Perspective

An aspirational approach to planetary futures

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Prevailing frameworks to address planetary environmental challenges tend to focus on setting goals, targets, or boundaries to limit human harm to ecosystems or species. Here we propose an aspirational approach aimed at empowering people to shape a better future for all of life on Earth. We do this by building on the human development approach and its supporting metrics, especially the Human Development Index (HDI), a broadly influential framework that has contributed to decades of human progress by measuring and promoting people's capabilities to lead the lives that they value. Rather than assessing the state or dynamics of the biosphere, we propose the Nature Relationship Index (NRI), which would focus on measuring the progress of nations towards delivering mutually beneficial relationships among people and the rest of the living world in terms that people widely understand and value. Through an open-ended process informed by expert consultation, international concept testing and indicator development, the NRI could help to incentivize progress towards a world in which humanity thrives together with the rest of life on Earth. We explore the challenges and opportunities of developing a robust NRI and invite broader participation to facilitate this development in collaboration with the United Nations Development Programme Human Development Report.

Many human societies have experienced decades of progress in the basic indicators that measure human development, including longer and healthier lives, increasing access to knowledge and education, and improving standards of living—the three dimensions of the Human Development Index (HDI)[1,2]. But at the same time, many of these same societies have caused unprecedented harm to the living world, including climate change, widespread pollution and worldwide declines in biodiversity that threaten the living world as a whole[2–6] while often exacerbating inequalities within and among nations[7,8].

The HDI and its associated indices have had an important role in shaping aspirational demands for better conditions for people since its introduction in 1990[9–11]. It does this by making progress, and failures to make progress, explicit and assessable through annually updated national indicators that are shared widely through the United Nations Development Programme (UNDP) Human Development Report. The HDI has proved especially effective in shaping government policies and in assessing the state of human development across nations, serving, by many accounts, as the most influential alternative to the profoundly limited gross domestic product (GDP) as an indicator of development[7,9,10,12]. Every year, the HDI sends a powerful message to national leaders and decision makers at all levels by highlighting where and when progress is being made, shedding light on different ways forward and incentivizing efforts to do better and avoid doing worse.

The HDI measures improvement and has no pre-determined target value, consistent with human development as an open-ended aspirational journey—'Higher is always better'. By contrast, prevailing frameworks for addressing nature's decline tend to focus on the risks and/or costs of human harm to ecosystems and species while setting specific goals, targets or boundaries to limit or reverse this harm[13–15]. Such frameworks have clear utility in identifying and publicizing harm to nature and people. Yet their focus on negative outcomes and portrayal of humans mainly as nature destroyers has also contributed to disempowering social conditions, including rights dispossessions of Indigenous peoples and local communities, green grabbing, political polarization and eco-anxiety, while failing to inspire coordinated societal efforts at the scales needed to reverse ongoing global crises[8,13,15–32].

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The way global challenges are framed affects how people interpret what is possible and necessary to shape a better future[17,22,33–41]. Avoiding worse futures can be motivating, but engaging with people's aspirations for a better future is no less essential, especially under challenging conditions. Supplementing emergency frames with evidence-based aspirational narratives that affirm that people have the capabilities to shape a better future both for themselves and for the rest of nature has the potential to incentivize more effective international collective action. Indigenous and other local movements based on kin building, responsibility taking, intergenerational well-being and aspirations for justice and a better future exemplify this approach[42–48].

Clear and sustained gains in human development have been achieved in most nations since the HDI was introduced in 1990[9]. Yet progress towards reducing the environmental harm caused by industrial economies—a notable international and national priority even then[9]—has been limited at best[2,7].

To motivate more effective action towards a world where people and nature thrive together, we propose an aspirational framework supported by an index analogous to the HDI—a Nature Relationship Index (NRI)—that broadens the aspirations of human development to include progress towards better human relationships with the rest of the natural world, of which we are a vital part. We build the case for this approach with evidence that human aspirations have motivated mutually beneficial relationships with nature in the past and continue to do so today in many contexts. We then explore strategies for developing a robust NRI metric guided by the UNDP Human Development Report Office (HDRO) that can inspire global progress towards a future where people and nature thrive together in the face of ongoing social-ecological challenges. Through a global multi-stakeholder consultation and development process led by HDRO, the NRI could potentially be released in the 2026 Human Development Report.

Shared aspirations shape transformations

Human development, inspired by the 'capabilities approach' formulated by the economist Amartya Sen, is about expanding the richness of human life, rather than simply the richness of the economy in which human beings live[49,50]. The approach centres on people's ability to live the kinds of lives that they value and have reason to value, and includes both achievements and freedoms in their personal agency and well-being, and assesses progress and evaluates policies through multiple dimensions of human development, which now include relationships with planetary change[7]. Broadening human development to include relationships among people and the rest of nature reinforces and furthers this important work.

