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Indigenous Peoples and local communities as agents of transformative change for sustainability

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Achieving just, equitable, and effective sustainability transformations requires diverse social engagement. This paper identifies five key roles played by Indigenous Peoples and local communities as agents of transformative change: embodying sustainable lifeways, resisting harm and defending rights, extending their practices to influence broader systems, and offering foundational models for care-oriented economies and governance. Through illustrative examples, we show how Indigenous Peoples and local communities actively contribute to global transformation. We emphasize the importance of engaging with a wide range of actors in supporting, expanding, and deepening these contributions to realize meaningful, systemic change toward a sustainable and just future.

Transformative change is urgently needed to address the current global polycrisis and advance a just and sustainable world¹. Achieving equitable, just and effective transformative change for sustainability demands engaging diverse actors and plural forms of knowledge. This collaboration enables the implementation of multiple actions across complementary strategies to create synergistic pathways and effects in order to halt biodiversity loss and nature's decline². Given the context-specific nature of transformative change, which operates across different scales, there are a variety of roles for individuals and collectives to bring about a just and sustainable world^{3,4}.

In this *Perspective*, we analyse the vital roles that Indigenous Peoples and local communities play in shaping and advancing transformative change toward sustainability. We focus on Indigenous Peoples and local communities as agents of transformative change because of the widely recognized importance of employing diverse ways of knowing, being, and relating for sustainability. Grounded in spirituality and relational cosmologies and rooted in deep, enduring relationships with territories and biodiversity, Indigenous Peoples' and local communities' knowledge systems often foster a respectful, reciprocal coexistence with nature^{5,6}. Over generations, these knowledge systems have supported the conservation and sustainable use of nature^{7–10}. As a result, a considerable portion of the world's biodiversity is found within landscapes and seascapes that are traditionally owned, managed, used, or occupied by Indigenous Peoples and local

communities^{11,12}. Moreover, despite mounting pressures from resource extraction and the rising incidence of harassment and violence^{13,14}, nature is declining more slowly on these lands than elsewhere^{15,16}.

Centring on Indigenous Peoples' and local communities' contributions is also an ethical imperative. Although in recent years Indigenous Peoples' and local communities' knowledge systems have started to gain some recognition, with some influence in global environmental decision-making^{16–18}, Indigenous Peoples' and local communities' rights are routinely violated in the name of economic development¹⁴. Indigenous Peoples and local communities also face large barriers to full participation in biodiversity policymaking, not only at regional and global levels but even within their lands^{19,20}. Moreover, mainstream narratives on transformative change rarely recognize Indigenous Peoples and local communities^{2,21,22}. Instead, non-Indigenous governance systems commonly marginalize and devalue Indigenous knowledge systems, constraining self-determination and limiting the potential of locally led, culturally grounded solutions^{23,24}. For transformative change to be both truly legitimate and effective, Indigenous Peoples and local communities must not only be included, they must play a central role in shaping its direction and priorities.

This *Perspective* compiles and analyses existing evidence on the roles that Indigenous Peoples and local communities play as agents of transformative change for sustainability. By centring Indigenous Peoples and local communities, we aim to reframe prevailing narratives around who drives

transformative change for sustainability. At the same time, we acknowledge that overgeneralizations can be misleading and that external pressures often hinder communities' ability to live in harmony with nature²⁵.

Context

There is no universally accepted definition of Indigenous Peoples and the term includes a large diversity of groups. In this work, we follow United Nations guidelines, which have increasingly adopted self-identification by individuals and their acceptance by a community as a primary defining element^{26,27}. Indigenous Peoples have rights that are recognized in international law, most notably the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). Similarly, the term local communities lacks a single, agreed-upon definition, with interpretations varying in their degree of inclusiveness of rural populations^{7,28}. Given that this work focuses on ontologies (i.e., ways of understanding and living reality or being), epistemologies (i.e., ways of knowing and producing knowledge), and values (i.e., principles and priorities that guide what is considered important or meaningful) that differ from western thinking and practices, we follow IPBES guidelines which limits the term local communities to refer to ethnic groups who are "*descended from and identify with the original inhabitants of a given region, in contrast to groups that have settled, occupied or colonized the area more recently*"²⁹. The term local communities is especially relevant where Indigenous Peoples lack legal recognition or the right to self-identify as Indigenous, or where local groups have long and deep historical connections to place and their management practices are traditionally developed and passed down through generations. It is important to note, however, that the rights and status of Indigenous Peoples must not be conflated with those of local communities. In line with established usage in academic literature, reports, and online resources, and following Brondizio et al.,⁷ we use the inclusive term 'Indigenous Peoples and local communities' (with or without a comma, as contextually appropriate) when speaking in general terms. However, to avoid overgeneralization, we refer specifically to Indigenous Peoples, local communities, or particular groups whenever relevant.

This *Perspective* builds on and expands the work of the 'Indigenous and local knowledge' (ILK) working group of the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) Transformative Change Assessment, which spent three years assessing transformative change, including the roles of Indigenous Peoples and local communities as agents of change. We synthesize information from a wide range of sources, including peer-reviewed and grey literature, websites, artistic expressions, and other relevant materials. In addition to written sources, we draw on insights from three IPBES Indigenous and local knowledge dialogue workshops^{30–32}. Despite challenges including power imbalances, limited representation, and differing knowledge system, these workshops offered meaningful opportunities for engagement between Indigenous Peoples, local communities, and scientists on biodiversity decision-making³³. We acknowledge, however, that a predominant reliance on written English-language sources may have constrained the scope of our research.

