sometimes bordering and cheating the current legality) and the consequences that this has on a territory

that is presented as emptied (in a clear perversion of the label “emptied Spain”, when this territory is not empty, people still live in it), have generated a social movement, largely disintegrated and local, against it. The protest involves a rethinking of the impact and consequences that this type of energy production can have (not only on the rural population, but also on the cultural and natural heritage of the affected areas), questioning its “green” character (a label that would underline an ecological nature now called into question) and the lack of information and transparency about its implementation and its consequences. It is a protest in multiple spaces and from various agents that questions the energy model that is actually to be implemented and the real character of the energies defined as “renewable”. Thus, the director’s discourse goes beyond the screen and helps to make a conflict visible, to question and reflect on how the ecological transition should be (or should not be) and to support social mobilization. As we have seen, this discourse has a social repercussion and obtains a response from the media, from the public authorities, from employers, from the scientific-technical sphere and from social mobilization.

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## Películas

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*As Bestas* (2022) Directed by R. Sorogoyen [Film]. Barcelona: A Contracorriente Films.

## Methodological Appendix

This paper describes and analyzes the emergence and development of the controversy in the written media. For this purpose, we have compiled and analyzed the news published in three newspapers, one national (*El País*), one regional (*La Voz de Galicia*) and one online (*El Confidencial*). Two of these newspapers, *La Voz de Galicia* and *El Confidencial*, have a conservative orientation and the other, *El País*, is center-left. They have been chosen because they are the newspapers with the largest circulation both nationally and regionally (within the Galician community).

The fieldwork has been carried out between January and March 2024. Two news searches were carried out through the Factiva database. The first one was based on the coincidence of the keywords "As Bestas", "Sorogoyen" and "eólic\*" to track news related to the film, its director and dealing specifically with the wind energy issue. It was specified that the time period of the search should be from November 11, 2022, the date of the film's release, to February 15, 2024, one week after the celebration of the 2024 Goya Awards. From the results obtained, news items that were identical duplicates were eliminated. After applying these filters, 12 were found in *La Voz de Galicia*, 11 in *El País* and 10 in *El Confidencial*.

To broaden the news base and contrast them with the previous results, the search was repeated with the same filters, but changing the keywords for the phrase "eólica sí, pero no así" ("wind power yes, but not like this"), resulting in 12 news items in *El País* and 1 in *El Confidencial*.

Once the final base of news items had been obtained, a content analysis was carried out, distinguishing those that were merely informative about the plot of the film from those that included some aspect of the wind power conflict. In turn, those resulting from the latter group were compared with the news resulting from the second search, trying to distinguish whether there was any degree of connection between the two groups.

## Biographical Note

Carmen Rodríguez-Rodríguez is a Lecturer at the Faculty of Sociology of the University of A Coruña. Obtained a PhD in Sociology from the Complutense University of Madrid (Extraordinary Doctorate Award) and has been a FPU scholarship holder. Among the research projects in which she has participated in recent years, the following stand out: "Mitigating risk in resilient societies. The incorporation of knowledge based on experience in the prevention, management and recovery of environmental disasters" (PID2019-107443RA-I00) and "Sharing society. The impact of collaborative collective action. Study of the effects of practices, links, structures and mobilizations in the transformation of current societies" (Ref. CSO2016-78107-R). She is currently a member of the research group of the Socioecos Project: Building sustainable society. Mobilisation, participation and management of socio-ecological practices, funded by the Ministry of Science, Innovation and Universities, PID2021-126611NB-I00.

Her latest publications (in collaboration with Elvira Santiago) include the book chapters "From bottom to top, the space of local knowledge in the governance of forest fires" (2024) and "Listening to everyone. The incorporation of knowledge based on experience for transfer in the Social Sciences" (2024) and the article "Building forest-fires resilience. The incorporation of local knowledge into disaster mitigation strategies" (2023). Topics of interest are social imaginaries, environmental issues and sociological theory.









**SOCIOECOS**

Climate Change, Sustainability  
and Socio-ecological Practices

# TRACK 8

## **Art, technology, design, and climate crisis**

*Eco-art; art and climate emergency; art and energy transition; climate crisis-based images and representations; DIY and Fab Labs' responses to climate emergencies; design for reuse, repurpose, recycle, and upcycle—eco and bio design; sustainable design; eco-empathic design; creative data visualisation; artificial intelligence-based eco-imaginaries*



## An Educational Project Exploring the Synergy Between Art and Science to Improve Understanding and Awareness of Climate Change

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**Abstract:** *El clima en la cuerda floja: imaginando extremos futuros (Climate on a tightrope: imagining extreme futures) is a research and educational intervention project funded by the Spanish Foundation of Science and Technology (FECYT).*

*The starting hypothesis is that the complementary use of art, science and technology is capable of improving the understanding and assimilation of phenomena related to climate change, as well as promoting the action and involvement of the school public and their environment. Their synergy is proposed as a tool to improve understanding of such a complex reality as the one we are currently experiencing, generate new awareness and modify behaviours. Consistently, the project's research team includes a group of scientists specialized in climate physics and a group of artists with extensive experience in outreach in their fields.*

*Cooperation between fields of knowledge is essential to address such a vast and multi-faceted problem as climate change. On the one hand, the potential of the arts to create fictions that enable us to grasp aspects that would otherwise be impossible to imagine; on the other, the need for a well-founded and objective understanding, as made possible by scientific research; and finally, the capacity of technological tools to expand the dissemination possibilities, and provide immersive support for visualising the fictions created.*

*The core activity of the project consists of a series of workshops carried out in schools from March through May 2024, using methodologies that are at the crossroads of the arts and science. In these workshops, after having based climate change on scientific rigour, participants will be invited to imagine the impact that climate change is having in different parts of the world and create an artistic installation that will be photographed using 360° technology. These images will be subsequently used to create an interactive virtual map that will bring together the scientific and artistic processes at the educational centres.*

*All in all, the activities seek to involve students and the broader school's environment in the knowledge of the greatest challenge we face, both in its scientific aspect and in its socio-environmental aspect, providing them with tools to critically interpret the large amount of information that they receive continuously through the media and social networks.*

**Keywords:** Education, climate change, awareness, art and science, technology

## 1 Introduction

The latest State of the World Climate report by the World Meteorological Organization (WMO) of the United Nations (UN), as well as the latest report of the Intergovernmental Panel on Climate Change in 2021 (AR6) (IPCC 2021) contain scientific evidence that leaves no room for doubt: climate change caused by anthropogenic emissions is behind many of the extreme weather and climate events we have been experiencing in recent years. Increasingly frequent, long-lasting and intense heat waves, droughts, mega-fires, intensifying hurricanes, and devastating floods are already affecting millions of people and causing billions of euros in losses. Added to this is the massive loss of biodiversity associated with climate change, such as that associated with ocean acidification and warming, plummeting Arctic Sea ice, or desertification. The IPCC WG1 (IPCC 2021) team of scientists has reaffirmed that we are at a point of no return, which implies a change of scenario in all aspects of human existence, individually and collectively. The UN Secretary General himself, Antonio Guterres, has stated that "the Earth is sending us a clear alarm signal in the face of this climate chaos". At this time, it is essential to act at all levels, from the institutional to the individual.

The educational project *Climate on a tightrope: imagining extreme futures (El clima en la cuerda floja: imaginando extremos futuros)*, funded by the Spanish Foundation of Science and Technology (FECYT) call Promotion of Scientific and Technological Culture, aims to create a space to make the challenge of climate change visible to young people from a scientific perspective, highlighting the role of scientific research and putting into the spotlight the importance of our decisions and actions in deciding the future of our planet. In order to stir their conscience and encourage them to take the initiative and act in the face of the climate emergency, it is essential that they live the experience in a close, surprising and fun way, involving emotions in the learning process. It is this need that justifies the strong synergy between Science and Art that is at the heart of this project. The goal is to ensure that young people themselves and their educational environment develop tools to understand what is happening

to our planet and can become active agents of change. From Science we raise the scientific bases behind climate change and we rely on art to reach the consciences of young people and seek answers to mitigate and stop climate change, and finally we use Technology to generate scientific-artistic material as the final product of the project.

In the traditional system of education, students are simply recipients of the learning material provided by the teacher through their voice and textbooks, and the possibilities for enhancing the education and personal development of students with learning difficulties of any kind are limited. In this project we propose to introduce symbolic instruments that create an atmosphere of curiosity and motivation in children and young people, and that encourage active and dynamic learning. This social construction of knowledge aims to ensure that all students have equal opportunities to participate. The team has extensive experience in dissemination activities in school environments in the form of participatory and playful workshops, in which the students are actively involved.

## 2. Team's Experience in Outreach

The experience accumulated by the scientific and artistic teams separately in carrying out workshops and outreach activities provides us with the necessary background to undertake this educational project as a unique opportunity for collaboration between the different disciplines to go further.

### 2.1. MuPAI

The Pedagogical Museum of Children's Art (MuPAI, <https://www.ucm.es/mupai/>) is a university museum affiliated with the Department of Sculpture and Art Education at the Faculty of Fine Arts (UCM). Established in 1981, MuPAI initially focused on building the first collection of children's art in Spain. Over the past four decades, the museum's objectives have evolved, transforming into a hub for research and experimentation with innovative methodologies in art education. In line with this mission, MuPAI boast a team of artist-educators coming from different artistic domains including formal and non-formal education, social and cultural institutions, research, and teaching This team is responsible for designing the museum's educational program, delivering workshops in schools and universities, organizing teacher training courses, and projects in collaboration with various educational, social, and cultural institutions (Ortega & Gil, 2023). MuPAI has undertaken several noteworthy projects, including:

- Projects on Art and Health in hospitals: The Interuniversity Research Group of the Pedagogical Museum of Children's Art (GiMuPAI) has demonstrated a robust research trajectory, with notable projects I+D (ref. SEJ2004-07241-C02-00/EDUC; ref.EDU2008-05441-C02-10/EDUC), and publications (Ullán & Belver, 2007; Ullán & Belver, 2018; Ullán & Belver, 2019)
- Art Camps at the Faculty of Fine Arts: These summer programs transform faculty classrooms into spaces for experimentation based on the works of contemporary artists. (Flores et al., 2008)
- "El Museo por la Ventana" and "Yoxti, Túxmi" initiatives: Emerged during the pandemic period, these initiatives aimed to create spaces for communication and artistic creation through distance-based practices (García et al., 2021; Ortega et al., 2021).
- Estudio Grapa, a project on the formation of a support and well-being group for the university community.
- The CompluArte project, one of the museum's longest-running initiatives, this project involves teaching drawing and painting classes to adults.

## 2.2 Meteolab

The team of scientists leading the project belongs to the Department of Earth Physics and Astrophysics and are researchers in climate variability and change with a long track record including over 100 publications in the last 5 years, which guarantees a complete and profound knowledge of the problems to be dealt with. Also, most of the team members are professors of the Master in Meteorology and Geophysics of the Universidad Complutense de Madrid (UCM). In addition to their teaching and research work, this team has been interested in the dissemination of climate science for over 20 years. In 2002, the group created the educational tool Meteolab (<http://meteolab.fis.ucm.es/>), with the aim of designing and disseminating simple experiments to explain the physical processes governing the atmosphere, ocean and cryosphere and their interactions, as well as the physical basis of climate change.

During these years, Meteolab has disseminated knowledge to more than 100 primary and secondary schools in the Community of Madrid and thousands of students. This outreach has taken place through a number of diverse initiatives such as the 'Science Week', 'Ciencia en el Barrio', 'Ciudad Ciencia' and other independent initiatives of project members in schools with limited economic resources, including some organized by the association 'Colarte en Madrid' (<https://www.colarte.org/>) which participates in the current project. Meteolab has extended the dissemination of climate knowledge to the general society, participating in activities organized by 'La Casa Encendida.' From an academic perspective, Meteolab has been utilized as an educational tool in the Master of Education at UCM, being employed by primary and secondary school teachers to enhance the understanding of physics-related concepts.

Meteolab experiments have been incorporated into teacher training courses and even within the Sustainability Vice-rectorate as a course offered to all the UCM community to better understand concepts related to climate change. It comprises a set of more than 30 experiments and videos that have been created as a result of an extensive collaboration between students and professors. Four Educational Innovation Projects and two Cooperation projects, funded by the UCM and led by members of the team, have been funded. Meteolab is known beyond the Community of Madrid, having conducted experiments in schools across more than 7 Spanish provinces. In the last year, Meteolab has expanded beyond the borders of Spanish geography. As part of a cooperation project with Senegal, the experiments have reached Cheick Anta Diop University (Dakar) and have been replicated for distribution to schools in Dakar, one of the cities in the world where the impacts of climate change have been most intense.

### 3 Description of the Activities

The activities will be carried out in Madrid in six public schools, one charter school and one private special education centre for students with Autism Spectrum Disorder (ASD). A total of approximately 500 students will participate in the activities. All the ordinary schools involved in the project have students at risk of social exclusion and students with special needs, including integrated ASD classrooms. The first workshop was held on March 20th, 2024, and the last one will take place on May 13th, 2024, ensuring their completion before the SOCIOECOS meeting in Bilbao. Figure 1 shows a caption during the introductory part of the workshop.

Figure 1. Image of the introductory part of the project workshops, which took place at CEIP Luis Cernuda on March 20th 2024. Own elaboration.





The proposed workshops are committed to interdisciplinarity and interaction between art, science and technology as a methodological tool. They aim to cultivate an active, critical and participatory approach among students, empowering them to construct their own knowledge with guidance and support from the project team.

The project proposes a journey through different places on the planet that might be affected by climate extremes. Each participant group will collaborate in the creation of a final collective map, which will also be accessible to the general public. Conceptualized as scientific-artistic endeavors, the workshops are structured around four thematic blocks corresponding to major extreme phenomena exacerbated by climate change: 1) extreme heat events, 2) desertification and aridity, 3) rapid ice melting, and 4) extreme precipitation events. Each school group will be assigned a climate theme block and all activities will be developed around their respective theme. Each workshop will last 2 hours and will include a scientific and an artistic phase. The two phases of the workshops are described below.

- *Scientific phase.* The first phase provides knowledge of the scientific bases of climate change and is carried out by the Meteolab team members. Through scientific experiments, the main phenomena that determine the current climate and its natural variability is explained in a visual and participative way. These simple experiences are used to illustrate how the atmosphere, the ocean or the cryosphere respond to the increase in greenhouse gases concentrations. The most relevant experiments for each theme have been selected and adapted among the extensive inventory of Meteolab experiments, to illustrate climate phenomena such as ice melting, sea level rise, greenhouse effect, pollution, urban heat island, the ocean's heat storage capacity, changes in ocean temperature and density, the effect of vegetation on climate, the role of evapotranspiration... As an example, Figure 2 shows an image of the urban heat island experiment, part of the extreme heat workshop.

Figure 2. Image of the scientific part of the project workshops, which took place at CEIP Luis Cernuda on March 20th 2024. Own elaboration.



- *Artistic phase.* In the second phase, the participants will be tasked with applying their acquired scientific knowledge to a specific context: a preselected location on Earth. This involves envisioning a transformation of the chosen location to illustrate the potential impact of the analyzed climate extreme in the absence of adequate mitigation and adaptation measures. To do this, the creative and aesthetic possibilities of artistic installation and action art will be used, with the aim of collectively recreating these places. The imagined landscape will subsequently be photographed with a 360° camera, to generate a virtual space that can be visited interactively, as this technique allows participants to immerse themselves in the scene. Thus, the physical space of the classroom will be transformed into this possible future, which, thanks to 360° visualisation technology, can also be analysed and shared. In this sense, each chosen context will entail the choice of particular materials that will awaken new plastic and aesthetic possibilities. As an example, Figures 3 and 4 show two images corresponding to the artistic phase of the workshops.

Figure 3. Image of the artistic part of the project workshops, which took place at CEIP Luis Cernuda, on April 9th 2024. Own elaboration.

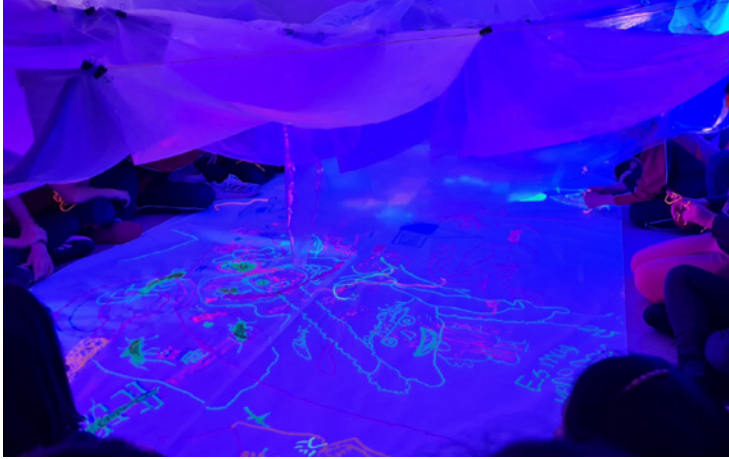


Figure 4. Image of the artistic part of the project workshops, which took place at CEIP Esperanza on April 9th 2024. Own elaboration.

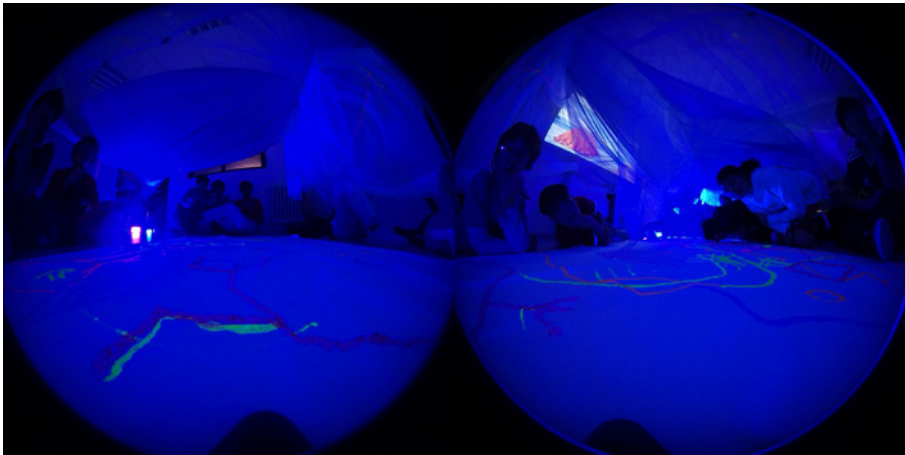


Concluding the workshop, the artistic experience will transition into a concise yet essential final collective reflection in which students will collaboratively discuss and share ideas regarding potential measures to avert climate disasters. This aims to foster critical engagement with the issue, encouraging social action and transformation.

The digital phase of the proposed activities will take place after the workshop sessions have concluded, and will be carried out primarily by the project's artistic team. Each 360° photograph, along with the reflections and contributions

from the school's group, will be uploaded to a virtual platform structured as an interactive world map. Scientific information on the different climate extremes will also be incorporated. The result will be a collection of all the extreme futures imagined by the participating groups. An example of a picture taken with the 360° camera is shown in Figure 5.

Figure 5. Image of the artistic part of the workshop taken with the 360° camera. Own elaboration.



#### 4 Expected Outcomes of the Project

The implementation of the project aims to achieve specific impacts on the school's students and their environment, and all participating agents. Specifically, by the end of the project, the following outcomes are expected, among others:

- That the participating school population has learnt the scientific fundamentals of climate change and can understand the causes of climate change arising from human action.
- That the participating students are aware that science is essential in our society, as it helps to understand our world in depth and provide guidelines for action in the face of the challenges we face, including climate change.
- That art is promoted and valued as a tool for raising awareness and to achieve social collaboration.
- That a multidisciplinary work team is created, which serves as an example to schoolchildren of how to work in a process of knowledge generation, interacting and contributing ideas in a collaborative environment in which all members are integrated on equal terms.

- That the participating children have understood that all of us can decide on our actions when faced with problematic situations, and that solidarity and social and environmental commitment is an option that leads to the common good.
- That another vision of climate change has been incorporated into the educational curriculum, and students make the problem their own and become active vehicles for raising awareness and disseminating this issue to their families.
- That the proposed activities, being playful and participatory, stimulate the curiosity and scientific interest of schoolchildren, as well as creativity and innovation.

## 5 Conclusions

At the end of the project, the team will assess the validity of the hypothesis that the joint and cooperative action of scientific and artistic agents facilitates or improves the assimilation of the concepts associated with climate change, encourages critical thinking and moves to action.

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## Methodological Appendix

More specific information on the workshops are presented here. All workshops will commence with a brief general introduction on climate change, addressing the main points:

- What is climate change?
- How do we see it in observations?
- What is the greenhouse effect?
- How do we know climate change is due to human activity?
- What do we expect in the future?

This will lead to introduce the four main theme blocks, and explain that they will learn more about one of these topics and contribute to creating an interactive map.

The experiments planned and scientific theme activities associated to each block are:

1) Extreme heat.

- Experiment on the heat island urban effect: measuring temperature rise in 2 methacrylate urns illuminated with 2 lamps with incandescent bulbs, one of them with a piece of concrete or black cardboard.
- Experiment on marine heat waves: demonstrate the high heat capacity of water by comparing the resistance to heating of a balloon filled with air only to that filled with water and air. Thermal expansion of water in a bottle with a straw.

- Cardboard map to play a game where the students are asked to place the extreme heat events in the present and think about how these will be modified or intensified under climate change.

## 2) Desertification and aridity.

- Experiment on the role of plants in retaining soil moisture, comparing the water runoff from soil with a plant with that without.
- Cardboard map to play a game where the students are asked to place the arid regions in the present and think about how these will expand under climate change.
- Evapotranspiration experiment: measure the cooling effect of plants on the air temperature.

## 3) Rapid ice melting

- Experiment comparing the effects of grounded ice (for example Antarctica) to those of melting sea ice (for example Arctic ocean ice) on the sea level rise.
- Experiment on albedo feedback: comparing air temperature over dark (ocean) versus over white (snow/ice) surfaces.
- Cardboard map to play a game where the students are asked to place the ice covered regions in the present and think about how these will be reduced under climate change.

## 4) Extreme precipitation.

- Experiment explaining the importance of soil type for avoiding flooding, and the effect of intense precipitation happening on arid soils.
- Experiments to illustrate convection and cloud formation.
- Cardboard map to play a game where the students are asked to place the extreme precipitation events in the present and think about how these will be modified under climate change.

Artistic strategies carried out by each thematic block:

### 1. Extreme Heat:

- 1.1. We will recreate a typical hot summer night by incorporating actions from our nightly routines and utilizing animal sounds like crickets, cicadas, and mosquitoes to create an immersive atmosphere.
- 1.2. Researching the most relevant data from the last 50 years on Earth's average temperature, we will translate it using a colour-coded system. The goal is to create a pattern of "warming stripes" on a quilt, visually representing climate change.



- 1.3. Reflecting on key concepts such as “the point of no return,” where the mechanisms of self-regulation of the Earth’s temperature may cease to be effective, intensifying global warming. We will also address ideas such as seasonal advancement and temporal dissonance, drawing inspiration from María Vallina’s performance “Time and Punishment,” which involves everyday actions represented with pieces of paper in bowls and random times.
- 1.4. Setting up an art installation in the classroom, where we will “make the bed” to recreate a steamy summer night. Sheets will be hung around the classroom on which additional data will be projected, contributing to a complete and thoughtful experience of the impact of extreme heat on our environment.

## 2. Desertification and Aridity:

- 2.1. Starting with the soundscape, we will address desertification through a ground-level conversation, accompanied by recordings of our steps. Participants will reflect on their daily commutes from home to school and select tiles representing different types of soil encountered along the way.
- 2.2. Using the frottage technique with an etching roller, we will record the texture of the soil in the school environment.
- 2.3. Expanding our perspective at the national level, groups will receive aerial images of crop fields from different autonomous communities. These images will be intervened with plasticine to highlight various aspects.
- 2.4. Setting up an installation that integrates the artistic products generated.
- 2.5. Concluding with performance, we will stand under the network of floors to listen to the sounds of the soil and reflect on the cycle of feeding soil-person, person-soil.

## 3. Rapid Ice Melting:

- 3.1. The workshop will commence with a visual presentation addressing the problem of Antarctica and the work of Andrea Juan.
- 3.2. Dividing the group into two, one will work on creating a mural using fluorine tempera paint, taking advantage of shadows cast by an overhead projector. Simultaneously, the other group will start assembling the installation freely. After a certain period, teams will swap tasks.
- 3.3. Concluding by moving the mural into the interior of the installation, illuminating it with UV lights.

## 4. Extreme Precipitation:

- 4.1. The workshop will start with a reflection on the impact of floods based on people’s social context. Through a dynamic classroom activity with projections, we will determine the number of cubic litres of torrential rain that could affect the space, transforming its layout and usefulness, and altering our usual activities.



- 4.2. Intervening with images using various artistic techniques, such as cyanotype and transfer, using water as the main element. These images will be distorted to represent the effects of flooding, altering landscapes and scenarios similarly to what happens in the natural phenomenon.
- 4.3. Setting up an art installation in the classroom using the intervened images and other materials to visually represent the impacts and consequences of flooding on the environment.

A total of 16 Meteolab, 5 MuPAI and 1 Colarte en Madrid monitors are participating in the activities. Each workshop for an individual school group will be attended by 2 Meteolab, 2 MuPAI and 1 Colarte monitor. The workshops will be carried out in Madrid in the following schools and dates:

- CEIP Luis Cernuda, March 20th, 50 students
- IES Matemático Puig Adam, April 2nd, 50 students
- Ntra. Sra. Escuelas Pías, April 8th, 72 students
- CEIP Esperanza, April 9th, 83 students
- Colegio Buenafuente, April 22nd, 28 students
- CEIP Ramón del Valle Inclán, May 6th, 48 students
- CEIP San Cristóbal, May 7th, 43 students
- CEIP Rep. de Venezuela, May 8th, 50 students
- Fuente del Palomar, May 13th, 75 students

The effectiveness of the project will be evaluated through a questionnaire provided by the project to be responded to by the school teachers after discussing it with the students in class. This questionnaire will cover the following qualitative aspects:

- Level of involvement of the group of students in the workshops.
- Degree of understanding and assimilation of knowledge by the students.
- Degree of student satisfaction with the activity.
- Comments and suggestions for improvement.