In contrast with most policy-driven models of change, the human development approach aims broadly, beyond any specific societal challenge, crisis, goal or target, and makes no specific prescriptions of how societal aspirations are to be achieved. By focusing on human agency—people's ability to hold values and make commitments and choices beyond their own individual well-being[51]—the human development approach treats people as agents of change, rather than passive recipients of policy interventions[52], foregrounding people's values, aspirations and struggles to achieve a better future.

Over thousands of years, human cultural capabilities have evolved to enable people to thrive across the planet in societies and ecosystems of unrivalled diversity, dynamism and scale[53–59]. From kinship relations with the living world to environmental regulations, many human societies have evolved the cultural institutions, technologies, perspectives and practices needed to thrive together with the rest of nature[54,60–64]. The challenge today is to more broadly recognize, cultivate, innovate and deploy these capabilities, aspirations and relationships across the planet, given that the majority of people now live in globally interdependent societies where advances in human development have become intertwined with the emergence of planetary crises[2,54,65,66].

Aspirations for better lives have motivated the pursuit, development and deployment of technologies, knowledges, institutions and other cultural tools needed to achieve them[54,67–72]. Yet access to these tools and their products, from human rights to public health, differ substantially between nations and people within nations[72–74]. Many continue to struggle to meet basic needs, whereas others, whose needs are met, are evolving new and different aspirations[73,75]. Transformative progress towards a better future must appreciate, build on and empower people's aspirations towards the fair and just sharing of benefits and burdens within and across societies, with future generations, and with the rest of life on Earth[53,59,66,73,76–87].

People can improve conditions for nature

Human societies do not inevitably degrade the rest of nature. Many Indigenous and other local communities have sustained themselves for centuries to millennia while shaping and sustaining some of the most biodiverse, productive and ecologically vibrant regions remaining on Earth[6,56,60,61,88–93] (place-based societies; Fig. 1). By contrast, the global expansion of industrial societies is associated with rapid global changes in climate, widespread pollution and biodiversity decline[4,54].

Recent patterns of societal change that increase planetary damage have led some to believe that all forms of human development are inherently a zero-sum game—that improving human conditions must inevitably come at the expense of damage to the natural world[2,94–96]. Such beliefs have serious consequences for collective international action[97].

Although environmentally harmful pathways of industrial development are clearly associated with some past and contemporary advances in human development, these pathways are neither necessary nor sufficient to sustain these advances over the long term[71,98,99]. In recent decades, progress in human development in many countries has been achieved without increasing, and sometimes even reducing, environmental harm. For example, from 1990 to 2022, the carbon dioxide emissions and material footprints associated with a given level of HDI generally decreased, suggesting that further decoupling may be possible (fig. 2.11 in ref. 8).

Norms and aspirations too have changed. As harm to the biosphere has spread and intensified, it has become increasingly unacceptable to many people[100]. Some societies with long histories of harming the biosphere and people to sustain their lifeways are aspiring towards and starting to achieve healthier human–nature relationships[66,69,94]. This change has been enabled through a wide array of institutions and practices, from national environmental protection agencies, legal frameworks and policy programmes, to philanthropic investments in nature conservation and restoration and international agreements to protect Earth's climate, ozone layer, habitats and endangered species[2,7,27,66,94,101]. Although many apparent environmental improvements have been achieved by exporting harm from high-income countries to low- and middle-income ones[102,103], there is also evidence that many societies have developed the legal, institutional, technological and other capabilities that could, if adequately deployed and supported, enable them to radically reduce the environmental harm they are producing[66,69].

The ozone layer is recovering as the result of international bans on the production of ozone-depleting chemicals together with an industrial transition to less harmful approaches[104]. Some endangered species are recovering thanks to increasingly effective conservation policies and practices[105,106]. Although far from resolved at a global level, water pollution[107], air pollution and acid rain[108], and many other environmental challenges have proved to be largely resolvable where adequate regulations and investments have been implemented[66,69] (industrial societies; Fig. 1).