The working group comprises individuals from diverse nationalities, disciplines, perspectives, and knowledge systems united by a shared commitment to elevating, sharing, interweaving, and expanding the knowledge of Indigenous Peoples and local communities in the care of nature. The authors include both Indigenous and non-Indigenous contributors, many of whom have long-standing relationships with Indigenous Peoples and bring expertise from a range of disciplinary backgrounds. As a collective, we acknowledge the dominant role that scientific epistemologies have historically played in shaping understandings of transformative change and nature and recognize that Indigenous Peoples and local communities often conceptualize them in fundamentally different ways. While this *Perspective* explores how the role of Indigenous Peoples and local communities can be more centrally situated within theories and practices of transformative change, the interpretations offered reflect the authors' perspectives and do not claim to represent any specific group or speak on their behalf.

Challenge framing

Existing literature on transformative change for sustainability disproportionately emphasizes the roles of certain actors in bringing about transformative change, while largely neglecting others². A recent review based on a corpus of 4.2 million documents for the IPBES Transformative Change Assessment found that only 12% of documents mentioning actors driving transformative change refer to local communities and just 2.1% mention Indigenous Peoples. In contrast, other actors appear much more frequently; for example, business and the scientific community each appear in approximately 30% of the documents². Furthermore, the literature inadequately presents the multiplicity of roles that different actors assume in bringing about transformative change. For example, Indigenous Peoples and local communities are often framed as passive recipients of change rather than as active agents shaping policies, innovations, and governance structures. There is no regional differentiation in the diverse roles of Indigenous Peoples as agents of change, even though these roles can vary considerably depending on the extent to which national legislation recognizes their rights. More broadly, Indigenous Peoples' knowledges have much less space in environmental policymaking compared to environmental sciences and technologies³⁴. Where Indigenous Peoples' futures are discussed, most publications are not led by Indigenous authors and are not based on Indigenous-designed research approaches and methodologies³⁵. These narratives tend to focus narrowly on inclusion, rather than engaging more broadly with the diverse contributions of Indigenous Peoples. These narrow framings and misrepresentations obscure a fuller understanding of both current and potential future contributions by diverse actors, as well as the richness of plural knowledge systems and ontologies³⁶. A more comprehensive understanding of these roles is essential for fundamentally reshaping governance in support of transformative change toward sustainability³⁷.

The IPBES Transformative Change Assessment identified five inter-linked roles as essential for driving transformative change toward sustainability: innovating and creating change, adopting and following change, raising awareness, unlocking broader systemic shifts, and influencing powerful actors⁴. These roles are presented as not mutually exclusive, since actors may assume different roles depending on the opportunities available to them. Moreover, roles can evolve over time and instances of transformative change often emerge from the interplay of multiple actors engaging in different roles. In this *Perspective*, we challenge the notion that these five roles fully capture the diverse and nuanced ways in which Indigenous Peoples and local communities contribute to transformative change. While this framework offers a valuable starting point, it largely reflects roles available to actors operating within or reinforcing dominant systems. In contrast, many Indigenous Peoples and local communities engage in efforts that address the underlying causes of biodiversity loss and nature decline, contributions that are not necessarily reflected in the roles outlined by the Transformative Change Assessment.

We propose a revised framework that more accurately reflects the diverse roles of Indigenous Peoples and local communities as agents of transformative change for sustainability (Table 1). We do so while acknowledging that our classification is only one of many possible approaches to understanding roles, capacities, and responsibilities. At the heart of the proposed framework is the concept of *being change*—the recognition that many Indigenous Peoples and local communities embody sustainable ontologies and lifeways that not only prefigure but can actively inspire the kinds of transformations needed at multiple scales (Fig. 1). Two roles protect and uphold Indigenous Peoples' and local communities' capacity to sustain their ontologies and practices amid external pressures: *resisting exploitation and harms* and *defending rights*. Two additional roles extend and amplify Indigenous Peoples' and local communities' ontologies and practices: *shaping broader societal change* and *providing customary foundations* for care-oriented ways of organizing economies, governance, and legal systems.

In the remainder of this *Perspective*, we elaborate on each of the five roles, illustrating them with selected examples from around the world.

Table 1 | Indigenous Peoples' and local communities' roles as agents of change

Role	Description	
Being change	Many Indigenous Peoples and local communities embody diverse, dynamic, and place-based ways of living that are rooted in care, reciprocity, and responsibility toward kin, encompassing people, lands, waters, and all forms of life.	
Protect and uphold Indigenous Peoples' and local communities' capacity to sustain their ontologies and practices	Resisting exploitation and harms	Through resistance, advocacy, and social movements, many Indigenous Peoples and local communities confront activities that cause environmental harm, assert their rights, and advance environmental justice.
	Defending rights	Many Indigenous Peoples and local communities engage with existing mechanisms—such as legal systems and policymaking processes—to defend and advance their rights, as well as the rights of all life.
Extend and amplify Indigenous Peoples' and local communities' ontologies and practices	Shaping broader societal change	Many Indigenous Peoples and local communities influence broader societal transformation through active engagement in environmental action, while also inspiring processes of unlearning, reimagining, and undoing dominant systems and worldviews around the world.
	Providing customary foundations for care-oriented ways of organizing	Many Indigenous Peoples and local communities uphold customary practices and societal structures grounded in relationships with self, others, spirits, ancestors, and all forms of life. These relational ways of being offer foundational insights for reimagining governance, legal, and economic systems rooted in reciprocity and care. They offer a paradigm for regenerating people and/with nature.

