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Synthesis, part of a Special Feature on Beyond the Assessment on the Diverse Values of Nature: Hidden gems, Biases, Frontiers, Challenges, and Insights

Sustainability-aligned values: exploring the concept, evidence, and practice

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ABSTRACT. Modern environmental thought has always involved normative claims about the values needed for sustainability. This has often played out in debates between proponents of anthropocentric and ecocentric ways of valuing nature. More recently, there has been a flourishing of interest in relational and pluricentric ways of valuing nature, coinciding with a "turn to values" in the sustainability literature. In this paper we explore the meaning and use of the term "sustainability-aligned values." Following the 2022 IPBES Values Assessment we consider these as values that are crucial for shaping decisions that will help bring about sustainability. Our characterization of sustainably-aligned values assumes inherent pluralism because of diverse interpretations of sustainability and of pathways toward it. Nevertheless, a review of three bodies of literature suggests that there is considerable agreement about the kinds of values that align with sustainability. In particular, the nurturing of certain relational values is now widely seen as supportive of sustainability, including values regarding what matters in human interactions with nature (such as stewardship), and values regarding relationships between humans (such as collectivism). We proceed to pose critical questions about the proposition that certain values support sustainability. We ask whether this emerging body of thought is consistent with pluralist requirements to foster values diversity, whether an agenda to nurture values aligned with sustainability is actionable, and how mobilizing sustainability-aligned values entails addressing power imbalances.

Key Words: *IPBES; justice; relational values; sustainability; sustainability-aligned values; values of nature*

INTRODUCTION

Although expressions of environmentalism vary widely, scholars have proposed that the roots of the environmental crisis lie in the domination of values that are not conducive to sustainability (Callicott 1995). Historical perspectives have highlighted how modernist cosmologies, stimulated by the European scientific revolution and Enlightenment, have led to worldviews in which humans are separate from and superior to nature; and where domination of nature is a valued goal (Leopold 2003, Washington et al. 2021) that goes hand in hand with domination of other humans through, e.g., patriarchy (Merchant 1980, Shiva 1988, Plumwood 2002) and coloniality (de Sousa Santos 2014, Gilio-Whitaker 2019, Quijano 2020). The derivative "great transformation" to market economies (Polanyi 1944) has also been linked to the triumph of individual profit over community, the domination of materialist values, and of ways of valuing nature that separate and objectify it as an entity to be controlled and instrumentally used (Naess 1990). Such perspectives contrast deeply with worldviews of oneness with nature and philosophies of good living that are associated with collective good quality of life among humans and other-than-humans. For instance, worldviews consistent with living with nature are held by many Indigenous Peoples and local communities (IPLCs) around the world, exemplified by the philosophies of *buen vivir* (good living) in the Andes, *ubuntu* (humanity toward others) in Africa, *Satoyama* (traditional cultural landscape) in Japan, or the Ghandian economy of permanence in India (IPBES 2022a). Thus, the contemporary environmental crisis is viewed as having deep roots that are embedded in historically dominant ways of knowing the world and maintained by a political economic system that primarily values nature for its contributions to the material prosperity of a subset of the human population (Muradian and Gomez-Baggethun 2021, Pascual et al 2023a). This dominant worldview forecloses on the myriad other ways that nature is valued by humans and in its own right (Callicott 1995), including those that recognize the active agency of plants and animals (e.g., Zent 2009). It is strongly associated with a form of political economy that is short-termist (Krznaric 2020) and dependent on societal hierarchies, inequalities and extractive practices to sustain its goal of capital accumulation (e.g., Harvey 2010).

According to a values-oriented framing of the environmental crisis, transformative change toward justice and sustainability will require (amongst other things) fundamental reconfigurations to the sets of values that dominate decisions and behaviors at multiple scales (IPBES 2022a, Pascual et al. 2023a). This view has been developed across many scholarly traditions, for example, in calls for more

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biocentric and ecocentric values in Euro-American environmental ethics (Leopold 2003, Naess 2017); in Indigenous and non-Indigenous philosophies that call for the attribution of rights-holding personhood to more-than-human nature such as plants, rivers, and mountains (Ojalehto Mays et al. 2020, Washington et al. 2022); and in sustainability science that calls for greater emphasis on the significance of reciprocal relationships between people and nature (Chan et al. 2016). These and other calls for non-instrumental ways of valuing nature are already producing new institutional arrangements (such as the constitution of Bolivia), new theoretical propositions (such as feminist decolonial propositions; Murrey 2018), and local to global management strategies Gómez-Baggethun 2015, Kozar et al. 2019). Although questions remain about the extent to which the values people hold become enacted in pro-environmental behaviors, we are also seeing emerging movements around the world that involve consciously activating relational values of reciprocity, care, responsibility, and interconnectedness with nature, for example, through mindfulness, meditation, yoga, slow food, strengthening of ancestral practices, and fostering communal perspectives (Wamsler 2018, Raymond and Raymond 2019, Jackson 2021).

