




Assessing multiple values of nature in National Biodiversity Strategies and Action Plans

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Funding information

Norwegian Agency for Development Cooperation (Norad), Grant/Award Number: QZA-21/0159; Open Access Publication Fund of Humboldt-Universität zu Berlin; Alexander von Humboldt-Stiftung; Spanish State Research Agency through María de Maeztu Excellence Unit, Grant/Award Number: MDM-2017-0714

Handling Editor: Rachelle Gould

Abstract

1. Around the world, people express a variety of values of nature based on how they relate and interact with it. These values of nature, broadly classified as instrumental, intrinsic, and relational values, underlie environmental policy and decision-making processes.
2. In this paper, our aim was to assess the values of nature that are expressed in national environmental policy documents.
3. We assessed the National Biodiversity Strategies and Action Plans (NBSAPs), the key national policy framework for biodiversity conservation, from 11 countries, representing the five regional United Nations groups.
4. We used qualitative content analysis to identify the value orientation of the statements in the NBSAPs and the main themes under each.
5. Across the 11 NBSAPs, unspecified value orientation statements were the most common (40%), followed by instrumental (38%), intrinsic (14%) and relational (9%) value orientation statements.
6. We identified the main themes in the instrumental value orientation statements as follows: (1) sustainability, (2) natural resources and (3) ecosystem services. The main themes present in the intrinsic value orientation statements were as follows: (1) recognizing intrinsic value, (2) endangered species and habitats, (3) conservation programmes and (4) threats to nature. Relational value orientation statements referenced as follows: (1) duty and responsibility to protect nature, (2) values expressed for nature, (3) national pride and heritage, (4) Indigenous

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peoples and local community's (IP&LCs) relationships with nature, (5) protecting nature for future generations and (6) equity in the use and access of nature.

7. Our findings indicate that NBSAPs respond to the directive of the Convention on Biological Diversity. They are primarily based on the instrumental values of nature, only rarely considering other ways in which nature is valuable to people. This can reinforce unjust outcomes for human well-being since environmental policies may not reflect the diverse ways in which nature and biodiversity matter to the population.
8. In an increasingly interconnected world, environmental policies are called on to incorporate multiple values to achieve positive outcomes for both human well-being and biodiversity conservation.

KEYWORDS

conservation, Convention on Biological Diversity, ecosystem services, instrumental, intrinsic, relational

1 | INTRODUCTION

Across the globe, there are multiple conceptions of nature and people relate to and interact with nature in various ways (Anderson et al., 2022; Pascual et al., 2023). Broadly, what people care about in relation to nature can be described as the values of nature that people hold (IPBES, 2022a). As previous research has shown, the way people value nature influences how they make decisions about and respond to environmental policies (Barton et al., 2022; Blake, 1999). It is increasingly acknowledged that incorporating multiple values in environmental decision-making is essential for conservation initiatives to achieve sustainable and just outcomes (Díaz et al., 2018; Pascual et al., 2023).

Until relatively recently, the values of nature were classified as instrumental or intrinsic (Vilkka, 2021). Instrumental values refer to the value of nature as a means to achieve a human end, such as a source of life-supporting materials and resources (Callicott & Frodeman, 2009). Intrinsic values, on the other hand, refer to the value of other than human beings expressed independently of any reference to humans as valuers (Bremer et al., 2018; Christie et al., 2019). Recently, a third category of value, called relational values, has been recognized based on people's relationship with nature. Relational values can be defined as the preferences, principles, or virtues that people have about or based on the relationships they have with nature (Chan et al., 2016, 2018).

Historically, environmental policy was mainly driven by intrinsic or instrumental values of nature. Before the 1990s, conservation thinking was broadly framed under 'nature for itself' or 'nature despite people' narratives that prioritized wilderness and intact natural habitats without people (Mace, 2014). In the 1990s and 2000s, a narrative of 'nature for people' based primarily on instrumental values gained popularity (Mace, 2014), driven in no small part by the widespread adoption of the concept of 'ecosystem services' (MEA, 2005). Although the concept recognizes that both intrinsic

and instrumental values are important for conservation, they exclude a diversity of values and human-nature relationships, which include but are not limited to the values held by Indigenous and local user groups that have contributed to the protection of nature. By acknowledging only a subset of homogeneous or dominant values of biodiversity, environmental policies and programmes are likely to deliver suboptimal outcomes (Lockwood, 2012). In this light, scholars from various disciplines call for a new, more holistic understanding of human-nature relationships that incorporates multiple values of nature (Mace, 2014).