While these roles are presented as analytically distinct, they are deeply interconnected and often mutually reinforcing; most examples reflect multiple roles in practice. Rather than assigning a single role to each case, the examples highlight how different roles manifest in practice within complex social-ecological realities. These roles are both shaped by and responsive to specific social, ecological, and political contexts, as well as the urgency and scale of environmental degradation—factors we have considered in selecting examples. In the final section, we return to the critical question of how to strengthen, expand, and deepen the roles of Indigenous Peoples and local communities as agents of transformative change. We argue that doing so requires a whole-of-society approach—one that mobilizes diverse actions and fosters broad engagement across social actors in a collective commitment to cultivating 'right relations': respectful, reciprocal, and accountable relationships between people, communities, and the natural world that support just and sustainable transformations³⁸.

Indigenous Peoples' and local communities' roles as agents of transformative change for sustainability

Being change

Many Indigenous Peoples and local communities embody ways of thinking, organizing, and acting that align with principles of sustainability and 'living as' nature³⁹. These values and practices are often rooted in holistic worldviews, where kinship relationships form the foundation of philosophies of life and guide efforts to live in harmony with nature^{40–42}. Embodying sustainable ways of being contrast with the Western notion of "change makers" and reflect a deep rooted mechanism of transformation, what we describe as the role of *being change*. This role captures the dynamism inherent in Indigenous Peoples' and local communities' ways of knowing and being, which understand reality as ever-changing, relational, entangled with the more-than-human world, and grounded in principles of care, reciprocity, and interdependence^{43–45}. These ways of being already embody many of the values that visions for transformative change commonly seek to achieve^{37,46}. As such, they challenge the notion that all communities must change⁴⁷. This perspective was strongly emphasized during the IPBES Indigenous and local knowledge dialogue workshops, where participants emphasized that transformation is primarily needed in the knowledge systems and structures of key sectors responsible for nature decline^{31,32}.

For many Indigenous Peoples and local communities, relationships with nature are deeply respected, as nature is regarded as a "revered space where all forms of life—human and non-human—flourish and sustain one another"⁴⁸. Landscapes and other-than-human species are often regarded as kin because of the webs of obligation and reciprocity and linkages to

ancestors^{31,49}. During one of the dialogue workshops³⁰, a representative of the Sámi Council, illustrated this perspective through the concept of *birgejupmi*—a guiding compass for living that emphasizes taking only what is needed and respecting nature's capacity for self-renewal (Fig. 2).

Indigenous Peoples' and local communities' relationships with nature are reflected in biocultural practices that guide the integrated management of social-ecological dimensions of life resulting in long-term sustainability^{50–52}. These practices are widespread and diverse. Examples include Aboriginal fire management in northern Australia⁵³, or the Himba people's rotational grazing system in Namibia⁵⁴. *Territories of life*, ancestral lands governed by Indigenous Peoples, are a powerful expression of these biocultural approaches⁵⁸. Territories of life exemplify relational ontologies and care practices, affirming the agency and sacredness of land (Fig. 2). These territories, along with the values and concepts embedded in Indigenous People's praxis, offer living examples of what it means to *be change*.

The biocultural practices referenced here are often maintained through customary governance systems that, despite being overlain, distorted, or undermined by imposed State tenure regimes and extractive activities, continue to play a vital role in supporting environmental care. These systems include local regulations, religious beliefs, symbolic practices, rituals, taboos, and sanctions, often transmitted through oral histories, festivals, and ceremonies⁵⁵. Customary governance may regulate specific activities through collective norms or impose temporal or spatial restrictions on access to certain species, areas, or natural elements. Customary governance systems are often enforced through spiritual or cultural sanctions limiting extraction and supporting biodiversity conservation^{56,57}, as seen in the *Kaja Sacred Forest of the Mijikenda People, Kenya* (Fig. 2), and have become foundational to some conservation efforts, such as the Mapuche Conservation Area *Len Ko Winkul Mapu*⁵⁸. Although a comprehensive global assessment of the vitality of these customary governance systems is lacking, research indicates that their effectiveness often hinges on the strength and resilience of local institutions in responding to and resisting global pressures, underscoring the importance of revitalizing and reinforcing them⁵⁹.

Resisting exploitation and harms

Indigenous Peoples and local communities *resist exploitation and harms*⁶⁰, thereby protecting and upholding the capacity to sustain ontologies and practices. Despite facing violence and systemic barriers that restrict their ability to protest, vote, lobby, participate in decision-making processes, or exercise sovereignty and autonomy, Indigenous Peoples and local communities remain at the forefront of movements resisting systems driving environmental degradation⁶¹. Through resistance, advocacy, and direct



Fig. 1 | Indigenous Peoples' and local communities' roles as agents of transformative change for sustainability. This conceptual framework outlines five interconnected roles that Indigenous Peoples and local communities play as agents of transformative change toward sustainability: *Being change* (purple), *Resisting exploitation and harm* (orange), *Defending rights* (blue), *Shaping broader societal change* (green), and *Providing customary Foundations* (red). Illustrations *Being change*: Birgejupmi: Saami reindeer by Premditated / CC0 1.0; Territories of Life: *Territorios de vida* image provided by Albert Maurilio Chan Dzul; Kaja Sacred Forest: *Kaya Kinondo, Sacred Forest, Kenya* by Ninara / CC BY 2.0. Illustrations *Resisting exploitation and harm*: Girjas: *Saana, Kilpisjärvi, Lapland* by Ninara / CC BY 2.0, Consensus Study on the Co-Production of Environmental Knowledge: A Diné woman in a traditional dress, on the rim of Grand Canyon, by NPS Photo/M. Quinn / CC-BY-2.0; Bikin National Park: *Bikin River* by Russian.dissident / CC0. Illustrations *Defending rights*: Central Arctic Ocean Fisheries Agreement: Royal