By contrast, efforts to address the greatest of all environmental challenges, the interlinked climate and biodiversity crises, have made only modest progress so far[4,109,110]. Although technological and other

	a Traditional Societies thriving with nature	**b Industrial** Societies improving relationships with nature	**c Planetary** Societies reshaped to thrive together with nature
Nature is thriving and accessible	1 Sacred spaces 2 Seasonal access and use	7 Parks and protected areas 8 Urban parks and planning	13 Indigenous Peoples and Community Conserved Areas and Territories (ICCAs) 14 Ecosystem and species restoration
Nature is used with care and respect	3 Propagating and tending species 4 Cultural burning	9 Soil conservation 10 Wildlife management	15 Clean energy 16 Circular economy
Nature is safeguarded	5 Kinship relations with species 6 Cultural protections for nature	11 Legal protections for air, water and species 12 Environmental education	17 International agreements protect oceans, atmosphere and ecosystems 18 Rights of and to nature

Fig. 1 | Healthy human relationships with nature are diverse, abundant, and continue to evolve. a–**c**, A limited sample of societal capabilities for shaping and sustaining thriving nature relationships—a full accounting is beyond the scope of this article. **a**, Traditional Indigenous and other place-based societies have deep histories of thriving relationships with nature. **b**,**c**, Industrial societies have evolved some capabilities to improve their nature relationships (**b**), but a major expansion of these will be required to shape planetary societies where people and nature thrive together (**c**). Figure adapted with permission from artwork by Yuka Estrada, ref. 190, AAAS.

capabilities to address their causes appear to be strengthening[106,111], political and other societal barriers often hold back their application at the scale and speed required to meet the challenges[112]. At the same time, an array of troubling new challenges has emerged, including ocean acidification[113], plastic pollution[114] and a rapid acceleration in the synthesis and dispersal of novel chemical pollutants[115].

These planetary challenges are increasingly disrupting people's lives and harming the rest of life on Earth. Clearly, something fundamental about how human development is being pursued needs to change. Although human aspirations for a better future are increasingly demanding healthier relationships with the rest of life on Earth[100] and societal capabilities to meet these aspirations are increasing, they are still falling short of what is required. To move forward, we must fundamentally improve how we incentivize and measure progress towards a world where all people and the rest of nature can thrive together.

People aspire to healthy nature relationships

Aspirational norms of kinship and reciprocity in human relations with all living beings and even Earth itself have underpinned the thriving natures sustained by many Indigenous and other local communities for generations[25,116–118]. Research across contemporary cultures and

societies confirms that most people value nature intrinsically and aspire to healthy and caring relationships with nature through diverse ways of knowing and being[36,47,119–124]. People across many countries and communities recognize, deeply value and form identities through their connectedness with the living world[36,125–127], and this connectedness is generally associated with both human well-being and capabilities, and action to care for nature and other people[123,125,128–133].

Shared aspirations for mutually beneficial relationships among people and the living world, including equity and justice in these relationships[134–137], continue to evolve in novel directions from their many deep cultural roots[138]. Examples include the universal human right to a "clean and healthy environment" recently agreed to by the United Nations[139,140], progress in recognizing the rights of nature, concepts such as multispecies justice that connect human well-being with the well-being of the rest of nature, including planetary functioning[19,21,45,77,117,118,133,141–146], as well as the ongoing development of nature-centred national well-being agendas[44,147,148], and Indigenous and other local community statements and movements[43]. Reinforcing and broadening these aspirations is even more critical in contemporary societies where people are increasingly living lives more physically and mentally disconnected from daily contact with other life on Earth[37,149–153].

The quality of human lives and progress in human development have always depended on nature, and this is recognized in contemporary policy frames including nature's contributions to people, ecosystem services, natural capital and nature-based solutions[121,127,134,135,154]. A variety of existing conceptual approaches and frameworks build on this relationship[125,133,141,155–157], including the eco-civilization approach[156] and the nature-positive approach[158,159], and some rely on integrating measures of socioeconomic and environmental progress[160]. The need remains for an aspirational approach focused specifically on incentivizing measurable progress towards healthier societal relationships with the living world.

Assessing nature relationships

Here we propose an index intended to build on and supplement the success of the HDI in inspiring, measuring and rewarding progress through a broadly understandable, widely valued and regularly reported national measure of progress towards a world where all people thrive together with the rest of life on Earth. The conceptual framing of the NRI is introduced together with an example of how it might be computed, to explore the challenges, opportunities and potential strategies by which it could be developed into a broadly respected international metric through a process guided by the UNDP HDRO.

Framing

We constructed the NRI's conceptual model and measurement approach through a sustained deliberative process initiated through two interdisciplinary consultative workshops (one hybrid, one in person). Following the HDI, the NRI integrates three dimensions, each defining a critical element of mutually beneficial societal relationships with nature. Each dimension would be assessed through one or more indicators computed at national scale and then aggregated (Box 1).

