

Comparative Analysis of Ancient Indian and Global Indigenous Sustainability Frameworks



07

Atulya Verma

Assistant Professor, ICFAI Education School
The ICFAI University, Dehradun

Ch.Id:-NSP/EB/GTRDBAIP/2026/Ch-07

ABSTRACT

This paper revisits and richly expands the comparative study of ancient Indian and global Indigenous approaches to sustainability, illuminating their shared ethos of harmony between people and Nature. We examine how ancient Indian wisdom – rooted in scriptures, spiritual practices, and community traditions – aligns with diverse Indigenous worldviews worldwide. Both frameworks emphasize respect, reciprocity, and interconnectedness as ethical cornerstones of sustainable living. Through a comprehensive literature review and qualitative thematic analysis, we contrast philosophical foundations, spiritual values, and practical environmental practices across cultures. For instance, ancient texts like the Vedas articulate reverence for Panchabhūtas (the five elements) and nonviolence (ahimsā) toward all beings, while many Indigenous peoples speak of Earth as “Mother” and manage resources through customary laws and taboos. Modern scholarship increasingly recognizes that Indigenous Knowledge Systems (IKS) inherently embody many Sustainable Development Goals, guiding biodiversity conservation, climate resilience, and community well-being. Yet these wisdom traditions were long marginalized by colonial and technocratic paradigms. We highlight recent shifts: global policy platforms (IPBES, UNFCCC’s Local Communities & Indigenous Peoples’ Platform, etc.) now acknowledge Indigenous knowledge as a vital resource for climate action and biodiversity protection. In addition, we frame “decolonial” approaches that seek to integrate Indigenous insights into sustainability science, moving beyond tokenism to genuine co-learning. By weaving together illustrative examples – from sacred groves and agroforestry to community-led climate adaptation – this narrative underscores that sustainability is as much a moral and spiritual question as it is technical. A relational ethic emerges as a common thread: viewing humans as part of an extended kinship that includes forests, waters, and future generations. This integrative perspective enriches academic discourse and offers guidance for education, policy, and practice aimed at achieving just and regenerative futures for all.

INTRODUCTION

Modern sustainability discourse often evokes scientific metrics and policy targets, yet beneath those frameworks lie diverse worldviews about humanity’s place on Earth. Across cultures, **traditional teachings** present strikingly similar lessons: the web of life is sacred, resources are finite, and communities must live in balance with Nature. Ancient Indian philosophy, for example, enshrines the idea of *Vasudhaiva Kutumbakam* – “the world is one family” – conveying that all beings share a single destiny. Likewise, many Indigenous societies speak of “*Mitakuye Oyasin*” (“all my relatives”) or personify Earth as a mother figure, underscoring kinship rather than ownership. These holistic ontologies contrast with dominant Western paradigms that

often treat nature as a mere commodity. Recent scholarship argues that **indigenous knowledge systems** (IKS) are inherently holistic and relational: they cannot be neatly compartmentalized but are woven into culture, language, and spiritual practice. For example, Carrin (2024) notes that Indigenous knowledge includes not only ecological information but also the entire “*dwelling*” process of life in a habitat, encompassing values, rituals, and communal norms. In this sense, ancient Indian traditions and Indigenous worldviews worldwide both regard environmental stewardship as a moral imperative, often grounded in spiritual beliefs and ethical duties (such as the principle of **dharma**, or cosmic order).

Despite these commonalities, Indigenous perspectives were long sidelined in mainstream environmental science and policy. In the 20th century, colonial and development agendas frequently dismissed local wisdom as “superstition.” However, contemporary crises – climate change, biodiversity loss, pollution – have underscored the value of time-tested practices and *relational* approaches to sustainability. For instance, the United Nations’ Sustainable Development Goals (SDGs) increasingly acknowledge that traditional knowledge spans food security, biodiversity, health, and governance. Studies show that lands managed by Indigenous peoples often retain higher biodiversity and forest cover than adjacent regions. In 2019, the IPBES Global Assessment explicitly called for integrating Indigenous and local knowledge with science in conservation strategies. Similarly, the Paris Climate Agreement (2015) and subsequent summits have created platforms for Indigenous voices (e.g. the UNFCCC Local Communities & Indigenous Peoples’ Platform), reflecting a shift toward **decolonizing environmental discourse**.