Canadian Mounted Police (R.C.M.P.) ship St. Roch in August on the Arctic Ocean / Library and Archives Canada / CC BY 4.0; Escazú Agreement: *Principio 10, Acuerdo Escazú* by Gafotos / CC BY 3.0; The Subsidiary Body of Article 8j (SB8j): *Capturando el espíritu de la COP 16* by EcoActivismo / CC-BY-2.0. Illustrations *Shaping broader societal change*: Salmon management: *Rearguard Falls* by D-Stanley / CC BY 2.0; Zapatista movement: *Line to search delegates, Zapatista Encuentro, 1996* by Julian Stallabrass / CC-BY-2.0; Restoration of the Yarra River: *Princes Bridge, Melbourne* by Bernard Spragg, CC0. Illustrations *Providing customary Foundations*: Law of the Rights of Mother Earth: *Earth Day ~ Mother Earth* by Alice Popkorn / CC BY 2.0; Te Awa Tupua - Whanganui River Claims Settlement Act: *Whanganui River* by Jason Pratt / CC BY 2.0; Ubuntu-informed environmental governance: *Results exchange workshop on land management, drought and food security, Athi village, Makueni County, Kenya*, image provided by Chinwe Ifejika Speranza.

action, they challenge exploitative dominant systems and harms, not only defending their rights and territories but also advancing broader struggles for environmental justice¹⁴.

Indigenous Peoples have actively campaigned against extractive activities and their impacts on health, often mobilizing to prevent the establishment of extractive industries on their lands⁶². Notable examples include opposition from the Inupiat and Gwich'in Indigenous Peoples in the Arctic region of North America against oil drilling, as well as widespread resistance to the Dakota Access, the Enbridge, the Trans Mountain, and the Keystone XL pipelines⁶². Beyond fossil fuel projects, Indigenous Peoples-led movements have also fought natural resource extraction. In Cambodia, the Prey Lang Community Network, established in 2007 by Khmer and Kuy Indigenous Peoples, has worked to safeguard Prey Lang Forest from illegal logging, agro-industrial expansion, and mining⁶³. In Russia, the Udege

people campaigned for the creation of the *Bikin National Park* to protect their lands from exploitation (Fig. 3).

Many Indigenous Peoples and local communities have also challenged conservation efforts that overlook justice, highlighting concerns about power, responsibility, land governance, and the social costs of environmental solutions—especially when these efforts lead to displacement, loss of livelihoods, and the marginalization or erasure of Indigenous People's knowledge and values^{64–66}. Several Indigenous Peoples' and local communities' movements have played a critical role in advancing the recognition and adoption of rights-based conservation⁶⁷ and advocating for equitable conservation governance^{68,69}. Many Indigenous Peoples have also actively reclaimed rights over ancestral territories they have long cared for, as exemplified with the *Girjas case concerning Sami right to hunt and fish* (Fig. 3).



Fig. 2 | Description and geographical location of three case examples of the role *Being change*. For illustrations, see legend to Fig. 1.

Indigenous Peoples and local communities have also challenged dominant narratives by questioning whose ontologies, knowledge systems, and values are recognized and valued. For example, Indigenous Peoples have questioned visions of planetary wellbeing that focus on carbon metric or economic growth, offering perspectives grounded in ontologies where the health of the Earth is inseparable from spiritual balance, ancestral obligations, and reciprocal care with all beings^{70,71}. Indigenous Peoples have also confronted Western academic conventions that determine whose knowledge counts, by advocating for the inclusion not only of Indigenous Peoples and local communities, but also of non-human entities as legitimate knowledge holders. A compelling example is the Bawaka Collective, an Indigenous and non-Indigenous collaboration based in Australia that foregrounds relational understandings of place. In their work, land—specifically Bawaka Country—is recognized as an active, co-constitutive force in shaping human life, and is thus acknowledged as first author in academic publications⁴⁵. Indigenous Peoples' advocacy has also played a key role in advancing data governance initiatives rooted in different ethical research frameworks. In Sweden, for example, the Sámiid Riikasearvi has issued guidance on data ownership, handling, and benefit-sharing⁷². Broader principles like the CARE⁷³ and OCAP® Principles⁷⁴ further assert Indigenous Peoples rights to data ownership, control, and use, emphasizing collective benefit, contextual integrity, and long-term stewardship. Indigenous Peoples advocacy has also led to the termination of initiatives that failed to adequately and equitably recognize plural knowledge systems, such as the suspension of the NASEM *Consensus Study on the Co-Production of Environmental Knowledge* (Fig. 3).

Defending rights

While often lacking formal institutional power, Indigenous Peoples and local communities protect and uphold their ontologies and practices by *defending rights*. Indigenous Peoples and local communities engage with and strategically leverage existing mechanisms, including local and international environmental decision-making processes and legal systems, to assert not only their own rights but also the rights of all living beings to a just and sustainable world. Through lobbying, litigation, and negotiation, Indigenous Peoples and local communities have shaped both local and global environmental policy, demonstrating that active participation in these arenas is essential to unlocking transformative change⁷⁵.

Through participation in global policy development, Indigenous Peoples have shaped key international agreements, including the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) and the Kunming-Montreal Global Biodiversity Framework. Their influence is evident in instruments such as the *Treaty on Intellectual Property, Genetic Resources, and Traditional Knowledge* (Fig. 4) and the historic COP 16 decision of establishing a Subsidiary Body on Article 8(j) of the CBD, which grants them a permanent role in formal biodiversity policy⁷⁶. Similarly, the global peasant movement *La Via Campesina* has played a crucial role in the adoption of the UN Declaration on the Rights of Peasants and Other People Working in Rural Areas⁷⁷.