The IPBES Values Assessment (IPBES 2022a) provides evidence of the need to confront the contemporary "values crisis" (Pascual et al. 2023a). This will require interconnected actions at different levels of intervention, including actions to reveal and institutionalize more diverse values (Vatn et al 2024), to enable expression of previously marginalized values, to change and develop new values, and to revitalize and empower sustainability-aligned values that have, over time, been eroded through coloniality and other forms of dominance (Rodriguez 2022, Horcea-Milcu et al 2023).

The typology of values created by IPBES (2022a) has a series of layers denoted as "worldviews and knowledge systems," "broad values," "specific values," and "value indicators." Worldviews are the "lenses" through which individuals and groups perceive and interpret the world, including their perceptions of reality. IPBES focused on nature-related aspects of worldviews: anthropocentric worldviews prioritize humans over other species; bio/eco-centric worldviews place importance on living beings or nature as a whole; and pluricentric worldviews focus on the reciprocal, intertwined, and embedded relationships between humans and other beings (Anderson et al. 2022, Pascual et al. 2023b, Raymond et al. 2023). Worldviews are connected with knowledge systems that are cumulative bodies of knowledge, practices, and beliefs (e.g., academic, Indigenous, and local), which are learned or transmitted within and across generations (Raymond et al. 2023).

Broad values are the life goals and guiding principles that constitute desirable people-nature relationships, which arise from particular worldviews and knowledge systems and transcend geographic or cultural contexts (Anderson et al. 2022, Pascual et al. 2023a). They guide behavior. For example, individuals holding strong biospheric values as guiding principles are more likely to engage in pro-environmental behavior within specific situations (de Groot and Steg 2010, Raymond and Kenter 2016). In contrast, specific values are judgments regarding the importance of people, places, or things in specific contexts including biodiversity, people-nature relationships, and human well-being. Specific values include instrumental, intrinsic, and relational values. Value indicators are quantitative measures or qualitative descriptors of specific values. Importantly, vertical interactions exist across these layers of the values typology, which help explain how worldviews shape broad and specific values, for example, how anthropocentric worldviews share utility-oriented broad values (Raymond et al. 2023). Horizontal interactions also exist within layers of the values typology, for example interactions between different worldviews can help explain how people sometimes express divergent or overlapping values for, e.g., biodiversity and ecosystems (Raymond et al. 2023). Moreover, complex feedbacks across vertical and horizontal connections occur in contexts of power relations, determining how decisions are made and whose interests these serve. For instance, contexts of power in which particular societal groups have dominated (e.g., the Global North, men, etc.) has gone hand in hand with the dominance of particular anthropocentric worldviews that reduce nature to a producer of goods and that favor instrumental values of nature over relational ones. Feminist scholarship has been at the forefront of understanding such "intersections" between domination of some people (e.g., through patriarchy or coloniality) and domination of nature, exploring how these are mutually tied in to prevailing ideologies that privilege some stakeholder's values and interests over others (e.g., Merchant 1980, Shiva 1988, Plumwood 2002). Dominant worldviews and values become operationalized as formal and informal institutions (rules, norms, and customs), ensuring their dominance in everyday decision making (Vatn et al. 2024).

Such concerns about the dominance of values that appear to push society far from sustainability are contributing to growing calls for more pluricentric worldviews that could transform institutions toward more inclusive decision-making processes, and in turn shift dominant discourses about our multiple interdependencies with nature (Stengers and Pignare 2011, Haraway 2020). Although this inclusive conceptualization of values clearly presents the different ways in which individuals and groups value nature, and the (inter-)connections across value layers, to date we lack a detailed explanation of how diverse values of nature relate to the achievement of sustainability outcomes. In this paper we explore the role of values in sustainability by examining the concept of "sustainability-aligned values" (SAVs; Martin et al. 2022, Pascual et al 2023a), which we define here as "those values and combinations of values that, given appropriate weighting in decision making, are conducive to achieving sustainability."

Although some literature refers to "pro-environmental" or "biospheric" values (e.g., de Groot and Steg 2010, Chwialkowska et al. 2020) we prefer "sustainability" because it is a widely agreed normative goal (most people agree that we want it) and "aligned" because this can incorporate human-human values that are not directly "environmental" or "biospheric" but may nonetheless be found to make sustainability outcomes more likely. We treat sustainability and justice as strongly interdependent, to the extent that deliberation over the nature of "sustainability-aligned values" is really a debate about what values can best serve both sustainability and justice (as intertwined) in particular contexts (e.g., Raworth 2017, Lenzi et al. 2023).

Our main contribution is to identify emerging ideas about what constitutes SAVs, i.e., what kinds of values are reported as SAVs, and to provide critical reflection about the utility of this knowledge, e.g., does a better understanding of SAVs provide an actionable agenda for just transformations toward sustainability?