It is unclear whether this recent, larger recognition of the multiple values of nature in the scientific literature and conservation discourse has found uptake in environmental policy. In this paper, our aim was to understand which values of nature are referred to in national environmental policy documents. Exploring multiple values in environmental policy provides insight into the coupled nature of social-ecological systems (Arias-Arévalo et al., 2017). It also offers new intervention points, helps us frame values as indirect or direct drivers of change (Jones et al., 2016), streamline management interventions that align with people's values (Ives & Kendal, 2014) and identify consensual and conflicting values associated with management approaches (Jacobs et al., 2016).

We use the National Biodiversity Strategies and Action Plans (NBSAP) to study the government perceptions of human values of nature in different countries. The NBSAPs were chosen for this study because they are the key national policy framework for biodiversity conservation, reflecting the government's commitment and priorities, its understanding of the value of biodiversity and its strategy to protect it. The NBSAPs are the main instrument for implementing the Convention on Biological Diversity (CBD), an international legal instrument ratified by all United Nations (UN) member states (except the United States). CBD member parties (member countries) advance the CBD objectives for conservation, sustainable use, and equitable sharing of biodiversity benefits by developing and implementing

NBSAPs. NBSAPs are intended to be tools to integrate the conservation and sustainable use of biological diversity into sectoral and cross-sectoral planning (Article 6), and to promote biodiversity mainstreaming in national decision-making (Article 10). Although it is not mandatory to develop an NBSAP or to submit periodic national reports on its implementation (Article 26), 193 out of 196 contracting Parties have submitted at least one NBSAP to the CBD since the tenth meeting of the Conference of the Parties (COP10) in 2010 (<https://www.cbd.int/nbsap/about/latest/>). They were the key tools intended to facilitate the achievement of the Aichi Biodiversity Targets (2010–2020) (Decision IX/8; CBD, 2008) and will continue to be fundamental in fulfilling and monitoring the progress of the Kunming-Montreal Global Biodiversity Framework. Previous research has used NBSAPs to examine different aspects related to nature conservation and management such as mainstreaming biodiversity in national economic and development policies (Whitehorn et al., 2019), investigating the inclusion of integrated approaches in sustainable management of production landscapes (Uetake et al., 2019), and exploring the potential for individual behaviour change (Rode et al., 2022).

The *specific objective* of this paper was to explore the diverse conceptualizations of the values of nature currently reflected in the NBSAPs. We analyse NBSAPs submitted by 11 countries representing a diverse array of case studies from the five regional UN groups. We set up a qualitative content analysis protocol to (i) identify and code the main text of the NBSAPs considering a value typology that includes instrumental, intrinsic, relational, unspecified, 'not value orientation statement', or uncertain, and (ii) thematically analyse the value orientation statements. This knowledge is important because it highlights the values of nature articulated in the NBSAPs and which values are currently overlooked, identifying opportunities for further engagement.

2 | METHODS

We used qualitative content analysis (Hsieh & Shannon, 2005) to identify (1) the value orientation of statements in the NBSAPs and (2) the themes covered by each type of value orientation statement. Studies employing a similar methodology with success have been conducted in several fields, including environmental policy (see, e.g., Huang et al., 2010; Maczka et al., 2016), but so far, few attempts have been made to analyse value orientations underpinning environmental policy documents (IPBES, 2022b). The methodological approach used during this study consisted of three overarching phases: document identification and selection, study design and pilot, and document analysis.

2.1 | Identification and selection of documents

After an initial evaluation of relevant policy documents, 11 NBSAPs from countries in the five regional groups of the UN were selected for further analysis (Table 1). The documents were selected following

several predetermined criteria: (a) The NBSAPs had to be in English, since English was the common language understood by all the authors. We chose to use a single language to minimize misconstruing language-specific concepts/meanings (Anderson et al., 2022); (b) the NBSAPs should be distributed across the five different UN regional groups to capture different regions; and (c) the selected nations, within each UN region, should reflect a broad variety in biology, climate and socio-economic backgrounds (Appendix S1). Countries were randomly chosen within each UN region, and if they did not meet criteria (a) or (c), they were replaced by another randomly chosen country. Table 1 presents the final selection.

2.2 | Study design and pilot study

2.2.1 | Creating the code book

Intercoder reliability is key to ensuring the validity and reproducibility of any study with multiple coders (Macphail et al., 2016). To ensure and assess intercoder reliability in our coauthor team, we followed the approach described by Lombard et al. (2002). A code book with an initial set of guidelines was created to categorize instrumental, intrinsic and relational value orientations, based on an extensive literature search. A fourth coding category, unspecified value, was added for statements in which the value orientation was alluded, but the specific type of value orientation could not be discerned (Table 2). These guidelines were tested in a preliminary coding exercise, where the coauthors split into groups of three or four to code 20 pages of an NBSAP document. The aim of this exercise was to familiarize all

TABLE 1 National Biodiversity Strategies and Action Plans analysed, the year they were submitted to the Convention on Biological Diversity, and the United Nations regional group of each country.