## Biographical Notes

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## Note

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## Art, Culture, and Sustainability: Exploring Paths of Transformation through Art-Based Community Initiatives

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**Abstract:** *The significance of art, culture, and creativity is escalating in their role addressing environmental concerns, advocating for sustainable practices, and fostering community development. Art has the potential to stimulate critical reflection, reframe problems and needs, foster dialogue and collaboration and promote creative solutions to complex environmental and social problems (Olsen, 2013).*

*This research paper delves into a case study involving art-based projects in five distinct regions in Spain, designed to propel sustainable and ecological transitions within communities. These projects constituted a transdisciplinary collaboration among artists, cultural mediators, and community members, sharing a common methodology and approach. Employing a qualitative approach, the case study used individual and group interviews with project participants, cultural mediators, and artists to investigate the interplay between art practices and social communities in the context of ecological transition. The primary research questions addressed the key processes and factors contributing to the success of the art-based projects in promoting sustainable community transformation, the principal impacts on community members' attitudes and behaviours towards sustainability, and the primary challenges and limitations.*

*The data underwent analysis using socio-hermeneutical and thematic analysis to discern patterns, themes, and trends. Initial findings indicate that the art-based programs had a positive impact on the community's environmental awareness and engagement. These projects increased participants' understanding of sustainability issues, influenced their attitudes and behaviours towards sustainability, and enhanced their willingness to partake in pro-environmental actions. Moreover, the projects facilitated the creation of a shared sense of ownership and pride within the community. Nonetheless, challenges and limitations emerged, encompassing concerns related to representation, participation, and impact assessment.*

*The study offers recommendations emphasizing the importance of interdisciplinary collaborations, the development of new evaluation methods capturing the diverse impacts of art-based projects on sustainability and community development, and the necessity for increased attention to issues of social justice, equity, and diversity in these projects. Art has the potential to empower communities by serving as a platform for expression, advocacy, and community mobilization. It aids in the cultivation of new skills, the facilitation of meaningful dialogue processes, and the fostering of a sense of belonging. However, addressing the composition of knowledge of different stakeholders is an issue to be further explored with methodological improvements in participatory processes.*

**Keywords:** *Art, culture, sustainability, ecosocial transition, community initiatives*

## 1 Introduction

In the face of the profound civilizational crisis we are experiencing, turbo-capitalist societies require a significant cultural transformation. This transformation involves changing hegemonic values, our organizational habits, the way we define our desires, and our outlook on the future. It requires revisiting our myths and influencing our imaginations (Herrero, 2014). It entails a profound shift in cultural patterns.

Since the publication of the "Limits to Growth" report (Meadows *et al.*, 1972), there have been significant international calls for a change in our ways of life. The various dimensions of the eco-social crisis (severe loss of biodiversity, depletion of natural and mineral resources, energy crisis, etc.) will compel human societies to reduce the material sphere on a global scale (Almazán and Riechmann, 2023; Bordera and Turiel, 2022). This change in habits has been defined through two different types of learning (Botkin *et al.*, 1980): shock learning (adapting forcefully to drastic situations) or anticipatory learning (the ability to anticipate future problems). The COVID-19 pandemic demonstrated how significant changes can be generated abruptly, but such urgencies leave many inequalities and significant negative social impacts on various levels (Fernández *et al.*, 2022). Therefore, investing in the capacity for anticipation will help ensure that the ecological transition is fair. The arts can aid in this anticipation by fostering long-term thinking and shaping our desires, generating emotional readiness for the implementation of these transformations (Garafassi *et al.*, 2018). This capacity for anticipation is closely related to the change in the cultural dimension.

Throughout history, artistic practices have played a central role in generating changes in the imaginaries of our societies, opening new horizons of desire, and creating new political possibilities. They have provided new spaces for experimentation and reflection (Belfiore and Bennett, 2008). In today's times of eco-social crisis, the practices and tools of art and culture can help us understand more deeply the exceptional nature of the moment we are living in and mobilize citizen desire for involvement in transformative actions (Fernández, 2024).

The cultural dimension, understood as the set of meanings, beliefs, rituals, art, and stories that generate social habits and collective behaviors, is increasingly prominent in environmental studies. Accounting for the cultural dimension is a tipping point for generating transformations in our human systems (Vervoort *et al.*, 2024). Neglecting these cultural aspects can render solutions to problems ineffective because, among other things, they do not resonate with what truly matters to individuals and communities (Adger *et al.*, 2013).

## 2 Art in its community dimension

Contemporary artistic and creative practices have developed various forms of engagement with communities, where individuals participate in artistic experiences and are not merely passive recipients of an artist's work. The origins of these practices have been identified since the Second World War, where groups and communities were creators of artistic and cultural activities beyond institutional frameworks (Marques, 2018). Community Art has been defined as a collaboration between local population and artists, who use art as a tool to express specific ideas or problems (Kelly, 1984). Furthermore, different terms have been used to define such practices where art relates to a community, some of these terms include: Public Art, situated in open spaces; Participatory Art, where the creative process involves both the artist and the recipients; Collaborative Art, usually employed by social collectives for political and social claims, often associated with performances; Socially Engaged Practice, a term coined by Suzanne Lacy to define practices integrated into a community that generate dialogue and exchange of ideas (Marques, 2018).

Creative practices with participatory components have proven to be useful in promoting collaboration and social learning (Chandler *et al.*, 2014) around emerging issues, such as environmental problems.

This study focuses on analyzing five experiences developed in the Spanish context, where different communities, driven by socio-environmental demands, needs, or concerns, have worked under the same protocol. This protocol was

developed by Belgian artist François Hers in 1990 and has been a strong inspiration for the European Nouveaux Commanditaires movement. The protocol lays the groundwork for the implementation of a mediated artistic creation process. It establishes three types of agents to make a collective artistic piece:

- Promoters or community: a group of people with a specific demand or need who want to work collectively and make it more visible at a social level.
- Cultural mediator: who acts as a link between the artist and the community facilitating the participatory work with the community.
- Artist: through a process of listening and interaction with the community, proposes an artistic work that responds to the social challenge or demand.

The case studies are under the umbrella of the same organization, the non-profit cultural producer called “Concomitentes” which is responsible for general coordination, financial support, and advice. The analyzed experiences are located in different regions of Spain: Castilla y León, Galicia, Cantabria, and Catalonia. Each initiative has worked on a different dimension related to the eco-social crisis and sustainability: just energy transition and biodiversity conservation, communal forest management, intangible cultural heritage and memory, water and traditional uses, inclusion of bodily diversity.

The analysis of experiences has been carried out through: 1) a review of the field notebooks of each initiative, developed on their website, 2) a series of semi-structured interviews -individual and group- with different profiles: cultural mediators, community members, artists, responsible for general coordination. For more information on the case study, please refer to the methodological section.

### **3 Design of resilient and transformative community processes**

Despite being developed under the same François Hers protocol, the analyzed projects exhibit a high methodological diversity regarding the design of actions and methods used. The protocol clearly establishes the three main roles within the process but does not provide further systematization around the work stages or the main methodological tools. This has been evaluated in a mixed way: on one hand, this lack of specificity creates an interesting openness so that “each mediator can find dynamics that are culturally closer to the community where they work” (Balseiro, 2024); on the other hand, this low definition “hinders the systematization of learning, the expansion of the model, and transmission for new projects based on the protocol”<sup>1</sup>



Based on the analysis of the issues identified in the interviews, it has been defined some stages of the process as recommendations for methodological improvement. These stages are open enough to incorporate the diversity of topics and contexts in which such projects may operate, and also help to systematize the process and optimize results:

1. Create group and expand the call. In this stage, it is important to include actions for the group cohesion, mechanisms to increase core group, and define internal operating agreements.
2. Understand social and ecological demands. In this phase is important to delve into the needs and desires and not to focus on the specificities of the artwork.
3. Artist selection. Different strategies for artist selection are implemented. More participatory or more mediator-centered strategies can be provided, depending on the group and project characteristics.
4. Delve deeper into the need. New questions and approaches are opened up with the artists' view. Artists are often good at generating questions that help think from new perspectives.
5. Generation and definition of the artistic work: The artist proposes the intervention, which is discussed with community members, striking a balance between artistic freedom and fitting into the context and territory.
6. Artwork production: It is recommended to create spaces where people can participate in the construction as a moment where collaboration can be opened to new people.
7. Inauguration and communication. Expanding the project's impact, including new people and generating positive impacts through the artistic piece. It is recommended to develop community actions where there can be a reflection on the artwork itself.
8. Systematization of learning and evaluation of changes. It is important to include a space for systematizing and evaluating the process, using an evaluation instrument from academic literature (mentioned in the next section) that is useful for evaluating intangible elements and valuing the process.

Important elements to consider in the process when promoting changes:

- Reduce the overall project time, not lasting more than a year and a half so that participants see results sooner and group energy does not dissipate.
- Incorporate intermediate results throughout the different actions.
- Enhance internal work with the group. Build relationships, address possible conflicts, and implement some conflict transformation methodologies. Have group care agreements from the outset.

- Generate a series of open meetings to foster transdisciplinary dialogue with experts, community members, artists, etc., to delve into the conceptual, theoretical, and ethical foundations of the action. They help consolidate discourses and new narratives as well as give visibility to the project.
- Use creative methodologies in meeting development. Creative practices with participatory components have the potential to improve community dialogue, social learning, and collaboration (Chanler *et al.*, 2014). This has been done in different ways in projects with positive results: performances, music and songs, video, walking interviews, etc.
- Value and evaluate the process in a more systematic way, helping to better communicate the importance and advantages of such processes, as well as possible improvements for future development. Support the community in using the artwork to continue advocating on the worked topic.

## 4 Social changes produced from art-based community initiatives

For the evaluation of the changes that have occurred in the development of artistic initiatives, a very current instrument tested in 20 cultural projects at the European level has been used. It's called the 9 Dimensions tool and it is an evaluation tool with "three categories of change, and nine dimensions: changing meanings (embodying, learning, and imagining); changing connections (caring, organizing, and inspiring); and changing power (co-creating, empowering, and subverting)" (Vervoort *et al.*, 2024). For a more detailed explanation, you can visit the following website: <https://creaturesframework.org/>.

This tool has been chosen because it has a solid foundation in academic literature, has recently been tested in numerous projects of different characteristics, and clearly includes the eco-social and artistic dimensions. It provides an evaluation that balances the openness of creative processes with the importance of making changes and results visible and measurable. This instrument has been used within the current study to establish the categories of analysis and can be used in the future as a tool to improve the initiatives. The changes in the established dimensions and categories are evaluated, as well as related difficulties:

### **Changing meanings (embodying, learning, and imagining):**

- Inside the group members: In all analyzed projects, through collaborative and artistic processes, new collective narratives have been developed around the problem and the need, delving into the meaning, and obtaining new perspectives. At the same time, in several projects, a new sense of hope has

been generated, seeing environmental issues as something that can also be enjoyable and fun. Although the artistic intervention in the analyzed projects did not generate a specific solution to the problem (as competencies belonged to other agents or institutions), it has created new future imaginaries, reinforcing the idea that it is important to continue taking collective actions. In the creation of meaning, in addition to information or data, it is important to include the ethical dimension (Galafassi *et al.*, 2018); in this sense, the inclusion of artistic practices has demonstrated good efficacy.

- In a broader public: Artistic tools have been effective in generating interest in the media and among other individuals not closely connected to the community. They have expanded messages and the social imagination surrounding the issue.

The main difficulty has been the ability of experiences to consolidate learning, return it, and share it with the rest of the projects. Therefore, a series of stage recommendations have been generated, and the use of systematized evaluation tools such as the 9 Dimensions tool is proposed.

### **Changing connections (caring, organizing, and inspiring):**

- Inside the group members: In a majority of projects, community participants have strengthened their emotional bonds, creating new connections that did not previously exist. The artistic language that goes beyond words has generated sensitive experiences that have helped to manage diversity. The creativity, play, and sensitive experience add a motivating element for the people involvement. In most cases, a feeling of belonging and a collective identity has emerged, and an improvement in group self-esteem.
- In a broader public: The results of the projects have been inspiring, leading to new communities wanting to develop similar initiatives based on art.

One of the limitations identified is that, since the language of contemporary art is very broad and diverse, it has been difficult for some community members to understand the methodologies, work processes, and objectives. This can be a limiting factor for a diversity of people to participate in such projects. On the other hand, it is considered important to strengthen conflict management and decision-making skills in the role of mediation.

### **Changing power (co-creating, empowering, and subverting):**

- Inside the members: The different languages of artistic practices have been positive for new leaderships to emerge. In several projects, participation in the initiative has been empowering for women, who have taken on roles of greater visibility at the community level. Additionally, in some projects, community

members have been actively involved in the artistic construction process itself. These spaces have expanded audiences and have generated greater project ownership.

One of the limitations for co-creation is using dialogue and agreement generation tools. Some projects can improve in this regard, so that the knowledge and action generated take into account greater diversity.

## 5 Conclusion

To advance towards a just ecological transition, the issue lies not in lack of knowledge or solutions but in the lack of effective action or the change in perception, values, and behaviors (Adger *et al.*, 2013). In this paper, we have delved into art as a tool, not so much to generate specific solutions, but to drive cultural changes: to pose deeper questions; to create spaces for reflection and dialogue; to open new frames of thought; to involve participation in the construction of hopeful futures, as problems do not present themselves in a closed manner where only expert knowledge can participate. Likewise, artistic practices have been presented as useful tools for community inclusion and participatory work, as the environmental problems we face are so vast that it is essential to incorporate the community perspective.

In recent years, there has been an increase in artistic works related to eco-social issues, but we have identified a lack of systematization of processes and better evaluation of their impact, acknowledging that this is a very complex task to undertake due to the inherent characteristics of the projects. The arts play a fundamental role in the necessary cultural change demanded by a just ecological transition, but it requires a non-instrumentalist approach that does not seek a predetermined outcome or the generation of a specific solution. Open processes delve into imaginaries, values, and attitudes towards certain problems (Galafassi, *et al* 2018) and must be combined with greater evaluation and visibility of the results. The arts have proven to be an interesting tool for “the massive enrichment of perceptions” (Rafanell, 2018, p11).

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## Methodological Appendix

The study has been based on a qualitative methodology, focused on understanding and investigating social processes from the perspective of the individuals involved in them. The aim was not to make statistical inferences but to gather significant elements that could be transferable and useful for different contexts.

Data collection was carried out through: 1) A review of the field notebooks of each initiative, available on their respective websites, analysing the discourses and established actions; 2) A series of semi-structured interviews - both individual and group interviews - with different profiles (cultural mediators, community members, artists, and individuals responsible for general coordination). The interviews were conducted online, recorded, and transcribed. An inductive-deductive coding and discourse analysis were performed.

A total of five projects implemented in five different regions were analysed. The inclusion criteria were: having carried out at least one year of work; involving the artist and having commenced joint efforts; and having a thematic relationship with a just ecological transition.

## Biographical Note

Javier Fernández Ramos is a PhD Researcher, consultant, trainer and facilitator. Expert in civic participation, social innovation, environmental education and sustainability. Bachelor with Honors in Environmental Sciences. Master's Degree in Environmental Education and Sustainable Development. Master's Degree in Social Innovation. Teacher of the UNESCO Chair of Environmental Education and Sustainable Development (UNED). In the last 18 years, his career has been developed in the fields of Sustainable Development, Citizen Participation and Social Innovation: designing and carrying out multiple participatory processes, researches, education programs and innovation projects. Co-founder member of Altekio.

## Notes

1. Quiroga, F. (2023, Online Interview).



## Courtyard Planting: Sustainable Design for Both Material and Unmaterial Space

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**Abstract:** *As a heritage of farming civilization, courtyard planting still affects our living space and ecological environment, and is an important object in the images of urban material and immaterial way.*

*From the perspective of material way, courtyard planting itself has become an important object of artistic design for families, communities, and urban public spaces, including horticulture, agricultural markets, supermarkets, balconies, office areas, parent-child gardens, school etc. Carrying out the hustle and bustle of urban blocks and creating new spaces for artistic imagination as well.*

*From the perspective of immaterial way, people maintain friendly relationships between heaven and humanity through planting behavior, in order to cultivating our belief in “enjoying life together with nature”; relieving the depress of people in the living the cement forest; promoting people’s pursuit of spiritual freedom and aesthetic life.*

*In recent years, with the rapid development of urbanization, especially since the pandemic, courtyard planting has been favored by more people. It has become a common phenomenon for families and neighborhoods to plant vegetables and fruits, which has driven the attention of artists and urban designers in this field. The re-planning of urbans is incorporating more and more artistic elements into public spaces. On the one hand, it injects more vitality and color into life, and on the other hand, different groups have a common social practice image.*

*Courtyard planting, as a micro system in cities has gone far beyond the definition of a physical space. Instead, it accommodates a series of aesthetic methods and diverse imaginations such as, cultural history, social habits, community solidarity, and emotional belonging in cities and daily life. As a result, various types of spatial design models have emerged, such as pocket parks, farmers’ markets, balcony gardening, community farms, and natural education are all important components of sustainable topics. Regardless of the motivations behind them, they all attempt to create a space production work that combines both beauty of nature and spiritual by planting behavior.*

*There are also some new challenges we are facing, for example, the homogeneity and vulgarity of urban public art design, the destruction of urban space (especially ancient cities) layout and style in the expansion of high-rise buildings, disputes over land use conflicts caused by the independent planting of courtyards, and the governments eagerness for quick success and instant benefits, and others.*

*This article starts with sociological empirical surveys and adopt interdisciplinary studies methods to focus on the history and value of courtyard planting, and its contemporary significance in social mapping of different types of urban spaces, based on the disciplines of reuse, repurpose, recycling, and accelerated upward circulation, we aim to achieve sustainable design for both of material and immaterial space.*

**Keywords:** *Courtyard planting, material and immaterial design, image space, sustainable*

## 1 Introduction

The text emphasizes the significance of courtyard planting as a legacy of farming civilizations, profoundly influencing our living spaces and ecological environments.

Courtyard planting has become a pivotal aspect of both material and immaterial urban spaces, fostering artistic design in various settings such as homes, communities, and public areas. It enhances urban life by blending art with nature, supporting mental well-being, and encouraging a connection with the natural world. The practice has gained popularity, particularly post-pandemic, leading to an increase in home and community gardens, which has caught the attention of artists and urban planners. These spaces serve not only as physical sites but also as arenas for cultural expression and social solidarity, evolving into diverse spatial design models like pocket parks and community farms. However, the expansion of such initiatives faces challenges like urban homogeneity and disputes over land use.

The text proposes a sustainable approach to both material and immaterial urban development through interdisciplinary methods and emphasizes the historical and contemporary relevance of courtyard planting in urban planning.



## 2 Courtyard Planting

China has a 5000-year history of agricultural civilization, and courtyard planting is one of the important legacies that still affects our survival and ecological spatial production as well as a component of urban and rural material and immaterial spatial design in the context of sustainable development. It is not only a spatial container, but also a carrier of natural and cultural genetic in agricultural civilization, as well as a shelter for life and soul. This practice is tied to the attachment relationship between heaven and humanity, and through thousands of years of generational change, it remains the master of our living space and the earth.

The characteristics of courtyard planting firstly lie in its existence as a material space, closely related to nature, the earth, life, labor methods, and the fruits of labor. Although it is only a microcosm in society, it far exceeds the definition of physical space. Its spiritual attributes determine that it is a carrier of “natural genes” and “cultural genes,” a refuge for life and spirit, accommodating and gathering a series of life and labor methods, life aesthetics, leisure behaviors, emotional attachments, and diverse imaginary spaces.

“The term of ‘courtyard’ (庭) and ‘garden’ (院) first appeared together in the book *‘Biography of Tao Hongjing’ in the Southern Dynasties period*, which records: “He particularly enjoys the sound of pine winds, planting in every courtyard, and feels joyous when hearing their sound” (《南史》卷七十六《隱逸傳下·陶弘景傳》 Tao Hongjing, (456–536ad) was a thinker and hermit during the reign of Emperor Wu of Liang). Ancient courtyards typically featured pavilions, terraces, and spaces for activities such as playing musical instruments, chess, calligraphy, and painting, representing a refined lifestyle cherished by literati and scholars. For ordinary people, the courtyard was their “self-sufficient land” in front or behind their homes, also referred to as a ‘garden’ or ‘yard,’ where they produced their own food, met their needs, appreciated the fruits of their labor, and found out enjoyment. It was the realm of material space production. ‘Labor and nature are companions; nature provides materials for labor, and labor transforms various materials from nature into the food necessary for survival. This is the first condition of human life’ (Marx). This ‘natural gene’ is indeed the primary condition of our existence. In that world, the ancients created the ‘Twenty-Four Solar Terms’ not only to guide agricultural activities and interpret the natural rhythms of heaven and earth but also as a guideline for people to enjoy life, rest, and follow the flow of nature, instilling a reverence for nature, seasons, and rules.

With the extension of courtyard planting, for the first time in history, societies had surplus products, and concepts of time and space changed. People began

to meet leisurely lives, connecting with nature, all living things, and communities through activities, such as: games, feasts, dances, social gatherings, ceremonies, and festivals. This led to the production of new public spaces, transitioning from simple bartering to a fusion of marketplaces, fairs, gardening, cooking, estates, gardens, granaries, ancestral secret recipes/medicinal recipes, forming a blend of material and immaterial “cultural genes.” These “dual genes” maintained the “heaven-human relationship,” ensuring the naturalness, diversity, and safety of food and meeting diverse needs, enriching a life space where human nature and godhood coexist.

Figure 1. Zhang Zeduan (Northern Song Dynasty) *Along the River during the Qingming Festival* (fragment, 0,248m x 0,5287m). Palace Museum. Beijing.



In historical records, the best “courtyard planting” in ancient times belonged to Tao Yuanming of the Wei and Jin dynasties. His naturalistic poetry, such as “... the bound birds long for their old woods, the pond fish yearn for their old depths. Clearing the southern wilds, returning to cultivate the homestead fields. About ten mu of land, eight or nine grass-roofed houses. Elms and willows shade behind the eaves, peaches and plums line the hall...”, established him as the pioneer of the ancient Chinese pastoral poetry, exerting a profound influence on later generations.

Courtyard planting reflects the universal values of “natural laws” and “morality” in the *Tao Te Ching* and its influence on the West. Western scholars praised Laozi as “a true philosopher, an insightful ethicist, a good theologian, and metaphysician.” This represents a convincing spatial production rooted in Chinese cultural traditions and filled with aesthetic thoughts in daily life (Ma, 2023).

Courtyard planting declined in modern times but is now linked to the national rural revitalization and urban-rural integration strategies. According to data from the National Bureau of Statistics, the urbanization rate at the end of 2022 was 65.22%, with nine provinces including Shanghai and Beijing already exceeding 70% (National Bureau of Statistics of China, 2023). However, there are still many historical legacy issues, such as: “Long-term large-scale rural labor migration to urban areas has led to trends of farmers to have to do various things, rural hollowing-out, and aging labor forces, resulting in significant structural shortages of rural labor. The current situation: elderly farmers lack of strength to farm, those born in the 1980s are unwilling to farm, those born in the 1990s lack knowledge of farming, and those born in the 2000s show no interest in farming. The question of ‘who will plant the land’ urgently needs to be addressed” (Liu, 2024).

### 3 Urbanization and Courtyard Planting

The rapid development of urbanization has led to the rise of emerging cities on one side, and the encirclement of the “concrete jungle” on the other. The loss of pastoral space is distorting many people’s perceptions. For example, some people believe that the grain and food we consume every day come from machine production, erroneously separating grain and food sources from in the natural ecological environment, without interest in knowing where the food they rely on for survival comes from, thereby disconnecting human life from the natural world on the subjective or objective cognitive level” (Ma, 2022).

Contemporary society have thrown away a plentiful and coherent historical experience, accompanied by common phenomena such as “natural deficiency syndrome”, “cultural desert syndrome”, and “design ideas homogeneity syndrome”, which threaten people’s physical, psychological, neural, spiritual, and behavioral systems, causing the whole society to fall into anxiety, involution, and struggle.

From 2019 to now, Chinese scholars conducted two surveys on “food self-provisioning”. In highly industrialized areas, due to the previous vigorous implementation of “village consolidation and relocation”, many families lost the land for courtyard planting.

In Jiangsu Province, where “village consolidation and relocation” occurred earlier, around seventy percent of rural households no longer have courtyards by data showed. Although Chinese people have always had a “garden dream” in their mind, it is still difficult to preserve and continue the cultural tradition of courtyard planting in the context of land scarcity and public ownership, and

allowing people to participate in a low-carbon and frugal lifestyle by “producing their own foods”. However, people still use to various possibilities to design spaces that maintain contact with nature.

Figure 2. Huidi, M. (April 2024) *Hutongs (alleyway) in Central Beijing.*



Figure 3. Huidi, M. (April 2024) *Hutongs (alleyway) in Central Beijing.*



## 4 A few examples

How can to own a planting garden in the concrete jungle? People have created various spatial design patterns, such as: pocket parks, community farms, parent-child eco-gardens, and fruit and vegetable picking gardens, to struggle conditions for people to reconnect with nature and the countryside.