Rather than assessing the state or dynamics of nature, the NRI aims to measure the progress of nations in delivering mutually beneficial societal relationships with nature in terms that people widely understand, value and consider important to living well. In this way, the NRI should be designed to incentivize improvements in a nation's relationships with nature through the prestige and benefits associated with right action and with higher international rankings, not through the setting of specific targets, limits or boundaries. By promoting widespread awareness about better and worse national relationships with nature, and highlighting progress in these relationships over time, the NRI, like the HDI, could help to incentivize and accelerate international progress towards a better planetary future.

The three proposed dimensions of the NRI were designed to align with current national and international priorities, including the management of landscapes that enable people and nature to connect and thrive together (Nature is thriving and accessible)[161], the use of nature to sustain human development without harming, diminishing or degrading it (Nature is used with care), and financial, legal and institutional support for environmental protections (Nature is safeguarded). NRI dimensions are also intended to align with the central priorities of human development, including a decent standard of living (for example, recognizing needs for energy and food), and to account for the potential of nations to export their negative impacts (for example, by connecting pollution and resource extraction with consumption, not production).

Improving social robustness

We used international concept testing to gain feedback from outside our author group to improve the NRI's aspirational framing, terminology and dimensions. Public engagement is increasingly used to source diverse perspectives, norms, values and interests in indicator development[46,162–165] and to increase the social robustness of indicators beyond scientific settings[166,167]. For example, national well-being initiatives in the UK, Canada and New Zealand consulted with citizens through focus groups and/or questionnaires to inform their development of well-being indices[148,168]. Here we used semi-structured interviews with small general population samples selected to reflect within-nation diversity in gender, education, household income, ethnic and religious identity (including Indigenous peoples), and residency in urban, suburban or rural areas from each of the five United Nations geographic regions (5 interviews each from Egypt, India, Peru, Poland and USA; 10 from China; total = 35).

The process of communicating with nonexperts in different regions around the world contributed to the deliberative learning process used to develop the conceptual framing of the NRI. Questionnaire development and the interpretation of interviews led to revisions in terminology, including the renaming of an NRI dimension ('Nature is supported' was revised to 'Nature is safeguarded') and a modified definition of nature (the living world, including plants and animals, and the environments that surround us, such as air, land, rivers, oceans, mountains, forests, deserts, and grasslands). These and other insights helped refine the framing of the NRI for broader communication as part of a collaborative process of iterative review by the authors.

Computing the NRI

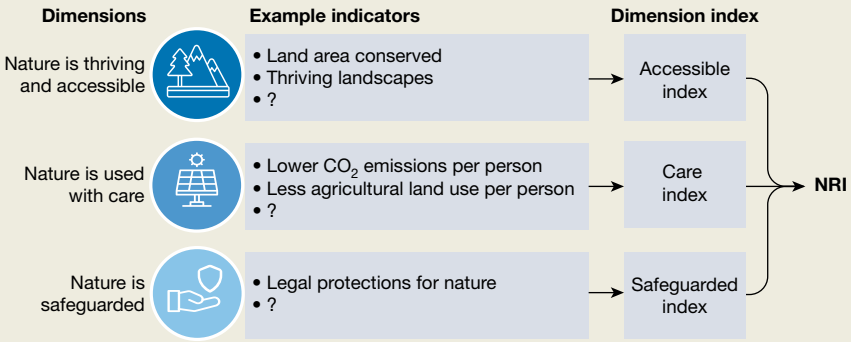
Like the HDI, the NRI is proposed as an aggregate index computed from multiple indicators to measure and monitor progress—and lack of progress—across the world's nations. To explore strategies for computing the NRI, we conducted an informal horizon scan of potential existing indicators based on a review of the academic literature, as well as national, regional and international dataset repositories, that included metrics designed to monitor the Sustainable Development Goals and other global frameworks. We then developed criteria to select among them, and computed a test NRI from a set of example indicators that met these criteria (Fig. 2 and Box 1). To accomplish this, indicators were normalized from 0 to 1 and averaged to produce dimension indices, and these were then averaged to produce NRI estimates (Fig. 2). Prior to normalizing, some indicators were inverted to ensure that higher values signify increasing progress, a property shared by the HDI and its dimensions. Simple normalization and unweighted averaging maintained clarity and transparency in computations, but sometimes also produced relatively skewed or clumped distributions. Most importantly, normalizing metrics across nations helps to focus attention on relative national performance, thereby rewarding significant improvements while punishing complacency in the face of major progress.

Our efforts to compute an initial NRI provide a proof of concept confirming that such a computation is possible, but also revealed major

Box 1

Conceptual model of a Nature Relationship Index

In this model, three dimensions of a healthy human relationship with nature are computed from one to two indicators normalized from one to zero and combined to produce the NRI. Example indicators and issues related to using them are highlighted, together with alternate indicators.