Country	Year submitted	UN regional groups
Angola	2019	African Group
Australia	2011	Western Europe and Others Group
Bhutan	2014	Asia and the Pacific Group
Czech Republic	2016	Eastern European Group
Egypt	2016	African Group
Germany	2016	Western Europe and Others Group
Guyana	2015	Latin American and Caribbean Group
Malaysia	2016	Asia and the Pacific Group
Russia	2015	Eastern European Group
Saint Vincent and the Grenadines	2018	Latin American and Caribbean Group
Turkey	2019	Western Europe and Others Group

authors with the categories and coding process and to identify how the guidelines could be further improved. Building on the experience and results of this preliminary analysis, the initial guide was revised and expanded to a more comprehensive 'code book'. It had clear definitions, guidelines and a database with examples for each type of value orientation. Following the completion of the code book, a formal pilot was conducted to test the validity of the codes.

Coding units were sentences defined as an orthographic unit beginning with a capital letter and ending with a full stop. The value orientation of each of these statements was coded using Taguette, a free web-based platform developed for the analysis of a large set of qualitative data (Rampin, 2021). Each sentence was assigned the following codes: instrumental, intrinsic, relational, unspecified, 'not value orientation statement', or uncertain. Some statements were assigned multiple value orientation codes if they contained different value orientations. In cases where the uncertain code was used, the appropriate code was assigned after a joint discussion with the coauthor team. This exercise was used to further strengthen and refine the final codes (Table 2).

2.2.2 | Intercoder reliability

Each author was designated as the primary coder of one document and the secondary coder of another, and all coding was done following the codebook described in 2.2.1. The first 30 pages of each NBSAP were coded by both primary and secondary coders, and the level of intercoder reliability was calculated using Cohen's kappa (Cohen, 1960). As Cohen's kappa is a relatively conservative index (Neuendorf, 2010), the minimum acceptable reliability level was set at a kappa value of 0.8. This indicates a minimum of 65% of intercoder agreement, which is considered a strong level of agreement

between the coders (Mchugh, 2012). The pilot results showed a kappa value between 0.85 and 0.99, with an average value of 0.96, indicating a high level of agreement between coders and a shared understanding of the definitions for each code.

The full analysis of the 11 NBSAPs (one per coauthor) began after the completion of the 'code book' and the intercoder reliability test. During the full analysis, all coders engaged in regular dialogue to discuss challenging sentences. Once all NBSAPs had been coded, each category of value orientation statements (instrumental, intrinsic, relational and unspecified) was re-examined by a subgroup of coders to address discrepancies or uncertainties.

2.3 | Data analysis

Analysis of the coded material explored (1) the distribution of the different value orientation statements in the country NBSAPs and (2) themes in each type of value orientation statement. The distribution of value orientation statements between countries was visualized through bar graphs created in Excel. The coded statements were then read and themes were manually identified for each type of value orientation.

3 | RESULTS

3.1 | Distribution of the value orientation of the statements in the NBSAPs

In total, 12,084 statements were coded for value orientation in the NBSAPs of 11 countries from all five UN Regional Groups. Of these, 6934 statements (57%) received a value orientation code

Code	Description
Instrumental	<ul style="list-style-type: none"> Nature is described as valuable or useful for humans ends Mentions of provisioning services, regulating services, economic benefits, natural capital, stocks and harvests, use of nature (tourism/recreation was tagged as instrumental unless an explicit relational aspect was mentioned)
Intrinsic	<ul style="list-style-type: none"> Nature is described as valuable regardless of humans Nature is valuable for natural (nonhuman) ends (e.g., forests must be preserved as habitats for animals) Nature as having a right to exist undisturbed by humans
Relational	<ul style="list-style-type: none"> Meaningful relationships with nature Links between nature and culture, identity, traditions, traditional knowledge, fairness, environmental justice and rights, sharing, future generations, heritage, responsibilities, human beings as a part of nature and quality of life References to personified nature (e.g., 'Mother Earth')
Unspecified	<ul style="list-style-type: none"> Value or importance of nature is implied, but no direct link to instrumental, intrinsic or relational values (e.g., 'our coastal and marine areas house important ecosystems'; 'we have safeguarded all our key ecosystems, species and genetic diversity')
Not value orientation statement	<ul style="list-style-type: none"> Sentence does not imply value, or value statement does not link to nature. Purely biophysical language that is only descriptive (e.g., 'there are an estimated 15,000 species of plants in the country')

TABLE 2 Coding criteria for the value orientation of the statements.