In recent years, the rising trend of pocket parks driven by local governments refers to small-scale green activity spaces facing communities, with diverse shapes and recreational functions. Although small in size, they are more humane, convenient, and accessible. Community residents can also hold cultural performances, talent shows, and other public activities on regular days, achieving the goal of “seeing green within 300 meters, seeing gardens within 500 meters”. It is reported that nearly 30,000 pocket parks have been constructed or renovated nationwide (China Urban Center, 2022).

For those without courtyards, they are most cleverly utilizing planting boxes to cultivate vegetables and fruits. Especially for residents living on the ground floor, they use to the small barren land (vacant space) in front of their doors to plant various vegetables, fruits, or flowers, creating a cityscape worth stopping and admiring, and combine with pocket parks then they enhance each other’s charm.

Community farms refer to citizens leasing land in the outskirts or countryside to plant various vegetables according to their own preferences. Some are motivated to obtain green food, while others use their weekends to connect with nature, laboring and observing the growth process of all things in the natural world, thereby cultivating their bodies and spirits.

Farmers’ markets are also one of the paths for people to get close to nature. Hong Kong’s famous Central Market (i.e., farmers’ market) covers an area of about 12,000 square meters with a harmonious existence of antiquity and modernity, simplicity and luxury, amidst the bustling streets and towering buildings of Hong Kong’s prime location, recording the cultural history, local customs, and lifestyle of Hong Kong for over a century. It also reflects people’s adherence to principles of freedom, equality, fairness, justice, respect, and hard work.

Balcony gardening presents another scenic view, as people create new natural spaces in the concrete jungle. Balcony gardening is mostly done by office workers, serving as a comfort for mental fatigue, alleviating various pressures, and improving physical degradation caused by long hours of sitting in the office and made them achieve the effect of strengthening their bodies through planting.

“Beautiful Courtyard” is a project launched by the Nanjing Women’s Federation to implement in the national strategy of rural revitalization. It aims to create a well-organized, clean and tidy rural courtyard with green trees and fresh flowers. Its purpose is to achieve functions such as rural tourism, sightseeing photography, parent-child interaction, enjoy leisure time, natural knowledge popularization, and other entertainment program, and to help villagers increase income and become rich in a comprehensive ecological environment. This social movement is currently being promoted nationwide.

Spatial production in various forms such as pocket parks, farmers’ markets, balconies garden, citizen farms, and beautiful courtyards are important components of sustainable topics. Regardless of the motivation, their common goal is to create a space that combines natural beauty and spiritual beauty through to step into nature.

## 5 Conclusions

Courtyard planting is a comprehensive topic involving an intersection of knowledge in literature, history, philosophy, law, management, education, science, technology agriculture, medicine, and art. Its existence also proves that “contemporary society has shifted from the production of things in space to the production of space itself”. This means that space is not only a container for production but also focuses on the interconnectedness of production relations, presenting different changes and processes, thereby providing a good place for philosophers, artists, and personalized architects to showcase their talents (Lefebvre, 2021). Achieving a new spatial pattern that combines living space with imaginative space.

Courtyard planting is also one of the important intermediaries in the modern life world and cultural transformation, containing the power to transform from one mode to another in the production of new spaces. These experiences should attract high attention from decision-makers, managers, public service providers, and researchers. Such examples can help address various shortcomings in our country’s understanding of courtyard planting, such as land use, urban layout, protection of ancient cities, management concepts, public services, and various misconceptions in artistic design. They can also help reverse the mentality of governments or participants seeking quick gains and stopping at the surface level.

Furthermore, courtyard planting can ensure self-sufficiency in food production within a certain range against the backdrop of climate change, the post-pandemic era, an uncertain future, and increasing risks of war. To pay more



attention and discussion on this topic come over particularly realistic and urgent. Truly achieve sustainable design concepts for both of material and immaterial space. Assist the public masses in participating in the harmony of soc-ecology through this practical behavior.

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- 《南史》卷七十六《隱逸傳下·陶弘景傳》Tao Hongjing, (456–536 A.D) was a thinker and hermit during the reign of Emperor Wu of Liang.

## Methodological Appendix

This article starts with sociological empirical surveys and adopt interdisciplinary studies methods to focus on the history and value of courtyard planting, and its contemporary significance in social mapping of different types of urban spaces, based on the disciplines of reuse, repurpose, recycling, and accelerated upward circulation, we aim to achieve sustainable design for both of material and immaterial space.

## Biographical Notes

### Huidi Ma

Prof. Huidi Ma is founder of the Center of China Leisure Studies and Distinguished fellow at the Leisure Studies Center of the Chinese National Academy of Arts, who was elected fellow of the World Leisure Academy in 2010. And published book, together with Er Liu, the entitled: *Traditional Chinese Leisure Culture and Economic Development: A Conflict of Forces* (Palgrave, 2017). Last year, Edited

book together with Hongwu Sun, the entitled: *Leisure Farming: A Wild Flower Since Ancient Time*. (China Agricultural Publishing House, 2023) Currently, she is collaborating with European scholars on socio-ecological practices to involve public participation into through the micro system of food self-provisioning.

Since 1987, Huidi Ma has been very active in Chinese academic and intellectual programs and projects. Some of her contributions and projects are: Agriculture and Society (1987, organized by The Ministry of Agriculture and the Chinese Association for Science and Technology); Chinese Communication Development Strategy and Countermeasure (1987-1990); Program for the Forum for Science and Culture (1987-1988); Chair of the Chinese Association for Science and Technology's first and second Academic Annual Meeting of Young Scientists (1992 and 1995); researcher at the Theory of Town and Township Enterprise (1993-1996); Organizer of the 50th Xiang Shan Meeting of the Chinese Academy of Science (1995); Project "Science and Technology and China at the Turn of the Century, with five years of support from the Science Society (1995-1996).

Huidi Ma is also the Journal Editor of the Journal Studies in Dialectics of Nature (in Chinese), which won the top prizes for three years in a row, awarded by the Chinese State Publishing Ministry.

In addition, she has edited and published various texts in book and journals: Edited a series of books on the Study of Educational Theory, published by He Nan Educational Press, 1992; The Corpus of the Forum of Sciences and Culture. Chinese Association of Science and Technology, 1988; "Chinese Women and Leisure," delivered at the 8th Symposium of the International Association of Women in Philosophy (USA), 1998; "On a Theory of Leisure in the Field of Spiritual Culture," Qi Ju Learn Journal No. 2 (1998), and delivered at the 20th World Conference of Philosophy (USA), 1998; "On the Studies in Characteristics and Trends Abroad: Science Policy," Future and Development No. 6 (1997); "On Comparing the National Scientific Management 'Planning Model' with China, America, Japan, and South Korea," Studies in the Science of Science No. 1 (1997); "Leisure: Construct a Happy Home of Spirit for Human Beings," The Digest of Xinhua No. 12 (1996); "Discussion on Management of the Emotional Culture," Future and Development No. 4 (1996); "On the Future Trend of Chinese Philosophy," Studies in the Dialectics of Nature No. 12 (1996); "The 'Planning Model' of National Scientific Macro-Management," Journal of Dialectics of Nature No. 4 (1995); "Theoretical Thought on China's First Program for Science and Technology," Studies in Dialectics of Nature No. 6 (1996); "The Artistic Element in Management and Policy Decisions," Future and Development No. 5 (1990).

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Links of interest:

Website: <http://www.chineseleisure.org/r>

<https://www.cddc.vt.edu/feminism/Ma.html>

## Huan Ni

Dr. Huan Ni received her M. Phil in Development Studies from the University of Cambridge from 2004-05 with UK Government's Chevening Scholarship. She is also the Director of ESG Development Promotion Center of Shanghai Pudong New Energy Association. Helen has been a China Member of the CEC Committee of International Union of Conservation Network (IUCN). Helen has 18 years of experience in working with international projects and international organizations such as DFID, UNDP, IFC, FCO, UNEP and WWF. She has been invited as an expert in low carbon communities by Shanghai Municipal Government.

Huan Ni has proven expertise to formulate, manage and deliver thematic projects on sustainable development, microfinance, poverty alleviation, corporate social responsibility (CSR), public-private partnership, SME Development, green financing in China, environmental protection, ecosystem services and climate policies.

Huan Ni had been working on the PwC London-managed Sino-UK State Owned Enterprise Restructuring and Enterprise Development (SOERED) Programme funded by DFID from 2000-04 before she went to Cambridge University to pursue her Master Degree in Development Studies. Her work in this Sino-UK programme was mainly on building an enabling business environment for SME development and SME financing in Sichuan Province and in Liaoning Province while trying to mainstream CSR to local SMEs. Her M.Phil Degree Dissertation in the University of Cambridge was the study about the SME development in Western China versus to developed coastal areas and the rest of the world.

In 2016, she founded a native environmental NGO called Shanghai Green Light-Year Environmental Service Center promoting sustainable lifestyles in urban and rural communities in China. Her new experience enabled her to get to know many start-ups and environmental SMEs working in sustainability. Her NGO work has earned her the "Social Impact Award" under "2017 Study UK Alumni Award" by British Council.

Huan Ni's home is called a mini environmental technology museum as she has installed Mainland China's first CIGS thin film solar plant. She is the first home user of outdoor aquaponics system to grow vegetables, the vertical farm user to use her kitchen waste to make organic fertilizer to have zero emission of her wet rubbish. She also uses hybrid and EV two-mode car and use dripping

irrigation system for her little farm. Her home has received more than 6000 visitors from around the world since 2015 and she has trained 21 kids as her “little volunteer explainers” from her own community.

Huan Ni is the founder and Leader of a Chinese environmental organization called Green Light-Year which advocates environmental initiatives from promoting green lifestyles in communities, schools, and businesses in Shanghai, Zhejiang, Jiangsu, and Shandong provinces, to practicing Education for Sustainable Development (ESD) in Eastern China.

Links of interest:

<http://green-lightyear.org/en/ms-huan-ni-helen>

<https://www.worldbank.org/en/news/feature/2022/03/08/ni-huan>

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### **Notes**

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## ARTEKOM. Estéticas y procesos decrecientes en el arte para una transición ecológica

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**Abstract:** ARTEKOM es un proyecto interdisciplinar de investigación y acción en el ámbito del Arte y la Comunicación. Se ubica en la Universidad del País Vasco, UPV/EHU, dentro del Programa para el Desarrollo Sostenible Campus Bizia Lab. Los contenidos que se trabajan están vinculados a los retos de la transición energética ecológica, planteando acciones dirigidas desde y para la comunidad universitaria hacia la población en general.

*Partimos de la necesaria aportación de las humanidades en los procesos de transformación cultural hacia la sostenibilidad y, más concretamente, en la capacidad de la creación artística como agente de intermediación. La ciencia ha constatado empíricamente que hemos superado los límites biofísicos del planeta y, en consecuencia, para resolver los problemas medioambientales inéditos a los que nos enfrentamos es urgente adoptar modelos socioeconómicos que respeten los equilibrios de la biosfera. Esto supone, de facto, reducir los recursos dedicados al consumo material en favor de patrones de desarrollo humano cercanos a la ética de la vida buena. No obstante, se ha observado largamente que la difusión de los hechos científicos no basta para instaurar nuevos códigos de conducta en la ciudadanía, es imprescindible una renovación social de los principios que subyacen a los deseos y a las motivaciones para la acción. En este punto es donde entendemos el importante papel que adquiere el arte para impulsar una transición que se caracterice por la empatía, la igualdad y la justicia social, aportando visiones de la realidad que hagan hincapié en lo posible y bueno frente a las distopías desmotivadoras y resaltando el valor de colaboración frente a la competencia.*

*En la esfera del paradigma ecológico se ha venido desarrollando una corriente artística desde hace décadas; de forma general, se ha caracterizado por el compromiso social y político, por aportar una visión holística de los problemas ambientales, por la participación en los retos locales de transición ecológica con perspectiva global y por adoptar, en su materialización, la austeridad y el respeto hacia los entornos bioculturales como premisas ineludibles. Siguiendo esa trayectoria, ARTEKOM constituye un doble ejercicio colectivo: por un lado, de exploración para*

*avanzar en la estética que señala caminos en los que la ética y la política responden al interés de lo común, y por otro, una experiencia pedagógica. En la comunicación se presentará el proyecto junto con un abanico de contenidos, enfoques temáticos y estrategias formales que, entendemos, caracterizan el arte ecológico y su desarrollo a través de las intervenciones artísticas realizadas.*

**Palabras clave:** Arte ecológico, arte proactivo, autolimitación en arte

## 1 Introducción

La especie humana a lo largo de su historia ha ido generando artefactos culturales y tecnológicos en una progresión que le ha permitido crecer y expandirse por todo el planeta. Con estos artefactos ha ido reformulando las reglas de los ecosistemas naturales que ha ido explotando, introduciendo una serie de factores de signo opuesto a la sucesión ecológica y, por tanto, determinando su evolución hacia la regresión (Margalef, 1982). Singularidades humanas como el uso de energía exosomática fósil, el transporte y el metabolismo externos han generado nuevos sistemas y modelos de interrelación, intra e interespecifica, que van acompañadas de la generación de contaminación y la alteración de los ciclos biogeoquímicos del agua, del oxígeno y dióxido de carbono, por ejemplo. Así pues, la multiplicación de los sistemas urbanos y de los tecnosistemas se sustenta en una estructura de funcionamiento que no respeta el esquema de ciclos que ha permitido la pervivencia de la biosfera.

No obstante, la dinámica expansiva de la economía hegemónica, que necesita crecer extrayendo cada vez más recursos a costa de alterar los ciclos naturales, se nos presenta aún como una ley natural inapelable. En consecuencia, de no afrontar una profunda transformación de los modelos socioeconómicos actuales, enfrentaremos una gravísima desestabilización global con desastrosas consecuencias para los territorios y la vida (Fernández, 2011; Taibo, 2020).

Ante este panorama global, desde el proyecto ARTEKOM (Arte y comunicación para la transición energética ecológica) consideramos que las ciencias humanas y las artes tienen un papel fundamental. Las imágenes y las palabras, los diferentes lenguajes artísticos que operan en el nivel simbólico, emocional y estético nos sirven para interpretar nuestras percepciones del mundo y median en la construcción de las sensibilidades y del pensamiento. El arte, por tanto, está vinculado con el conocimiento, con las políticas y con el posicionamiento ético de cada sociedad.

Si históricamente las manifestaciones artísticas han proporcionado miradas innovadoras que han servido para desentrañar las relaciones del ser humano con su entorno biofísico o para comprender la naturaleza, en la encrucijada actual constituyen una importante herramienta para proporcionar conocimiento y alimentar los imaginarios de un futuro deseable, para hacer visible la transición a un futuro de austeridad material como una oportunidad para integrar a la gran mayoría de la población en sociedades democráticas y sostenibles ecológicamente.

## 2 El proyecto ARTEKOM

ARTEKOM es un proyecto interdisciplinar de investigación y acción en el ámbito de Arte y la Comunicación para apoyar una transición energética ecológica (2018). Se ubica en la Universidad del País Vasco, UPV/EHU y nace dentro del Programa Campus Bizia Lab (CBL), una iniciativa impulsada por la Dirección de Sostenibilidad y del Servicio de Asesoramiento Educativo, perteneciente al Vicerrectorado de Innovación, Compromiso Social y Acción Social de la UPV/EHU.

El equipo que lo lleva a cabo está constituido por profesorado, estudiantes, investigadores/as y trabajadores/as de administración y servicios de la Facultad de Bellas Artes y de la Facultad de Ciencias Sociales y de la Comunicación.

ARTEKOM comenzó la andadura a finales de 2018, con el doble objetivo de investigar en el diseño de estrategias de sensibilización y comunicación a través de intervenciones artísticas, y de constituir un foro abierto y participativo de reflexión, experimentación y acción en la intersección entre arte y ecología. En estos años el proyecto ha ido creciendo y diversificándose en componentes y actividades, contando con colaboraciones puntuales con otros equipos de investigación dentro de la UPV/EHU -Tradener proiektua, Ekopol, Basque Centre for Climate Change (bc3)- instituciones y organizaciones sociales - Itsasmuseum Bilbao, Ekoetxea Urdaibai, Ekologistak martxan (Ecologistas en acción, en la Comunidad Autónoma Vasca)-

Los contenidos que se trabajan en el proyecto ARTEKOM están vinculados a retos de la transición energética ecológica, la urgencia de la crisis ecosocial y las políticas para la sostenibilidad (Álvarez *et al.*, 2022). Las acciones se dirigen desde y para la comunidad universitaria y hacia la población en general. Fundamentalmente investigación artística y las consecuentes labores expositivas y curatoriales; la propuesta y dirección de Trabajos Fin de Grado y Trabajos Fin de Máster; la participación en iniciativas extrauniversitarias y la organización de encuentros, intercambios, seminarios, talleres, cine

(Ekozinemaldia) y charlas. Sin olvidar la divulgación mediante la publicación de libros, catálogos y artículos.

Enmarcamos nuestra práctica artística en el territorio del *arte ecológico*, entendiendo que supone asumir el compromiso de trabajar en arte con el tema y el objetivo de concienciar, sensibilizar y actuar por la construcción de sociedades justas, igualitarias y sostenibles. Aquí conviene aclarar que encuadrar la acción creativa como ecológica es una opción que exige participar de un conocimiento, de una posición política y ética coherente con los principios fundamentales de la ciencia ecológica y asumir las concepciones y acciones necesarias para el buen vivir que se derivan de ellos (Marín, 2014, 2018); mientras que hacer arte ecológicamente, es decir practicar la autolimitación, es un deber moral en un mundo que transita hacia situaciones de escasez generalizada.

### **3 Estrategias artísticas de sensibilización y comunicación para la transición ecológica**

Podríamos definir el proyecto ARTEKOM como un ejercicio colectivo de exploración, para avanzar en una estética que sirva a la transición ecológica señalando caminos que respondan al interés de lo común. En este proceso, las propuestas artísticas desarrolladas presentan un amplio abanico de opciones formales y de contenidos, pero comparten ciertas premisas fundamentales que se exponen a continuación.

En principio, asumimos el importante papel del arte como agente de intermediación para alcanzar los retos de transición hacia la sostenibilidad, proponiendo nuevas visiones de la realidad que contribuyan a redireccionar comportamientos. El arte es comunicación, y sus mensajes, además de apelar a nuestra inteligencia, provoca emociones a través de sensaciones, proporcionando un conocimiento sensible significativo que tiene gran incidencia en nuestras decisiones racionales. Lucía Loren en la obra *Cosiendo el hielo* (2016-19) hace una propuesta de reparación simbólica que invita a una reflexión sobre los efectos de las actividades humanas sobre los ecosistemas y la emergencia climática. Documenta una acción en la que utiliza lana, que las ovejas han dejado en su deambular prendidas en arbustos y matorrales, para coser, en este caso, la fina capa de nieve a la tierra.

Figura 1. *Cosiendo el hielo / Sewing the ice* (2016-2019), Lucia Loren.  
Cortesía de la artista.



Somos conscientes del alcance y gravedad de la crisis socioecológica: está empíricamente demostrado que en caso de perpetuar las aspiraciones crecientistas de la economía convencional el sistema global colapsa. La especie humana tiene ante sí un futuro incierto, y entre las alternativas está incluso su propia desaparición (Odum y Barret, 2006; Margalef, 1996). Pero también pensamos que aún podemos cambiar las inercias y propiciar la transición hacia nuevos modelos de vida sostenible en términos de justicia y equidad.

En esta línea de pensamiento, asumimos que naturaleza y cultura son dos aspectos de la misma realidad. Los seres humanos ejercen un impacto sobre sus entornos a la vez que se ven afectados por las fuerzas ambientales (Milton, 1997). Somos ecodependientes y vulnerables: la crisis medioambiental conlleva la crisis social y viceversa. Por estas razones, para afrontar el cambio es necesario aplicar un enfoque holístico a la problemática sociomedioambiental. Todos los problemas que nos afectan: calentamiento global, pérdida de diversidad, abastecimiento de materiales y energía, conflictos armados, migraciones... están interrelacionados, y no se pueden tratar por separado. Éstas son reflexiones que asoman detrás de la obra *The blue planet* del escultor José Ángel Lasa y *Laments in the horizon* del artista sonoro Mikel Arce.



José Ángel Lasa, se denomina asimismo “recolector” puesto que utiliza para sus obras materiales que han sido desechados. Pueden ser restos de árboles y arbustos que recoge en el monte, pero también restos de la actividad industrial o comercial. La pieza *The blue planet* (2005) fue realizada en el contexto de crisis y Guerra del Golfo. Según cuenta el propio artista, venía recogiendo latas de aceite desechadas recogidas en el campo que se acumulaban en su estudio esperando ese momento en que la realidad provoca la necesidad de expresar un sentimiento, un estado de ánimo o una reflexión mediante la obra.

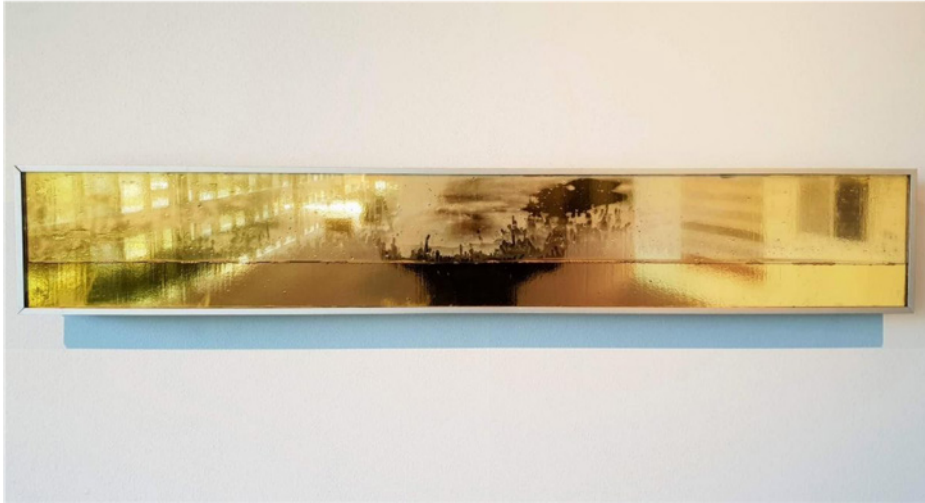
Figura 2. *The blue planet* (2005), José Ángel Lasa. Cortesía del artista.



Mikel Arce utiliza la tecnología como instrumento esencial en sus obras. *Laments in the horizon* (2018) es una obra visual y sonora alimentada con una pequeña placa solar. Colocado en la pared, observamos un prisma de paredes de cristal con fondo cromado en oro; contiene agua que se mueve con un ritmo irregular y el conjunto es un objeto atractivo visualmente. La imagen se ensombrece cuando el autor nos hace sabedores de que el movimiento está provocado por la reproducción de grabaciones sonoras obtenidas durante las actividades de los dramáticos rescates de inmigrantes en el Mediterráneo, mediante un *transductor* táctil (altavoz de baja frecuencia). Los sonidos son irreconocibles; los lamentos y gritos se *transducen* en las ondas visuales ante un horizonte dorado.



Figura 3. *Laments in the horizon* (2018), Mikel Arce. Cortesía del artista.



Otro aspecto fundamental en las estrategias artísticas de Artekomp es la austeridad en la materialización de los proyectos. Compartimos la consciencia de que sobreconsumimos por encima de la biocapacidad de nuestro territorio, y lo que nos toca es rebajar el consumo en nuestras actividades cotidianas. Obviamente ha de ser así también en las artísticas, por esa razón, en Artekomp hemos adoptado una actitud propositiva y asumimos el compromiso de trabajar con coherencia.

Las obras de la serie *En clave de RE* de Susana Jodra (iniciada en 2018) visibiliza a través de diferentes propuestas artísticas la necesidad de la REducción en el consumo de recursos materiales y energéticos. REúne verbos que empiezan por RE, pero más allá del eslogan REducir/REutilizar/REciclar, sus piezas nos hablan de REvisar nuestra RELación con los objetos que consumimos, de REplantearnos nuestro modo de vida, y de REparar en qué acciones nos producen satisfacción, y cuáles RESponden a la tendencia de velocidad y de consumo creciente del sistema más que a un bienestar común. La obra de la imagen se titula *REpositorio*. Si bien un repositorio es un lugar para guardar y pREservar, este se convierte en un lugar para el olvido cuando sus contenidos no son REvisitados, REleídos, RELacionados, REactivados... Es de señalar que, de igual manera que se REutilizan los verbos, los elementos utilizados para elaborar las diferentes piezas de la serie han sido REScatados.

Figura 4. *REpositorio / REpository* (2020), Susana Jodra. Cortesía de la artista.



En esta misma línea de repensar nuestras prioridades, ajustándolas a las limitaciones ecológicas del planeta, planteamos que es necesario abandonar las fórmulas del tecnooptimismo (que hace pensar que todo podrá seguir igual) y volver la mirada a lo que el investigador Adrián Almazán (2023) denomina *técnicas humildes*. Se trata de poner en valor alternativas para actuar en lo cotidiano, descubrir experiencias enriquecedoras en lo pequeño y compartido, y poner la vida en el centro, como reclaman las pensadoras ecofeministas Alicia Puleo (2019) y Yayo Herrero (2011).

Estela de Frutos y Chiara Sgaramella (Viridian) crearon la obra titulada *Exergía* (2019). Son piezas de pan cocido, esculturas comestibles y biodegradables que reproducen a tamaño real algunas herramientas vinculadas al trabajo agrícola manual. Esta obra está directamente relacionada con la lucha ciudadana por la defensa de la huerta valenciana impulsada bajo los lemas “La huerta es vida” y “El asfalto no se come”.

Figura 5. *Exergía / Exergy* (2019), Viridian (Estela de Frutos y Chiara Sgaramella).  
Cortesía de las artistas.