	Nature is thriving and accessible	Nature is used with care	Nature is safeguarded
Meaning	There are areas where people can safely enjoy the benefits of nature and there are habitats suitable for wild species to live	Societies use nature and natural resources, such as forests, wild fish, the air and rivers in ways that sustain or improve their quality for use by people and the living world	There are significant public spending and legal protections that keep water, air and the living world, including endangered species, in a safe and healthy condition free from pollution
Measure	How much environments where people and nature thrive are available and accessible	The degree to which societies use nature to sustain their development in ways that do not pollute, diminish, degrade or harm the living world	How much societies are spending on and legally supporting efforts to make the living world safer, cleaner and healthier for people and the rest of life
Example indicators	Land area conserved (per cent national area in protected areas and other effective area-based conservation measures) Thriving landscapes (per cent populated landscapes with ≥25% seminatural vegetation within 1 km^2)	Less CO_2 emissions per person (consumption-based) Less agricultural land use per person	Legal protections (index based on six international environmental rule of law questions)
Issues with indicators	Protected areas and other conservation areas may not effectively conserve nature Neither indicator measures accessibility adequately	Agriculture is only part of land use, and varies in impact Neither indicator is clearly aspirational, and both correlate with human development	Laws may be ineffective Scope of efforts to safeguard nature are too limited
Alternate indicators	Green status of species index Restored areas Areas conserved by ICCAs	Clean energy (per cent final energy) Fewer species harmed through consumption	Environmental spending (per cent of GDP) Right to a clean and healthy environment

obstacles to using existing indicators to produce an NRI that is acceptable for broader use, particularly the limited availability of socially relevant national indicators with comprehensive global coverage and consistent annual updates. For this reason, the NRI estimates in Fig. 2 are useful only for exploring strategies to produce an acceptable NRI in the future through a process requiring the development and incorporation of new and improved indicators.

Choosing indicators

A wide array of existing indicators might be chosen to compute the NRI, including complex aggregate indicators for national environmental performance that have been assessed across multiple nations and internationally (for example, the Environmental Performance Index[169]). These include national indicators that support international target-setting agreements, such as carbon budgets relating to climate targets (1.5 °C and net zero[15,170]) and protected areas accounting relating to biodiversity agreements[154], among others.

To be useful for computing the NRI, indicators must meet at least five criteria. (1) As with the HDI, all indicators must be simple to understand and interpret, to ensure that people around the world are able to comprehend and value them. (2) Indicators, and the data used to compute them, must be available as open data, to facilitate international data use and sharing. (3) To enable progress to be measured around the world over time, indicators must be globally comprehensive and annually updated. (4) To ensure compatibility with progress in human development and avoid redundancy, NRI indicators should not exhibit strong stationary correlations with the HDI or its indicators. Most importantly, (5) NRI indicators must be aspirational—that is, capable of measuring significant long-term progress towards a world where people and the rest of nature thrive together.

Applying these criteria to existing national social and environmental indicators quickly revealed that globally comprehensive and broadly understandable national indicators describing progress in societal relationships with nature are not widely available. Complex aggregate