Following a brief review of the recent "turn to plural values" in the sustainability literature, we establish a conceptual basis for SAVs, proposing an essentially pluralist approach to both sustainability and values. We then synthesize three key bodies of sustainability literature: (i) visions of sustainable futures, (ii) models about how to leverage transformations to sustainability, and (iii) research on relational values. These three bodies of research all reveal particular ideas about what constitute SAVs, and even show considerable agreement.

We consider identification of particular values that align with sustainability to be a compelling but also a challenging agenda. Though such an elevated status for some values (e.g., dignity) may go uncontested, other judgements (e.g., collectivism vs. individualism) are more divisive. More generally, the idea of promoting a selection of values (over others) can involve tensions with values pluralism, the recognition of greater diversity of values that is widely advocated in sustainability literature (Martínez-Alier 2002, Gomez-Baggethun et al. 2014, Jacobs et al. 2016, Arias-Arévalo et al. 2018, Pascual et al. 2017, 2023a). We explore these tensions to further elucidate how we conceive of SAVs and to consider how knowledge about SAVs might be actionable for enabling transformative change. We recognize that a values-based transformative change agenda requires reflections on the power relations among the different worldviews and values, and on ways to challenge the status quo to open space for marginalized perspectives that could be more conducive toward sustainability (Avelino 2021, Arias-Arévalo et al. 2023, Pascual et al. 2023b). We discuss this in relation to the particular case of authoritarian right-wing, populist political movements that seek to construct and exploit divisions over whose interests are served by SAVs.

SUSTAINABILITY, VALUES, AND JUSTICE

There is growing agreement in the sustainability sciences that transformations to sustainability will require changes to the values that shape (and are shaped by) economic and political decision making (IPBES 2022a, Pascual et al. 2023a). Frameworks for thinking about transformations and transitions movements increasingly assign a central role to values in societal change, for example as deep places of leverage, capable of radical system change (Meadows 1999, 2008, Abson et al. 2017, Fischer and Riechers 2019, Wamsler et al. 2021). This might be framed as cultural, as part of the long-term contextual "landscape" that shapes societal goals and norms (Geels 2011, Loorbach et al. 2017); or as personal, as the individual identities and beliefs that form the "inner" dimension of sustainability (O'Brien 2012, Ives et al. 2020, Wamsler et al. 2021, Woiwode et al. 2021).

Identifying what changes are needed to values remains highly contested (Martin et al. 2022, Pascual et al. 2023a). For example, one of the greatest fractures across the environmental movement, one that has for decades separated mainstream from more radical environmental thought, is the possibility of sustainable economic growth and therefore the status of norms of human progress that promote material and energy growth as a precondition for human prosperity (Martínez-Alier et al. 2010, Gómez-Baggethun and Naredo 2015, Kallis 2019, Hickel 2020). Such broad beliefs about what matters for humanity can profoundly affect which specific values are emphasized in decision making, for example, a green growth perspective emphasizes full recognition of the instrumental values of nature whereas more radical alternatives, including post-growth perspectives, also emphasize relational and intrinsic values of nature (Martin et al. 2024).

Sustainability has been a plural and contested concept from its inception, and the exploration of SAVs is laden by these complexities. Sustainability emerged in global political discourse as a means to problematize the need to stay within global environmental limits, while at the same time satisfying the physical, psychological, and social needs of all humans (Kidd 1992). The term "sustainable development" appeared in the 1980s, framed as a form of economic growth that could be rendered compatible with protection of the environment (Du Pisani 2006), a proposition that remains contested. More recently, the 2015 UN Sustainable Development Goals (SDGs) aimed to include diverse views and to manage trade-offs between environmental, social, and economic objectives, but have revived debates around what to sustain, for whom and where, how substitutable natural assets and associated ecosystem services are (Balvanera et al. 2022), and whether emphasis on economic growth (SDG 8) is compatible with other SDGs (Demaria and Gómez-Baggethun 2023). In parallel, alternative concepts have associated meaningful human life with responsibility for life support systems. For instance, stemming from Indigenous management practices, the notion of living in harmony with nature reaffirms interconnectedness through values such as respect, reciprocity, humility, and gratitude that can often lead to self-imposed restrictions on the use of nature (Spiller et al. 2011, Verbos and Humphries 2014), sometimes connected with mental models of devotion toward nature expressed through rituals and taboos (Muradian and Pascual 2018).

With roots in a normative construct, ideas about what constitutes SAVs will inevitably reflect our ideas about how we should live in the world, and in particular how we conceive human connections with the rest of nature. For example, worldviews in which people are conceived as separate from nature will tend to locate value in one or the other, humans as the locus of what matters and nature as the means to achieve that (instrumental values) or nature as the locus of what matters, irrespective of human preferences (intrinsic values; Pascual et al. 2023a, Himes et al. 2024). If sustainability is framed as maintaining the continuous flow of benefits to people then the instrumental values of nature are emphasized. If it is framed in terms of sustaining all life on earth, then the emphasis will be on intrinsic values. However, an additional social-ecological perspective, arising from worldviews in which people and nature are inseparable, will locate value in the interactions among people and nature. In that case, what is to be pursued and sustained is living in harmony, and the values aligned with this will tend to be relational. Though much research aligned with this third perspective does not use the framing of sustainability, the worldviews that underlie it are highly relevant to sustainability conversations. For instance, scholarship in Latin America that is based on such relational ontologies does not always distinguish between people and nature, but instead emphasizes radical interdependence, associated with holistically applied relational values such as mutual respect and care (Escobar 2018, Gallegos-Riofrio et al. 2022).