Isabel Álvarez realizó la obra *Letxuga power*, reutilizando el cartel impreso en lona plástica usado para publicitar una exposición anterior del equipo Artekomp titulada “Egin behar dugu/Tenemos que hacerlo”. Con él confeccionó decenas de bolsas en las que introdujo tierra y plantones de lechuga. Así, en la siguiente exposición, “Egiten ari gara/Lo estamos haciendo” de 2021, invitó a cada visitante a llevarse una lechuga con la opción de consumirla o dejarla crecer y germinar. Cultivar y cuidar lo que se ha sembrado está en la base conceptual de la pieza, que se completa con la participación de los otros y de la propia naturaleza.

Figura 6. *Letxuga power / Lettuce power* (2021), Isabel Álvarez.  
Cortesía de la artista.



También coincidimos en que es preciso acercarnos y acercar a la ciudadanía al conocimiento de la naturaleza; informarnos acerca de cómo se desarrolla la vida en lo cercano, establecer o reforzar los vínculos con el territorio que nos rodea, nos empuja a la empatía y el respeto.

Celia Martínez, en su trabajo Fin de Máster desarrolló el proyecto *Para Martín*, 2021-2022. Un trabajo interdisciplinar en el que convergen diferentes disciplinas: ecología, urbanismo, diseño y escultura y tiene como objetivo acercar la avifauna urbana a la ciudadanía. Lo llevó a cabo con la colaboración de técnicos de la Consejería de Agricultura, Ganadería y Medio Ambiente, Gobierno de La Rioja, bajo el lema "no todos los pájaros pequeños son gorriones".

Figura 7. Para Martín / for Martin (2021-2022), Celia Martínez.  
Cortesía de la artista.



Por último, compartimos el proyecto emancipador de la ecología social que se fundamenta en la colaboración frente a la competencia (Riechmann et al., 2022). Entre las estrategias positivas, son destacables las acciones artísticas que, en colaboración con la población local y agentes provenientes de otras disciplinas contribuyen, a despertar la sensibilidad ecológica de la población; a la modulación de comportamientos y a determinar el emprendimiento de proyectos en función de los intereses de la comunidad (Demos, 2009). En esta línea de pensamiento se interpretan el proyecto *Manta salvavidas*, Trabajo de Fin de Master que Miriam Loidi inició durante el confinamiento de 2020. En él se propone la construcción colectiva de una manta para cubrir y proteger. El proceso de elaboración constituye un interesante y necesario acto de socialización en el que las personas participantes comparten experiencias y aprenden unas de otras. Según la manta “salvavidas” va creciendo, va generando redes metafóricas, pero, sobre todo, vínculos reales, vivenciales.



Figura 8. *Manta salvavidas / Life-blanket*, (2020-2022), Miriam Loidi Zulet.  
Cortesía de la artista.



## 4 Concluyendo

En ARTEKOM nos interesa el tipo de arte político y social que se rige por el compromiso para la acción; que se caracteriza por el conocimiento crítico, por la colaboración o la participación en los retos locales de transición ecológica con perspectiva global, integrando valores como la empatía, la igualdad y la justicia social. Y que, en coherencia, adopta la austeridad y el respeto hacia los entornos bioculturales como premisas ineludibles para su materialización.

En nuestras producciones intentamos, en la medida de lo posible, minimizar la huella ecológica o el impacto ambiental. Promovemos la autoproducción, creando obras que se realizan preferentemente con materiales usados y que en muchos casos se reutilizan posteriormente. Prestamos especial atención a la minimización de los residuos generados de todo tipo y al gasto energético. Las piezas que usan dispositivos tecnológicos, son de baja intensidad en consumo energético y material y siempre que es posible, elegimos que las exposiciones se muestren con luz natural.

Los artistas que participan activamente de los retos sociales, culturales y políticos del tiempo en que vivimos plantean o reflejan problemáticas que afectan a la humanidad en sus obras o intervenciones con su trabajo, usando lenguajes sensitivos que ayudan a modificar la forma en que vemos el mundo o entendemos los sucesos. En este territorio, las formas de arte explícitamente ecológico o ecologista posibilitan la visibilización y sensibilización proactiva sobre problemáticas ecosociales, tendiendo puentes entre disciplinas, favoreciendo las sinergias y ofreciendo visiones alternativas.

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## Notas

1. Carmen Marín Ruíz es miembro de ARTEKOM, UPV/EHU, y del proyecto Humanidades energéticas (PID2020-113272RA-100), programa estatal de Investigación, Desarrollo e Innovación (MINECO/FEDER UE).
2. Susana Jodra Llorente es miembro de ARTEKOM, UPV/EHU, y del grupo de investigación LAIDA, Literatura e identidad, que forma parte de la red de grupos de investigación consolidados del Gobierno Vasco (T 1572-22) y la UPV/EHU (GIC 21/118).





## Speculative Designs as Dialogical Artefacts to Approach Socioecological Crisis: Analysing Riceskin and AI Kevin Provotypes

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**Abstract:** *Socioecology is a multidisciplinary field that examines the intricate interplay between social behaviour and ecological processes within the actual environmental crisis, seeking to understand how social structures and interactions influence the natural environment. This holistic approach brings the need for a dialogue that opens up interconnections among different structural levels; aiming for systemic shifts that, if not from the transformation of power organizations, may start from the societal reflection of what changes we must enforce.*

*This research advocates for speculative design to reflect on how might socioecological sustainability practices challenge current behaviours on production and consumption in the Anthropocene era. This design creates scenarios in which visual narratives foster new ways of reflection and communication.*

*Showcasing two examples of artefacts designed by two master's students majoring in Design in Complexity at Oslomet, in collaboration with SIFO (Consumption Research Norway) and Nitja Center for Contemporary Art, this paper analysed the design code of two imaginary futures which concern socioecological challenges.*

*For this educational module, the students were asked to design speculative provotypes, a concept encompassing provocation and prototypes, addressing the 12th Sustainable Development Goal of the UN, ensuring sustainable consumption and production patterns. The first provotype, Risekin, connects the fashion and food industry for a reflection on its production, secondly, AI Kevin, is an AI persona designed for mindful grocery shopping; Risekin uses a material-based approach based on the idea of edible clothes, often provoking mixed feelings in the viewers, on the other hand, AI Kevin, using the emerging AI technology, directly interacts with the users immersing them into his narrative.*

*The goal is to expand the exploration of speculative design via artefacts for the coherent understanding and acknowledgement of the socioecological challenges to be attached, triggering reflections for action.*

**Keywords:** *Design, speculative design, socioecology, prototypes, futures*

## 1 Introduction

When analyzing through the socio-ecological lens, societal and ecological issues are bound to be constrained by a holistic cultural, economic and political system. Socioecology disseminates social structures such as public policies, industries or communities, for an understanding of how systems are designed.

Design is often preached as a force with the power to turn existing realities into desired ones, however, this force is often driven by dominant policies focused on economic growth, blindly observants of socio ecological crisis. Hence, design not only configures the products but also the industry and its consumers, often, being used to strengthen a singular flow that leads us to the established paths. In response, there is a need for tools that provide us with new forms of strategies towards socio-ecological transformation, for instance, speculative dialogues. Speculative design, a subsidiary of critical design, gives shape to imaginary futures casting doubts on preconceptions about the currently accepted status quo and activating creative dialogues.

“There is no one way of doing zero waste fashion.” (Rissanen and McQuillan 2023) states the book *Zero Waste Fashion Design*; challenging this statement, one of the case studies presented in this paper, uses speculative design for the reflection and materialization of a one hundred percent zero waste clothing collection, addressing sustainability in fashion industry design. On the other hand, exploring the use of emerging technologies such as AI, the second case study speculates on service design as a tool to enforce sustainable thinking in customers’ consuming practices in the food industry. Via comparison, the case studies point to ponder how communication codes are designed and which dialogues they activate according to their design. These case studies are located in the 12th Sustainable Development Goal of the UN, ensuring sustainable consumption and production patterns.

## 2 Literature Backbone

### 2.1 Food and fashion industry in the Capitalocene epoch

In 2002, Crutzen designates the preceding two centuries and beyond as a new geological epoch, the Anthropocene, a time designated to the massive impact of human activity damaging the earth’s ecosystem. Therefore, in the Anthropocene humans are defined to be the geological force unbalancing the environment,

nevertheless, Jason Moore (2016) brings this reflection further reformulating the epoch into the Capitalocene. Capitalocene focuses on the complex interactions between economy, society and the natural environment, standing for a perspective that perceives the differences among human stakeholders instead of clustering all humanity equally. In the Capitalocene, decision-making agents and capita-based economic forces are the “way of organizing nature” (Nayeri 2016). Under the necessity of researching sustainability in the holistic approach of the Capitalocene, the field of socioecology is which identifies and analyse systemic relationships that enforce current societal and ecological challenges, as well as, those dynamics that could benefit sustainable practices.

Nowadays, companies are increasingly incorporating sustainability into their branding strategies, however, their sustainability strategies differ from each other. Different business models find their way to embrace sustainability as much as it doesn't affect their profit, leading to greenwashing and an empty meaning of sustainability, as Partridge (2011) states “Sustainability is intuitively understood, yet has no coherent definition”. This leads to a plurality of interpretations among consumers and producers; for example, H&M's conscious clothing line is a sustainable option within fast fashion, however, its “sustainability” can't be compared with eco-friendly second-hand store models.

Fashion is more than the pragmatic choice of clothing we wear on an everyday life basis, fashion is a form of art that reflects a complex network of sociocultural systems. As with any discipline of art, the fashion industry is continuously evolving, exploring from multi-sensory or empathic dresses to bio-smart clothing (Ferrara 2018) and other alternatives that enhance fashion experiences to new spheres. Research on eco-design technologies is also being developed reacting to the markable negative effects of the globalized fashion and textile industry on the environment and society, effects that make the fashion industry deeply involved in the destruction of Earth's life-supporting systems (Fletcher 2014).

While the meaning of sustainable practices stands flaky in the fashion industry, their definitions seems to be more solid in the food industry; adopting a plant-rich diet, limiting food transportation distances, restricting deforestation and the production of agrichemicals, and reducing the vast amounts of food waste, are some of the sustainable challenges under the umbrella of the food system.

Although the reduction of fossil fuel emissions is crucial to limit the upcoming consequences of the climate crisis, systemic changes in current food production and consumption could significantly help us to meet the Paris Agreement goal of limiting the global temperature increases to 1.5°C or 2°C target (Clark et al 2020) . Nonetheless, “reducing food-related emissions has received less

attention, perhaps because these emissions might seem to be an unavoidable environmental cost of feeding humanity (Clark et al 2020) , not taking into account the benefits it could bring to globally adjust dietary habits and consumption behaviors to the needs of the current socio ecological reality.

## 2.2 Speculative Design and Provotypes

“It’s hard to say what today’s dreams are; it seems they have been downgraded to hopes. Hope that we will not allow ourselves to become extinct, hope that we can feed the starving, hope that there will be room for us all on this tiny planet. There are no more visions. We don’t know how to fix the planet and ensure our survival. We are just hopeful.”(Dunne and Raby 2013)

Speculative Everything, a book written by Anthony Dunne and Fiona Raby, inaugurated a design that envisions imaginary futures considering how things could be, positioning for a design that could reshape current systems to develop forward. Using the principles of critical and fictional design combined with utopian and dystopian genres, speculative design examines reality for the creation of creative tools that could transform nowadays barriers. Consequently, these artifacts are a way of shaping hopes into possibilities, or at least into visions.

Adding to the theory of speculative design, provotypes, a concept encompassing provocation and prototypes, highlight the need for provocation in order to trigger discussion and reflection (Boer and Donovan 2012). The idea of provotype was developed in the early 1990s by Mogensen, who combined the *activity theory* with the concept of prototyping. The activity theory disseminates action in the following matters; how (operations), the what (actions) and the why (activity) (Engeström 2017). Accordingly, prototypes offer a model that tests a new way of operation aiming to facilitate the action; provotypes are designed to question the activity, to wonder the “Why?” of the established systems.

## 3 Methodology

IMAGINE project, a research initiative led by SIFO (Consumption Research Norway), examines contested futures of sustainability through imaginaries, ways in which people imagine the future. In collaboration with IMAGINE master’s students majoring in Design in Complexity at Oslomet University, Norway, were invited to explore speculative futures as part of their course Design and Technology. Showcasing two student projects that were exposed at Nitja, Center for Contemporary Art, this paper analyzed the codes utilized in this provotypes design for speculative dialogues about socioecological matters.

## 4 Case Studies

### 4.1 Riseskin



Figure 1. *Riseskin* provotype (2023) Haizea Pérez Machin

In 2031, recognising the need for stronger action, the United Nations responded to the severe impact of the climate crisis by approving to turn the 17 sustainable goals into laws. Therefore the fashion industry faces a crisis that demands a radical transformation to adapt to the new law implementation.

Contextualized in the speculative future described above, the provotype *Riseskin* is a brand that embraces the mission of creating garments with zero waste by crafting clothing exclusively from edible materials. This rice-based clothing challenges norms, creating a visionary blend of fashion, playfulness, sustainability, and culinary innovation.

This provotype is composed by a website that creates a complete scenario around edible clothes as a product, by exploring the website section “About us” viewers can find an ad that will introduce them to a fictional scenario in which *Riseskin* is a feasible brand to exist. For the representation of its performativity, the project also recorded the models eating the clothes they were wearing. This scenario takes advantage of multidimensional tools, technological and physical spheres, as well as multi-sensory, to immerse the viewer in its speculative reality.

## 4.2 AI Kevin



Figure 2. *Kevin AI provotype* (2023) Alex Taylor.

In 2050, Norwegian government has heavily taxed meat consumption and production pursuing carbon-neutral goals. However, society still have the cultural desire to eat what they used to, in response, Kevin, the AI store assistant of the future, will be in charge of changing those behaviors.

Kevin is an AI grocery shopping assistant whose function revolves around promoting sustainable and healthy choices to users, with an interactive and engaging dialogue. He encourages users to consider plant-based alternatives, educates them about the environmental impact of their food choices, and offers suggestions for sustainable options available in the store. Despite this customer's desire, Kevin remains persistent in his efforts to guide users towards more environmentally friendly options.

Inworld AI, a software that allows people to create and frame non-player characters in their custom worlds, was the platform used to create Kevin. The persona is designed by providing the character with a core description of who they are, giving them contextual knowledge of the future that they reside in, and indications of how should they interact with the customer. Hence, the AI assistant's personality can also be manipulated by changing its default emotions, and adjusting how it will react and which emotions will arrive in the service based on player input.

## 5 Discussion

*Breakfast in Fur*, by Méret Oppenheim in 1936, is a famous surrealist artwork created when art responded to “the crisis of the object” focusing on the subconscious and dreamlike aspects of human experience to transform reality by subversion of logic. On that account, the presented prototypes may respond to the socioecological crisis instead, bringing up alternatives for the established logic.

On one hand, Riseskin has a great aesthetic force that makes it concept work, the design takes as reference *panneggio bagnato*, wet drapery, a sculptural technique created by Phidias in the 5th century BC, for the artistic representation of clothing. With this visual connection, the rice paper takes the place of a classical form in a quick association, yet, the material remains unfamiliar or even contonary. At the same time, the models’ exploration of their clothes by eating them, reminds us of Goya’s painting Saturn eating his son, striking a reference in which the body somehow ingests its own body, creating a circular cycle. The provotype activates as viewers navigate the tension between the familiar format of a consumption webpage and the unconventional characteristics of the announced product. The imagined future where Riceskin exists challenges established constructions of the industry, sparking debates about the plausibility and desirability of edible fashion.

Edible clothing is intentionally designed to generate visceral responses, potentially including feelings of curiosity, discomfort, disgust or even evocation. This provotype wants to allow non-linear communication to happen, aiming to design the provocation but not the reaction to it. This approach requires designing a code that is so defined, that it blur in the viewer’s eye.

In the design process of this provotype the models had the chance to directly experience this speculative scenario, they wear it, they feel it and they eat it. The feelings were vibrant and the impact of the prototype was noticeable, which led us to wonder how much people’s boundaries need to be pushed to make them aware or conscious of their surroundings and what it takes to make us aware and conscious about our consumption habits. Do we care about how processed the food we eat is, until we see the process on our skin? Are not the fabrics we wear relevant to us until we have to eat them?

On the other hand, Kevin AI uses a more concrete language than Riseking creating a direct interaction with the user for its purpose. The emerging AI is currently entering different spheres of our daily lives, being positioned in the futuristic actuality; therefore, in this technological transition customer assistance is starting to come up in different services even if it remains unfamiliar.



Usually, customer assistants must facilitate users' experience making the users' operation, "how?", and the activity, "what?", easier; however, Kenvin's persistence set the users in the activity, wondering the "Why?" of their pursuit. Thus, unlike Siri, Apple's assistant, Kevin is designed to confront the user, prioritizing his goal to promote products with low environmental emissions.

The provotype creates a scenario that the viewer is part of by having a dialogical conversation with them since they can feel part of the story. In addition to the state of social presence Kevin acquired through its anthropomorphic design elements (Janson, 2023), this service is inspired by the aesthetics of current Norwegian supermarkets and names existing brands you could find in Norwegian supermarkets, which is a clear code for a relatable narrative.

Both provotypes aims to generate strong feelings that will lead anyone to negotiate their boundaries within the contested socioecological future and its potential to address sustainable challenges. Riceskin and Kevin AI challenge traditional notions of industrial production methods and consumer expectations within them. Discussions revolve around the feasibility and desirability of these products, raising questions regarding the cultural acceptance of different innovative trends and services, and how society adapts to this change. How can we and the industry adapt to sustainable restrictions or opportunities?

## 6 Conclusion

As the term itself states, the aim of a provotype is to provoke, but which design code do we use to provoke and which kind of provocation are we designing? Risekin and Kevin are both shaped to have an impact on the viewers' thinking towards sustainability, however, the language code they use to interact with the viewer defers.

Risekin will actively use the lack of viewers' understanding to trigger the conversation of the unknown; Each viewer will try to connect the abstract concepts within their reality, creating a collective landscape of diverse thoughts, richful than any single provotype the designer could do on their own. Thus, the designer uses the provotype to decode an undiscovered dialogue.

Kenvin, is an exaggerated service that uses a dialogue code that is being integrated in society, turning a situation that is taken for granted into a speculative alternative which makes a wonder about the issues of the status quo. Both of the presented narrative provocations are not completely dystopian or utopian; instead of tilting the strings until the edge of fiction they create a limbo where the artifact is concrete enough to be loosely interpreted; a fictional design that it is, without yet being.



Aligned with “societal degrowth” principles (Kallis, Kostakis and Lange 2018) , hence, still challenging the growth paradigm, creative-led sustainable actions can design alternatives for socioecological care development on the Caialocene era. Hence, this paper believes that socioecological “imaginaries of futures can affect people’s actions in the present” (Lockton; Candy, 2018, p.3) , speculative design opens a door for ideation, since, the value of the speculative provotypes doesn’t rely on the materialized design itself, but on the dynamics and reaction it generates.

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## Methodological Appendix

As mentioned above, this paper examines two student projects showcased at Nitja, Center for Contemporary Art, analyzing the methodologies employed in these prototype designs to stimulate speculative conversations regarding socioecological issues.

The initiative was started by the IMAGINE project, spearheaded by SIFO (Consumption Research Norway), which investigates diverse visions of sustainability through speculative futures. In partnership with IMAGINE master's students specializing in Design in Complexity at Oslomet University, Norway, were encouraged to delve into speculative futures. This collaboration took part from November to mid-December of 2023, with second-year master students. The design process of the prototypes ran during the Design and Technology course, where prototypes were tested and adjusted.

As part of the prototype design, students were asked to research the actual stakeholders leading the Norwegian fashion and food industry for a concrete understanding of the current status. Once the stakeholder's landscape was drawn, students pointed out primary signals within the industry, the dominant forces that shape the systems. As a tool to visualize the dynamics between stakeholders and dominant signals, the ANT (Actor Network) method was employed as a mapping exercise aiming to position every agent within the signal spectrum in which they operate. This mapping also included the identification of weak signals, and early indicators of potential changes, which were used as starting points to conceptualise the prototypes. Hence, the four Dator arcs method was applied to formulate the narratives of the speculative scenarios in which the artefacts are activated.

Furthermore, the prototype analysis is based on the data collected during the design process and the exhibition, hence, AI Kevin also stored all the interactions with the users.

## Biographical Note

My name is Haizea Perez, a student holding a Bachelor of Fine Arts and a Master's degree in Teacher Training for Compulsory Secondary Education, with a specialization in art. Currently, I am pursuing my second Master's degree in Design and Complexity at Oslomet, and I am in the process of writing my master's thesis on design strategies for the integration of refugees in Norwegian communities, in collaboration with the Trøndelag sørvest project. Additionally, I am employed as a research assistant at the AFI Work Research Institute, where I am currently involved in the SPARC research pilot (Sustainable Partnerships and Research Collaborations). My research interests revolve around the intersection of art and design with socioecological practices, aiming to facilitate development towards sustainable futures. Correspondence for the author should be directed to [perezhaizea23@gmail.com](mailto:perezhaizea23@gmail.com).

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# The Rupture and the Connection: Non-Representation and Participation in Art for Socio-Ecological Change

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**Abstract:** *Exploring the relationship between the rupture caused by non-representation on the one hand and the connection fostered through active participation on the other, this contribution in environmental humanities seeks to consolidate an ecocritical perspective that includes posthumanism, new materialism, and ecological theory, particularly within the field of art and art history. The first part lays its theoretical groundwork by focusing on the concept of non-representation as developed in formalist discourse and avant-garde artistic experiments. By examining the radical defamiliarization of nature and objects, the article shows how this process enables the redefinition of normative standards and the formation of an ecological epistemology rooted in non-hierarchical perspectives as critical for achieving tangible and meaningful change. On the other end of the artistic spectrum, presented in the second part, two cases of activist and participative practices are revealed as examples of implementing change through intersubjective experience within artistic frameworks. The recent shift in community artistic practice towards enabling subjects' participation and reacting to societal demands includes geographical peripheries and marginalized groups. A new aesthetics of interconnectedness may show that reality is not our mirror image, but rather a gradual embracing of the manifold entanglements that need to be addressed through artistic eco-imaginaries and posthumanist inclusivity.*

**Keywords:** *Community art, avant-garde art, abstraction, social change, ecocriticism.*

## 1 Introduction

In the contemporary context, marked by pressing societal and environmental challenges, artists play a pivotal role in transcending conventional boundaries and shaping narratives that respond to these complexities. This contribution delves into the relationship between the rupture caused by non-representation and the connection fostered through active participation, exploring their combined potential for driving social and ecological change. Rooted in the theoretical framework of environmental humanities, drawing from

posthumanism, new materialism, and ecological theory, the goal is to contribute to the establishment of the ecocritical perspective within the field of art and art history. While ecocritical perspectives have become integral to literary studies, their mainstream adoption in art and art history remains underdeveloped. Art can actively intervene, uncover, and articulate the nuances that demand attention, fostering the development of new, ecocentric imaginaries that better respond to contemporary crises (Patrizio, 2019; Kusserow, 2021).

The discussion specifically centers on the symbiotic relationship between non-representation or abstraction and participation or social activism. Within the realms of art and humanities these two essentially different, contrasting techniques may contribute to the overarching goal of catalyzing socio-ecological change. The paper proposes a dual approach: breaking away from old narratives, concepts, and values while actively implementing new modes and instigating behavior models across society (Haraway, 2016). The first part eschews examples with overt environmental dimensions, instead focusing on non-representational artistic experiments of avant-garde art. By examining the radical defamiliarization of nature and objects in art, the aim is to theoretically imply how this process enables the redefinition of normative standards and the formation of an ecological epistemology rooted in non-hierarchical perspectives – critical for achieving tangible and meaningful change. On the other end of the artistic spectrum, which is presented in the second part of this contribution, activist, and participative practices are revealed as potent contexts or at least vehicles for implementing the change through intersubjective experiences within artistic frameworks. The paper aims to highlight art's potential to inspire a reimagining of the human relationship with the environment, providing an understanding of how radical artistic practices can lay the foundation for a socio-ecological shift. In doing so, this work contributes to a broader discourse on art's transformative power and its role in shaping more sustainable and ecologically conscious societies.

## **2 Non-Representation and Eco-Epistemology**

At the brink of what may seem like the end of the world as we know it, there is a compelling need to revisit the avant-garde art project of the 20th century. Through manifestos as declarative “points of departure” and the realization of new formal practices in literature and art, the avant-garde aimed to transform both subjectivity and the social, everyday practice. Breaking the art and life dichotomy in avant-garde terms means expanding the very definition of art, allowing for artistic expressions without a tangible object, and embracing new narratives that challenge the capitalist, extractivist, and imperialist basis of our cultural values system.

Non-representational and non-semantical cases of avant-garde experiments that are characteristic of the avant-garde movements, such as futurism, dadaism, and constructivism – but also of the conceptual and performative artistic practice of the neo-avant-garde, all the way to contemporary intermedia art (Pranjić and Purg, 2023) – show that precisely the radical process of defamiliarisation of the nature or object in art enables the redefining of normative standards and formation of a certain ecological epistemology that is rooted in a decisively non-hierarchical perspective.

Ecological epistemology connects a plethora of theories that go against the usual anthropocentric worldview, such as those that address the problem of dualisms between nature and culture, subject and society, body and mind, artefact and nature, subject and object. Exemplary is the case of Donna Haraway's (2016) notion of *sympoiesis* or *making-with* that marks the co-production between humans and non-humans in scientific production or Isabell Stenger's (2010) concept of *ecology of practices*. Isabell Stengers' work not only opens to question the foundations of objective (natural and humanities) sciences but also shows a new way of connecting and generating knowledge and possible new imaginaries that can arise from different forms of human activity, not necessarily bound to rationality and authority. Knowledge and science can be something that we not only discover through a predetermined methodological apparatus but also shape through emergent practices and processes (Rousell, 2021).