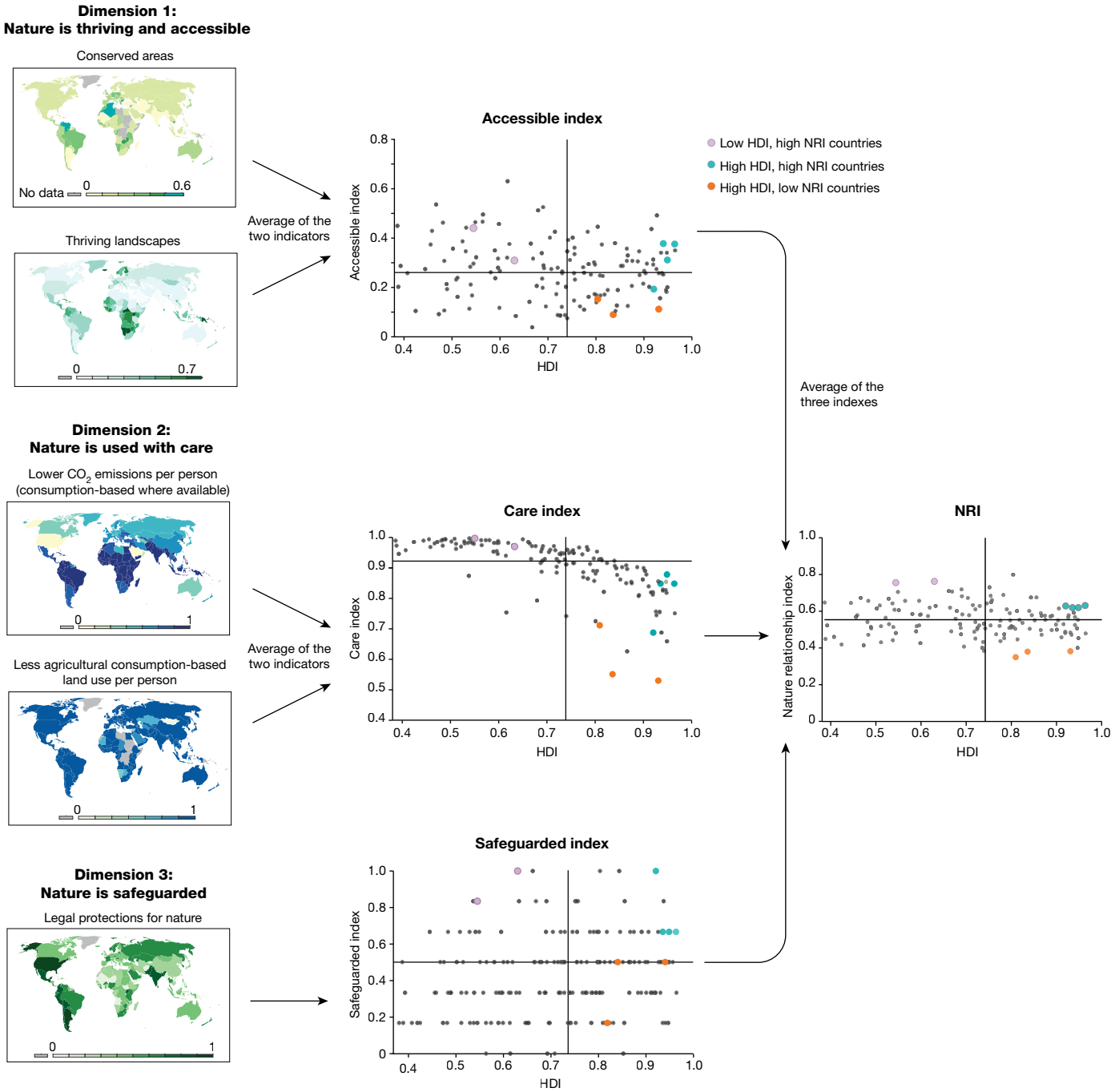


Fig. 2 | Conceptual model for assessing nature relationships across nations using a test NRI. Computation of a test NRI using preliminary example indicators, highlighting emerging international patterns in dimension indices and an NRI computed from them, in relation to the HDI, using graphs divided into four quadrants (lines represent medians). Points representing specific national patterns of the test NRI and the HDI are labelled in colour in graphs. The top right quadrant of each graph highlights countries that are making the most progress towards a world in which people and nature thrive together.

indicators, national carbon targets, biodiversity measures and other highly technical indicators were rejected as being too difficult for most people to understand and value. Many potentially suitable national statistics, including indicators associated with the Sustainable Development Goals, were only available for a small set of wealthier nations, a major issue precluding NRI computations for most of the world. For example, only 72 countries had data for government spending on environmental protection, and only 66 had data for spending on biodiversity and landscape protection for the latest year of data available from the International Monetary Fund. Expanding existing national indicators to cover more nations is therefore a major opportunity for developing future indicators for the NRI. Limited temporal coverage was an even greater obstacle; only a small set of indicators meeting the five criteria were available for multiple years or updated on an annual basis. Out of five indicators chosen for testing (Box 1), only carbon emissions is consistently updated on an annual basis for most countries. Future efforts to produce annually updated indicators will therefore also be essential for the success of the NRI. Experience with the HDI also shows that the establishment of indices can generate demand for national and international statistical entities to either collect or harmonize data for indicators that have had historically sparse geographic and time coverage.

Challenges and opportunities for the indicators

All the indicators we chose to explore NRI computation had near global coverage, enabling international patterns to be observed, yet each also raised significant issues precluding their use (Box 1). Examining these issues relative to each NRI dimension helped to clarify potential strategies for developing future indicators suitable for use in the NRI to be released by the HDRO in the future.

Dimension 1: Nature is thriving and accessible

The national extent of protected areas, parks and other areas dedicated to the conservation of thriving wild nature is a widely available indicator computed annually as part of international targets for biodiversity protection[171]. Yet conservation areas are not always effective in sustaining wild nature, and protected areas in particular have a history of excluding people, limiting their utility as an indicator of accessible nature[172]. Including Indigenous Peoples and Community Conserved Areas and Territories (ICCAs)[173] in area-based measures would improve them by recognizing and supporting the thriving and accessible natures shaped and sustained by these communities[61,90].