This paper deepens the comparative analysis of these wisdom traditions. By “humanizing” the academic narrative, we aim to show how ancient Indian texts (the Vedas, Upaniṣads, epics, and folk practices) echo many values found in Indigenous societies worldwide – from reverence for sacred rivers to communal conservation of forests. We juxtapose these philosophies with recent examples (e.g. community land management, rituals of reciprocity, legal personhood for Nature) to highlight cross-cultural resonance. Importantly, our analysis is contextualized by modern challenges and movements. We incorporate **decolonial frameworks** to critique past biases and spotlight collaboration: for example, how contemporary education is beginning to *braid* Western science with Indigenous knowledge, and how policy is recognizing the rights and insights of Indigenous communities. In all sections, emphasis is placed on the *relational, spiritual, and ethical dimensions* of sustainability that transcend mere resource calculations. Ultimately, this manuscript seeks to bridge knowledge traditions, demonstrating that a full understanding of sustainability requires embracing multiple ways of knowing, learning from ancient lineage, and honoring our shared responsibility to the planet.

LITERATURE REVIEW

Scholars across disciplines have documented how Indigenous worldviews foster sustainability. Ethnographic studies reveal that Indigenous peoples maintain **deep ecological knowledge** passed down over generations. This knowledge is *holistic*: it includes not just technical know-how about plants and animals, but also the cosmological narratives and ethical norms that guide use of resources. In Australia, for instance, Māori concepts of *kaitiakitanga* (guardianship) imbue stewardship of land and waters with moral weight. In

North America, the Iroquois “Seventh Generation” principle explicitly requires decision-makers to consider the impact on descendants seven generations hence. Many Amazonian tribes integrate spiritual respect for animal kin and forest spirits into their hunting and agriculture. These examples illustrate a pattern identified by Tu’itahi (2022): Indigenous values are *relational*, emphasizing reciprocity and interconnectedness among humans, non-humans, and the environment.

In the Indian context, a rich body of literature highlights similar threads. Bargah (2025) notes that ancient Indian philosophy “*laid the groundwork for environmental ethics by emphasizing the interconnectedness of humans and nature*”, viewing the environment as a living system in which humans are not separate from, but part of, the whole. Classical texts depict rivers, mountains, and animals as divine or sacred. For example, the Ganges (*Ganga*) is worshipped as a motherly goddess, and wisdom literature like the *Bhagavad Gītā* teaches reverence for the warrior even in defeated foes (which has been interpreted ecologically as respect for all life). The principle of **ahimsā** (nonviolence) in Hinduism and Jainism extends to animals and plants, indirectly discouraging overexploitation of fauna and flora. Scholars also point to *dharma* and *karma* as ethical foundations: humans have duties to maintain *ṛta* (cosmic order) and face karmic consequences if they damage the environment. Thus, the Indian tradition provides an ecospiritual framework where protecting Nature is both a pragmatic and moral obligation.

This convergence between Indian and Indigenous sustainability is borne out in practice. Chauhan *et al.* (2022) survey ancient Indian scriptures (Vedas, Upaniṣads, Epics) and find “**ecological concordance**” embedded in many rituals and norms. The authors note that concepts akin to modern “3R” (Reduce-Reuse-Recycle) and *zero-waste* were intrinsic to traditional life: offerings were made with minimal waste, materials were used in cyclic fashion, and byproducts (like cow dung and ghrīta) were reused in agriculture and medicine. Similarly, Kumar *et al.* (2023) document how the Vedic era prioritized environmental protection, with communities *worshipping nature* and managing resources meticulously so that rivers and forests remained pristine. These findings resonate with global studies: by contrast to centralized state parks, many of the world’s oldest protected areas are actually *sacred sites* guarded by local peoples. Pearce (2023) reports that sacred groves, church forests, and temple reserves – spanning Ethiopia, Japan, India and elsewhere – constitute an “ancient network of community conservation” that often harbors biodiversity lost in surroundings. In India alone, elders recall that up to 30% of traditional land in some regions was once set aside as sacred grove, and over 100,000 such sites existed in the past. These parallel instances underscore a key insight from the literature: **spiritual beliefs can be powerful de facto conservation laws**.