Indigenous Peoples have also actively engaged in regional and local environmental policy, influencing decisions to protect both global and regionally recognized rights⁷⁸. For instance, the Northern Aboriginal Peoples' Coordinating Committee on Persistent Organic Pollutants (POPs), formed by Arctic Indigenous groups, supported the Inuit Circumpolar Council's role in negotiating the Convention on Long-Range

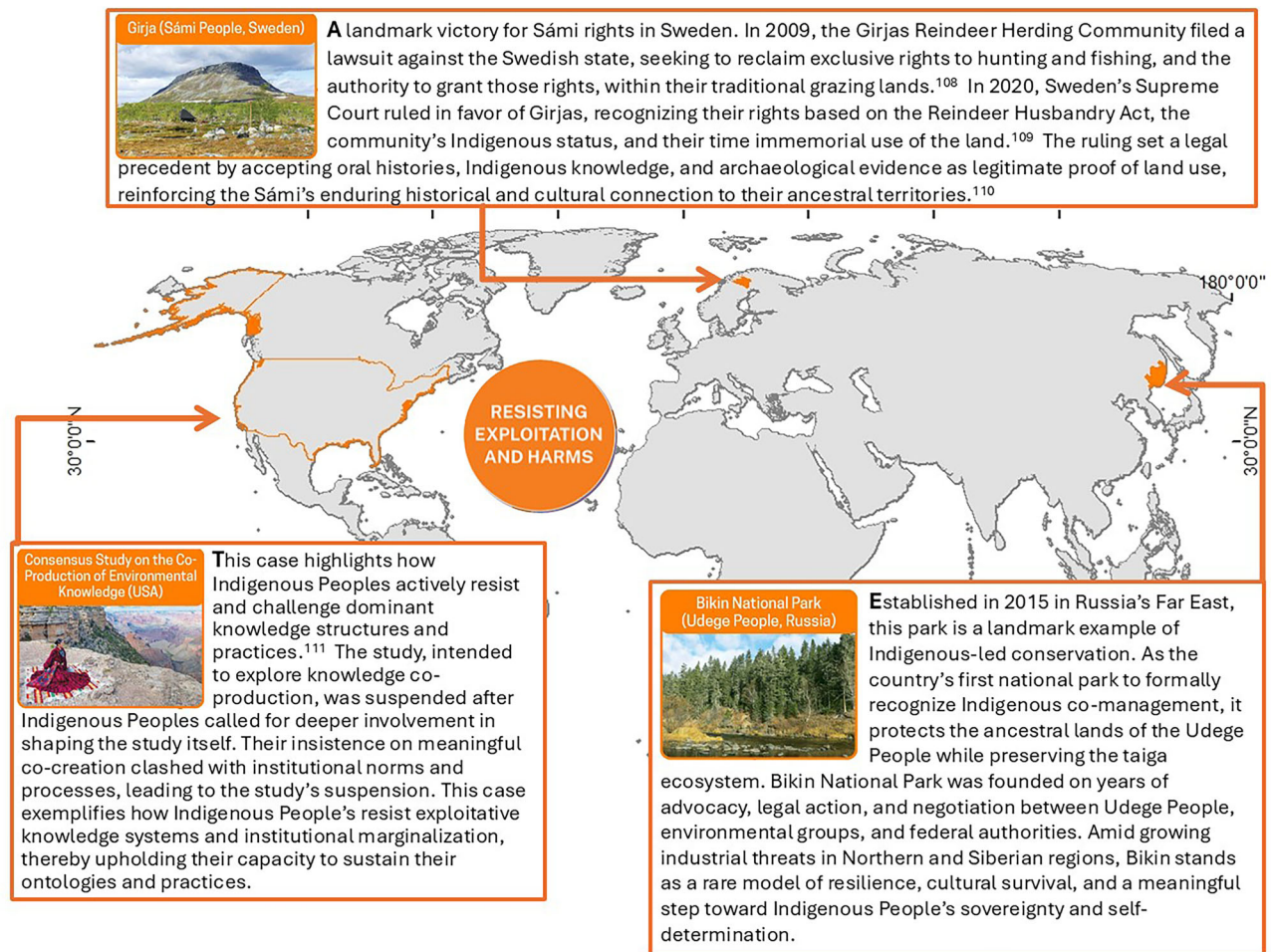


Fig. 3 | Description and geographical location of three case examples of the role *Resisting exploitation and harms*. For illustrations, see legend to Fig. 1.

Transboundary Air Pollution Protocols on POPs and Heavy Metals⁷⁹. Arctic Indigenous Peoples also advocated for expanded bans on persistent chemicals and precautionary language in the Stockholm Convention and the Minamata Convention on Mercury⁶². Indigenous Peoples also contributed to the *Development of the Escazú Agreement*, which aims to guarantee access to environmental information, public participation, and justice in environmental matters in Latin America and the Caribbean, while providing protection to environmental defenders (Fig. 4); and Arctic Indigenous Peoples have played a role in the development of the *Central Arctic Ocean Fisheries Agreement* (Fig. 4). It is worth noting, however, that the inclusion of Indigenous perspectives in these agreements does not guarantee their effective implementation or enforcement, which often remains limited by political will to recognize Indigenous Peoples presence in countries, state capacity, or competing economic interests, which dominate international negotiations.

Shaping broader societal change

Indigenous Peoples and local communities are shaping future visions that inspire broader societal transformation and encourage critical reflection on dominant ideas of progress. In doing so, they challenge the legacy of colonial modernity—a system rooted in European colonial expansion that continues to marginalize Indigenous worldviews and values. This dominant model often equates modernity with progress, promoting racial hierarchies, rigid divisions between humans and nature, and the justification of extractive and appropriative practices⁴⁶.