These efforts are also key for the elaboration of ecological epistemology, which was comprehensively defined by Isabel Cristina de Moura Carvalho (2019; Steil and Moura Carvalho, 2016). Eco-epistemology recognizes the agency of natural processes, objects, and materials (Bennett, 2010). It also advocates for knowledge that is *with* rather than *about* the other beings. Moreover, by giving voice to the world and considering the autonomy of things and nature in relation to humans, ecological epistemology challenges the foundations of modern knowledge that is part of Western modernity. Ecological epistemology stands in contrast to the representational perspective. The realization that we are not standing outside of the world or nature and that we are not autonomous to knowable objects leads to the recognition that knowledge is not a representation of the real, which is processed through logical operations. At its core ecological epistemology is opposed to representational thinking and the anthropocentric view, thus shaping the posthuman perspective (Braidotti, 2013).

In the formalist theory from the beginning of the 20th century, the need to be *outside* (removed from the situation) as a prerequisite for experiencing artistic work, as well as the authentic being in the world, was pointed out

by two theoreticians – both Viktor Shklovsky (2020) with his technique of *defamiliarization* or *estrangement*, and Mikhail Bakhtin with the concept of *outsideness*. Abstraction and distancing are essential parts of any emotional and aesthetic experience, as any break in the continuity of perception requires a new metamorphosis, a new crystallization of the form. The various ways of avant-garde distancing and breaking with the everyday aim to offer a space for the invention of new forms and a new model of subjectivation. The emergence of the postulates of formalist theory was closely linked to the poetic and intermedial experiments of the futurists, who wanted to revive a *petrified* language with a poetic word of excess through new (visual and sound) forms, which would also lead to changes in human and the world.

In the field of design, and in the context of addressing global unsustainability, the concept of defamiliarisation has been used by Tony Fry in his book *Defuturing: A New Design Philosophy* (2020), in which he argues that defamiliarisation is necessary to make something visible and reviewable again. In this way, for Fry, defamiliarisation (“the denaturalisation and defamiliarisation of all that exists”) is a necessity for any real change, since otherwise we are forced to think of the *new* and *change* in terms of the limit or the existing – i.e. unsustainable, Eurocentric, anthropocentric and productionist design, thinking and living. Fry’s work links the history of design to the human condition of defuturing, which means destruction of the future by design. Because our conditions of existence drastically changed, Fry stresses that we also need to drastically change our philosophy of existence and acting. The new direction for making anything in the world is not a direction within design as-is; it is a direction beyond where design now is. It is also a direction beyond where thought and everyday praxis now are.

### 3 Participative Modes of a Creative Eco-Sociality

The community artistic practice of the recent two decades is marked by the shift or *turn* from dealing with objects and installations towards dealing with (mostly indeed human) subjects and enabling their participation in art activities, which is “a kind of reaction to the societal demand to include and make visible the marginalised groups of citizens who have been excluded from the social environment or from participation in public cultural life” (Milevska, 2006). As a dynamic form of engagement where the boundaries between creator and spectator blur, enabling individuals to collaboratively shape the artwork’s meaning, participatory art dismantles the traditional artist-viewer hierarchy. However, any modelling, implementation, or research on participatory or collaborative practices should still consciously consider the postcolonial and feminist critique of hegemonic power regimes of representation, especially as reflected in media cultures (Milevska, 2024).

### 3.1 Empowering Invisible Communities through Participatory Art

The *Participatory Art for Invisible Communities* (PAIC) project (<http://paic-project.eu/>) attempted to introduce new dynamics into the social spaces of isolated or deprived communities, as well as deepen their relationship with the environment. Through sharing stories or mapping relationships, the PAIC framework builds on both natural and cultural resources as key factors of social and economic development, opening the community space for study, reflection, and social imagination, while defamiliarising (potentially) damaging traditions. Interactions through participatory artistic tools, with the natural environment as well as the social context, and a critical reflection of historical factors were evidenced to transform the frame of reference in deprived or damaged zones and enable structural changes toward a future based upon creative and critical thinking.

Among eight PAIC workshops, two were held in Osek, a small village 10 kilometers East of Nova Gorica (Slovenia), a peripheral brain-drained yet smart-city ambioned small border town, struggling with diverse structural inequalities as well as environmental challenges, such as a huge waste incineration and concrete-production plant located upstream an otherwise pristine river. The workshop of Winter 2017 targeted the older senior population, while the Summer workshop focused on children – both groups were previously analyzed to be underrepresented, i.e. “invisible” in the community’s cultural life. In terms of a de-hierarchisation, as shaped through emergent practices, the inhabitants of Osek and the adjacent villages were eventually evaluated (Purg, 2018) to have become more prominent when observed from the municipality center as originators and producers of artistic works and cultural events. Moreover, the inhabitants became better visible to each other, across village parts, and generations, developing a collective awareness of the environment and their common issues, and not least being empowered toward creative solutions to tackle the challenges.

After the PAIC workshops, both the youth as well as the older generation of the village could claim as their community realm the so-called *Farovž*, a large parish house (including a spacious garden) in the middle of the village, offering considerable space for community events, exhibitions, artistic performances, intergenerational activities, an art residency programme etc. The results of the workshop with the senior population were condensed on a Google Maps page, edited and managed by the group of seniors. Similarly, the youth workshop consolidated the cultural usage of the newly acquired community environment, in an unexpected, innovative way. This time the “invisible” young families (mostly seen emigrating from such villages) became involved in the cultural happening, as the children jointly produced a stop-motion animation and



recorded an original soundtrack, topicalizing the *Farovž* space as “open inside out”, representing a kind of microcosmic environmental unit to the broader community scape of the three villages that the children came from.

### 3.2 Making Autonomy in a Peripheral Capital of Culture

An autonomous, solar-powered art-science lab in the form of a standard car trailer, *xMobil* ([www.instagram.com/xmobil25/](http://www.instagram.com/xmobil25/)) was developed through the participation of hackers, students, makers, engineers, artists, and scientists. Now an official project of the *Go!2025* European Capital of Culture programme, the project was started in early 2021, gradually negotiating the trailer’s functionalities and (recycling, low-carbon footprint) architecture through a novel combination of art and design thinking, methodologically consolidated in the preceding *Module in Art, Science and Technology* project (Castillo-Rutz and Purg, 2021). The fully operational trailer was launched in the summer of 2022, appearing since then at several festivals, public events, and off-road, at eco-hotspots in the Goriška region, in Hungary and Germany. With a robust solar electric system of 8 kWh, modular multi-usage interior, and an art-sci water filtering installation in (participatory artistic) development, *xMobil* is geared for collaborative work either in remote locations or in public space. It is designed in particular to support research in art-science-technology projects, especially ecological investigation (especially citizen science) and bioart (often implying Haraway’s *sympoiesis*), sociology fieldwork, visual anthropology, etc.

*xMobil* may serve as an example of how to synergize the colliding forces among essentially different sectors and their often diverging social values while addressing burning issues of geographical, social, and spatial peripheries, aesthetical and cultural minorities as well as keeping up a diverse range of artistic research and environmental activism practices. Perhaps most importantly here, *xMobil* may be considered a creative platform focusing on shifting the process and emergent design from the habitual and mundane reality towards an embracing of a system’s complexity and its natural limitations, as manifested in *xMobil*’s solar energy harvesting and rainwater treatment framework, and not least its towing range. The platform thereby showcases different ways toward the autonomy of the individual as a creative subject (or micro-community), supporting research and explorations oriented against corporate power or mainstream narratives. Since it is only possible to run electrical devices in the trailer as long as there is enough sun, and the drinking water supply depends on a slowed-down process of (rain)water filtration, *xMobil* may be understood on the one hand as an artistic research machine materializing limit in its most ultimate form, and on the other as a platform for eco-epistemological dialogue between scientific and non-scientific knowledge.

## 4 Conclusion

Departing from habitual perception through artistic intervention was, in formalist theory, the process of removing something from its otherwise everyday context, thereby achieving an effect of the strange, the shocking – which made the object and its background or context truly visible. This displacement makes the object visible, and at the same time gives us the possibility to reflect on our preconceptions, values, and beliefs. It is the first step necessary to establish a true dialogical relationship with the environment and nature. Ecological epistemologies propose a way of enacting knowledge that, rather than objectifying the real, leads to a closer engagement with and immersion in the immediate and material world of experience.

The recent shift in community artistic practice towards enabling subjects' participation and reacting to societal demands to include marginalized groups brings about necessary considerations of postcolonial aspects, feminist critiques, ecocriticism, and intersectionality that need to be applied in any modelling or research on participatory art. Through and with the help of art we can describe not only the social but also the ecological reality that we are already a part of (Morton, 2021). Understanding and seeing the world through the lens of different artistic practices that address alternative worlds and subjects with the concept of non-hierarchy contributes to the development of an ecocritical worldview, that can result in ecological choices we make and “revolutionary routines” (Pedwell, 2021) we might eventually develop. There is a need for an aesthetics of interconnectedness that helps express the complexity of the world and comprehend the reality not as our mirror image, but rather as a gradual embracing of the manifold entanglements that need to be addressed through artistic eco-imaginaries and posthumanist inclusivity.

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## Methodological Appendix

The research design for this study involved a qualitative approach aimed at exploring the relationship between non-representation and participation in art for socio-ecological change. Drawing from environmental humanities, ecocriticism, and art theory, the study employed a comparative analysis of theoretical frameworks and case studies to examine the dynamics of rupture and connection within artistic practices. Methods included a two-fold approach: a literature review in environmental humanities, art theory, and related fields to establish theoretical foundations; and case studies of two artist and

participative practices to elucidate real-world examples of non-representation and participation in art for socio-ecological change. The sample size was limited to two local Slovenian case studies, selected based on their topical relevance, and first-hand availability of data.

## Biographical Notes

Associate Professor Peter Purg, PhD is Dean of the School of Humanities and leads the New Media module in the Digital//Media Arts and Practices graduate//postgraduate programme at the School of Arts, University of Nova Gorica. His scientific inquiries include media arts pedagogy, interdisciplinary collaboration and innovation, media art and media ecology. His artistic merits range from (lecture) performances and intermedia installations to public-space interventions and participatory creative processes. His recent publications include: "Establishing ecosystems for disruptive innovation by cross-fertilizing entrepreneurship and the arts" (2023), "Dancing sympathy beyond human failure: artistic research as cosmopolitical defuturing" (2023), "Progressive pedagogies for innovation among art, science and technology" (2022), and "New platforms of art education for urban reflection" (2014). Recently Peter Purg led the acclaimed MAST - Module in Art, Science and Technology project (DG Connect) and was centrally involved in the DIVA - Art:Biz Innovation Ecosystem (Interreg SI-IT) project. Currently, he leads two projects for the GO! BORDERLESS 2025 European Capital of Culture: the art-science-DIY lab xMobil, and the media-arts+performance series PostMobility. In 2011 he was awarded *Prometheus of Science for Excellence in Communication* by the Slovenian Science Foundation.

Kristina Pranjic, PhD is employed as an associate professor at the Research Centre for Humanities and the School of Humanities at the University of Nova Gorica, where she coordinates the Literary Studies BA and MA program tracks. She has worked as a critic in the field of visual and intermedia arts and is currently a member of the Expert Commission for Intermedia Art at the Ministry of Culture, Republic of Slovenia. Currently, Kristina Pranjic is finalizing her book project on the topic of Yugoslav Avant-garde (Ljubljana: Sophia, 2024). Her recent publications include the following contributions: "The Change Must Come" (Brill, 2023); "Zenithist Concept of a Barbarogenius as a Critique of Western European Culture" (PkN, 2020); "Constructing New Signifiers with Aesthetic Intervention" (Zonemoda Journal, 2020). In research work she focuses mainly on avant-garde and contemporary artistic practices, with an interest in alternative epistemologies of the avant-garde, exploring the emancipatory and posthumanist potentials of art, along with forms and networks of transnational collaboration among avant-garde artists.

## Notes

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## Ecoventions: the Beginning of Sustainable Artistic Practices

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**Abstract:** *The paper focus on the commitment of art in terms of sustainability and the many ways it can work on the topic, not only as expression mean but as a sustainable tool itself. The discourse would like to focus on what has been defined by Sue Spaid "ecovention:" artistic ecological invention (2002).*

*Focusing on different artworks and artists, it is possible to analyze direct intervention on ecosystems, transdisciplinary approaches which hybridize art and science to foster deep understanding of the phenomena, connections and exchange relations between living and not living beings. Starting from curator Linda Weintraub selection of ecological artworks, together with Spaid's examples of ecoventions, I would like to present both historical and contemporary works which deal with ecosystems either to reveal their patterns either to restore environments with multidisciplinary strategies and the communicative power of artistic expression. Here I provide some examples of the case studies, which I will further analyze and select if chosen to take part in the conference: Agnes Denes, Tree Mountain – A Living Time Capsule (1992-1996, Ylojarvi, Finland); Hans Haacke, Rhinewater Purification Plant (Frefeld, Germany, 1972); Helen Mayer and Newton Harrison, Survival Series (1970-1973); Allan Sonfist, Time Landscape (1965/1978-present); Anicka Yi, Biologizing the Machine (Milano, 2022); Jason deCaires Taylor, Molinere Underwater Sculpture Park (Grenada, 2006-ongoing).*

*These artworks represent only a small selection of the mare magnum of artists dealing with ecosystems through transdisciplinary approaches, theoretical and practical, aimed to a more sustainable art production, to enable alternative ecologies of attention and to sensitize the wide public of these invisible issues.*

**Keywords:** *Ecovention, contemporary art, Eco Art, Land Art, ecocentricity*

## 1 Introduction

This research addresses the recent, apparently fashionable, ecological trend in art installations and exhibitions. The exhibition curators' goal of engaging ecology is due to its growing importance in the global political discourse. Indeed, the consequences of human exploitation of the planet are evident today, and it is no longer possible to ignore them. Our lack of collective ecological sensitivity, fused with the push towards progress, leads to the geological period we are living. In today's Anthropocene, large-scale human actions shape environments and modify ecosystems (Morton, 2013). The Anthropocene was popularized by Paul Crutzen<sup>1</sup>, a Dutch atmospheric chemist who won the Nobel Prize in 1995. According to him, the beginning of this Era can be identified at the end of the 19th century, because, according to this author in the last two centuries, the effects produced by human activities have become clearly perceptible.

The size and severity of the changes that humanity triggered in ecosystems over the last two hundred years could be compared to the changes nature had made in thousands of years. Following Timothy Morton's reasoning "the first significant marks were established in 1784, when carbon from coal industries began depositing worldwide, including in the Arctic, thanks to the invention of the steam engine by James Watt" (Morton, 2013)<sup>2</sup>. Other theories place the beginning of the Anthropocene in different dates, but always in the same period: the nineteenth century, the time of the Industrial Revolution (Lewis and Maslin, 2015).

The use of fossil fuels is not the only rate that has accelerated since the beginning of the Anthropocene, as shown by the enormous research carried out by Robert McNeill and Peter Engelke<sup>3</sup>, who define the post-1945 period as "Great Acceleration". They point out that this accelerated lifestyle "cannot last long" (McNeill and Engelke, 2014). Resources will run out, even if they do not foresee when, and this moment will be only a brief flicker in Earth's history. On the contrary, the Anthropocene will surely last longer, as "our power to alter ecosystems will only increase".

Our lack of awareness in evaluating the consequence of our behavior, of intensive agriculture, mass livestock, deforestation, intensive fishing, resource extraction, is due in part to the many actors always involved in life on earth. It is almost impossible to predict how an ecosystem can react to invasive practices, due to the many living things that are part of it. In 1979 James Lovelock<sup>4</sup> theorized a fairly common hypothesis today. He used the term "Gaia", historically attributed in ancient Greece to the Earth goddess, to define the earth as a living being. According to Lovelock, the planet is alive, "the entire surface of the Earth including life is a self-regulating entity and this is

what I mean by Gaia" (Lovelock, 1979). All lives and materials on and under the surface of the earth are one part of a single system, a mega-organism: "we are part of a larger whole".

Theories about the future of the Earth and the consequences of the Anthropocene continue to evolve, never finding a compromise between the tendency of humans to have the highest quality of life, and the stress that our lux and habits are causing to our planet.

On this subject, about which much more could be said, different artistic movements were activated and already some first Land Art experimentations of the 60s are indirectly involving ecological thoughts.

## 2 Land Art as First Ecological Form of Art

According to Jeffrey Kastner<sup>5</sup>, "Among the many relationships that define the human condition, the individual's connection to the environment is primary" (Kastner, 1998). Since the very first development of humanity, our species has always belonged to nature and to earth, as part of the greater whole, as one of the many elements which collaborate to the mega-organism: the living planet (Lovelock, 1979). Through art and science human beings have always tried to understand their connection to the earth, to analyze it, to represent it, to use it. The continued fascination for the landscape merged, in the 1960s, with conceptualist approaches to artmaking, giving birth to a new form of art, freed from the art system: Land Art. The term was originally coined by quintessential land artist Robert Smithson and it defined art interventions which embody the physical landscape.

Artists producing site-specific works might switch from landscapes to internal environment for several reasons: to escape the boundary of the gallery; to question the production, distribution and ownership of artworks; to experiment new materials, gestures and scales; to take advantage of the characteristics of a specific site or space (Kluesing, 1988). Rather than with painting or other material mediums, many artists chose to operate on the land, on the body or on the relation between beholders and surrounding space, giving birth first to happening, performances and relational installations. Others realized that art was a practice based on craft techniques, which was becoming anachronistic with the raising of the industrial system of production. This unusual approach brought to the emergence, in the 1960s, of Land Art, Conceptual Art, Arte Povera and so on, all movements that put into crisis the institutional and commercial dynamics of the art system.



In particular, Land Art can be considered as the first artistic approach directly involving nature and environment. Some interventions can be considered not invasive, shaping the environment without permanently modifying it. For example, in Nevada and California (US), Walter De Maria<sup>6</sup> created different land works at the end of the 60s: Mile Long Drawing, Las Vegas Piece and Desert Cross. Mile Long Drawing consisted in drawing two chalk lines in the desert, highlighting its hidden geometry, like modernist painters used to do with canvases. The work was a temporary operation, canceled by atmospheric agents. On the contrary Michael Heizer's Double Negative (1969)<sup>7</sup> really shaped the panorama of Nevada desert. The environment was used as canvas to trace a line using, instead of the paint brush or chalk, bulldozers. Land Art, however, is not only about making 'big things,' but it is an artistic intervention questioning the system of art and reevaluating the relation between humans and the surrounding environments.

These early experiences were then enriched during the 1970s which many other monumental earthworks by Smithson, Nancy Holt, Christo and Jeanne-Claude, Walter De Maria.

Some earthworks, like De Maria's Lightning Field, are supposed not to change in time, while some others, as Mile Long Drawing (1968) or Double Negative (1969) by Heizer, are exposed to external climate factors and natural modification (Beardsley, 1982). There are many strategies to assure the longevity of both artworks and earthworks, as curator Linda Weintraub<sup>8</sup> discusses in her *To Life! Eco Art in Pursuit of a sustainable planet* (2012). However, it is always an "anthropocentric longevity", based on strategies to preserve something on its original condition despite external events and factors. The majority of human production is thought to last together, even if our common tendency is to change our objects as fashion changes. In the same way, museums preserve their collection in specific conditions of humidity, light and temperature, and so on. The "eco-centric longevity," on the other side, "promotes continuity with the dynamic flux of interacting systems" (Weintraub, 2012c). In an ecological point of view, nothing is durable, everything is constantly changing, interacting with all other materials and actors of the living system. To be eco-centric is the opposite of being anthropo-centric: it means taking into consideration all the tiny variables which contribute to the lifecycle of a natural system and to consider humanity as one of these variables – not a tiny one.

### **3 When an artwork can be considered "Eco"**

In a 2005 essay that tries to build a possible "ecological art history", Andrea Gaynor and Ian McLean<sup>9</sup> focus on ecology being a recurring topic in art production, not only facing the environmental crisis, but also offering a new

vision on the relationship between humanity and nature (Gaynor and McLean, 2005). According to them, to discuss this specific side of art history, it is needed the collaboration of ecologists, who can offer their scientific point of view. The forced division between humanistic and scientific subjects could be one of the reasons why ecological art has not enough been taken in consideration by art critics, curators and historian.

In the opinion of Weintraub to be defined as such, the so-called Eco Art not only needs to deal with ecology, but it needs to be ecologist (Weintraub, 2012c). How could art production address sustainability and be sustainable at the same time?

The most interesting evidence in the development of a sustainable form of art is its multidisciplinary, since it would be impossible for artists alone to develop artworks with precise scientific and sustainable impact. On a social point of view, is it possible to consider two sides of Eco Art. On one side, these forms of art build a special relation with the public: they provoke and involve directly the public, both theoretically and practically, since they are often created with the public participation, in a relational and community point of view<sup>10</sup>. On another side, the works need the participation of professionals from different disciplines, fostering dialogue and community building in the meeting point between critical and creative thinking.

According to Weintraub, ecological art needs to have four attributes to be considered such. First, the issues involved in the work must be ecological. Secondly, Eco Art needs to consider the interconnectedness that binds all materials, processes and events on Earth. Nothing is isolated, but everything is related to something else. Thirdly, since the natural flow is inevitable, the ecological artist recognizes that his works of art/ will be transformed through time. Finally, it must follow the principle of ecocentrism: human beings are no more important than other entities on Earth. As Weintraub states, "humans are expendable to the biosphere, while the biosphere is indispensable to human survival" (Weintraub, 2012b). These four points are guidelines which clarify that adding the prefix -eco to the word art stipulate an alliance between artists and ecologists, both participating in the environmental movement.

However, by definition, art is not sustainable, as it is a form of phenomenal and epistemological investigation of the conceptual or material environment of the artist. Like all luxuries, it is not sustainable because it is not directly necessary to survival or functional to our primary needs. Anyway, we need it to understand all the concepts too difficult and widespread<sup>11</sup> to be understandable and representable to the human mind: a category in which sustainability can be included.

## 4. Ecovention and Sustainable Forms of Environmental Art

In 1999 Sue Spaid coined the term *Ecovention* (ecology+ invention) to describe an artist-initiated project that employs an inventive strategy to physically transform a local ecology (Spaid and Lipton, 2002). It is as well the title of a show, held at the Contemporary Arts Center, Cincinnati, and curated by Sue Spaid and Amy Lipton. As affirmed by Charles Desmarais, artists selected for the show are “artists who have resisted the passive role of commentator, pursuing an active strategy that requires the production of concrete, positive change in the natural environment” (Desmarais, 2002).

In *One Place After Another*, Miwon Kwon<sup>12</sup> makes a distinction between “intervention” and “integration” of site-specific art (Kwon, 2002). Even if Kwon is mostly referring to urban Public Art and its relationship with the surrounding architecture, these terms can be also applied to land art and its relationship with the environment. Early American Land Art usually poses itself in an “intervention” way. This means that it is placed in the environment without thinking about the environment itself and how it could react to the extraneous operation. On the contrary, ecovention can be considered as “integration” act, since they are not only created to suit a determinate site, but they are aimed at helping a no more integrated space to become integrated again. Between the many ecoventions involved in the 2002 exhibition, I would like to cite some to better define which interventions could be considered as such and why.

Mel Chin<sup>13</sup> *Revival Field* (1991) is probably one of the most famous ecovention. It is located in the Pig’s Eye Landfill, a State Superfund site in St. Paul, Minnesota. From 1991 it is still an ongoing project. The artwork involves special hyperaccumulator plants to extract heavy metals from the contaminated soil of the area (Revival Field, 1991). According to Spaid, “of course, artists don’t produce their projects on their own. They collaborate with community members and local specialists such as architects, botanists, zoologists, ecologists, engineers, landscape architects, and urban planners to realize and evaluate their scientifically complex projects)” (Spaid, 2002). In fact, Chin realized this work in collaboration with Dr. Rufus Chaney, senior research agronomist at USDA. Plants were organized inside the site in an aesthetically beautiful way, playing with the circular form inscribed in a square. Constant monitoring of the soil composition permits to verify the efficacy of the solution proposed by Chin, evaluating the efficacy of the “Green Remediation” (Revival Field, 1991). It offers low-tech alternative to costly and unsatisfactory remediation methods currently used. The idea of using plants to activate recovery process of soil came to Chin’s mind during the 1980s, and only later he could have contacts with Chaney, who offered his expert point of view to him. The site was selected by the two on June 1991, and from the plantation on, important results were registered.

Another example of econversion is the Alan Sonfist project in Manhattan, *Time Landscape*, conceived in 1965 and began in 1978. It was realized in a 45 feet x 200 feet lot between Huston Street and La Guardia Place, in downtown (Weintraub, 2012a). Sonfist's idea was to reproduce a piece of the ancient forests which once were covering Manhattan Island. He used several years of research and many collaborations with experts, historians and botanists, to point out which plants and grasses select for the historical garden. The desire of the artist was to represent a pre-Colonial wilderness in the center of New York, involving many issues. First of all, the work faces the urban history of the city, aware of the fact that humans' action radically changes ecosystems. Not only he focused on plants, but also on preservation of the site. In fact, the little garden is not treated as a common park. Instead, in this case, preservation means evolution. The work is developing in a wild way, as nature claims it. Recreating this past botanical community, he also created homes for birds, insects and small animals, which are free to live undisturbed, contributing to the ecosystem. The whole work is curiously decontextualized in time but correctly contextualized in space, creating a bizarre sense of alienating. This work, "besides uplifting the spirits of passerby, it replenishes soil, freshens city air, provides nesting for birds, created habitats for many organisms, conducts carbon sequestration, purifies water, prevents erosion, and so forth.