Recent interdisciplinary research has begun to integrate these traditions into contemporary sustainability science. Indigenous and environmental education scholars urge *bridges* between knowledge systems. For example, Chuchartas, Sothornwit *et al.* (2021) in a global review highlight that co-designing climate solutions with Indigenous communities not only yields effective localized strategies but also realigns values toward environmental ethics (the so-called “knowledge co-design” approach). In Himalaya, Negi *et al.* (2025) systematically document Himalayan villagers’ traditional ecological knowledge (TEK) and emphasize its triple-win potential for climate adaptation, resilience, and greenhouse gas mitigation. Their review shows that local farmers use sophisticated agro-forestry rotations, rainwater harvesting, and pasture

management that have sustained livelihoods through changing climates. Yet, the authors lament that these practices remain underutilized in formal policy and science – a gap echoed by many scholars calling for *co-production of knowledge*.

A salient theme in the literature is the **decolonial critique** of mainstream sustainability. Ojochenemi (2024) argues that prevailing climate discourse is tainted by *scientism* – a belief in Western science as the sole authority – which has historically marginalized African Indigenous Knowledge (AIK). Similarly, Alfaro *et al.* (2024) highlight how colonial histories in Bangladesh have constrained Munda Indigenous adaptation strategies. These works advocate shifting away from top-down technocratic models towards “exemplary ethical communities” where Indigenous epistemologies guide solutions. This perspective aligns with recent policy shifts: UNESCO and IPCC reports now explicitly recognize traditional knowledge as critical to climate adaptation. For instance, the IPCC’s Fifth Assessment (AR5) stated that “*Indigenous, local, and traditional knowledge systems... are a major resource for adapting to climate change*” but lamented their inconsistent use in practice. In sum, the literature underscores a growing consensus: sustainability research and policy must honor Indigenous knowledge as co-equal to scientific knowledge, embracing an inclusive, justice-oriented paradigm.

METHODOLOGY

This manuscript is a **narrative-analytic comparative review**. We synthesized insights from a broad swath of recent scholarship (2015–2025), integrating peer-reviewed studies, institutional reports, and credible sources that illuminate ancient Indian and global Indigenous perspectives on sustainability. Key steps included: (1) Identifying seminal themes in both contexts (worldviews, spiritual-ethical frameworks, material practices); (2) Searching academic databases and authoritative websites for relevant literature (including anthropology, environmental science, and religious studies journals); and (3) Iteratively constructing cross-cultural comparisons. We maintained academic rigor by prioritizing peer-reviewed and high-quality sources (journals, international reports, edited volumes) and by citing sources explicitly to support each claim. The tone of presentation is reflective and narrative, with evocative examples, yet we preserved scholarly convention through systematic citations. Importantly, we adopted a **transdisciplinary lens** – similar to “Two-Eyed Seeing” approaches – intentionally weaving together scientific findings and Indigenous epistemologies as complementary strands. While no new empirical data were collected, our synthesis is attentive to context and agency: for example, when describing sacred groves or communal rituals, we cite ethnographic and ecological studies to ground the narrative. In this way, our methodology aligns with decolonial principles by giving voice to Indigenous knowledge-holders through their published accounts, rather than speaking solely from a Western academic perspective.

COMPARATIVE ANALYSIS

Philosophical and Worldview Foundations

At the core of both ancient Indian and many Indigenous traditions is a **holistic worldview** that sees humans embedded within Nature rather than above it. In Indian philosophy, texts articulate an organic

cosmology: the material world arises from and is sustained by the *Panchabhūtas* (five great elements: earth, water, fire, air, ether) and governed by *ṛta* (cosmic order). Bargah (2025) emphasizes this interconnectedness, noting that Indian thinkers viewed environmental phenomena as manifestations of divinity, with *dharma* guiding proper relations between humans and the natural world. Likewise, contemporary Indigenous scholars describe their knowledge systems as **holistic habitus** (in Bourdieu's sense) where ecological know-how, cultural identity, and spirituality merge. For instance, Carrin (2024) explains that Indigenous knowledge is rooted in the “dwelling” of community members on their lands over millennia, encompassing sacred rituals and communal memory about local ecology.

This relational ontology is evident in both settings. In South Asia, many villages historically considered land and animals sacred, creating an ethos of care. For example, certain forests were protected as the abode of deities, and water bodies were revered in local lore. Similarly, in Africa, the concept of *Ubuntu* (often translated as “I am because we are”) frames humanity as interdependent with all life, fostering a collective ethic of stewardship. A Zimbabwean elder might say the trees and rivers are *daizve dzevana* (“children of the soil”), implying mutual obligation. These ideas parallel the Indian reverence for *Panchabhūtas* – for example, *Vedic hymns* personify elements as deities with which humans must live in harmony. Although specific expressions differ (e.g., Indian ideas of *karma* versus Aboriginal Dreamtime stories), the underpinning message is strikingly similar: all beings belong to a unified order, and maintaining that order (by honoring Nature's rhythms) is the highest duty.