(instrumental, intrinsic, relational, unspecified or a combination of the different codes). Unspecified value orientation was the most common (40%), followed by instrumental (38%), intrinsic (14%) and relational (9%). Of the statements analysed, 21% demonstrated a combination of any two value orientation codes (instrumental, relational and intrinsic), with the instrumental and relational value orientation codes co-occurring the most (14%). A smaller portion (1.4%) of the statements incorporated the three value orientation codes (instrumental, relational and intrinsic).

At the level of individual country NBSAPs, Germany had the highest percentage of unspecified value orientation statements (57%), and Egypt had the lowest percentage of unspecified value orientation statements (26%). Guyana had the highest percentage of instrumental value orientation statements (48%) followed by Egypt (47%). Germany's NBSAP had the lowest percentage of instrumental value orientation statements (17%). The NBSAP of Australia had the highest percentage of relational value orientation statements (18%) and St Vincent and the Grenadines had the lowest percentage of relational value orientation statements (2%). Russia had the highest percentage of intrinsic value orientation statements (18%) and Bhutan had the least intrinsic value orientation statements (9%). Figure 1 shows the breakdown of the values orientation statements by country NBSAPs and the aggregate between countries.

3.2 | Themes in the value orientation statements

The most common themes in the manifestation of *instrumental value orientation* in the NBSAPs were related to ideas of sustainability, natural resources, and ecosystem services. We further expand on these themes below. In many instances, the themes overlapped, were interrelated, and were often used within the same statements.

1. Sustainability: These types of statements recognized that human well-being was dependent on nature, so the use of nature had to be sustainable to ensure future well-being. They covered topics such as 'sustainable exploitation' of different abiotic and biotic resources, and in several instances, specific species (e.g., seals in Angola's NBSAP) or production systems (e.g., agriculture, fisheries and timber) were named. Sustainable use of natural resources was described as a way to achieve international conservation and sustainability goals, such as the Millennium Development Goals and the Aichi Biodiversity Targets. The need for more research on sustainability, education on concepts of sustainability, and the development of skills and capacity for sustainable use was recognized. The statements referred to sustainable governance, management, and the creation of frameworks for sustainable use. Unsustainable use of resources was recognized as a threat to biodiversity in some cases. The sustainable use of resources was considered a strategy to mitigate the impacts of climate change. Some NBSAPs recognized that local and Indigenous communities had traditional practices related to sustainable use and that their inputs had to be incorporated in the development of sustainable management plans. Several NBSAPs stated that societal change in consumption patterns and new approaches to resource use are needed for sustainable use. This theme also related to ideas of sustainable development linked to the use of nature to combat poverty, create jobs and diversify the economy, and the 'use' of nature for national interest.
2. Natural resources: In the NBSAPs, natural resources, which included biotic, abiotic, renewable and non-renewable resources, were often placed in the context of sustainable use. Natural resources were considered assets that should be 'used', 'extracted' or 'exploited'. Unsustainable or overuse of natural resources was often referred to as the cause of the current environmental crises. In some instances, the negative impacts of natural resource

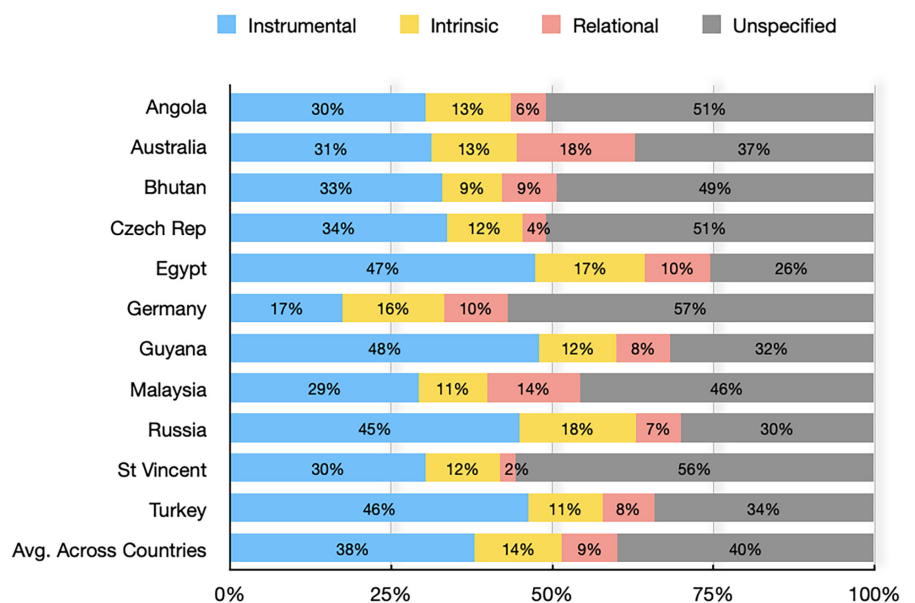


FIGURE 1 Distribution of value orientation statements in the National Biodiversity Strategies and Action Plans.