## 5 Conclusions

These projects demonstrated the raising importance of environmental artworks dealing with the environment not as a canvas, but as ecosystem<sup>14</sup>. The disturbances of an ecosystem are all the unsustainable practices humans exercise every day, defined by Weintraub as *cradle-to-grave practices* actions that ignore cycles of material, for example creating goods too inefficient to recycle. With our actions, we run out the carrying capacity of the eco-system: the system is not able to react to the enormous disturbances created by humans. For this reason, we need to apply reparation strategies, which help the planet to respond to the negative action *cradle-to-cradle practices* are aimed to balance the use of resources, creating a compensation response to the disturbance. There are two types of cradle-to cradle strategies art can apply to remedy its impact: on one side, communicating and spreading information about the current environmental emergence; on the other side, being sustainable, applying methods to diminish their impact, from the point of view of energy, production, transportation, garbage.

From the negative impact of invasive works of art, to the neutral impact of artworks made by sustainable materials and practices, econversion reach another step. They moved on to a positive impact, restoring exhausted

environments. They really try to place exploited territory and ecosystems again in the natural mechanism, accelerating their recovery. Artists apply “integral thinking” (Weintraub, 2012d) to deal with the different fields of knowledge necessary to reach a universal goal; they are, thus, recognized as custodians and restaurateurs of the environment.

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## Notes

1. Paul Crutzen, a Dutch atmospheric chemist who won the Nobel Prize in 1995, introduced the concept of the Anthropocene in 2000 at a meeting of the Scientific Committee of the International Geosphere-Biosphere Programme, in Mexico.
2. Timothy Morton is a professor and Rita Shea Guffey Chair in English at Rice University. He is writer and philosopher and he explores the intersection of object-oriented thought and ecological studies.
3. Robert McNeill teaches history at Georgetown University and has published many books regarding environmental history and Anthropocene. Peter Engelke is Senior Fellow in the Strategic Foresight Initiative dell'Atlantic Council, Washington (D.C.).
4. James Lovelock was an English independent scientist, environmentalist and futurist. He is best known for proposing the Gaia hypothesis. He specialized in climate engineering and wrote several environmental science books.
5. Jeffrey Kastner is a New York-based writer and critic. He regularly contributes to Artforum and has written for publications such as The Economist, Frieze, The New Republic, and The New York Times. His essays have been published in books and exhibition catalogues on artists.
6. Walter De Maria was an American artist, sculptor, illustrator and composer. His artistic practice is connected with minimal art, conceptual art, and land art of the 1960s.
7. Michael Heizer is an American land artist specializing in large-scale and site-specific sculptures. He is one of the pioneers of Land Art movement.
8. Linda Weintraub is an American art writer, educator and curator, she addresses environmental consciousness and the relation between society and environment.
9. Andrea Gaynor is environmental historian focusing on the historical relationships between the human and non-human. Ian McLean Ian McLean is the Hugh Ramsay Chair of Australian Art History at the University of Melbourne. Professor McLean was previously the Senior Research Professor of Contemporary Art at the University of Wollongong and adjunct Professor at the University of Western Australia.

10. Relational Aesthetic is defined by its theorist as “a set of artistic practices which take as their theoretical and practical point of departure the whole of human relations and their social context, rather than an independent and private space” (Nicolas Bourriaud, 1996).
11. All these concepts can be defined as “hyperobjects”: they can’t be identified or directly seen, they are everywhere and it is almost impossible to change or define them (Morton, 2013).
12. Miwon Kwon is a Research Professor and The Walter Hopps Chair Emerita in Modern and Contemporary Art. Her academic career started and concluded at UCLA, where she established the department’s first curriculum in contemporary art history as an Assistant Professor in the late 1990s and served as the Department Chair for nine years prior to retirement. She is the author of the influential book.
13. Mel Chin is an artist who covers broad range of approaches in his art, including works that require multi-disciplinary, collaborative teamwork and works that enlist science as an aesthetic component to developing complex ideas.
14. As Weintraub describes in *To Life! Eco Art in Pursuit of a Sustainable Planet*, “sustainability is a measure of long-term viability that is achieved when the disturbances that afflict a system are balanced by its compensation response. [...] Carrying capacity measures the limits of an ecosystem ability to react to a disturbance.”



## Lo efímero del arte en la era Antropoceno

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**Resumen:** *En el campo del Arte se difunde con urgencia el denominado Ecoarte, practica que mantiene estrecha relación con mi creación artística desarrollada en el área de Artes visuales y vinculada a la Naturaleza, lo fenomenológico y la conciencia ecológica. Desde esta perspectiva, se plantea reflexionar acerca de lo efímero del arte desde una necesaria transición ecosocial. El análisis abarca problemáticas implícitas en mi obra de modo consciente: arte y emergencia climática, arte y transición energética e imaginarios de la crisis climática.*

*La pregunta que se investiga pretende dilucidar si la crisis ambiental era una cuestión vital en movimientos artísticos previos que profundizaban en el binomio arte-naturaleza, plástica-social o arte povera. La metodología usada es el estudio de un caso de obra propia; se han seleccionado dos obras cuyo análisis servirá para comprender cómo desde un marco ecológico el arte explora una relación esencial con la naturaleza que aboga por la preeminencia de la Tierra como organismo interconectado. Se explican las ideas generales de esta práctica transdisciplinar: su origen conceptual relacionado con la teoría Gaia; la influencia del arte procesual y del arte povera; cómo se insertan estas premisas en la propia práctica a través de la idea de metamorfosis –cambio y transformación social–; y la evolución hacia lo ecológico, relacional, participativo y colaborativo.*

*En primer lugar, se define el Arte Ecológico poniendo como ejemplo dos de sus hitos históricos, Joseph Beuys y Agnes Denes, para centrarse a continuación en dos obras actuales que poseen un marcado carácter efímero y fenomenológico y que ponen en valor de la preservación de la Tierra. Las obras seleccionadas, Shiva (2022) y Bosque esencial (2022), visibilizan a través del tiempo el desmedido peso de infraestructuras y tecnologías y la idea de que la naturaleza siente. Además, ambas responden a un planteamiento de obra efímera y time-specific, creadas para un tiempo y un lugar.*

*En particular, la obra titulada Shiva (2022) alude a la cualidad mutable de lo efímero y lo leve en contraposición a lo permanente, y centra la atención en el desmesurado peso de la tecnosfera, pues invade nuestro propio habitat natural y destruye ecosistemas. A continuación, se analiza la obra Bosque esencial (2022), que hace referencia a la idea de la energía que se desprende de la experimentación en la naturaleza, y el registro de*



*esa energía viene dado a través de la intervención sobre la fotografía. La obra plantea la sintiencia de la naturaleza (De Quincy 2020) y fomenta la necesidad de vivir en armonía con la misma.*

*A modo de conclusión, se establecen reflexiones en torno al ecofeminismo y arte ecológico, como medio para canalizar el presente estado de la cuestión, y cómo las prácticas sostenibles proponen alternativas hacia una renovada visión de la sociedad y naturaleza.*

**Palabras-clave:** *Arte Ecológico, arte efímero, ecofeminismo, fluido, Antropoceno*

## 1 Introducción

En el campo del Arte se difunde con urgencia el denominado *Ecoarte*, practica que mantiene estrecha relación con mi creación artística desarrollada en el área de Artes visuales y vinculada a la Naturaleza, lo fenomenológico y la conciencia ecológica. Desde esta perspectiva, se plantea reflexionar acerca de lo efímero del arte desde una necesaria transición ecosocial. El análisis abarca problemáticas implícitas en mi obra de modo consciente: arte y emergencia climática, arte y transición energética e imaginarios de la crisis climática.

La metodología usada es el estudio de obra propia; se han seleccionado obras cuyo análisis servirá para comprender cómo desde un marco ecológico el arte explora una relación *esencial* con la naturaleza, que aboga por la Tierra como organismo interconectado. Mediante el análisis de obras de arte que se posicionan ante el avance del deterioro de la Naturaleza y la crisis climática se aborda el Arte Ecológico. La pregunta que se investiga pretende dilucidar si la actual crisis ambiental no estaba ya implícita en movimientos artísticos previos que profundizaban en el binomio arte-naturaleza, plástica-social o arte povera, ante los discursos actuales que ponen de manifiesto una preocupación institucional por objetivos sostenibles; de lo que se deriva un creciente empleo del prefijo *eco* y la tan nombrada *sostenibilidad*, presentes en múltiples contextos que pueden carecer de un *sentir* por la ecología y la naturaleza.

En primer lugar, se establecen los conceptos ideológicos y formales de esta práctica artística transdisciplinar que discurre entre escultura, dibujo, fotografía y video: su origen conceptual relacionado con Gaia (Lovelock, 1995); la influencia del arte procesual y el arte povera; y cómo se insertan estas premisas en la propia práctica a través de la idea de *metamorfosis* –cambio y transformación social–; y la evolución hacia lo ecológico, relacional, participativo y colaborativo.

En segundo lugar, se clarifica la práctica del Arte Ecológico con obras de Joseph Beuys y Agnes Denes, para centrarse, a continuación, en dos piezas de creación propia que visibilizan la emergencia climática; obras de marcado carácter efímero, fenomenológico y que ponen en valor de la preservación de la Tierra. En las obras seleccionadas, *Shiva* (2022) y *Bosque esencial* (2022), se muestran las consecuencias del Antropoceno, al tiempo que denotan la idea sintiencia de la naturaleza. Asimismo, ambas responden a un planteamiento de obra efímera y *time-specific*, creadas para un tiempo y un lugar.

A modo de conclusión, se establecen reflexiones en torno al arte como medio para canalizar el presente estado, y cómo las prácticas sostenibles proponen alternativas hacia un renovada visión ecosocial de la naturaleza.

## 2 La influencia de Gaia: lo múltiple e interconectado en la Tierra y en el Arte

A las puertas del fin de siglo XX, en la era en la que todo lo sólido se desvanece en el aire, se genera una creciente inquietud ante la que Italo Calvino responde en *Seis propuestas para el último milenio* (1992) proponiendo una serie de valores para abordar un futuro mejor: levedad, movimiento, rapidez, multiplicidad, velocidad, etc.

El arte siempre se ha comportado como un catalizador, un mediador entre la sociedad y el mundo. Mi proyecto artístico nace desde la escultura y refleja preocupaciones ecosociales latentes en los 90: explotación de la tierra y recursos, antropocentrismo, experimentación animal, etc. A su vez, incorpora los conceptos de levedad, movimiento y multiplicidad de Italo Calvino, de modo que investiga una obra etérea y efímera, ligada a la idea, a la *desmaterialización* (Lippard, 2004); un arte que se desvincula del aura de lo perpetuo empleando materiales precarios, livianos, perecederos, mutables, con una filosofía heredada del arte povera, –reducida huella de carbono y sostenible–, que se materializa en obras como *Cita al Jinete del cubo de Kafka* (1995) y *Para llegar a ser* (1995). Esculturas de carácter móvil, leve y aéreo que se manifiestan desde el proceso y el devenir, y que reivindican un cambio social, pues nacen con el propósito de forjar una reflexión social ante la problemática explotación y destrucción de la naturaleza: imparable contaminación, pérdida de territorio y biodiversidad, masiva edificación e industrialización, clonación animal, etc. A su vez, reivindica una producción artística sostenible: un decrecer en producción y en consumo de energía en favor del planeta.

Por otro lado, un concepto trascendental es la *interconexión*, derivada de la propia Naturaleza, quién establece una conexión sutil entre todas sus partes

desde lo micro a lo macro. Todo está conectado entre sí, y de hecho, existe una interrelación a gran escala como explica la teoría Gaia (Lovelock, 1969), según la cual la tierra (Gaia) y la atmósfera se comportan como un sistema autorregulado que tiende al equilibrio. Esta idea de que el planeta es un *todo*, de entender la Naturaleza como totalidad interconectada, incluso de correspondencia entre lo microscópico y el macrocosmos es también una filosofía de pensamiento que crece desde la observación de lo fenomenológico, como bien explica Thoreau (2010): "Cuando el sol se pone, la arena deja de fluir, pero llegada la mañana, los riachuelos vuelven a moverse, a dividirse y subdividirse sin cesar formando miríadas de arroyos. Y así es como se forman, probablemente, los vasos sanguíneos."

Su pensamiento se revela antes las constantes agresiones al planeta por el ser humano que nos sitúan hoy en la era Antropoceno: deshielo de polos, acidificación de mares, desaparición de bosques autóctonos, explotación energética, etc. Ante este paradigma, la necesidad de simbiosis con la naturaleza motiva la serie *Para llegar a ser* (1995) donde se toma consciencia de que *somos fluido* (compuestos de agua) y se anticipa el valor del Agua y la *conciencia líquida* (Soberón, 2019), ante la necesidad de preservar la vida. Con la misma filosofía, la pieza critica el antropocentrismo situando a la misma escala personas y animales, ante la discriminación histórica de otros seres vivos, como microorganismos y hongos.

Desde esta práctica artística se produce una transgresión del arte hacia lo efímero y leve, hacia lo ágil y aéreo. Así, lo dinámico y el movimiento se constituyen en pensamiento y práctica *fluida* y exploran límites del espacio y nuevos modos de interactuar con el público. Esta metodología investiga la naturaleza del *espacio-tiempo cambiante*, distanciándose de lo inmóvil, – *black box* o museo– en el campo expandido de la escultura (Krauss, 1996). La creación artística se basa en observar, percibir y experimentar la influencia de lo temporal y cómo las fuerzas de la naturaleza y el cosmos condicionan este devenir. Así, se promueve una actitud participativa en la propia creación que transita hacia una *disolución del rol de artista*, desterrando el mito del genio en favor de la colaboración abierta, de modo que surgen proyectos de arte relacional.

Gran parte de estas cuestiones sobre fluidez, levedad y tiempo son experimentadas en la práctica y constituyen el concepto de *lo fluido* sobre el que se asienta la investigación teórica doctoral *In-fluido: lo fluido como concepto y práctica artística* (Soberon, 2016a) que se resume así:

"...la comprensión de que todo lo que nos rodea es *fluido*, de que "todo" está en cambio constante, de que el tiempo y la materia están en

fluctuación, y por lo tanto están modelados por la inercia del devenir, de que existe una condición artística no arraigada en la materia perpetua sino en la cualidad movible que nos conforma, que es la base del pensamiento *fluido*. Por ello, *In-fluido* plantea la siguiente hipótesis: somos fluido y como tal nos comportamos... En el campo del arte lo fluido busca manifestarse como condición temporal, cambiante, efímera, dinámica, móvil, múltiple y leve”.

En definitiva, este concepto de *interconexión* se plasma en la *cultura de lo fluido*, crear bajo esta noción refleja la *fluides* del espacio-tiempo, lo que derivará en prácticas artísticas específicas del tiempo y el lugar.

### 3 *Time-specific, lo efímero del arte ecológico*

Figura 1. Cita al jinete del cubo de Kafka, (1995), Pilar Soberón



Figura 2. Para llegar a ser, (1995), Pilar Soberón



La emergencia planetaria arroja luz sobre la trascendencia de lo efímero en la naturaleza y en el arte, pues vislumbra el límite *espacio-tiempo*. Así, lo efímero del espacio y del tiempo se experimenta en *Prozesu* (2010), acción de devolver al mar *su* sal escribiendo con sal marina la palabra *proceso*. La acción, desarrollada durante la marea baja, consiste en esperar a que el mar “borre” la acción y reintegre la sal. La obra, realizada con la colaboración de la ciudadanía, alude al devenir cíclico y la transformación (Soberon, 2016b), conceptos presentes en *Green Cathedral* (1978/86) o *Volo d’Uceleo* (2010) de Marinus Boezem.

Figura 3. Prozesu, (2010), Pilar Soberón, Donostia



Ante las numerosas propuestas en torno al Arte sostenible y Arte medioambiental, José M. Parreño (2015) explica que sólo es Arte Ecológico el que se rige por las siguientes leyes de ecología:

- 1) Todas las formas de vida son interdependientes.
- 2) La estabilidad de los sistemas es mayor cuanto mayor es la diversidad y complejidad.
- 3) Las materias primas son limitadas y también es limitado el crecimiento de los seres vivos.

Entonces, un arte que tematice estas cuestiones, visibilizando la interdependencia, la biodiversidad o los ciclos de las estaciones y de la vida, por ejemplo, será Arte Ecológico.

También el que muestre la alteración, destrucción y degradación de los mismos, también podríamos valorar el carácter ecológico de las obras según sus materiales y sus procesos. A aquellas que no generan huella ecológica y son respetuosas con el medio”.

Figura 4. Green Cathedral, (1978/86), Marinus Boezem, Almere



Figura 5. Wheatfield: A Confrontation, (1982), Agnes Denes, Nueva York



Ejemplos pioneros de ello son Joseph Beuys y Agnes Denes. En 1982 Beuys promueve una *plástica social* (Parreño, 2015), un cambio social desde la ecología con la intervención artística *7000 Oaks*; obra iniciada en la Documenta de Kassel en la que planta 7.000 robles durante cinco años con la ayuda de voluntarios. En ese mismo verano Agnes Denes, pionera del arte medioambiental y del arte conceptual, realiza *Wheatfield: A Confrontation* plantando trigo en un solar de Nueva York; situado entre rascacielos crea un paisaje de oro amarillo que reflexiona frente a la especulación del mercado, el hambre en el mundo y rememora la naturaleza de la tierra.

#### **4 Shiva y Bosque esencial, tiempo y devenir como cambio social: el retorno a lo esencial**

Las obras tituladas *Shiva* (2022) y *Bosque esencial* (2022) se han creado de modo sostenible; con materiales seleccionados por su cercanía (km 0), mínimo impacto ambiental, reducida huella de carbono (creación in-situ) y aluden al tiempo y al devenir como esencia efímera del arte. Asimismo, son obras pensadas específicamente para su evolución en un tiempo y un espacio y visibilizan la problemática de la acelerada desaparición de un espacio concreto, en el momento actual, poniendo el foco en los problemas del Agua y de la Tierra, en los últimos destellos de una naturaleza que agoniza, que soporta grandes cambios y transformaciones, donde afloran la muerte y la destrucción.

De hecho, *Shiva* (2022) alude a la cualidad mutable de lo efímero, lo leve, en contraposición a lo permanente: el desmesurado peso del crecimiento y desarrollo humano –económico, social, urbanístico...– que ahoga la naturaleza, visibilizando la problemática del territorio, pues la actividad humana invade todo *habitat* y destruye ecosistemas. Así, en el Antropoceno, la tierra muestra



Figura 6. *Shiva*, (abril, 2022), Pilar Soberón, Nápoles



Figura 7. *Shiva*, (abril 2022), Nápoles



sus heridas a través de los sedimentos del pasado, en septáreas procedentes de la gran extinción de hace 66 millones de años que inspiran la instalación efímera *Shiva*. La obra apela a la conciencia de la humanidad, pues a una escala temporal sin precedentes, en la corteza terrestre se sedimenta una nueva esfera: la tecnosfera –toda la capa de tecnología humana que se calcula que son unos

60 millones de toneladas– que destruye la biosfera y extingue sus organismos vivos, amenazando la supervivencia de la propia humanidad y de la naturaleza. La obra interactuó durante cinco meses en el jardín del Palacio Real de Portici, Museo Musa Nápoles, dibujando con lava, tierra y piedra una silueta de septaria. La materialidad de la instalación en blanco y negro rememora la dualidad de todo lo existente en el universo pues habla del tiempo como destructor y creador y de la escala de las edades geológicas ante la crisis ambiental, equiparado la extinción de hace 65 millones de años con la situación actual.

Figura 8. *Shiva*, (octubre, 2022), vista de la transformación de la obra al cabo de cinco meses



Figura 9. *Bosque esencial*, (2022), *Haritz*, detalle, Pilar Soberón





Por otro lado, la segunda pieza titulada *Bosque esencial* (2022), compuesta por tres fotografías con intervención directa, alude a la naturaleza como ser sintiente, pues la Naturaleza siente hasta en la más ínfima de sus partes; habla de la energía que se desprende de la experimentación en la misma por medio del registro de esa energía vital, de la *sintienza* de la naturaleza (De Quincey, 2002) que viene dado a través del dibujo de intervención sobre el soporte fotográfico. La disminución del Bosque Mediterráneo y la desaparición

Figura 10. *Bosque esencial*, (2022), *Haritz II*, detalle, Pilar Soberón

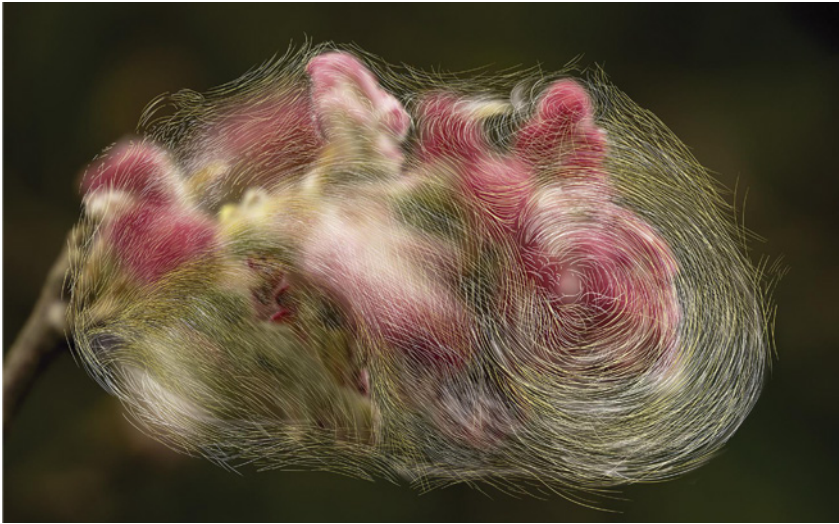
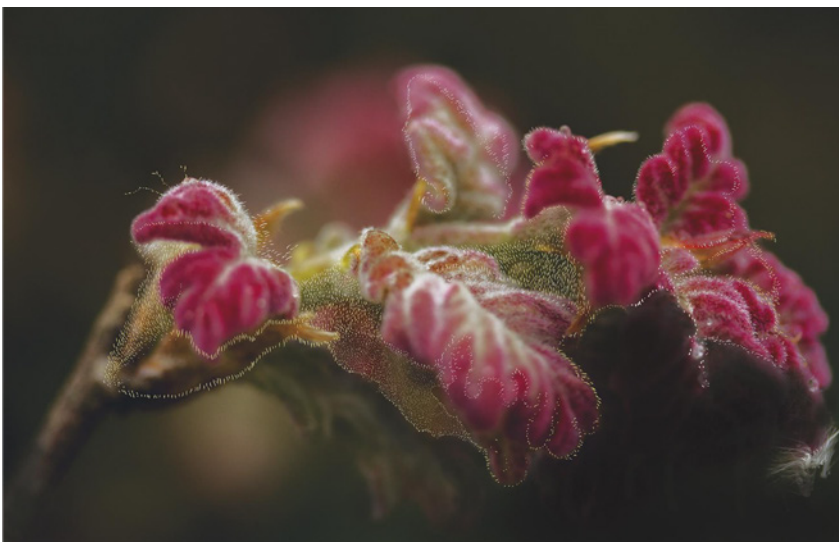


Figura 11. *Bosque esencial*, (2022), *Haritz III*, detalle, Pilar Soberón



del *Quercus* ha dejado una Tierra ahogada por la tecnosfera o sobreexplotada por la agricultura intensiva, en detrimento de la riqueza que aporta el bosque autóctono, con robles, encinas, tejos, etc. La serie *Bosque esencial* (2022), nace como un manifiesto para preservar y enaltecer uno de los organismos vivos más grandes que existen –el Bosque– a través de la idea de una naturaleza que siente. En ella, se recalcan procesos, estados y acontecimientos derivados de la acción de la eclosión de un brote, pues la naturaleza siente hasta en los estados más profundos.

## 5 Conclusión

En conclusión, arte y ecología reivindican que ha llegado la hora de retornar a la idea de que en la naturaleza hay conciencia. Henry D. Thoreau, un siglo antes de que llegaran los “verdes” (Thoreau, Coy & Díaz, 1995), reivindicó la primacía de la experiencia en la naturaleza, en 1945: “Fui a los bosques porque quería vivir solo, deliberadamente, para afrontar los hechos esenciales de la vida y ver si podía aprender lo que tenía que enseñar y no descubrir, a la hora de la muerte, que no había vivido”.

En este sentido, Blanca De la Torre (2022: 6) pone en valor el Ecofeminismo como vía para caminar hacia un futuro sostenible y expresa:

“...los ecofeminismos operan como una brújula para dismantelar el capitalismo, el patriarcado y el colonialismo, que se han constituido como las tres bases principales de la crisis ecológica actual. Esta matriz que aún el pensamiento y la praxis nos invita a alejarnos de la mirada antropocéntrica y a apostar por pensar desde lo sistémico, lo que implica deshacernos de las cosmovisiones imperantes...”

Desde esta perspectiva arte y ecología posibilitan un futuro abierto al cambio ecosocial, una *metamorfosis ecosocial* necesaria que alimente una nueva cosmovisión y retornar a lo esencial: la naturaleza.