The literature shows that acknowledging this worldview has practical implications for sustainability. UNESCO and IPCC assessments now highlight that Indigenous communities' “holistic view of community and environment” is a major asset for adaptation, precisely because it accounts for complex, place-based relationships. In other words, when policy and science respect that different peoples can frame the environment in morally meaningful ways, it broadens the set of solutions. For example, in the Amazon, Levis *et al.* (2024) call for “indigenizing conservation science” by blending Western methods with Amazonian cosmovisions – a synergy that can guide sustainable land management and climate strategies.

Spiritual and Ethical Dimensions

Beyond philosophy, spiritual beliefs and ethical norms infuse sustainability practices with deeper significance. In ancient Indian culture, for instance, *Ahimsa* (non-harming) has been interpreted to include nonviolence toward animals and plants, influencing vegetarianism and care for life. Moreover, rivers like the Ganga are worshipped as goddesses, so polluting them violates sacred duty. Bargah (2025) highlights that many Indian faiths “view the environment as a living system... often seen as a divine or sacred entity,” framing exploitation of Nature as morally wrong. This sacralization means that environmental protection is not just utility-driven but is woven into rituals and respect for *Jīva* (life-force) present in all things.

Analogously, Indigenous communities often infuse spirituality into environmental ethics. Sacred groves, temple forests, and ancestral mountains serve as spiritual anchors where the community's moral codes are affirmed. Pearce (2023) reports that “sacred natural sites are the oldest form of habitat protection in human history,” maintained by taboos that are often more effective than formal legislation. In Ethiopia, church forests

are maintained around monasteries; in Japan, Shinto shrines preserve ancient woodlands; in rural Estonia and Nepal, villages offer rituals to protect their forests. These sites carry intense cultural meaning, and harming them incurs social and spiritual sanction. In Central America, Maya communities still make offerings to the Earth and sky, embedding permaculture in spiritual practice. Such examples underscore how **spirituality becomes an ally of ecology**: reverence for the sacred translates into concrete stewardship.

Importantly, these spiritual-ethical systems often stress **reciprocity and care over dominance**. For example, some Indigenous North American tribes refer to themselves as the “caretakers” of the land rather than its masters. In India, the concept of *Runa* (debt) sometimes frames nature as a lender of resources to whom humans owe reverence and repayment. Scholars have pointed out that this leads to practices like offering prayers or a portion of harvest back to the earth, akin to a tithe. In both traditions, harvesting or hunting typically follows rituals of thanks, ensuring that resource use is never purely extractive but always relational. This contrasts with industrial exploitation, and as Bargah notes, such principles “*promote a harmonious relationship*” that ancient Indians believed was necessary to avoid ecological calamity.

Traditional Practices in Environmental Management

These worldviews give rise to **specific sustainability practices** in daily life. In ancient India, traditional agriculture and craft incorporated sustainable methods. Farmers practiced multi-cropping and fallowing long before “organic” became a label, often guided by lunar calendars and local ecological knowledge. Rainwater harvesting structures (stepwells and tanks) were widespread; water management treatises existed in classical texts (e.g. *Arthashastra*). Waste was minimized through reuse: cow dung and ashes were valuable fuel and fertilizer, and textiles or metals were recycled into new items. Chauhan *et al.* (2022) highlight that Vedic cultures essentially lived a circular-economy ethos, with near-zero waste in religious offerings and domestic life. Kumar *et al.* (2023) similarly observe that because of this ingrained conservation ethic, “*the environment and water bodies stayed immaculate*” during the Vedic era. Many of these practices have been documented ethnographically; for example, Madhav Gadgil and others have catalogued India’s sacred groves (*Devrais, Kavus, Orans*), which are communally protected fragments of forest that maintain biodiversity hotspots. Even today, approximately 14,000 such groves are known, each with its own set of cultural taboos (e.g. no hunting, logging, or even entry without permission), conserving species that have disappeared elsewhere.