Under the assumption that integrating diverse environmental knowledges leads to more informed and broadly accepted decisions, many transition initiatives are increasingly seeking the participation of

Indigenous Peoples and local communities^{43,80}. However, these efforts often remain embedded in frameworks that treat humans and nature as separate, and they frequently position Indigenous Peoples as mere participants in externally driven conservation projects. This overlooks their deep, relational connection to the natural world, an understanding emphasized in emerging approaches such as convivial conservation⁸¹. Despite these limitations, Indigenous Peoples and local communities often actively engage in a range of transition efforts—from customary land governance and biodiversity monitoring to ecosystem management, restoration, and knowledge co-creation. Through participation, they reshape these initiatives, often in transformative ways. Their engagement creates living examples of change in practice, playing a critical role in *shaping broader societal change*.

Indigenous Peoples and local communities have engaged in the planning, execution, and monitoring of restoration activities, drawing on their knowledge systems and practices to shape these activities. Examples include the involvement of *Indigenous Elders, through the Birrarung Council in the regeneration of the Yarra River in Melbourne, Australia* (Fig. 5)⁸²; the Ainu's People participation in the restoration of Shiretoko National Park in northern Japan⁸³; the work of local forest users groups in Nepal's Community Forestry Program⁸⁴; and farmers' contributions to rice paddies restoration in Kerala, India⁸⁵. Examples are also found in community-led fishing practices that promote ecosystem integrity and resilience^{86,87}, such as *salmon stewardship by Indigenous communities in British Columbia* (Fig. 5)⁸⁸.

A paradigmatic example of Indigenous Peoples shaping broader societal change is found in the *Zapatistas movement*, as this movement not only changed things radically within the Mexican nation state, but they also

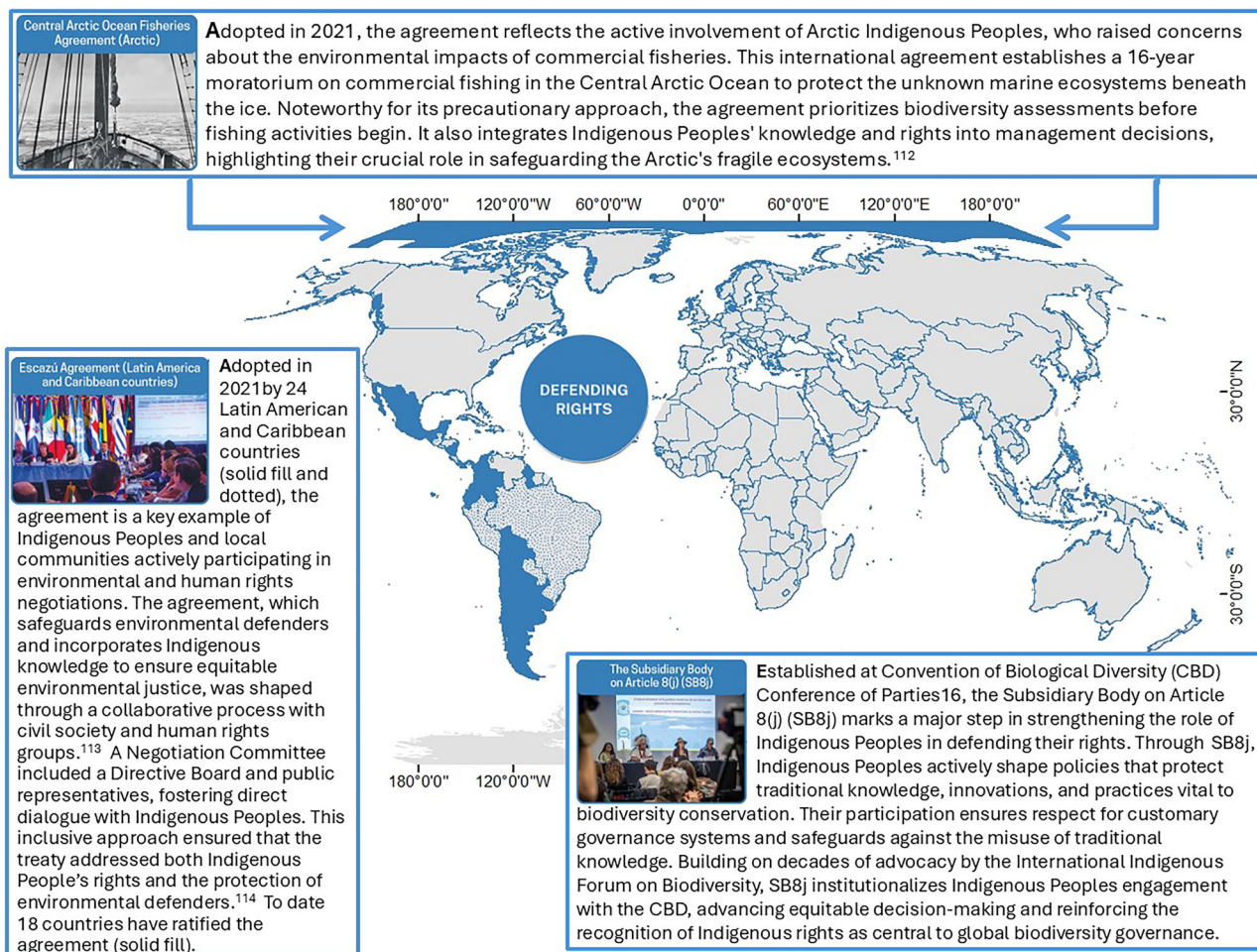


Fig. 4 | Description and geographical location of three case examples of the role *Defending rights*. For illustrations, see legend to Fig. 1.

established their own sovereignty and have inspired movements around the world (Fig. 5).

Providing customary foundations for care-oriented ways of organizing economies, governance, and legal systems

Many Indigenous Peoples' and local communities' ontologies support ways of organizing society that are communal, and based upon ethics of care - hereafter termed 'care-oriented'. In this way, they *provide customary foundations for care-oriented ways of organizing economies, governance, and legal systems* that transcend dominant narratives and expand the possibilities for just and sustainable futures.