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## Nota biográfica

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## Notas sobre las imágenes

- Figura 1. *Cita al jinete del cubo de Kafka* (1995), Pilar Soberón
- Figura 2. *Para llegar a ser* (1995), Pilar Soberón
- Figura 3. *Prozesu* (2010) Pilar Soberón, Donostia
- Figura 4. *Green Catedral*, (1978/86), Marinus Boezem, Almere
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## Notas

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**SOCIOECOS**

Climate Change, Sustainability  
and Socio-ecological Practices

## **Oral Presentations' Abstracts**

*Abstracts without Complete Texts /  
Only for Oral Presentations*

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**Title: Learning from citizen science and food movements: synergistic pathways towards democracy, technological sovereignty and sustainability in the 4th Industrial Revolution**

**Abstract:** *Calls for citizen participation in science are fast spreading, originally mainly in the natural sciences, and more recently in social sciences, giving way to the rapid rise of citizen science (CS) as a pathway towards sustainable transitions and public participation in science. A wide variety of CS projects are focused on food system related topics. Often reliant on low-cost technologies (e.g. apps and low cost sensors) that enable citizens to gather data from their environments, CS initiatives are creating new socio-technical systems aiming to foster social learning and inform policy-making processes on environmental matters through open data. Concerns about meaningful citizen participation in the research process, technology, and data sharing and ownership are being raised. This research argues that the long history of democratic and sustainability struggles in food systems can provide a useful reference framework for considering issues of participation, big data and sustainability in CS. Equally, this paper analyses the positive developments that CS has brought around the democratisation of knowledge production, open data, sensing technologies and increasing positive and constructive ways for people to actively take part in caring for their natural and food-producing environments. All of these are aspects that the food movement could benefit from. The challenges and opportunities at the intersections between a longstanding interdisciplinary interest in food and agriculture and new scholarship and practice centred on CS are analysed in relation to the following dimensions: data democracy and economic democracy; labour visibility; fostering learning communities for moving from data to action, sustainable and appropriate technology, and overcoming epistemological and quantophrenic biases.*



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**Title: Social-ecological analysis of human-wildlife conflicts through the environmental justice lens**

**Abstract:** *The expanding human footprint is causing habitat loss and alterations in wild species, thus increasing human-wildlife conflicts (HWC). HWC predominantly arises when the presence or behaviour of wildlife poses real or perceived threats to human interests, leading to disagreements between stakeholder groups. These situations often generate social conflicts between stakeholders regarding wildlife management, and such conflicts are often diverse, complex, dynamic, and multi-layered. In this study, we systematically mapped the global scientific literature on conservation conflicts that incorporates the social-ecological systems (SES) framework with a focus on human-wildlife conflicts (HWC). HWC are particularly important in the current context of species extinction and climate change. Additionally, we conducted a descriptive analysis of the global distribution of HWC studies and analysed the impact of such conflicts on stakeholders using the environmental justice framework and its three dimensions: distributive, recognition, and procedural. Finally, we identified the stakeholders involved, their implication level in the decision-making process, and their participation level in the research (i.e. consultation, collaboration, and engagement). Our results identified 67 articles analysing HWC from an SES perspective, distributed across 45 countries. More than half of the articles (55%) focused on mammals (mainly ungulates and carnivores), followed by birds (12%), and fishes (12%). We identified nine types of stakeholders: managers, local communities, researchers, NGOs, farmers, fishers, hunters, the tourism sector, and Indigenous people. Local communities and managers were the most involved in HWC studies. Although local communities participated at the consultation level, they were not included in decision-making. In contrast, managers participated in the decision-making process and collaborated largely with the researchers (46%). The most commonly employed participatory methods were interviews, followed by surveys, focal groups, and workshops. Our findings shown that those stakeholders identified as most affected by conflicts, in terms of loss of resources and/or livelihoods, were not the same as those included in decision-making.*

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**Title: Creating a tiny forest in an economics school in Lisbon: notes from an ongoing process**

**Abstract:** *In this presentation, we focus on the collective creation of a tiny forest at ISEG Lisbon School of Economics and Management, Universidade de Lisboa, Portugal. ISEG's tiny forest is part of the project TERRARE Action-research for social and ecological regeneration, developed at SOCIUS/CSG, ISEG, Universidade de Lisboa with the aim to foster social and ecological processes of learning and acting towards soil regeneration. It initiated in Autumn 2023 with a series of participative workshops open to the whole university community: students, staff, faculty and researchers. Participants learnt about the Miyawaki method, mapped the space, cleaned it, created the tiny forest design and marked it on the land, to then plant hundreds of plants in February 2024.*

*Tiny forests created according to the Miyawaki method can be as small as 300m<sup>2</sup>, making them particularly adequate to urban (re)forestation and soil regeneration. One tiny forest hosts dozens of native plants of all the forest strata growing closely together, a configuration that enables faster growth and greater protection to each other than isolated trees. Tiny forests regulate temperature and humidity, reduce pollution, increase biodiversity, and promote people's wellbeing, to name a few of their proven benefits. To the extent that people are involved in their creation, care and fruition, we may consider them privileged contexts where nature-based social-ecological practices flourish.*

*We draw on data collected through participant observation of the project's processes, as well as on the participants' expectations and evaluations as expressed before and after the workshops. We focus on three main axes: 1) to critically reflect on the participative processes of the tiny forest creation; 2) to assess the project's ability to integrate different knowledges towards social and ecological change; 3) to explore the potentialities of a tiny forest as a living lab in an economics school.*

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**Title: An Ecocritical Exploration of Ecological Myths in Animation: Unveiling Imaginaries of Modernity and Climate Change through Suzume, Nausicaä, and Weathering with You**

**Abstract:** *As we navigate the intricate landscape of shifting perspectives on climate and ecological concerns, the narratives woven around climate change and its repercussions form an integral part of contemporary imaginaries of the future. Particularly, Japanese animation, or anime, with its diverse cultural narratives, offers a distinctive lens through which viewers can delve into various depictions of climate change and its societal consequences. This presentation delves into specific anime works—Suzume, Nausicaä, and Weathering with You—with the aim of unravelling the intricate tapestry of themes, characters, and visuals embedded within these narratives.*

*Our presentation interprets animation as a mode of contemporary storytelling that explores potential future scenarios. By analysing these animated works, we intend to delve into the global challenges posed by climate change and establish connections between the dystopian worlds portrayed in the selected anime and real-world climate-related issues. This approach fosters a profound comprehension of the urgency for sustainable practices. Utilising qualitative analysis, we will focus on narrative elements and symbolic representations of climate change.*

*This presentation endeavours to bridge the gap between popular culture and environmental discourse, encouraging interdisciplinary dialogues regarding the imperative need for socio-ecological practices in the face of climate change.*

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**Title: Re-Signifying Just Transitions from Care: Ethical reflexions and social practices**

**Abstract:** *In the context of growing environmental and social challenges, the notion of just transitions has become a central theme in the discussion on sustainable development. Traditionally, these transitions have focused on a green growth paradigm with the help of initiatives such as the European Green Deal, mainly centred on the adoption of clean technologies and renewable energies. However, this approach often overlooks critical aspects related to care, equity, and social justice.*

*This research argues that a just transition should incorporate the ethics of care as a fundamental pillar. This holistic approach recognizes the importance of care systems, advocating for a restructuring of the social and economic policies and practices that sustain everyday life. We argue that the inclusion of the ethics of care is crucial to addressing systemic inequalities and ensuring that transitions are truly just for all members of society. It is when the notion of care is incorporated within just transitions that real meaning is given to the idea of leaving no one behind.*

*Our proposal examines how current economic models can be adapted to incorporate the ethics of care, challenging the notion that justice and care are incompatible with economic growth. Through an interdisciplinary analysis that includes perspectives from economics, social philosophy, and ecological theory, we explore alternative models of development that integrate both technology and care. Through a comprehensive analysis of specialized bibliographic corpora and select case studies and contrasting the insights with selected actors from business, policy and academia, this study first questions the capacity of the current framework to foster a truly just and sustainable transition; second, proposes a radical and traversal priorities based in the systematic integration of ethics and third , launches a critical introspection for political actors regarding the urgency of a paradigm shift towards a framework that prioritizes equity, social justice, care and emphatic sustainability.*

*Preliminary considerations show that, although theoretically plausible, a just transition under the current paradigm may prove inherently deficient. The incorporation of a sustainability construct into the prevailing model tends to reinforce pre-existing disparities and focuses on technocratic and market-based interventions, disregarding the structural causes of environmental and social injustice. This limitation is demonstrated through empirical examples and case studies that expose the discrepancy between theorization and practice in the implementation of just transition policies.*

*In this vein, existing transition strategies must be complemented to untangle non-virtuous structural configurations, creating fair long-term outcomes that are more equitable. Moreover, the commitment to ethically driven research agendas and policies is still necessary and is still very relevant, as they allow to transfer knowledge and propose tools and actions and addressing issues such as changing roles and relationships in transition environments, with a focus on the need to better understand how people make sense of the transition processes.*

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**Title: Unraveling social-ecological dynamics and identifying transformative actions in an intensive agricultural system in the drylands of South-East Spain.**

**Abstract:** *The South-East of Spain is known as “Europe’s garden, since most of the vegetables and fruits produced here end up in the kitchens of Northern Europe. However, it stands as the driest region of continental Europe, making it susceptible to land degradation and droughts. These conditions are exacerbated by climate change and unsustainable human practices, resulting in severe impacts on food security, livelihoods, and human well-being.*

*The development of the region since the 1970’s has also contributed to a myriad of conflicts and sustainable dilemmas. More specifically, the introduction of intensive agriculture practices and the tourism sector has generated significant economic, socio-cultural, and ecological effects. On one hand, irrigated agriculture has transformed family farming practices to a large agribusiness sector, fostering technological innovation and increasing employment opportunities in what was once one of Spain’s most impoverished areas. On the other hand, this development has brought social challenges, including the lack of social integration of migrants, unregulated housing settlements, and gender inequality. Ecological challenges have also emerged, such as groundwater overexploitation, water pollution from fertilizers, and the abandonment of traditional farming practices that maintain ecosystem services in biocultural landscapes.*

*While sustainable initiatives are gaining ground in the region, a collective effort is needed to transition to a development model that prioritizes sustainability and equity. Transforming this agri-food system requires the perspectives and involvement of multiple stakeholders to pinpoint how and where to intervene the system efficiently. This study aims to uncover the root causes of the main challenges perceived in the region and identify key points where transformative actions can be implemented.*



*We used a novel participatory approach that combines the Three Horizons methodology (a scenario building method to collectively discuss visions, current problems and actions to reach positive visions) with Casual Loop Diagrams (CLD), which allowed for a better understanding of the system that goes beyond individual and symptoms level to the dig deeper in the root causes and dynamics sustaining present problems. We carried out five workshops involving various stakeholders at local and regional level, including representatives from the government, private sector, academia, civil society and cooperatives, to gather cross-scale and cross-sectoral perspectives. Through these workshops, we obtained a total of eight CLDs. These diagrams revealed three main themes that are considered key by stakeholders to better understand this social-ecological system and the dynamics that perpetuate unsustainable trajectories. These insights were then synthesized in three final CLDs: a) economic activities and environment, b) governance, participation and education, and c) equity and migration.*

*Our findings reveal multiple intervention points (e.g., collaborative governance or alternative production practices) and outlines fifteen strategic actions to address them, crucial for informing and fostering collaborative efforts to shift this social-ecological system towards more sustainable trajectories. Furthermore, this paper contributes methodologically to address the current “lack of sociological imagination” regarding sustainable futures and context-specific transition pathways. We achieve this by using transdisciplinary, cross-scale, and system-thinking based approaches that can be operationalized in other regions with similar conditions or experiencing comparable challenges.*

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**Title: Social-ecological compromises in the face of climate change**

**Abstract:** *Societies confront a rising frequency of extreme events associated with climate change, exemplified by numerous recent storms along European coastlines. In this context, understanding how societies can collectively make decisions despite the heightened radical uncertainty resulting from these events is essential, especially concerning potential changes in the natural environment.*

*From an heritage approach combining economics of conventions and practice theory, this paper develops a theoretical framework on social-ecological compromises. These compromises are defined as more or less stabilized agreements, whether institutionalized within formal environmental management systems or not.*

*These compromises are at the heart of the management challenges facing many natural environments and resources (Calvo-Mendieta et al., 2017). They emerge from the compatibility of heterogeneous, even contradictory, representations of the environment, involving the use and preservation of resources and individual and collective interests. Stakeholders can therefore coordinate around figures of compromise (Godard, 1990), which I seek to reveal, particularly where natural heritage is concerned.*

*However, analysing these sayings is insufficient for comprehending what actors are, in fact, doing. The representations of the environment detected in actors' discourse are not the only determinants of behaviour, which the standard literature has translated as an attitude-behaviour gap (or green gap), to be corrected by policies aimed at the instrumental rationality of individuals, of an economic or psychological nature (Shove, 2010). I focus on the collective determinants that shape actors' practices, and help to stabilize or not socio-ecological compromises: institutional dimensions (such as environmental regulations), material dimensions (including path dependency) and relational dimensions (such as collaborative relationships).*

*I applied this framework to the retro-littoral wetlands of Charente-Maritime in France, characterized by a significant risk of submersion. I conducted a survey of 91 primary marsh producers and managers on the Brouage and Fier d’Ars marshes, to understand their representations of the environment, their practices and the relationships they maintain with each other. Employing a mixed-method data analysis, I reconstructed two prominent compromise figures stabilized in the traditional practices of producers, such as pastoralism, oyster farming, and salt production, owing to their strong inertia associated with ecological anchorage. Although stakeholders project different visions for the territory’s future, rekindling the antagonisms at the core of compromises, the inertia of their practices raises doubts about their adaptability in the face of submersion.*

*This theoretical framework is crucial for comprehending the factors that drive stakeholders to coordinate despite their diverse representations of the environment. It also sheds light on how stakeholders implement these compromises despite the constraints influencing their practices. In the face of climate change, it also aims to shed light on the dynamics of actors’ visions, and how practices may or may not adapt, given multiple collective dimensions. Finally, this paper aims to enhance our understanding of the link between the individual and the collective by concentrating on the behaviors of stakeholders and considering the system of rules within which they operate.*

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### **Title: Whose Future and Which Transition? The Effects of Fridays for Future on EU Institutions and Policies**

**Abstract:** *Fridays for Future was initiated in 2018 by young people challenging older generations, especially those in powerful positions, for their insufficient action to address the climate crisis. The movement mobilised millions in the streets, organising some of the most massive climate protests in history. Their momentum was such that even Frans Timmermans, former executive Vice-president of the European Commission, declared that “there wouldn’t have been a European Green Deal without Fridays for Future”. Therefore, we aim to analyse and understand the effects of this movement on EU institutions and policies. To capture this, we applied a mixed-method qualitative approach, including thirty semi-structured interviews with activists and representatives of EU institutions, including Members of the European Parliament and representatives from six Directorate-Generals of the European Commission.*

*In our analysis, we unpacked the nuances of these effects by focusing on the following aspects: (1) The relationships and interactions between the movement and EU institutions, (2) their impact on EU Policies, (3) their conflicting discourses, and (4) post-political tendencies. We observed that the effects of youth climate movements on EU institutions are complex and convoluted, as well as highly influenced by the social-political-economic context. It is undeniable that FFF greatly influenced EU public opinion and contributed to unprecedented advancements in EU climate policy. However, the movement did not manage to transform the underlying reasonings of the EU, which still needs to question its neoliberal and neocolonial thinking to fulfil the ideals of climate justice.*

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**Title: The role of emotions in nature conservation in arid and semi-arid landscapes under a climate change scenario**

**Abstract:** Protected areas (PAs) can be regarded as highly intricate social-ecological systems, integrating both nature conservation efforts and the socio-cultural practices of the local communities that inhabit them. Their significance as a conservation strategy is widely acknowledged, particularly in the face of diverse drivers of change, such as climate change, biodiversity loss, and social conflicts over land use. These factors pose a risk not only to the ecological effectiveness of PAs but also to their capacity to foster connections between people and ecosystems. Addressing this challenging scenario requires a paradigm shift in the field of nature conservation, highlighting the role of PAs as socio-ecological systems and emphasizing the integration of the human dimension into their management. This study seeks to explore the role of emotions in PAs across semi-arid and arid landscapes of the province of Almería (SE Spain). This region is heavily impacted by climate change, and PAs frequently serve as crucial facilitators in fostering people's connection with nature. Specifically, this research aims to: i) propose a methodological approach to map the spatial distribution of emotions linked to PAs; ii) propose the Emotional Non-parametric Relation Index (ENRI) as a measure to assess people's emotional connections with landscapes; iii) examine the impact of varying levels of aridity on the emotional connection between people and PAs; and iv) reflect on the potential implications of this emotional dimension for PA management. Utilizing 176 face-to-face surveys, we collected information on positive and negative emotions toward landscapes within PAs with different levels of protection, aiming to explore the role of emotions in PA management. Results indicate that PAs with higher protection levels and lower aridity (e.g. Cabo de Gata Natural Park) are primarily associated with positive emotions, while those with lower protection levels and higher aridity indices are linked to negative emotions. The presented methodological approach can contribute to a better understanding of conservation behaviours toward arid and semi-arid landscapes, providing insights to enhance ecological outcomes, social acceptability, awareness, and motivation for nature conservation, with the goal of conserving both landscapes and emotions under a climate change scenario.

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**Title: Wolves, mastiffs and livestock: Effects of changes in wolf management on socioecological practices and interspecies relations in the Basque country**

**Abstract:** *This communication derives from an ethnography on the impacts that recent changes in wolf management in the Basque Country have on the socio-ecological practices (livestock management, incorporation of guard dogs, etc.). We are particularly interested in the transformations in the habits of care and coexistence between species (Lescureux, 2006).*

*In the Basque territories of Alava and Bizkaia, the traditional shepherding experienced a process of transformation of its forms between the mid-1960s and the 1980s, derived from at least two important factors: the decline of the shepherding and the withdrawal of predators. As a result, the emerging forms of having livestock contemplated practices such as the absence of permanent surveillance of the herds, as well as the unemployment of guard dogs, whose main breed has historically corresponded to the mastiff. In 1986, the return of the wolves became dramatic in the face of a way of life in marked decline (Cano, 2011). Since then, the question of how to manage wolves in both territories has been open and has generated a strong debate among antagonistic agents: the livestock sector, environmentalist associations, the Basque Government and the provincial councils.*

*Since the ratification of the Bern Convention (European Council, 1981) by the Spanish State in 1986, the provincial councils of Alava and Bizkaia, which have the competence for the management of the species, have applied a "lethal management of the Iberian wolf" (Quevedo et al, 2019), thus benefiting livestock farmers with compensation for damages and granting hunting permits whenever attacks on livestock have occurred. However, under pressure from environmental associations and Europe, the wolf was included in September 2021 in the List of Wildlife Species of Special Protection Regime, which makes it infeasible to hunt it without having taken prophylactic measures to prevent attacks. Thus, in the year 2023, the provincial councils have made a conservationist change in management, dedicating a subsidy item to measures such as the acquisition of mastiffs, the installation of electric fences and geolocation systems for livestock.*

*These new measures, which advocate the recovery of coexistence with the wolf, have not satisfied a large part of the livestock sector, which continues to see its livestock and its own way of life threatened by the populations and attacks of that species. Therefore, assuming that in this case only to staying with the problem is possible (Haraway, 2020) and that the becoming of any living being is always a relational process (Deleuze and Guattari 2020; Strathern, 2020), we ask ourselves about the impact of the change in wolf management on the relationships between, at least, humans, livestock, mastiff dogs and wolves. Thus, to understand the conflict that is taking place, it seems fundamental to ask ourselves about the socio-ecological set of knowledge and ways of doing and being that make the wolf become a sheep predator, the livestock become prey, the mastiff become a guard dog and the human being become a shepherd.*

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**Title: El inicio de carreras activistas en el movimiento ecologista: el caso de Fridays for Future y Extinction Rebellion en España**

**Abstract:** *La investigación se centra en analizar el comienzo del compromiso activista en jóvenes participantes de Fridays for Future y Extinction Rebellion a través del concepto de carrera militante (Filleule; 2001), poniendo especial énfasis en las emociones, discursos y experiencias que surgen en los primeros momentos. Nuestro propósito es comprender las formas en las que los jóvenes se suman a la lucha contra la crisis climática, cómo esta participación los transforma y cuáles son los factores que influyen en su permanencia o abandono del movimiento.*

*Para abordar la conexión entre el individuo y la militancia se tienen especialmente en cuenta el papel de las emociones y de las relaciones afectivas. Las emociones pueden paralizar, contribuir a la construcción de grupos e identidades, establecer lazos, iniciar la movilización o mantener el compromiso (Emirbayer y Goldberg, 2005). A modo de ejemplo, en la reciente ola de movilizaciones climáticas se ha subrayado la ambivalente importancia de la eco-ansiedad para la acción (Gifford y Gifford, 2016), la cual puede tanto producir como evitar la acción colectiva. Además, las interacciones internas entre participantes y los equilibrios cotidianos también forman una red relacional que sostiene o desanima la participación (Kitts, 2000).*

*En esta investigación, se llevó a cabo una labor etnográfica en los colectivos Fridays for Future y Extinction Rebellion, con 23 observaciones participantes, realizadas en Madrid y Zaragoza desde marzo de 2019 hasta el momento actual. Este trabajo se complementa con 27 entrevistas a miembros de ambos colectivos, dos grupos triangulares virtuales y la revisión de documentación interna del movimiento.*

*Los resultados provisionales permiten resaltar lo siguiente:*

*En primer lugar, se evidencia la importancia de la transformación emocional a lo largo del proceso de implicación en el movimiento, transitando desde el miedo o la ansiedad hacia la indignación y, posteriormente, la identificación con el movimiento o la esperanza.*



*En segundo lugar, se destaca la relevancia de los ciclos cotidianos de retroalimentación de la actividad militante, es decir, la trama diaria de acciones, afectos, recompensas o problemas que sostienen la participación y facilitan el desarrollo de una carrera militante.*

*En tercer lugar, se resalta que las reglas y normas que rigen las interacciones sociales dentro del movimiento no son meramente organizativas. Estas normativas atraen o repelen a diversos perfiles, y su manejo facilita la labor dentro de la organización, reduciendo los conflictos y el costo de coordinación. La asimilación de estas prácticas por parte de una persona es una parte crucial de su proceso de integración en el colectivo.*

*De manera análoga, se subraya que los ciclos de retroalimentación pueden presentar defectos. Cuando el activista no recibe reconocimiento social o no logra adaptarse a las formas del movimiento, se quiebran o debilitan muchos de los procesos necesarios de vinculación.*

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**Title: Sensitive infrastructures: Aesthetic investigations of the critical zone in the exhibition space**

**Abstract:** *The paper discusses the “thought exhibitions” developed by Bruno Latour and Peter Weibel, in collaboration with various co-curators, for the ZKM | Center for Art and Media in Karlsruhe (Germany), most notably “Critical Zones – Observatories for Earthly Politics” (2020–22). It provides an expansive insight into the complex scientific measurement methodologies and scholarly protocols that underpin the research practices of Earth System Science and emphasizes the infrastructural nature of this complex of data collection – infrastructures that include scientific instruments and data processing, but also “sensitive infrastructures” (Arènes) made up of trees, microorganisms, and collaborative research practices. Based on the author’s first-hand knowledge of the exhibition planning and collaboration with Weibel and Latour, the paper pinpoints the central predicament of an exhibition that ambitions to represent this complex infrastructure which itself responds to the impossibility of giving one proper representation of its object: namely how to mediate an unlimited infrastructural endeavor (of climate change monitoring) in the finite infrastructural organization of the exhibition space. While the paper focuses on the extensive installation “CZO Space” by Alexandra Arènes and Soheil Hajmirbaba – one of the centerpieces of the show –, it also discusses the curatorial work that has gone into making the exhibition and the negotiation between different infrastructural scales it entailed. In doing so, it emphasizes the necessity of exhibiting the impossibility of representation in a mediation that invites its spectators to take part in unraveling this infrastructural conundrum.*

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**Title: Socio-ecological practices to beat the heat: the home and living environment, a hotbed of new forms of inequalities**

**Abstract:** *Although now publicly discussed, climate change remains little visible or tangible in the daily life of many people living in Western and developed countries. This relative invisibility can lead to inaction, as stated by Giddens (2009).*

*However, the increasingly frequent and severe heat waves are a visible consequence of climate change. In France, for example, the summer of 2023 was the 4th hottest summer since 1900 (Météo France, 2023), with record-breaking temperatures and multiple heatwave alerts. Such extreme weather phenomena are set to multiply and intensify in the years to come.*

*Extreme heat affects populations and systems. However, in areas with a temperate climate, individuals and infrastructures are not used to extreme temperatures. The consequences of heatwaves are reflected in many aspects of everyday life, and hinder the conduct of activities at home, at work, and in the public space.*

*Depending on the characteristics of their housing and living environment, individuals are unequally subject to the consequences of heatwaves and do not have the same resources, which shapes various daily behaviours. When well conceived, the home and living environment can be places of refuge from the heat. Conversely, the negative effects associated with extreme heat can be exacerbated by exposure to high temperature in the home. To cope with such adverse conditions, individuals can implement adaptation strategies, from home renovation and transformation to smaller everyday measures. These individual strategies can be understood as socio-ecological practices.*

*In this context, we explore the interactions and strategies developed by individuals towards their home and living environment in the context of heatwaves.*

*Based on a comprehensive and precise survey of individual behaviours and attitudes during the heatwaves of summer 2023, our research offers unprecedented and detailed results. Two questionnaire-based quantitative surveys of French people have been conducted (a sample of 2,500 French people representative of the population, plus 6 samples of 1,000 people representative of the population in areas hit by a heatwave in the summer of 2023), as well as a series of 30 semi-structured interviews with people living in areas affected by a heatwave.*

*Our research sheds light on the experience of heatwaves and the way it unfolds and interacts with the practices associated with the home and the living environment. Not everyone is equal when it comes to heatwaves, and extreme heat reinforces socio-economic inequalities associated with living conditions. While homeowners and individuals with the highest incomes have access to better insulated homes or can benefit from resources such as a garden or a private pool, which can lead to a higher carbon footprint, the less privileged have no choice but multiply light, ephemeral strategies to beat the heat. Such socio-ecological practices should be carefully looked at to understand the way disadvantaged people adapt to heat waves, and how the different adaptation strategies affect the environment.*