Globally, Indigenous communities have analogous systems. In Bangladesh and Nepal, floodplain communities plant seasonal crops in customary patterns that stabilize soil and manage monsoon water, a practice noted by Alfaro *et al.* (2024) in their study of the Munda people. In the Himalayas, Negi *et al.* (2025) catalogued a wealth of local practices: alpine herders rotate grazing on cyclical schedules and reforest grazing land with fruit trees, while village councils use community forests to supply fodder without denuding slopes. In Arctic regions, Inuit families interpret weather changes through generation-old indicators (seal migration, ice patterns), allowing them to adapt hunting calendars. In coastal Pacific islands, Polynesian navigators balance fishing with temple-led marine reserves. These examples reflect a common theme: **self-regulated resource management based on intimate knowledge of local ecology**.

Interestingly, many of these Indigenous strategies embody principles now celebrated by sustainability science. For example, agroforestry (planting diverse species in fields and pastures) is a cornerstone of Indian traditional farming and is also found in Mayan and West African systems; it simultaneously sequesters carbon, enriches soils, and supports wildlife. Fire management by Aboriginal Australians – using low-intensity burns to prevent large wildfires – is now recognized for its role in preserving flora and carbon balance. Customary marine tenure (as practiced by Pacific Islanders and some Amazonian tribes) has parallels with modern protected areas, limiting overfishing and allowing stocks to regenerate. As Ojochenemi (2024) emphasizes, many African Indigenous practices already embody what Western theorists call “sustainable development” – they are collective, place-based, and ethically governed.

Contemporary Policy and Decolonial Perspectives

The final axis of comparison is how these knowledge systems are recognized (or marginalized) in modern policy and discourse. Historically, colonial regimes often disrupted Indigenous management. In India, British forest laws overrode village rights, abolishing many sacred groves and imposing revenue cropping. Similarly, in Africa and the Americas, colonial and even postcolonial governments have sometimes excluded Indigenous communities from land governance. However, the last few decades have seen a “*coming of age*” for IKS in global forums. The 1992 Rio Earth Summit recognized traditional knowledge in Agenda 21. In 2007, the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) underscored the rights to cultural and land-based knowledge. Most recently, the 2022 Kunming-Montreal Biodiversity Framework (CBD COP15) explicitly calls for involving Indigenous Peoples and local communities (IPLC) in conservation decisions.

Indeed, the **agenda of integration** emerges strongly. UNESCO’s climate portal explains that Indigenous land-management is now woven into climate policy: local knowledge “*contribute[s] to the achievement of SDG 13 [Climate Action] by observing changing climates, adapting to impacts and contributing to global mitigation efforts*”. UNFCCC’s Local Communities and Indigenous Peoples’ Platform (LCIPP), established in 2017, creates a formal space for exchanges of Indigenous climate innovations. The IPCC’s Sixth Assessment Report (2021) includes Indigenous authors and acknowledges Indigenous knowledge alongside science in framing adaptation (AR6 WGII). This represents a significant shift from earlier models that treated indigenous contributions as anecdotal.

Scholars encourage *decolonizing* sustainability by moving beyond mere inclusion. Ojochenemi (2024) frames this as challenging “*scientism*” – the hegemony of Western technocratic solutions – and proposing African Indigenous Knowledge (AIK) as *equal partners* in climate education and policy. Alfaro *et al.* (2024) similarly call for dismantling “*Western-centric adaptation paradigms*” in favor of community-led strategies. Such scholarship aligns with participatory and justice-oriented approaches. For example, community-based climate adaptation projects increasingly employ participatory mapping, oral history, and cultural protocols alongside scientific data, reflecting an epistemic shift.

In practice, we see concrete outcomes. In Bhutan and Nepal, some forest councils legally mandate respect for customary norms. In Latin America, Argentina and Colombia have granted legal personhood to

rivers (e.g. Atrato River rulings), an innovation inspired by Indigenous cosmologies that treat waters as living relatives. In academia, courses in environmental science and sustainability studies are beginning to include modules on sacred ecology and tribal land rights. The United Nations' Educational, Scientific and Cultural Organization (UNESCO) promotes *transdisciplinary* research centers (such as the Centre for Indigenous Knowledge Systems in South Africa) to ensure research agendas reflect Indigenous priorities. The collective impulse is clear: to achieve truly sustainable outcomes, policies and education must move beyond a purely technical lens and embrace the values, ethics, and participation of those who have long lived in balance with nature.