While many Indigenous Peoples and local communities are drawn into capitalist relations to varying degrees, many sustain strong economies distinct from dominant systems that are typically community-centred, prioritizing collective well-being, gift economies, and subsistence- or sufficiency-based livelihoods. These perspectives have sparked ongoing debates about alternative economic models, including pluriversal approaches to economic systems, like the Potawatomi concept of the *honourable harvest*⁸⁹, Indigenous forms of degrowth and solidarity economy initiatives^{90,91}, or non-market food provisioning services⁹². Indigenous and local knowledge systems have also been foundational in transforming productive activities. For instance, permaculture - a well-established agricultural system involving holistic design principles to regenerate soil health, conserve water, and enhance agrobiodiversity—draws heavily from Indigenous knowledge⁹³. Similarly, regenerative agriculture has roots in the practices of Mediterranean island communities cultivating climate-resilient, ecosystem-restorative crops⁹⁴. Today, these practices are re-emerging and growing

through translocal, solidarity networks connecting local farmers, food cooperatives, and other actors⁹⁵.

Indigenous Peoples' ontologies have also played a foundational role in shaping environmental governance innovations that seek to reimagine or re-establish human-nature relations. Central to many of these ontologies is the concept of kinship with the more-than-human world, which informs distinct cosmologies and governance systems. Examples include *Sumak/Allin Kawsay* from Andean traditions and *Mino bimaatisiwin* of the Anishinaabe People of North America^{96,97}. These ontologies and practices foreground care, reciprocity, and solidarity, not only with other humans, but also with lands and waters understood as vital and alive. These respectful, reverent relationships and obligations with more-than-human beings, ancestors, and future generations underpin environmental governance practices, as illustrated by *Ubuntu-informed environmental governance in South Africa* (Fig. 6).

The Rights of Nature movement offers an example of how Indigenous Peoples' ontologies have been foundational for legal systems⁹⁸. Drawing on these ontologies, proponents, including many Indigenous Peoples, assert that nature possesses inherent rights, including the right to exist, thrive, and evolve. As a legal paradigm, the Rights of Nature challenges dominant Western and neoliberal legal frameworks that prioritize individual interests over collective well-being. Instead, it centres diverse ecological values rooted in relational ontologies and care-oriented values^{69,98,99}. This movement has spurred groundbreaking legal innovations, such as Ecuador's 2008 constitutional recognition of the Rights of Nature—the first legal framework of its kind—achieved through sustained advocacy by the Confederation of Indigenous Nationalities of Ecuador (CONAIE). Other notable examples



Fig. 5 | Description and geographical location of three case examples of the role *Shaping broader societal changes*. For illustrations, see legend to Fig. 1.

include *Bolivia’s Law of the Rights of Mother Earth* (Fig. 6) and the *Te Awa Tupua - Whanganui River Claims Settlement Act 2017, Aotearoa New Zealand* (Fig. 6). We note that rights of nature have limitations in terms of practical enforcement and also risk reinforcing rigid dichotomies between nature and culture, that have been widely critiqued, as explained above¹⁰⁰.

Outlook

Fostering transformative change for sustainability requires expanding and deepening the recognition of Indigenous Peoples and local communities as key agents of change. Drawing on the diverse roles outlined in this *Perspective*, we emphasize that strengthening Indigenous Peoples’ and local communities’ contributions must be part of a broader, coordinated, and just transformation grounded in respectful, reciprocal coexistence, a positionality that implies care for all life¹. Crucially, this transformation must begin by supporting Indigenous Peoples’ and local communities’ own priorities and visions for sustainability and justice.

Transformation that addresses the underlying causes of biodiversity loss and nature decline cannot emerge from the same extractive logic that has driven them. Disrupting these entrenched systems involves confronting deep political and structural struggles, including the global inequities in power, consumption, and voice that uphold relations of domination.

It is therefore vital to resist narratives that place the burden of planetary sustainability solely on Indigenous Peoples and local communities. Such framings risk romanticizing their roles while obscuring the responsibilities of elites, high-consuming groups, and States for historical and ongoing environmental harms¹⁰¹. What is needed is recognition of how Indigenous

Peoples’ and local communities’ practices can inspire, inform, and support far-reaching structural and cultural shifts in sustainability imaginaries and the global political economy.

Governments, institutions, citizens, the private sector, and non-Indigenous actors all have roles in this collective effort. These include protecting and recognizing Indigenous Peoples’ and local communities’ ontologies, epistemologies, rights, values, and governance systems; creating enabling conditions for communities to thrive; and ensuring meaningful participation in decision-making processes. Equally important is avoiding transformation narratives that reduce change to technical innovation or novelty. As with the legacy of “wilderness” and “rewilding,” dominant conservation framings that erase human presence and reinforce the conceptual separation between the “natural” world and “culture” risk co-opting or erasing Indigenous Peoples’ and local communities’ ways of being that already embody sustainability¹⁰². This is not to idealize Indigenous Peoples or local communities as universally living sustainable lives, nor to suggest their politics and practices are unchanging. Rather, their relational ontologies offer powerful possibilities for reimagining sustainable futures.