*These results contribute to understanding socio-economical inequalities and can guide public decision-making to ensure a fairer ecological transition in a warmer world.*

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**Title: Mapping a few art responses to the climate change**

**Abstract:** *In the discourse surrounding climate change, visual art has emerged as a platform for challenging societal responses. This abstract offers a mapping of recent social ecological responses from visual art in the context of climate change. It compares key theoreticians and artworks that embody each response and role.*

*One of the dimensions of this mapping corresponds to visual art, informed by Morton's concept of the Dark Ecology that relates to Olafur Eliasson's Ice Watch. The artist strategically positions melting icebergs in urban settings, serving as tangible markers of climate change's immediate consequences.*

*Another dimension relates to eco-critical aesthetics (Demos, 2016) underscoring the connection between art and environmental politics that is seen in the artwork by Subhankar Banerjee's Caribou Migration I, a vivid representation of the Arctic National Wildlife Refuge's ecosystem intertwining aesthetics and advocacy, and urging engagement in dialogue about conservation and indigenous rights.*

*A third dimension is dedicated to art as Climate Activism, as art transcends representation to become an active agent. Amy Balkin's artwork "Public Smog" transforms carbon offset credits into art installations, raising questions about the commodification of environmental solutions. This artwork challenges viewers to consider the systemic changes required to address climate change.*

*A fourth aspect is the intersection of Art and Science to address ecological challenges. In relation to this aspect, Natalie Jeremijenko's "Environmental Health Clinic" blurs the lines between art and science, engaging the public in real-world solutions to environmental issues. This interdisciplinary initiative bridges the gap between theory and practice.*

*Visual art can amplify the voices of marginalized communities disproportionately affected by climate change. So, a fifth step in the analysis concerns environmental Justice and Representation based on the theoretical framework of slow violence and the environmentalism of the poor (Nixon, 2011) which finds resonance in the artwork titled "Flint Is Family" (LaToya Ruby Frazier, 2016) as the artist documents the water*

*crisis through intimate narratives. This artwork serves as a potent reminder of the environmental injustices faced by marginalized populations.*

*Aestheticizing sustainability (McKibben, 2010) celebrates art's role in promoting eco-friendly practices and is related to the artwork Solar Bell (Olafur Eliasson, 2012) in which the artist integrates renewable energy sources into the artwork. This piece showcases how art can inspire ecological consciousness.*

*Art also becomes a conduit for climate education based on the concept of Art as Climate Education (Orr's, 1994) that can be seen in the Waterpod Project (Mary Mattingly, 2009) as the artist transformed a barge into a sustainable habitat, engaging communities in dialogues about resource conservation. This artwork fosters a more profound understanding of sustainable living.*

*The objective of this paper is to map these recent social ecological responses and roles of visual art, to foster creative solutions to climate change. The methodology is based on a case of study comparative approach of seven concepts related to seven artworks. The aim is to contribute to match concepts and artworks that play a pivotal role in shaping a more sustainable and resilient future for our planet.*

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**Title: Rights of Nature and the Challenges of the Present. The Irish case in Global context**

**Abstract:** *This paper analyses processes through which 'nature' got rights granted through societal and constitutional transformations observed in the last decades of the twentieth-first century. It offers a theoretical approach through which we can understand these processes, accompanied by a discussion of a case study that is happening in Europe currently: Ireland is about to be the first country in Europe to change its constitution to recognise the rights of nature. Rights of nature have been granted in many parts of the world since the first decades of this century. These proposals have been justified differently in each of the contexts it has emerged. However, what the different forms of justification have in common is that, at the first step, 'nature' needs to be integrated as a 'being' before a second moment, in which the legal justifications for these inclusions are grounded within the framework of the Anthropocene era and structure rights to overcome problems of equilibrium of life on earth. Theoretically, rights of nature call for a reconciliation between the concrete elements of life and the way societies understand themselves. To discuss the significance of rights of nature as a way to overcome the moral challenges of the Anthropocene era is also a way of addressing questions of who sustains what, what for, how it can be sustained, and, also, for how long. To raise and answer these kinds of questions could help us to look at the problem of social/political change as a process in which many subjects have their role: the ones who have the power of critical and reflexive existence about what they are doing, as well as the ones who act because they are living entities that impact on the world. To understand all the tensions involved in the process of transformation in the direction of the inclusion of the rights of nature in the European context, we are going to analyse the Irish case. Ireland is about to be the first country in Europe to organise a referendum to change the Constitution and make it possible to include the rights of national biodiversity. This process needs to be understood in comparison to the other similar ones that happened in other places of the world - for example, the previous ones observed in both North and South America. For that, the paper will connect the theoretical approach with empirical analysis as a way of understanding social change and political action in the Anthropocene era. Taking nature as an external object has impacted the equilibrium of life on earth. The paper will show that we are living in a time in which societies need to slow down anthropocentric reasoning in the direction of life-centric reasoning if we want to be able to address the challenges of our contemporary times.*

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**Title: Mapping Biocultural Refugia: detecting hotspots of historical solutions for climate change adaptation and sustainability through online spatial data**

**Abstract:** *Biocultural diversity (BCD) encompasses the diversity of life in all its manifestations and the interactions between them. This concept underscores the intricate relationship between biological and cultural diversity, emphasizing the different ways in which local populations relate, interact and live with nature through their knowledge, beliefs, practices, and values.*

*Previous studies highlighted that rural settlements, agroecosystems, and terrestrial systems in which traditional practices and sustainable subsistence activities play a key role can be considered as 'biocultural refugia'. Biocultural refugia are places where relict species have found shelter during periods of stress, and that also contain a diversity of human knowledge and experiences, values and belief systems. These places have concentrated most of the attention in BCD research related to sustainability and environmental issues because they serve as 'libraries' of traditional knowledge accumulated over time, fostering resilience and offering historical solutions to a wide range of challenges, including climate change adaptation and other current sustainability problems. Mapping BCD hotspots is crucial for targeted research into places holding these historical solutions. Furthermore, the mapped data enables precise conservation efforts and informed policymaking in specific locations.*

*Building on this foundation, this study undertakes a practical exploration of BCD in order to map BCD hotspots in two distinct Spanish regions—Navarra and Almería. Based on the online compiled secondary spatial information, we first constructed a comprehensive BCD index, utilizing a diverse range of biophysical and sociocultural variables. This approach expands upon previous indices by incorporating a broader array of variables to maximize an equitable representation of all the dimensions of BCD. Secondly, a series of predictor variables were employed to elucidate the spatial distribution of BCD across the two case studies. Utilizing these variables, we generated a BCD hotspots map, pinpointing regions with elevated BCD index values as important biocultural refugia. These areas merit exploration for climate change adaptation strategies.*

Our study identifies challenges in mapping BCD, particularly regarding intangible heritage's spatial specificity and dispersed data sources. Despite these challenges, our interdisciplinary approach bridges theoretical BCD concepts with practical mapping techniques, offering insights into historical solutions for climate change adaptation and sustainability within specific socio-ecological systems and helping to avoid mistakes from the past. We advocate learning from biocultural refugia to foster local identity, sense of belonging and heritage as a driving force for conservation and sustainability.

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**Title: La importancia de las emociones en el enfoque de Bienestar Sustentable como guía de vida**

**Abstract:** *Desde la perspectiva del Bienestar Sustentable, basada en 12 dimensiones claves, la de Emociones se destaca por su grado de importancia. Precisamente es la responsable de poder promover un ambiente propicio de vida, siendo medio y fin en sí misma, basada en las acciones de cada individuo para lograrlo.*

*Por lo tanto, en la práctica no es que los escenarios futuros sean solamente favorables, sino más bien que los escenarios futuros sean claros y transparentes. En el caso de que dichos escenarios sean positivos, será mucho mejor; pero en el caso de que dichos escenarios futuros sean desfavorables, la intención no es que generen miedo y ansiedad, bloqueando el razonamiento del ser humano y generando un bienestar psicológico negativo (tal el planteamiento de la Comisión Sarkozy para evitar los escenarios futuros desfavorables al perjudicar el bienestar actual); sino, por el contrario, la intención es que los escenarios futuros sean claros para poder generar acciones derivadas del razonamiento y potenciado desde las emociones, con una perspectiva evidente de vinculación del bienestar actual con el futuro: Bienestar Sustentable.*

*Sin duda, desde las emociones se forjan los valores, el bienestar y su consideración hacia futuro, sin embargo, se debe tener mucha cautela en la implementación de acciones contrarias a los intereses universales. Entre ellos, por ejemplo, el riesgo de dictadura ecológica y/o populismos climáticos, entre otros, donde se aprovechan de la eco-ansiedad y de otras emociones para su uso en intereses particulares. Para ello, es fundamental también establecer relaciones entre las dimensiones de "emociones" y "razón práctica", junto con las restantes 10 dimensiones del Bienestar Sustentable para establecer la guía del uso libre de la conciencia y un razonamiento adecuado y poder emplear una razón práctica e integral sobre el bien de la vida.*

Pixová, Michaela

Affiliation(s): BOKU, Austria; Charles University, Czech Republic

**Title: A quiet right to the city? Sustainability governance blind spot regarding allotment gardens**

**Abstract:** *Urban gardening in the CEE region is an important source of food self-provisioning, which is environmentally sustainable and increases cities' resilience against multiple crises. Despite the rising popularity of community gardens, allotment gardening remains much more widespread and culturally entrenched in Czech cities. Gardening also plays an important role in climate and food policies recently launched by two major Czech cities, Prague and Brno.*

*We ask how allotment gardeners are linked to institutional actors and to what extent they belong to grassroots movements concerned with urban development, and the food movements promoting local alternatives to the globalized industrial agri-food system. These include community gardens, a new phenomenon adopted from the West, which receives disproportionately higher attention in the two cities' policies. Conversely, the role of allotment gardens is obscured and their contribution to environmental sustainability not fully recognized by policy-makers and in policy documents.*

*In our analysis, we include food self-provisioning in allotment and community gardens among food alternatives, which we conceptualize as values-based modes of production and consumption. In the CEE region, these were previously conceptualized as forms of "quiet sustainability", "quiet food sovereignty", "quite food democracy" and "quiet everyday resistance".*

*In line with an understanding of urban gardening as a "right to the city" practice, we propose the concept of a "quiet right to the city" practised by allotment gardeners in Czech cities in the form of associational activity and "quiet everyday resistance" not only against the current food system, but also against the housing crisis and consumer lifestyle detached from nature.*

*We explore the history of different forms of gardening in Prague and Brno and conflicts which emerge from the dual approach of institutional and social movement actors, including gardeners, to different forms of urban gardening and their role in sustainability governance. We argue that allotment gardens' full potential in averting further environmental decline and Czech cities' vulnerability to future threats and uncertainties must be leveraged by allotment gardeners' "quiet right to the city" being practised in a less quiet way and in a concerted collaboration with other social movements.*

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**Title: Phasing Out Coal Without Feminism? Gender and Intersectionality in the Czech Climate Movement**

**Abstract:** *Gender and intersectionality have received increasing attention in movements advocating for socio environmental justice on a planet facing imminent climate breakdown. Data show that women and marginalized groups are not only more vulnerable to the effects of climate change but also more concerned about the environment than men—in some contexts they constitute the dominant force of the youth climate movement's mobilization. In both politics and traditional environmental NGOs, these groups nonetheless tend to be out voiced by men and their perspectives and approaches, which focus on business, science, and technical solutions. In the context of today's hegemonic patriarchy and capitalism, feminist climate justice activists have therefore associated intersectional perspectives with alternative conceptualizations of economies based on principles of care and regeneration.*

*So far, focus on gender and intersectionality by social movement studies has been notably scarce. There is also little understanding of how intersectional social movement organizing is shaped by place, including spatial reproduction of racial, classed and gendered power relations. In this paper, we explore how gender and intersectionality are conceptualized, incorporated, and prefigured by the Czech climate movement. We pay attention to the way the movement's different constituents create opportunities for more significant involvement of women and other marginalized groups and for enhancing their agency, voice, and "feminine frames" in Czechia, a country characterized by a homogenous white population, high dependency on coal extraction and combustion, a long-standing hegemony of techno-managerial approaches, and aversion to feminism and left-wing politics. So far, Czechia also remains a climate sceptic country relatively unaffected by climate shocks, which can in some contexts destabilize gendered social systems and open new space for women in representative politics.*

*Drawing on embedded feminist action research and a long-standing relationship with the movement and activists, we uncover the underlying mechanisms and impacts of male supremacy over women and other marginalized groups on the climate change debate in Czechia and show how increasing attention to gender and intersectionality translate into the Czech climate movements' frames, strategies, and relationships. While the younger and more critical grassroots constituents of the movement actively strive to promote and prefigure a politics of care, justice, and equality, these efforts are more limited in traditional NGOs with higher public visibility. We argue that these developments interfere with the structural constraints of a society that prioritizes climate action frames focused on business, science, and technical solutions. Despite frequent cases of coalition work and cooperation among different constituents of the climate movement, frames focused on ethics, justice, and alternative economies, which are preferred by women, continue to be marginalized. Marginalization of these voices is not only negatively affecting the visibility and interests of non-hegemonic groups in the movement, the gender balance of the public debate, and the role of socio-environmental justice in climate change policies, but is also contributing to the perpetuation of dominant exploitative and extractive hierarchies between men and women, humans and nature, and the Global North and Global South.*

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**Title: Participatory mapping for the conservation of biocultural diversity and future sustainability in rural areas**

**Abstract:** Every landscape on Earth is influenced to some degree by people, and, in turn, societies and cultures are shaped by landscapes. Biocultural diversity is the notion that biological and cultural diversity are dependent on each other, and that biological diversity is managed, conserved, and created by different cultural groups. Rural regions are visibly shaped by human practices, and in these areas, the relationship between nature and culture runs deep, where everyday practices and traditions have co-evolved with the environment over millennia. This is especially true in Mediterranean agricultural landscapes, where traditional agriculture has endured for millennia. However, these landscapes depend on human interventions and are currently threatened by multiple drivers of change, including socio-cultural drivers (e.g., abandonment, intensification processes, or ageing of population) and ecological drivers (e.g., climate change and biodiversity loss). In this study, we carried out two participatory workshops to identify, map, and evaluate biocultural diversity in a rural case study in Almería, Spain. In the workshops, we applied a gender analysis to identify potential differences between gender. Twelve females and thirteen males of different ages participated in the workshops. Participants identified different components of biocultural diversity (i.e., practices, knowledge and traditions). Subsequently, participants spatially mapped the different elements of biocultural diversity and identified the potential drivers of change threatening the future conservation of the area. Our results indicate that biocultural diversity is decreasing in terms of practices, knowledge, and traditions. In particular, cultural and economic drivers were identified as relevant for sustaining the rural population, while climate change effects were identified as the main driver affecting habitats. In addition, differences were found across gender roles, being males able to identify major numbers of practices, while females mostly identified traditions and knowledge types. This study represents a first attempt to identify spatial variations of biocultural diversity in rural areas while determining gender-based differences. These findings may help to identify areas of high priority for the conservation of biocultural diversity, as well as serve as places for adaptation to climate change.



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**Title: Reinventing pastoralism as a sustainable socio-ecological practice for the ecological transition**

**Abstract:** *Throughout the second half of the twentieth century, pastoralism was presented - particularly by the forestry bodies in charge of reforestation policies - of the various State administrations - as one of the main causes of various ecological problems, blaming this activity for phenomena such as deforestation and desertification, the loss of soil fertility, the collapse of habitats and biodiversity habitats and biodiversity, wildfires, etc. This "degradationist" vision of pastoralist activity began to be questioned in the 1990s by the researchers of "Indigenous Local Knowledge" (ILK). and Traditional Ecological Knowledge (TEK) when the socio-ecological consequences of the abandonment of pastoral activity in large areas of the country - proliferation of fires, disappearance of species linked to the traditional rural activity, depopulation, etc. - and more importantly, its potential to mitigate emissions from the AFOLU (Agriculture Forestry and Land Use) sector, which is responsible for approximately 25% of total GHG emissions of total greenhouse gas emissions (IPCC, 2019). In this case study, we propose to analyse the potential - in addition to the existing barriers and obstacles - for the development of new initiatives in the field of pastoralism as an adaptive socio-ecological practice for climate change adaptation and mitigation, and in particular for mitigation of climate change, and in particular as a tool for the In this case study, we propose to analyze the potential - as well as the existing barriers and obstacles - for the development of new initiatives in the field of pastoralism as an adaptive socio-ecological practice for climate change adaptation and mitigation and in particular as a tool for the prevention of extreme fire episodes (sensu Tedim et al., 2020 "Extreme Wildfire Events") resulting in a net increase in the emission of greenhouse gases (approximately 10% of the global total), emerging risk to human safety and increasing economic losses. Specifically, we propose to analyse the perceptions among the 6 groups of agents identified in the framework of the Socioecos research project with the ability to influence the success or failure of these initiatives: Participants/users, Experts, Public policymakers, Public/private organizations, Civil society and Social movements.*

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**Title: Voices from Southern Europe: Bringing the social sciences and humanities to the forefront of our research and action on the climate crisis**

**Abstract:** *The EU has sought to stimulate interdisciplinary research collaborations for decades to enhance synergies among European research communities and to support its own policy goals. However, disparities remain in terms of overall participation, roles within cooperative research and financial contributions received which are typically fragmented in terms of research geographies particularly between the Western/Northern parts of Europe and Southern, Central and Eastern European countries [1].*

*Additionally, inequalities across epistemic cultures – e.g. Social Sciences and Humanities (SSH) at the service of Science, Technology, Engineering and Mathematics (STEM) research – results in the domination of certain disciplines over others [2] and limited cooperation between the two.*

*Furthermore, stark differences can also be seen across the transition-related thematic areas of climate, energy and mobility. It has been noted that between 1990-2018, only 0.12% of funding for climate change was directed to SSH research [3].*

*To help overcome this triple marginalisation, the authors form part of a European project to generate best practices for incorporating SSH research into policies to address climate change. One objective of the project is to help overcome fragmentation by enabling a better representation of SSH research from underrepresented research geographies, particularly Southern and Central Eastern Europe. To this end, the project ran a Call for Evidence and two workshops with climate-energy-mobility SSH researchers to create a Position Statement [4] which was submitted to the European Commission (Directorate-General for Research & Innovation) on how SSH in Southern and Central Eastern Europe can be better supported.*

*The contributing authors led the organisation of a workshop in Bilbao in 2023, with 23 SSH researchers from a wide spectrum of SSH-disciplines (e.g. psychology, sociology, STS studies, human geography) from 8 Southern European countries. As main challenges, researchers denounced the marginalisation faced by SSH researchers in this geography, precarity in contracts, lack of institutional support and recognition of the legitimacy of Southern 'ways' of doing science. As a way forward, researchers proposed to transform the logic of project-based funding, silo-based academic cultures as well as grand science narratives around innovation, competitiveness and excellence while reclaiming a Southern European research agenda.*

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**Title: Kindred Ecologies as Socioecological Practices for Youth Living Well in Turbulent Times**

**Abstract:** *What it means for young people to live well today is far from singular or settled; investigating interconnections between human and ecological well-being is crucial in the Anthropocene; the current geological time in which human's social/political actions and relations have led to ecological degradation and climate change that threatens the biosphere, human and non-human worlds (Crutzen, 2002; Haraway, 2016). Presently of polycrises, the 2022 United Nations (UN) Human Development Report identified overarching ecological, climate and social crises as causes of unprecedented declines in human wellbeing in 90% of the world's countries. The UN Secretary-General has cautioned about "a generational catastrophe" for young people. This paper invokes Mills' (1959) "sociological imagination", Furlong's (2007) "epistemological fallacy" and Haraway's (1991; 2016) "multispecies kin-making" to analyse new interrelations between young people, their practices of living well and the embedded socio-ecological contexts they now inhabit. We concur (Tilleczek, 2021; 2022) that an "epistemological fallacy" (Furlong, 2007) has hidden critical social relations from youth and must be urgently addressed so that young people are not "blind to the existence of powerful chains of interdependency...and forced to negotiate a set of risks that impinge on all aspects of their daily lives, [such that]...crises are perceived as individual shortcomings..."(Furlong, 2007, pp. 44). We present findings from our Partnership for Youth and Planetary Wellbeing project that examines overlapping social and ecological contexts and practices of young people in various locations across the Americas (including Canada, Costa Rica, Belize, Jamaica, and Chile). Likewise, we engage youth-centric participatory and anticolonial ethnographic and educative methods alongside young people and youth-serving adult communities to investigate how they live well and sustainably and how to co-design education to better support young "educational revolutionaries" (Tilleczek, 2022). Furthermore, we have developed youth advisory groups (20 youth across locations) to guide over 150 youth interviews, 60 intergenerational group dialogues, filmmaking, and artmaking. Learning alongside ecologically and socially vulnerable young people (including Maya, Williche, Maroon, Brunca, and peasant peoples) about practices of living well and sustainably affords examination of (a) various conditions under which youth socio-ecological practices occur, (b) characteristics, actors and relationships of socio-ecological practices, and (c) practical*

eco-educational possibilities arising from meeting daunting social and ecological circumstances. We show how youth fashion sets of “kindred ecologies” (Tilleczek, 2022) as spaces of intergenerational, intercultural, and interspecies climate justice practices that are educative. Engaging beyond individualism through a “sociological imagination” with/for young people’s complex “range of intricate relations” (Mills, 1959) helps to link biography, ecology, history, culture, nature, and interspecies doings. We share film and artistic works by these young people to illustrate selected “kindred ecologies” based on making relations, repairs, new knowledge, and reparations with biosphere, land, creatures, and people in community. “Self-conscious thinking” (Mills, 1959, pp. 121) and “conscientization,” as a process of becoming critically conscious about the complex state of the world through reflective action (Freire, 1970; 1981; 2004), are aspects of socio-ecological practices that are intersecting and bidirectional relationships between humans, other species, machines, and digital technologies with/in multiple symbiotic ecologies (Haraway, 1991, 2016; Tilleczek, 2014, 2019, 2020).

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**Title: The Humus participatory methodology to enhance soil health in the municipalities of the European Union**

**Abstract:** *Soil degradation reflects a lack of appreciation for the value of healthy soils for people and the planet. Within this context, the EU Mission 'A Soil Deal for Europe' (Soil Mission) aims to lead the transition to healthy soils via sustainable soil management. This requires knowledge and awareness of the importance and value of soil health and its challenges and drivers across Europe. Municipalities and regions are at the forefront of soil management, regulation, innovation, and community-building and are thus pivotal for promoting soil health. However, engaging and activating municipalities and regions across Europe to protect and restore soil health is vital for a successful Soil Mission deployment. HuMUS is the only project implementing the EU Soil Mission that is targeting public administration at local and regional levels. In particular, the research that we present within the Humus project shows a participatory approach that will be applied in 33 pilot cases to support the co-implementation of solutions to protect and restore soil health at municipal and territorial (intermunicipal) scale. This participatory approach will ensure an increased cooperation between public and private actors, such as municipal stakeholders, policymakers in charge of local and regional strategies, as well as private stakeholders and citizens. Territorial Management Agreements will be reached with key stakeholders through participatory diagnosis to identify strengths, weaknesses, opportunities, and threats around soil health that will set the basis for the co-creation of solutions for the protection and restoration of soil health will be discussed and agreed by all actors.*



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## **Title: What prevents us from behaving more sustainably? A perspective from Environmental Psychology**

**Abstract:** *Most people accept that climate change is real and that humans are at least partly*

*responsible for this problem (Steenjes et al., 2017) so we should become the main driver in the search for a solution (Schultz and Kaiser, 2012). Concern about climate change keeps growing (Capstick et al., 2015), but after decades of awareness campaigns and education programs, decisions and habits of individuals are still not environmentally friendly enough. This is known as the 'attitude-behaviour gap', a challenge at both the individual and collective level. Environmental Psychology is making great efforts to understand the reasons for the gap and encourage pro-environmental behaviours (e.g. Carrico, 2021). Existing models have repeatedly found this gap when trying to explain sustainable behaviours: considering values, attitudes or personal and social norms is not enough to explain pro-environmental behaviour.*

*In order to explain these findings, several factors must be considered. Psychological and psychosocial barriers are known to interfere with effective changes in habits and decisions that could help mitigate climate change. We should also consider that pro-environmental behaviours are very different in nature and can be promoted or hindered by specific factors.*

*In relation to the 'behavioural barriers', it has been found that people face different types of barriers, both internal and external, when attempting to change their behaviour to become more pro-environmental (Blake, 1999; Kollmuss and Agyeman, 2002; Lorenzoni et al., 2007). Studies analysing the relationship between attitudes and behaviours that have taken this type of barrier or facilitator into account have obtained better results, finding stronger associations between attitudes and behaviours (Corraliza and Berenguer, 2000; Kaiser and Gutscher, 2003). Gifford (2011), after a literature review, proposed 30 barriers grouped in 7 categories, naming them the 'dragons of inaction'.*

The study to be presented aims to understand the relation of these barriers to specific pro-environmental behaviours. With a sample of 439 participants between 18 and 85 years old ( $M=40.36$ ,  $SD=14.63$ ) (53.1% women, 46.5% men and 0.5% non-binary), we used structural equations to explore the mentioned relations. Our findings confirm the need to recognize distinct barriers to different pro-environmental actions, challenging the predominant approach of treating such behaviours as a whole. This idea has far-reaching implications for the effectiveness of interventions: targeting specific barriers and facilitators of each type of pro-environmental behaviour can significantly improve the impact of future initiatives. As the world grapples with concerns about the climate crisis, eco-anxiety, and ecological pain, our study contributes to the evolving discourse on tools and practices to address these emotional and mental health effects. This research thus addresses critical aspects of the human dimension within the broader context of socioecological practices in the era of the climate emergency.

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