It is also critical to measure access to thriving nature and its benefits in the urban and agricultural landscapes where most people live. We developed a 'thriving landscapes' indicator using remotely sensed land cover data to assess the degree to which each nation's populated landscapes (≥1 person km^{-2}, at 1 km^2 resolution) included adequate vegetation cover to experience nature's benefits[174,175]. Remote sensing can enable global indicator development but cannot measure the actual accessibility of nature to people or other species. Social surveys, biological inventories and other techniques are therefore needed to assess people's actual and perceived access to nature, habitat quality and the benefits of sharing nature in these landscapes—a goal for future indicator development.

Dimension 2: Nature is used with care

Although all life depends on using nature, recent planetary disruptions, including global climate change, biodiversity decline and other threats to human aspirations for a better future are profound examples of uncaring and disrespectful use. Carbon emissions per capita is a widely available national indicator that is directly related to contributions to global climate change. However, emissions are also historically correlated with human development. Although this relationship is gradually decoupling[8,176], until clean energy is affordable everywhere, emissions-based indicators could conflict with human development and should be avoided. Under these conditions, clean energy indicators, although clearly aspirational, might also serve as 'clean-washing' for wealthy nations with massive historical emissions. The potential remains to develop a more robust aspirational indicator for using energy with care and respect for the global climate system.

Agricultural land use per person is a widely available national indicator of land demands that cause habitat and biodiversity losses[177]. Yet this indicator also suffers from multiple issues, including its omission of land demands for forest products, minerals and other resources. As computed here[178], this indicator captures the potential impacts of land demands met through global supply chains, but does not incorporate the ecological and social contexts that determine the actual impacts of specific forms of agriculture, such as the production of livestock in grasslands versus rainforests. The many limitations of carbon emission and land demand indicators are clear. More robust aspirational indicators measuring human use of nature with care and respect are clearly needed, potentially including indicators relating to a cleaner economy or circular use of resources.

Dimension 3: Nature is safeguarded

Protecting air, water, wild species and other components of nature from pollution, degradation and loss have long been considered fundamental governmental responsibilities. Even so, we found that national measures of environmental governance, spending and/or their effectiveness in safeguarding nature were generally only available for wealthier nations, precluding their use as global indicators. To fill this gap, we developed a 'legal protections for nature' indicator using national answers to six questions pertaining to the governance of nature and environment administered worldwide[179]. Although indicators created in this way have a limited range and distribution (Fig. 2) and an uncertain relationship with safeguarding nature that is subject to different national interpretations, a modest international comparison was possible. More robust indicators might be developed through a more comprehensive and directed international survey approach, in addition to expanding the global coverage of existing national statistics, such as national expenditures on environmental governance.

Broader issues

Indicators relating to greenhouse gas emissions and commodity flows were computed relative to their source nations, but further issues with teleconnected consequences and spillover effects remain, including land demands exported to other regions when nations reduce their own agricultural production, and international appropriations of nature through 'green grabbing'[16,180]. Another basic issue is a focus on national level assessment itself, an issue common to both NRI and HDI. Although this enables international comparisons and can simplify data collection, it also overlooks important sub-national differences and societal definitions. For instance, some people's interpretation of the 'society' relevant to them is associated less with nations than with a particular cultural, territorial or governance grouping within a country—such as an Indigenous society or urban neighbourhood. As with the HDI, for which the inequality-adjusted HDI was developed and is currently computed annually to capture heterogeneity across the population in the three dimensions of the index, options can be explored for variations of the NRI that account for this heterogeneity within countries.

Although the NRI focuses on measuring nature relationships at national scale, the degree to which people personally know, feel connection with or care for the plants, animals, rivers, beaches or other elements of the living world may be at least as powerful, aspirational and productive of well-being as those related to the institutions and practices of one's society or culture[152]. Although these diverse ways of knowing and being in relationships with nature might be assessed by survey methods[36,181,182], their wide global diversity may not facilitate connecting them with the national level actions that the NRI is intended to measure and motivate. National investments in experiential nature education might serve as a proxy indicator of efforts to shape healthier nature relationships, including institutions and practices that are not captured by the current care metrics. Additional, better metrics of how countries respond by institutionalizing the care aspirations of their citizens might also strengthen this dimension of the NRI.