extraction on other biodiversity and ecosystem services were mentioned. All NBSAPs also explicitly recognized that the use of natural resources was crucial to human well-being, while some NBSAPs recognized that they were important from the scale of local and Indigenous communities to the national level. They mentioned the need to build capacity for the sustainable use of natural resources. The inclusion of Indigenous communities in management planning and their traditional knowledge of the use of natural resources was also recognized.

3. Ecosystem Services (ES): ES appeared in the context of accounting, economic valuations, national-level assessments, and ecosystem-specific or ES-specific valuations. In several cases, NBSAPs mentioned that nature needed to be conserved to protect ES, and that environmental degradation leads to decreased ES and human well-being. They recognized the national economic dependence on ES and the importance of ES related to production systems, especially agriculture. They highlighted the gap in understanding ES, and the need for more research on human dependence on ES, links to human well-being, changing trends in the provision and use of ES, information for effective management of ES, and climate change impacts on ES. Many countries expressed a lack of capacity and resources for ES valuations and the need to articulate ES in meaningful ways for decision-makers. Some statements related to ES restoration in general as well as with respect to specific ES such as pest control and soil erosion. Some NBSAPs found conservation programmes based on ES concepts such as Payments for ES, particularly attractive as they could generate revenue to support conservation. Some NBSAPs specifically recognized the dependence of local and Indigenous communities on ES. Finally, in all NBSAPs, the need to build resilience for ES production, raise awareness of ES and develop better governance and management systems was stated.

The main themes in the manifestation of *intrinsic value orientation* in the NBSAPs were as follows: (1) recognizing intrinsic value, (2) endangered species and habitats, (3) conservation programmes and (4) threats to nature.

1. Recognizing intrinsic value: In the NBSAPs, these types of statements explicitly recognized the intrinsic value of biodiversity or habitats and the 'needs' of nature. For example, 'We share the Earth with many other life forms that should be conserved for their own sake' as stated in the Australia NBSAP and 'Biodiversity is also held by many to have intrinsic values' as stated in the Malaysia NBSAP. Some of these statements also referred to the rights of nature.
2. Endangered species and habitats: These types of statements referenced protecting endangered/endemic/or rare species and habitats that were threatened or support such species, for their intrinsic value. They referred to the importance of ecological factors crucial for endangered species, such as ecological corridors, spawning and nesting grounds. They also included statements that called for the identification of areas of 'high biodiversity

value' and the assessment of the status and trends of endangered species.

3. Conservation programmes: In the NBSAPs, such statements referenced conservation programmes, management or policies such as the establishment or increasing coverage of protected areas, mapping and zoning of ecologically sensitive areas, species reintroductions, extension of fenced areas, increasing policing of conservation areas, policies related to illegal trade and poaching, or conservation of specific species. These statements also made a clear distinction between humans and 'nature' and often referred to 'wild' or 'intact nature', with conservation programmes established with this distinction, clearly stating that these areas had to be free from human pressures. For example, from Bhutan's NBSAP, 'Large natural areas, which are not directly influenced by humans, are the only places where natural processes can be in their natural form'.
4. Threats to nature: These statements recognized the multiple threats to biodiversity and habitats, most of which were anthropogenic, such as illegal wildlife trade, poaching, prevention of the introduction of invasive alien species and environmental disasters such as oil spills.

The main themes in the manifestation of *relational value orientation* in the NBSAPs were classified as follows: (1) duty and responsibility to protect nature, (2) values expressed for nature, (3) national pride and heritage, (4) Indigenous peoples and local community's (IP&LCs) relationships with nature, (5) protecting nature for future generations, and (6) equity in the use and access of nature.

1. Duty and responsibility to protect nature: These types of statement relate to the duty and responsibility of humans/citizens to protect nature. For example, 'collectively, we have a civic responsibility to help sustain our planet', from the Australia NBSAP. Responsibility to protect nature was considered a social, private or public responsibility in different NBSAPs.
2. Values expressed for nature: These types of statements recognized a variety of different values expressed for nature with 'care' being the most prevalent. The Czech Republic NBSAP also recognized that in some instances biodiversity is lost due to lack of care, 'On the other hand, heavily influenced habitats, almost conditional on human activity, disappear for the opposite reason, due to lack of care, especially the absence of traditional and nature-friendly practices in the past bound to small agricultural activity'. Other values for nature expressed in the NBSAPs included solidarity, living in harmony with nature, nature as nurturing, recognizing human interdependence with nature, spiritual values, wonder, awe, appreciation and love for nature. These statements also recognized cultural services provided by nature, such as for sport, education, art, tourism and social and cultural well-being.
3. National pride and heritage: These types of statements recognized nature or specific species/habitats as a national pride and heritage of the country and were often linked to national identity.