Diverse values and visions of sustainability are tightly interconnected with ideas about justice (Lenzi et al. 2023). Justice refers to a set of interrelated concepts concerning fair distribution

of goods (distributive justice), fair inclusion in decision making (procedural justice), and due respect for different identities, values, and knowledge systems and practices (recognition justice). Some of the interconnections between justice and sustainability have long been recognized, such as in the Brundtland definition of sustainable development as that which "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987). However, appeals to justice in sustainability discourse are often vague about whom justice ought to apply to, and what it might require. Further, there has been little progress in correcting injustices created by or exacerbating the global sustainability crisis. This includes inequalities in the distribution of benefits from nature and of the consequences arising from its degradation (Armstrong 2017, 2022), including inequalities arising from the mitigation of and adaptation to climate change (Hayward 2012). It also includes procedural injustices, shown by the absence of meaningful inclusion of affected stakeholders in 99% of biodiversity valuation studies (IPBES 2022b). Recognition justice, and the related concept of epistemic justice, is especially important given the wide diversity of values and worldviews pertaining to nature, yet these values have been similarly poorly reflected in policy (IPBES 2022b). The diverse values of nature are interconnected with all three aspects of justice, and this affects both how sustainability aligned values are understood and the policies that support them. Indeed, these understandings of justice are often inseparable in policy contexts (Lenzi et al. 2023).

WHAT VALUES ARE ALIGNED WITH SUSTAINABILITY?

Although standard economics has taken a largely monistic approach to "getting the values right," there is a shift in sustainability literature toward a more pluralist reflection on values that might support sustainability. Because of the normative and contested definition of "sustainability" itself, and its deeply intertwined partner concept, "justice," ideas about which values are right, will inevitably vary across socio-cultural contexts and scales. Here we summarize the findings from three sets of literature reviewed within the IPBES Values Assessment that make explicit claims or assumptions about how different values determine the likelihood of achieving sustainability objectives. First, we review how developers of future scenarios have imagined values to be associated with sustainability; second, we review how scholarship on transitions/transformations to sustainability has identified roles for particular values; and third, we review how literature on relational values discusses connections to sustainability.

Sustainability-aligned values in future scenarios

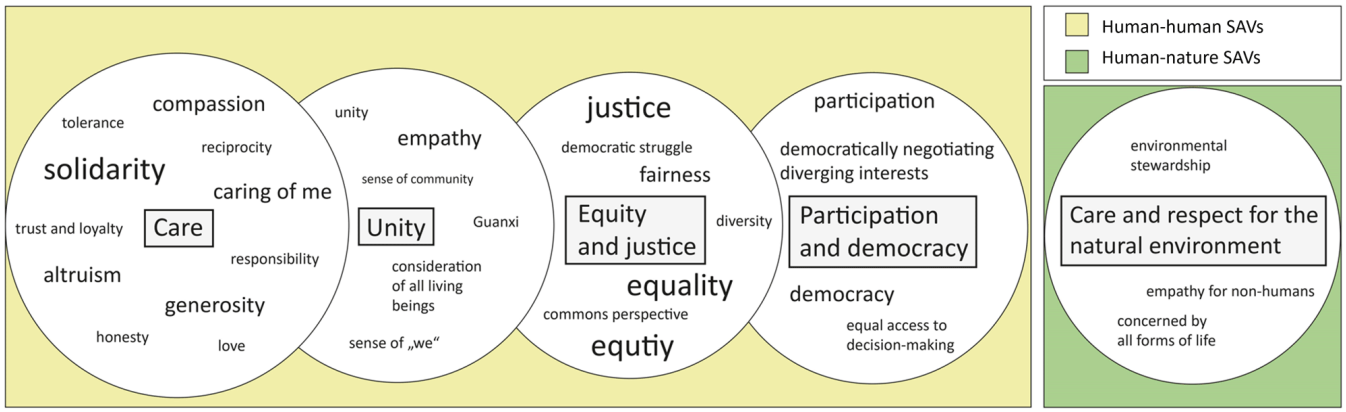
A review of future scenarios provides evidence about the kinds of values that are thought to align with sustainable futures (Martin et al. 2022). The review encompassed academic and gray literature by combining keyword-based searches of SCOPUS and customized search engines targeting non-academic sectors, snowballing of the identified literature, and expert knowledge (Yoshida et al. 2024). Scenarios of the future that address the IPBES foci of nature, nature's contributions to people, and good quality of life were reviewed for the values they implicitly or explicitly emphasize. For example, one scenario might illustrate a future society dominated by individualist broad values, whereas another might emphasize relational values of nature. We categorized such values to look at how these associate with the sustainability of the imagined future. 460 scenarios were identified and catalogued for (i) the focus of values, organized into three categories: a focus on the value of nature itself, on nature's contributions to people (NCPs), and on the wider support for quality of life (Fig. 1); and (ii) the justification for valuation, using the classification of intrinsic, instrumental, and relational reasons.