Illustrative assessment of NRI performance

The NRI aims to expand the aspirational space of human development to include healthy societal relationships with nature. It is therefore useful to assess the NRI in relation to the HDI, as illustrated in Fig. 2, using charts divided into four quadrants. The top right quadrant—high NRI and high HDI—would thus highlight nations that are making the most progress towards a world where people and nature thrive together. An integrated NRI–HDI metric might also be computed based on relative distances in this aspirational space (Pythagorean distance from 0,0 to 1,1).

Our use of a test NRI highlighted some of the key issues that will need to be addressed in developing an NRI suitable for annual international comparisons. Almost one-quarter of nations ranked above the median in both HDI and NRI, partially filling the aspirational space in Fig. 2. This would seem to indicate that many nations are making significant progress towards a world where nature and people thrive together. Yet, this aspirational space also included at least one wealthy nation with

outsized contributions to global climate change and other planetary disruptions. Wealthy nations might attain higher NRI rankings by making larger investments in conservation, environmental protection and technological advances enabling cleaner and more efficient use of energy, land and other resources while still having greater overall and historical impacts per capita—an issue that must be addressed. Concerns also remain with the potential for indicators to reward poverty, societal inequalities and the exporting of resource demands, rather than broad progress towards healthy nature relationships. Being too poor to harm nature is no aspiration. And NRI changes over time could not be observed here because multiple indicators lacked annual data.

As expected, nations with the highest per capita carbon emissions ranked lowest in our test NRI performance, and HDI was also mildly correlated (approximately 0.7) with carbon emissions[8] (visible in Fig. 2, care index graph). Nevertheless, no significant correlation was found between HDI and NRI across the 141 nations with available data in our test analysis. This may change depending on future NRI indicators, but it does confirm that the NRI could serve as a novel and independent measure of progress towards a better future. That nations ranking highest in both NRI and HDI were about equally represented by developing and developed nations is also encouraging, as it would indicate that many different pathways might lead towards a future where people and nature thrive together. Indeed, the highest NRI and combined NRI and HDI scores observed in our illustrative analysis were attained by Costa Rica, a nation that is regularly ranked highly in assessments of sustainable development and environmental policies. Future development and testing of the NRI might also utilize nations known for success in improving their nature relationships as helpful benchmarks for calibration or validation.

Building a better future for people and nature

Many human societies have sustained a thriving long-term coexistence with the rest of nature, and some are increasingly developing the capabilities needed to shape a future where all people can thrive together with the rest of nature (planetary societies; Fig. 1). By assessing and promoting progress in achieving this better future, the NRI has the potential to build on the successes of the human development approach to drive national and international efforts in this direction. A focus on improving the landscapes where people live and work is also increasingly critical to conserving and restoring biodiversity[161,183,184] and to further stimulating peoples' aspirations for a thriving nature[125,128,185]. Along these lines, much can be learned from the thriving cultural natures of many Indigenous and local communities[61,90].

This is only the first stage in developing an NRI that is suitable for annual international assessments. Suitable indicators have not yet been identified and many have yet to be fully explored, including those related to global oceans, global biodiversity footprints of consumption[186], species conservation and recovery, ecosystem restoration[185] and other aspects of human relationships with nature, from local to global. Many exciting and potentially more accurate indicators of healthier societal relationships with nature might be developed. For example, clean, healthy, safe and swimmable rivers are culturally powerfully aspirational aspects of natures shared by many people around the world[45,187] that are challenged by unhealthy societal relationships[188] and might be assessed nationally through a variety of approaches, including citizen science[189]. An annual international survey might also serve to produce NRI indicators in the future.

The NRI is not a panacea for the many challenges to improving nature relationships across scales and contexts. Indeed, its ability to drive change will ultimately depend on the degree to which people around the world understand and value its core aspirational dimensions—the measure of which remains a challenge. Even so, connecting with the common aspirations of people may be the only way to generate the scales of cooperation needed to end the nature crisis and shape a better future for all.

We offer the NRI and its supporting framework with the aim of stimulating further discussion and to welcome broader input to help develop the NRI towards a potential formal release as part of the 2026 Human Development Report. Like all new metrics introduced as part of the Human Development Report, the NRI will be informed by a broad global multi-stakeholder consultation process refined through the guidance of the HDRO's statistical and high-level advisory panels. This process includes targeted thematic consultations and covers all United Nations geographic regions to ensure that diverse perspectives inform the report and its metrics. As work on the NRI evolves, this consultative approach offers multiple opportunities to leverage widespread feedback to improve the NRI. Through this approach we hope to ensure both a useable index and widespread buy-in from people around the world, including expert stakeholders from scientists to policymakers.

The NRI is a work in progress. It is empirically grounded and clear-eyed about the unprecedented social and environmental challenges that societies currently face. We invite your input to develop it into an effective international guide to shaping a better future.

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