Nature was referred to as a 'cultural heritage', a 'national symbol' or 'iconic'. Specific species were considered national or cultural symbols. For example, in the Malaysian NBSAP, 'The Malayan tiger is featured on the country's coat of arms and many other logos where it symbolizes strength and courage'. In some cases, biocultural sites were declared heritage sites.

4. IP&LCs relationship with nature: These types of statements referred to IP&LCs, their relationship with nature, Indigenous local knowledge (ILK), traditional healers and traditional ecosystem management systems. It was recognized that IP&LCs have a special relationship with nature, are 'important guardians', 'stewards', and their management practices have contributed to the protection of nature. Sacred spaces, abodes of deities and medicinal plants were specifically mentioned. The need to involve IP&LCs in environmental management and conservation and, in some instances, increase the land managed by them, was also acknowledged. The importance of acknowledging, supporting and maintaining ILK while preventing misappropriation, was mentioned. The ongoing loss of ILK was also recognized.
5. Protecting nature for future generations: These types of statement referred to the need to protect nature for future generations, the responsibility towards future generations, leaving a natural legacy, and intergenerational justice and equity.
6. Equity in the use and access of nature: These types of statements included the fair and equitable use of nature for all people, especially IP&LC.

The *unspecified value* statements implied nature's value without explicitly specifying why they are important. These statements were predominantly either descriptive or concerned with policies or actions related to nature.

4 | DISCUSSION

Our study reveals valuable insights into the distribution of value orientation statements in the 11 NBSAPs. Although the NBSAPs referred to multiple value orientations, the documents do so to differing extents. The largest portion of the statements in the NBSAPs reflected an unspecified value of nature, referring to the value of nature in an ambiguous way. This indicates that a significant portion of the value orientation statements in the NBSAPs do not explicitly specify the reasons for valuing nature, potentially missing an opportunity to emphasize the importance of biodiversity conservation. A possible explanation is that these statements were deliberately kept vague to build agreement and/or offer multiple interpretations for policy action (Moore, 2011). Language ambiguity is often used as a tool among decision-makers to create superficial consensus to allow progress between multiple parties (Jegen & Mérand, 2014). At the same time, ambiguity can create policies with unclear goals that reduce the efficacy of environmental outcomes (Engebretsen et al., 2017) and delay tough political choices (Moore, 2011). Ambiguity may also contribute to hiding injustices towards less powerful stakeholders whose values are often excluded

(Lliso et al., 2022). For example, if we take the statement 'revitalise all forest reserves in the country' from the Angola NBSAP, it implies an underlying value about the importance of forest reserves, but the type of value is left vague. This provides several different options for 'revitalization'. Hypothetically, the state department could be the more powerful stakeholder, and they could 'revitalize' the forest reserves through restricting local community use, who might have relied on the reserves for generations. In this hypothetical instance, failing to explicitly recognize the multiple values of the forest reserve can lead to injustices for the local community.

Among the explicit value orientation statements, instrumental value orientation was the most common, followed by intrinsic value orientation. Relational value orientation statements were the least present. The NBSAPs were originally conceptualized so that countries could develop national plans for 'conservation and sustainable use of biodiversity' (Article 6) and integrate biodiversity into sectoral and cross-sectoral plans (Article 10). As one of the original primary goals of the NBSAPs is instrumental, it is perhaps unsurprising that instrumental value orientation statements, that is, values ascribed to nature as a means to a human end, were the most predominant. On the one hand, explicit recognition of human dependence on nature is useful. On the other hand, a narrow focus on instrumental values can come at the expense of other well-being outcomes (IPBES, 2022a, 2022b; Pascual et al., 2023).

'Sustainable use of biodiversity' was one of the motivations for the development of NBSAPs and this was reflected in the most common manifestation of instrumental value orientation. However, an important point to note is that even though the term sustainability was often used, it was rarely clearly defined in any of the NBSAPs; nor were there indicators or frameworks for identifying or measuring sustainability. The terms 'sustainability', 'sustainable use' and 'sustainable development' have long been criticized for their ambiguity and lack of clear definition, which makes them poorly suited to measure and implement practices effectively (Holden et al., 2014; Hopwood et al., 2005). If these terms are not clearly defined, this poses a danger of 'greenwashing' or legitimizing cross-sectoral exploitation of natural resources and biodiversity (Graedel & Klee, 2002).