Fig. 1. The proportion of scenarios within each grouping (Dystopian, Economic Optimism, Sustainability) that include a particular value focus. The table is based on the data from Harmáčková et al. 2023., Appendix A, Table S3, with category boundaries as follows: Low: 0%–35%, Medium: 35%–70%, High: 70%–100% of scenarios in each group.

		Dystopian Scenarios	Economic Optimism Scenarios	Sustainability Scenarios
Value Focus	**Nature itself**	Low	Low	Medium
	Nature's contributions to people			
	Material	High	High	High
	Regulating	Low	Medium	High
	Non-material	Low	Low	Medium
	Nature for good quality of life			
	Individual focus	High	High	Medium
	Societal focus	Low	Medium	High
	Cultural focus	Low	Low	Medium

The scenarios themselves were grouped in terms of their outcomes: dystopian, economic optimism, and sustainability (Fig. 1). Focusing on the scenarios of sustainable futures, a number of commonalities were observed in the underlying values (Harmáčková et al. 2023). First, although dystopian and economic optimism scenarios primarily focused on good quality of life at the individual level (e.g., individual well-being, knowledge), a high proportion of sustainable future scenarios also emphasized societal aspects of good quality of life (e.g., governance, equity, and resilience). Unlike dystopian and economic optimism scenarios that often exclusively emphasize material values, sustainability scenarios were also more likely to consider cultural aspects of good quality of life (e.g., identity, community, art). Second, in line with both a stronger societal focus and a stronger focus on the value of nature itself (Fig. 1), sustainability scenarios were found to better represent intrinsic and relational values in addition to the instrumental values that dominate the other two scenario types. Third, the overall picture shows us that the academics and others who construct scenarios of the future tend to associate dystopian futures with focus on narrow (material, individual) sets of values, and associate sustainable futures with more balanced, pluralistic sets of values. In other words, those constructing scenarios tend to think that SAVs are not premised on the rejection of material and instrumental ways of valuing nature, but rather on ensuring that such a value's focus does not dominate in ways that prevent a more diverse values focus.

Fig. 2. Clusters of values identified as aligned with sustainability in the transformations literature. Font size of underlying terms indicates frequency of use.



Sustainability-aligned values in transformation to sustainability

A further literature review focused on scientific literature published in the field of transitions and transformations for sustainability (Martin et al. 2022). A structured search strategy employed keywords encompassing synonyms of values, transformation, and sustainability. This was supplemented by expert input, resulting in a dataset of 149 published academic papers. The review followed a qualitative content analysis protocol to identify values that are associated with transformations to a sustainable and just future, and to code and categorize these into clusters of values. Although the scenarios literature described above reveals the values that future people are imagined to prioritize (and proposes how this is associated with sustainability outcomes), the transformations literature more often considers values that are required as part of the process of change toward sustainability.

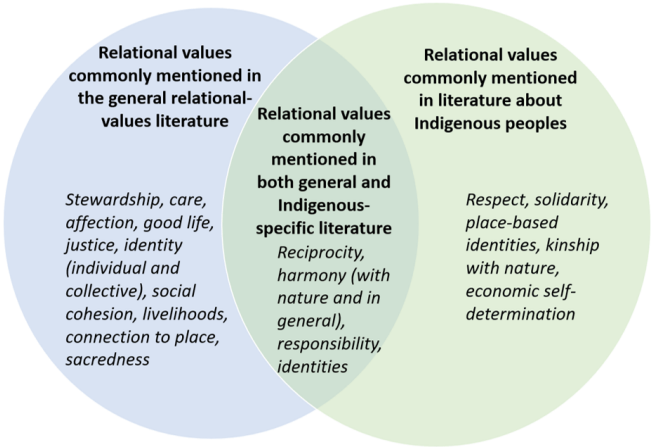
The review revealed two categories of SAVs. First, the literature identifies values that revolve around inter-human relationships, encapsulating virtues of care, unity, equity, and democracy. Among the subset of papers that explicitly identify values embodied in sustainability transformations, 73% refer to such inter-human values. In other words, broad values about how we live together as humans are frequently viewed as being of crucial importance as the context that shapes the ways in which we interact with nature (Vinnari and Laine 2017). It is argued that we need a departure from conventional paradigms of progress that are centered on values of individualism (Feola 2020) and economic gains (Katrini 2018). Instead, it is outlined that we need to nurture and enable values such as care, unity, equity, and democracy (Fig. 2). Only about a third of these papers emphasize values that directly address societal relationships with other-than-human nature. These are also mainly focused on broad values, calling for the nurturing of values linked to care and respect for nature. These society-nature values are expressed through terms like "environmental stewardship" and "empathy for all life forms" (Antadze and McGowan 2017, Vinnari and Laine 2017, Ajibade and Adams 2019, Christie et al. 2019).