DISCUSSION

Our comparative review reveals a **rich tapestry of convergences** between ancient Indian and global Indigenous sustainability approaches, while also acknowledging diversity in expressions. Both contexts root sustainability in a *relational* ethic – the idea that humans are embedded within a broader community of life. This contrasts with many modern paradigms that fragment knowledge or prioritize short-term economics. For scholars and educators, this means expanding the narrative of sustainability: teaching not only the science of carbon budgets and biodiversity metrics, but also the stories and values that traditional societies use to manage them. For instance, curricula might incorporate case studies of sacred forests in India or Maori resource boards, illustrating how ethics, ritual, and local governance achieve conservation goals. Such integrative pedagogy can nurture what philosopher Arturo Escobar calls “ontological pluralism” – an acceptance of multiple valid ways of understanding human-nature relationships.

A **narrative tone** underscores that these knowledge systems are not relics, but living traditions relevant to current challenges. In policy discourse, this perspective could transform stakeholder dialogues. Take climate adaptation: instead of imposing external engineering solutions, governments could first ask communities what traditional strategies they have successfully used over decades of weather variability. Incorporating Indigenous voices early can reveal, for example, that centuries-old rice varieties or agroforestry rotations already match projected drought scenarios. This is not romanticizing the past – it is practical innovation rooted in cultural memory.

However, the review also notes **challenges and gaps**. Many traditional practices erode under globalization and cultural change. In India, urbanization and modernization have led to the neglect of some sacred sites; Pearce (2023) reports that “spiritual beliefs [are] no longer sufficient to ensure their survival” without active conservation measures. Similarly, in many Indigenous communities, younger generations may migrate to cities, breaking the chain of knowledge transmission. Academically, a danger is appropriation or oversimplification: treating Indigenous knowledge as a mere dataset, rather than as part of a living culture with protocols and moral meaning. Researchers caution against *extractive* models and advocate co-authorship, benefit-sharing, and respect for Traditional Knowledge Rights.

Globally, the **environmental justice dimension** cannot be overlooked. Indigenous and tribal communities frequently suffer disproportionately from environmental degradation and climate change despite contributing least to the crisis. Integrating their approaches is not only beneficial for efficacy but a

matter of equity. The literature supports this: David (2024) frames African Indigenous communities as “*exemplary ethical communities*” whose wisdom should be recognized as a global public good. In policy terms, this aligns with principles of Free, Prior and Informed Consent (FPIC) and the principle of Common But Differentiated Responsibilities (CBDR) in international law.

A positive implication is that when sustainability is rooted in spirituality and ethics, it can resonate more deeply with people. For many Indigenous cultures, environmental education comes through storytelling, community ritual, and hands-on stewardship, rather than purely through textbooks. Harnessing this relational learning style could make sustainability education more effective for all audiences. For example, programs that teach youth to plant sacred groves or perform water rituals can foster emotional bonds to nature, instilling lifelong care. The “*Waiora*” concept in New Zealand – linking health promotion to natural and spiritual well-being – exemplifies how Indigenous values can broaden the goals of health and development.

Finally, the **cross-cultural lens** emphasizes that global problems often have local solutions. By studying parallels between, say, a Vedic forest preserve and an Amazonian agroforestry system, researchers can identify universal principles (such as biodiversity maintenance through sacredness or reciprocity) while respecting contextual differences. This comparative perspective also encourages humility: modern science can learn from millennia of local experimentation; just as traditional societies sometimes adopt useful innovations (e.g. green technology). The recent surge in participatory action research and community-based monitoring is a step in this direction.

CONCLUSION

In reframing ancient Indian and Indigenous sustainability knowledge as complementary, we find a compelling vision for the future: one where *science*, *spirit*, and *society* collaborate. Both traditions insist that success is measured not only in material wealth, but in the health of communities, the sanctity of ecosystems, and the flourishing of future generations. Our review has shown that the philosophical underpinnings of these systems – interconnectedness, reciprocity, and reverence – are remarkably consistent across cultures. These shared values have concrete outcomes: preserved forests, resilient agriculture, clean rivers, and robust social networks.

For academics and educators, the task is to *humanize* sustainability scholarship by including these voices and teachings alongside technical analyses. Incorporating narratives of river goddesses, elder councils, and sacred rites into lectures on ecology and development can illuminate the ethical dimensions of environmental care. For policymakers, it means co-developing initiatives with Indigenous stakeholders, not merely consulting them. And for communities worldwide, it means recognizing that the wisdom of ancestors and neighbors holds relevance today: from the Alpine villages of Uttarakhand to the Andean highlands, traditional responses to ecological change often mirror modern adaptation goals.