The theme of ES being frequently present in the NBSAPs is probably a reflection of the popularization of the concept and policy instruments based on it, such as Payments for ES and Reducing Emissions from Deforestation and forest Degradation (REDD+), over the last 20 years (Corbera & Schroeder, 2011; Wunder, 2005). These are particularly attractive concepts, as they offer the potential for sustainable financing for conservation (Hein et al., 2013).

Creating plans for 'conservation' is another important motivation for NBSAPs, which could implicitly assume intrinsic, instrumental or relational value, since the value orientation is not specified. However, intrinsic or relational value orientation statements were poorly represented in the NBSAPs. The term conservation, historically, is rooted in western worldviews and often, but not always, implies intrinsic value with a clear separation between people and 'nature' (Kohler et al., 2019). Conservation practice has commonly

focused on measures that prioritize intrinsic value, including restricting extractive use, such as strictly protected areas, fencing, and hunting bans (Anderson et al., 2022). This has changed slowly, especially over the last two decades, with a broader recognition of other means of protection, such as community-based conservation measures (Mishra et al., 2017; Young et al., 2021). This was reflected in the NBSAPs we reviewed. Strict measures that prioritize intrinsic value, and exclude human use, were the most proposed methods for conservation. However, there was an increasing recognition of other measures such as Indigenous protected areas and biosphere reserves.

Relational values offer an alternative motivation for designing conservation interventions, beyond purely utilitarian or intrinsic motivations (Klain et al., 2017). While the term 'relational values' is relatively new, the concepts and issues associated with these values have long been discussed in the literature, without necessarily using the specific terminology (Stålhammar & Thorén, 2019). The relational value category offers a means to explicitly acknowledge the different ways that nature matters to people based on relationships with and responsibilities to nature (Himes & Muraca, 2018). The NBSAPs recognized relational value orientations to a limited extent, with a large focus on the relationship that Indigenous people have with nature. This is especially relevant, as Indigenous people have long faced injustices perpetrated by top-down conservation (Bontempi et al., 2023). However, the overall lack of recognition of relational values from NBSAPs excludes vital motivations for protecting nature and disregards the multitude of intangible ways that people around the world value nature (Pascual et al., 2023). All countries have a heterogeneous population, and it is important to reflect the diverse relationships people have with nature in the NBSAPs. Recognizing and embedding relational values in the policy discourse can have the potential to function as leverage points for achieving more effective environmental policy, as articulating environmental conservation policies with locally held values is likely to increase their effectiveness (Amaruzaman et al., 2022; Horcea-Milcu et al., 2023; Lliso et al., 2021).

Our study had several limitations. Firstly, we analysed only 11 policy documents; although they were from different UN regions, they are unlikely to be globally representative. As these policy documents are long, manually analysing them takes a substantial amount of time. Future studies could address this limitation by using artificial intelligence to analyse a larger set of NBSAPs. This attempt can be considered a hypothesis-generating study for future research. Secondly, we were able to analyse only NBSAPs written in English or translated into English that excluded NBSAPs from other parts of the world, such as Francophone and Hispanic countries. The NBSAPs that were translated may have lost some of their original meaning during the translation process. Third, our coding unit was at the level of a sentence, which could have led to a larger number of value statements that had an unspecified value, as the core value claims could have been expressed earlier in the paragraph. However, we feel that the proportion of these statements likely to have been influenced by a previous value statement is fairly small and unlikely

to influence our overall conclusions. We welcome further research on the values reflected in NBSAPs, to form a more comprehensive picture of the values shaping national conservation policies.

5 | CONCLUSION

In this paper, we analysed the multiple values of nature expressed in NBSAPs, a key national policy framework for biodiversity conservation under the CBD. The motivation for the development of the NBSAPs comes from Article 6 which specifies 'conservation and sustainable use'. Our analysis shows that the NBSAPs have responded specifically to this, with a predominant focus on instrumental value.

Why is it important to consider multiple values in policy documents? Values form the basis of policy design which influence human action and outcomes for biodiversity and human well-being (Pascual et al., 2023). An overly strong focus on instrumental values can risk undermining internal conservation motivations, as illustrated by the effects of unintended crowding-out of internal motivations caused by payments for ES schemes with strong instrumental framings (Lliso et al., 2021; Rode et al., 2015), while focusing exclusively on intrinsic values can sometimes result in increased conflicts and environmental injustices (Bontempi et al., 2023). Instruments built around relational values are speculated to enhance existing conservation motivations, as they include values of nature in ways that are already important to multiple stakeholders, potentially reinforcing conservation support (Horcea-Milcu et al., 2023; Lliso et al., 2021). For example, relational values have been used to bridge Indigenous and western worldviews, reinforcing existing values of nature, and in some instances have led to successful collaborative multi-stakeholder natural area management (Pratson et al., 2023). Recent international assessments such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Values Assessment have also emphasized this inclusion of relational values (IPBES, 2022a, 2022b; Pascual et al., 2023). Embedding relational values into policy may require, among other things, raising the awareness of the importance of these values among policymakers (IPBES, 2022a, 2022b; Skubel et al., 2019). Only by bringing the existence of relational values to people's attention can they be considered, assessed and subsequently incorporated into decision-making.