Sustainability-aligned values as relational values

Several reviews have examined the links between SAVs and relational values. A review of 284 articles suggests that relational values are often directly characterized as SAVs (Himes et al. 2024). This finding was supported by another review of 72 empirical studies of relational values (Pratson et al. 2023) and an additional conceptual review (Hoelle et al. 2022), which pointed out that literature on relational values overwhelmingly presents them as aligned with positive relationships with nature and with sustainability. The main examples of relational values reported in the wider literature are stewardship, responsibility, care, affection, reciprocity, harmony with nature, good life, and justice (Himes et al. 2024) whereas the most common relational values discussed in empirical research are identity (both collective and individual), social cohesion, livelihoods, connection to place, and sacredness (Pratson et al. 2023; Fig. 3).

Conceptual explorations of the values of Indigenous peoples and local communities have revealed that relational values are often rooted in ideas about reciprocal dependencies of people and nature (e.g., *buen vivir* in Latin America; *ubuntu* in Africa; and *Mino-bimaatisiwin* in Indigenous North American communities), which is a main reason for associating relational values with SAVs. There are many philosophies associated with harmonious coexistence between people, and between people and nature. Many relational values are strongly intertwined with these philosophies; the most common examples are "reciprocity, harmony, respect, solidarity, responsibility, place-based identities, kinship with nature, and economic self-determination" (Anderson et al. 2022:59). The sustainability alignment of these values is perhaps most evident in the lives of Indigenous peoples (Gallegos-Riofrio et al. 2022, Gould et al. 2023). Many Indigenous traditions involve kinship relationships with other-than-humans and demonstrate ways of being in place that have lasted for centuries or millennia, which provides evidence that relational worldviews can lead to sustainable lifeways. However, the relational values literature proposes that these values are relevant to all communities (Muraca 2011, 2016, Chan et al. 2018, Hoelle et al. 2022).

Fig. 3. Relational values commonly mentioned in general and Indigenous-specific literature.



Although the relational values literature adds weight to claims that many relational values are SAVs, this does not mean that all relational values are SAVs. Amazonian cattle ranchers, for instance, have strong relational values toward their pastures and livestock even though the creation and maintenance of those production systems is responsible for widespread deforestation of the Amazon rainforest (Hoelle et al. 2022). People can also develop negative relational values of nature, for example, where relations with wildlife lead to long-lasting emotional and psychological trauma, fostering relationships of fear or insecurity with respect to the natural environment (Lliso et al. 2022).

Sustainability-aligned values across the literature

Across these three bodies of literature, we see considerable agreement about what are considered to be SAVs. Work on relational values has been motivated by evidence of connections with sustainability, including the positive justice and conservation effects of recognizing IPLC worldviews and knowledge. This insight is generally consistent with the reviews of scenarios and transformations literature, both of which propose broad values regarding inter-human relationships (forms of collectivism and other non-material elements of living well) as foundational to sustainability. Both also identify the need for positive relational values regarding human-nature interactions, moving from more singular and insular focus on instrumental values of nature to greater diversity of values. The importance of relational values in the futures literature is broadly conceived, with significant emphasis on the inter-human relationships, indicating agreement that human-human relations are deeply interconnected with human-nature relations.

CHALLENGES AND OPPORTUNITIES FOR NURTURING SUSTAINABILITY-ALIGNED VALUES

Although acknowledging that our reviews have been limited to selected bodies of literature, we still find the common ground about SAVs to be quite striking, especially in light of our discussion of the contested nature of both sustainability and the pathways needed to get there. In this section we engage with some more of the complex challenges that remain, despite this apparently emergent agreement. First, we still need to resolve this with a strong body of evidence that proposes values diversity as crucial to justice and sustainability and then we need to consider some more pragmatic concerns about if and how identification of SAVs may present an actionable, values-based agenda for sustainability.