A genuine commitment to transformation requires an ontological and ethical shift, from relations of domination to relations of care, reciprocity, and accountability. This shift can guide for non-Indigenous actors seeking transformations in diverse contexts, calling for humility making space for Indigenous Peoples’ leadership, deep listening (to humans and more-than-human voices), self-reflection, and alignment of action with justice³⁸. It also means resisting efforts to impose externally driven solutions and to appropriate Indigenous Peoples’ struggles for other agendas. As the field of

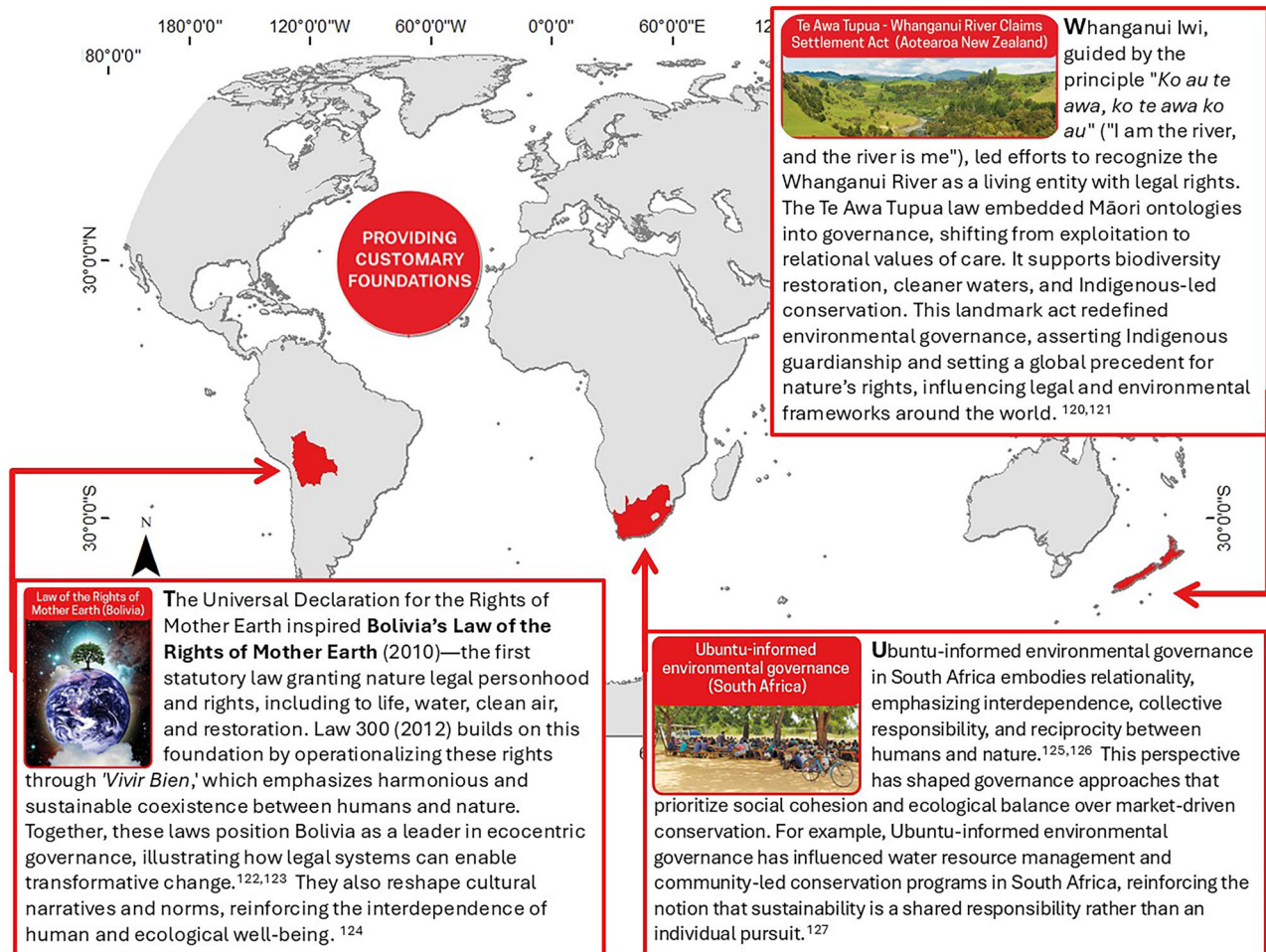


Fig. 6 | Description and geographical location of three case examples of the role *Providing customary foundations for care-oriented ways of organizing economies, governance, and legal systems*. For illustrations, see legend to Fig. 1.

transformative change for sustainability grows, the need for humility and reflexivity on behalf of non-Indigenous actors becomes ever more urgent.

Ultimately, Indigenous Peoples' and local communities' roles must be recognized and supported—not substituted, romanticized, nor instrumentalized—by those committed to justice and ecological integrity. Strengthening these roles calls for a reconfiguration of ontologies, values, and relations beyond Indigenous Peoples' and local communities' contexts. Embodying this shift in research, policy, and practice is not a destination, but an ongoing, collective journey towards pluriversal justice and sustainability.

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Author contributions

V.R.G. conceived the idea, conducted investigation, and wrote the original draft. V.N. conceived the idea, conducted investigation, designed the figures, and contributed to write the original draft. M.B.M. conducted investigation, designed the figures, reviewed drafts, and contributed to the final manuscript. V.H. conceived the idea, conducted investigation, and contributed to write the final manuscript. J.L. conceived the idea, conducted investigation, designed the figures, and contributed to write the final manuscript. H.W. conceived the idea, conducted investigation, and contributed to write the final manuscript. Z.A. conducted investigation and contributed to write the final manuscript. P.B. conducted investigation and contributed to write the final manuscript. J.C. conducted investigation and contributed to write the final manuscript. JMD conducted investigation and

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Competing interests

The authors declare the following competing interests. P.B. coordinates IPBES Indigenous and Local Knowledge Technical support unit, based at UNESCO-Paris. E.G. is President and a financial member of the Australian Institute of Ecological Agriculture. V.N. is a financial member of the Natural Resources Institute (NRI), a research and development organization. K.O. is co-owner of cCHANGE, which focuses on transformations to sustainability.

Additional information

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