We recommend that the CBD guidance for future NBSAPs be expanded to explicitly articulate relational values, along with the existing articulation of instrumental and intrinsic value. Furthermore, as a national policy plan, NBSAPs could accommodate diverse values of nature to align policy goals with the different ways in which nature and biodiversity are important to the population of countries, including IP&LC and other groups who tend to be marginalized. We hope that as academic discussions on relational values progress and as they gain prominence, they will find more traction in environmental policy formation. In an increasingly interconnected world, an endorsement of multiple human values of nature by academia and policy is required to achieve positive outcomes for both human well-being and biodiversity conservation.

AUTHOR CONTRIBUTIONS

Ranjini Murali: Conceptualization; method/study design; writing coordination+meeting lead; data acquisition; data analysis and interpretation; section lead and synthesis—final/whole; drafting and reviewing—original+reviewing/editing; references; final review+submission. Bosco Lliso: Conceptualization; method/study design; writing coordination+meeting lead; data acquisition; data analysis and interpretation; section lead and synthesis—methods+results; drafting and reviewing—original+reviewing/editing; references; final review+submission. Lelani Mannetti: Conceptualization; method/study design; writing coordination+meeting lead; data acquisition; data analysis and interpretation; section lead and synthesis—discussion; drafting and reviewing—review/editing; references; final review+submission. Anna Filyushkina: Conceptualization; method/study design; writing coordination+meeting lead; data acquisition; data analysis and interpretation; section lead and synthesis—intro; drafting and reviewing—original+review/editing; references; final review+submission. Håkon da Silva Hyldmo: Method/study design; data acquisition; data analysis and interpretation; drafting and reviewing—original (methods)+review/editing; references; final review+submission. Natalia Lutti: Method/study design; data acquisition; data analysis and interpretation; drafting and reviewing—review/editing; references; final review+submission. Evonne Yiu: Method/study design; data acquisition; data analysis and interpretation; drafting and reviewing—review/editing; references; final review+submission. Sacha Amaruzaman: Method/study design; data acquisition; data analysis and interpretation; drafting and reviewing—review/editing; references; final review+submission. Ann-Kathrin Koessler: Data acquisition; data analysis and interpretation; drafting and reviewing—review/editing; references; final review+submission. Dominic Lenzi: Data acquisition; data analysis and interpretation; drafting and reviewing—review/editing; references; final review+submission. Ariane Amin; Method/study design; data acquisition; data analysis and interpretation; final review+submission.

ACKNOWLEDGEMENTS

As Fellows in the IPBES Values Assessment, we would like to thank the IPBES fellowship programme and the Technical Support Unit on Capacity-Building for giving us the opportunity and support to participate in the assessment. We would especially like to thank Sofia Ana Monroy and Cem Iskender Aydin, and the Value's Assessment Technical Support Unit for their support. We also thank all the authors of the Values Assessment for shaping the way we think about human values of nature. We would like to thank the editorial team at People and Nature, and the anonymous reviewers for their thoughtful, insightful and detailed comments that helped improve the manuscript. We acknowledge support by the Open Access Publication Fund of Humboldt-Universität zu Berlin. Open Access funding enabled and organized by Projekt DEAL.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT

The data for the manuscript are available here: <https://doi.org/10.5281/zenodo.10939473>.

POSITIONALITY STATEMENT

The authors of this paper were all fellows in the IPBES Values Assessment, which was approved by the member states at the IPBES Plenary in 2022.

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DATA SOURCES

Data Sources used for Appendix S1.

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World Bank. (2019). Indicators. <https://data.worldbank.org/indicator/>

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

Appendix S1.

How to cite this article: Murali, R., Lliso, B., Mannetti, L. M., Filyushkina, A., Amaruzaman, S., Amin, A. M., Hyldmo, H. d. S., Koessler, A.-K., Lenzi, D., Lutti, N., & Yiu, E. (2024). Assessing multiple values of nature in National Biodiversity Strategies and Action Plans. *People and Nature*, 6, 1355–1365. <https://doi.org/10.1002/pan3.10645>