Tensions between identifying SAVs and advocating value pluralism

One of the emerging issues during the IPBES Values Assessment was an apparent tension between (a) findings that values diversity is essential for sustainability and (b) findings that only some values are aligned with sustainability. For example, the Summary for Policy Makers of the IPBES Values Assessment states that "Achieving sustainable and just futures requires institutions that enable a recognition and integration of the *diverse values* of nature and nature's contributions to people" (IPBES 2022b:13-14, emphasis added) and that "Transformative change needed to address the global biodiversity crisis relies on *shifting away from predominant values* that currently over-emphasize short term and individual material gains, to nurturing sustainability-aligned values across society" (IPBES 2022b:13-14; emphasis added). This apparent tension can be resolved by our understanding of values pluralism. First, in contrast to a relativist position, our understanding of pluralism is consistent with the idea that the kind of values that underpin decision making matters enormously (Vatn et al. 2024). Indeed, the overriding conclusion of the IPBES Values Assessment was that the sustainability crisis has been driven by decisions dominated by market values of nature (Pascual et al. 2023a). The call for "values diversity" is not then a call to allow all values to flourish. It is a recognition that those values that we now need to face our collective existential crisis, have not been allowed to flourish. Nurturing diversity (and recognizing the pluriverse of values) does require us to try to identify what these SAVs are, and correspondingly, how they are suppressed. Second, we understand pluralism to require not only the encouragement of diverse values, but also the reduction in influence of values that prevent diversity. For example, the review of scenarios (Harmáčková et al. 2023) highlighted that sustainable futures were associated with scenarios in which relational and intrinsic values co-exist with and balance instrumental values of nature. We interpret this as a two-way process: balance requires the nurturing and protection of historically marginalized values widely considered to be SAVs, and it also requires action to reduce the salience of historically dominant values widely considered not to be SAVs.

Can sustainability-aligned values be mobilized?

An agenda to change societal values of nature (nurturing some, restraining others) raises questions about practicality. In particular, broad values have previously been considered to be personal and durable over long periods of life, or only changeable through slow processes of adaptation across the lifespan (Manfredo et al. 2017). However, we are learning more about the potential for shared values, i.e., values produced socially over shorter periods, for example, under designed forms of deliberation (Kenter et al. 2019). The view of broad values as necessarily stable is also contested by observations that individuals hold other "latent" values that may trigger change (Haerpfer et al. 2022) because these can be intentionally activated, for example, by using information prompts (Raymond and Kenter 2016, Kendal and Raymond 2019, Kenter et al. 2019), by reforming institutions (rules, norms, and conventions; Vatn 2015,

Vatn et al. 2024), or in response to shock events including dramatic changes in environmental conditions (e.g., in the face of daunting impacts of climate change; O'Brien and Wolf 2010). More generally, there is increasing evidence that people around the world hold values that they are unable to act upon because of prevailing political and economic systems, as well as asymmetric power relations (Pascual et al. 2023a). Thus, there is growing support for the possibility of mobilizing values toward enhancing SAVs in decision making, even if practical know-how remains thin (Horcea-Milcu et al. 2023).

The idea that nurturing SAVs might be less about changing people's values and more about enabling existing (latent and/or dominated) values also resonates with characterization of a "value-action gap" (Blake 1999, Flynn et al. 2009, Babutsidze and Chai 2018), which occurs because a variety of factors such as information, incentives, social norms, and formal rules directly or indirectly determine behavior (Vatn 2005, Steg and Vlek 2009, Gould et al. 2023). In addition to values that motivate sustainable behaviors, people also need the capacities and opportunities to act accordingly (Michie et al. 2014). For this reason, the challenge is not simply to promote certain types (e.g., relational) of values that make people care "more" about each other and about nature, but also to find new ways of translating their values into action (Bouman and Steg 2022). This includes addressing the social, economic, political, or physical constraints within the social-ecological system that may hinder them from acting upon SAVs (Martin et al. 2022). Efforts to change behavior in general require a comprehensive understanding from both a behavioral science perspective as well as a systems perspective of the environmental conditions and the social spheres within which individuals and their behaviors are embedded (Shove 2010, Newell et al. 2021). Working to align values with sustainability may therefore partly involve encouraging individuals and groups to hold and prioritize particular types of values in their own socio-cultural context, making use of information, incentives, regulations, nudging, and social learning processes. But it will also require interventions to include and enable latent and marginalized values to be expressed, and to find new ways of translating latent values into action (Raymond and Raymond 2019; Pascual et al. 2023a, Horcea-Milcu et al. 2023).

The greatest challenge may not be an absence of SAVs but that prevailing power relations lead to the domination of values linked to existing hierarchies of status and economic wealth (Feola 2020, Zafra Calvo et al. 2020, Ferguson 2023).The IPBES Values Assessment found that only a narrow range of values are operationalized in decision making despite a great diversity of values held by people around the world (Pascual et al. 2023a). This is a matter of structural power, related to the societal institutions (rules and norms) that "structure" the kind of decisions and behaviors that are possible in everyday life (Arias-Arévalo et al. 2023, Vatn et al. 2024). Decision making is shaped by the current and historical structural power imprinted in formal political and economic institutions and in socially produced norms such as gender and class relations (Jacobs et al. 2023, Shackleton et al. 2023). An agenda to work with SAVs therefore needs to pay much attention to existing forms of institutionalized power dynamics in society, with particular attention to whose values are legitimized and thus more easily included and excluded from decision-making processes, how processes of value marginalization are normalized and institutionalized, and what opportunities exist to overcome these barriers (Fritz and Binder 2020, Arias-Arévalo et al. 2023). For example, changes in formal structures such as tenure rights, international human rights, education curriculum, and national accounting systems might all help to disrupt existing institutionalized forms of values domination. Equally, forms of deliberative democracy that facilitate shifts in cultural norms about, e.g., gender, well-being, and business success, might help to restructure decision making (Pascual et al. 2023a).