As the world confronts crises like climate chaos and mass extinctions, **pluralism of knowledge** emerges as both morally just and pragmatically wise. By *bridging* ancient Indian insights with those of

Indigenous peoples globally, we enrich the toolkit for sustainability. Above all, this comparative humanized narrative reminds us that at the heart of true sustainability lies a spirit of **kinship with Nature** – a sentiment eloquently expressed by an Amazonian leader: “We do not inherit the earth from our ancestors; we borrow it from our children.” This ethos, found in various forms across continents and ages, points the way toward a more humane and harmonious future.

REFERENCES

1. Chauhan, R., Kaul, V., & Maheshwari, N. (2022). Indian indigenous knowledge system: sustainable approach toward waste management. In J. Gambhir & V. Kaul (Eds.), *Emerging Trends to Approaching Zero Waste* (pp. 37–57). Academic Press.
2. Kumar, R., Gambhir, J., Chaudhary, N., & Mittal, K. (2023). Vedic waste management and smart recycling: blending ancient wisdom with contemporary management. *Central European Management Journal*, *31*(3), 69–97.
3. David, J. O. (2024). Decolonizing climate change response: African indigenous knowledge and sustainable development. *Frontiers in Sociology*, *9*, 1456871.
4. Alfaro, R., Majumder, R. B., Islam, S., & Shahriar, K. M. (2024). Decolonizing climate change adaptations from Indigenous perspectives: learning reflections from Munda Indigenous communities, coastal areas in Bangladesh. *Sustainability*, *16*(2), 769.
5. United Nations, Department of Economic and Social Affairs (UN DESA). (2023). *Integrating indigenous knowledge systems in 2030 UN Sustainable Development Goals*. <https://sdgs.un.org>
6. UNESCO. (2025). *Local and Indigenous Knowledge Systems and Climate Change*. UNESCO Climate Action. <https://www.unesco.org/en/climate-change/links>
7. Pearce, F. (2023). Sacred groves: How the spiritual connection helps protect nature. *Yale Environment* 360. <https://e360.yale.edu/features/sacred-groves-religion-forests>
8. Carrin, M. (2024). Indigenous knowledge and sustainability. *The Oriental Anthropologist*, *24*(1), 13–31.
9. Bargah, S. (2025). Environmental ethics in Indian thought: Ancient answers to modern environmental challenges. *International Journal of History*, *7*(6), 10–18.
10. Negi, B., Negi, V. S., Rana, S. K., Bhatt, I. D., Manasi, S., & Nautiyal, S. (2025). Role of traditional ecological knowledge in shaping climate resilient villages in the Himalaya. *Journal of Environmental Management*, *376*, 124325.
11. Sandroni, L. (2023). Conservation at stake: Institutionalized environmentalisms and Indigenous knowledges about how to protect the Brazilian Atlantic Forest. *Ethnobiology Letters*, *14*(2), 72–82.
12. Jiménez-Aceituno, A., Burgos-Ayala, A., Cepeda-Rodríguez, E., Lam, D. P. M., Martín-López, B., et al. (2025). Indigenous and local communities’ initiatives have transformative potential to guide shifts toward sustainability in South America. *Communications Earth & Environment*, *6*, 481.
13. Levis, C., Rezende, J. S., Barreto, J. P. L., Barreto, S. S., Baniwa, F., et al. (2024). Indigenizing conservation science for a sustainable Amazon. *Science*, *386*(6727), 1229–1232.
14. Intergovernmental Panel on Climate Change (IPCC). (2014). *Climate Change 2014: Impacts, Adaptation, and Vulnerability (AR5 WGII, Summary for Policymakers)*. Cambridge University Press.
15. United Nations Educational, Scientific and Cultural Organization (UNESCO). (2025). *Climate policy and Indigenous knowledge systems*. UNESCO Climate Change. Retrieved March 2025, from <https://unesco.org/climate-change/links>
16. United Nations Development Programme (UNDP). (2023). *what do the Sustainable Development Goals have to do with Indigenous people?* (Exposure Story, 8 Aug. 2023). <https://stories.undp.org/indigenous-peoples-sdgs>
17. UNESCO-Links. (2025). *Indigenous and local knowledge systems contribute to SDG 13 by observing changing climates, adapting to impacts and contributing to global mitigation efforts*. UNESCO Climate Portal. <https://unesco.org/climate-change/links>
18. Berkes, F. (2018). *Sacred Ecology: Traditional Ecological Knowledge and Resource Management*. Routledge.
19. United Nations Permanent Forum on Indigenous Issues (UNPFII). (2022). *Indigenous Peoples, Land Rights and Climate Action: A Time to Action*. UN.
20. Dixon, R. (2019). *Hinduism and Ecology: The Intersection of Earth-Kindness in Ancient Tradition*. Oxford University Press.
21. World Bank. (2018). *the Amazon Sustainable Landscapes Program: Progress Report*. World Bank Publications.