One important challenge for the potential of SAVs to be nurtured arises when political divisions are strong and where environmental values become politicized and polarized across social divides. For example, we have witnessed how social polarization is being nurtured by coordinated authoritarian populist political movements, with significant impacts on environmental agendas in countries such as the U.S., Brazil, Hungary, Argentina, and India (to name a few). The so-called populist "far-right insurgency" (Muradian and Pascual 2020) often directly opposes intergovernmental environmental policy goals including European and national climate policies (Huber et al. 2021), by a deliberate attempt to portray SAVs as linked to social cleavages, and as "globalist" agendas promoted by elitist, urban, and higher middle class actors (Muradian and Pascual 2020). Although our review of SAVs suggests the need for collectivism and equity in the face of existential insecurity, populist politics often produces the opposite response, pushing people to reinterpret issues of justice and align with top-down authoritarianism values rather than with deliberative, shared values (Pratto et al. 1994, Altemeyer 1996). Such authoritarian populist movements tend to highlight symbolic threats from marginalized social groups (e.g., immigrants but also, e.g., those promoting alternative, non-consumerist lifestyles). Values based on constructions of fear and superiority provide the basis for inter-group prejudices and the delegitimizing of those values associated with marginalized social groups. This may provide one explanation for the backlash against pro-environmental attitudes and values found in skeptic and denialist positions about the social-ecological crisis, and in beliefs that environmental regulations are excessive and a deterrent to economic prosperity (Muradian and Pascual 2020).

On the other hand, sustainability-aligned values may provide powerful reasons for people to act for and organize transformative change. They may empower those who hold them to resistance, and ignite processes of learning and cooperation (Partzsch 2015). Nurturing and protecting SAVs, giving careful attention to engaging all actors, can facilitate plural coalitions for concerted efforts at different scales of decision making, fostering more inclusive bottom up, top down, as well as horizontal strategies.

CONCLUSIONS: moving the agenda forward

Since at least the 1960s, environmentalism has been implicitly or explicitly normative in its advocacy for particular sets of values. These debates have evolved in the last decade or so, from debates between anthropocentrism and ecocentrism dominated by predominantly Western philosophical traditions, to greater attention to philosophical traditions that more strongly emphasize relationality. Thus, claims that sustainability requires

greater emphasis on the intrinsic values of nature have been augmented by calls to emphasize relational values of nature. We have sought to take stock of the recent growth in literature that identifies values as an important locus for interventions to help promote sustainability. It has done this in three steps: first, by exploring the contested meaning of sustainability and thus acknowledging the inevitable pluralism of claims to know what values will underpin its pursuit; second, by reviewing three bodies of literature that are directly associated with such claims to find out what kind of values are claimed to be aligned with sustainability; and third, through a series of reflective questions about the practical use of this new knowledge about sustainability-aligned values.

With the clear caveat that we have only been able to review three selected bodies of literature, it is still quite striking that these tend toward strong determination of SAVs. Indeed, we imagine that readers of environmental social sciences and humanities are likely quite familiar with the kinds of values proposed as being conducive for sustainability. According to this literature, SAVs include societal values about development and quality of life that stem from, e.g., collectivism and the commons (rather than individualism) and from non-material basis for human well-being (rather than material consumerism). They also include society-nature values that are relational, such as care and stewardship, rooted in worldviews of radical inter-dependence (rather than anthropocentric and instrumental thinking).

Although it is tempting to read this convergence of ideas about what constitutes SAVs as a clear agenda for action, the literature also points to some considerable challenges. First, there remains the need to clarify what we mean by nurturing and promoting certain types of values (e.g., relational ones) and in particular, how this corresponds with a pluralist stance on values diversity. Our approach here has been consistent with recent IPBES findings (IPBES 2022a, Harmáčková et al. 2023, Pascual et al. 2023a) to focus on the idea of balance, i.e., that promoting SAVs is in large measure about breaking the current dominance of narrow sets of values, in ways that enable alternative values to gain traction. This is a justice agenda (e.g., enabling voices to be heard) as much as a sustainability agenda (e.g., ensuring decisions incorporate forms of values that foster care and restraint). A diversity of sustainability-aligned values already exists. To date, these are marginalized because of existing power exercised by those with interests in the status quo over those with interests in change. Simultaneously, these values empower resistance to existing structures and cooperation with like-minded people to overcome obstacles to transformation. Indeed, this might currently be the clearest utility for the concept of SAVs: a kind of boundary object that helps us to explore the barriers to bringing diverse values into decision making, and helps to identify entry points for addressing these and to motivate people to do so.

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AM led and coordinated; PB and CR formed a core team; all other authors contributed sections of text and/or editorial insights.

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