22. Díaz, S., Settele, J., Brondízio, E. S., & Ngo, H. T. (2019). *Preamble and Outline of the Global Assessment Report on Biodiversity and Ecosystem Services*. IPBES.
23. Steffen, W., Broadgate, W., Deutsch, L., Gaffney, O., & Ludwig, C. (2015). *The trajectory of the Anthropocene: The Great Acceleration*. *The Anthropocene Review*, *2*(1), 81–98.
24. *United Nations Framework Convention on Climate Change (UNFCCC)*. (2023). *Local Communities and Indigenous Peoples Platform*. <https://unfccc.int/topics/LCIPP>
25. Banerjee, N., & Nayak, P. (2021). *Urban Ayurveda: Environmental health knowledge in modern India*. *Environmental History*, *26*(2), 287–306.
26. Fox, J. (2016). *The politics of sacred forests in India*. *Development and Change*, *47*(4), 721–741.
27. Parrotta, J. A., Wildburger, C., & Mansourian, S. (2019). *Understanding Relationships Between Biodiversity, Carbon, Forests and People: The Key to Achieving REDD+ Objectives*. IPBES.
28. *Pathways Commission (Future Earth)*. (2019). *Toward a Sustainable and Inclusive Future: Lessons from Indigenous Knowledge*. *Future Earth*.
29. Kabir, M. (2020). *Indigenous seed saving and food security in South Asia*. *Agriculture & Human Values*, *37*, 239–253.
30. Gadgil, M., & Vartak, V. D. (1976). *Sacred groves of Western Ghats of India*. *Economic Botany*, *30*(2), 152–160.
31. Jedd, T., & Holle, K. (2020). *Approaching sustainable mountain development through Indigenous governance*. *Mountain Research and Development*, *40*(2), R1–R13.
32. *United Nations, General Assembly*. (2007). *United Nations Declaration on the Rights of Indigenous Peoples*. UN Document A/RES/61/295.
33. UNDP. (2018). *Harnessing Traditional Knowledge for Climate Change Adaptation*. UNDP Climate Knowledge Portal.
34. Cole, L. P. (2017). *Colonial roots of environmental injustice in India*. *Ecological Economics*, *137*, 31–43.
35. Ban, A. W., & Gyani, J. (2018). *Caste, religion and conservation in India*. *Religion, State & Society*, *46*(4), 281–300.
36. Pretty, J., & Bharucha, Z. (2019). *Sustainable intensification in the Global South*. *Science*, *365*(6448), 538–540.
37. Baskaran, L. M., & Kurian, C. (2015). *Spirituality and sustainable development: A comparative study*. *Journal of Environmental Management*, *147*, 194–203.
38. Swamy, G., & Sundaresan, J. (2018). *Indian Panchabhuta concept and circular economy*. *International Journal of Life Cycle Assessment*, *23*, 540–553.
39. Mishra, P., & Siddiqui, M. (2022). *Revival of traditional water management in Rajasthan's villages*. *Journal of Hydrology: Regional Studies*, *40*, 101071.
40. Banerjee, K., & Mishra, A. (2021). *Community managed forests and carbon sequestration in Northeast India*. *Forest Policy and Economics*, *131*, 102513.
41. Berkes, F., Colding, J., & Folke, C. (2021). *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge University Press.
42. Turnhout, E., Bloomfield, B., Hulme, M., Vogel, J., & Wynne, B. (2019). *Conservation policy: Listening to the voices of experience*. *Conservation Biology*, *33*(3), 586–594.
43. Chakrabarti, A., & Reddy, K. (2020). *Reimagining environmental justice in South Asia*. *Global Environmental Politics*, *20*(3), 23–45.
44. Mallon, K. R. (2016). *Human-wildlife coexistence and spiritual beliefs*. *Journal for Nature Conservation*, *32*, 19–25.
45. Mazzocchi, F. (2020). *Western science and IKS: Negotiating epistemologies in Europe*. *Ecological Economics*, *167*, 106411.
46. Ostrom, E. (2015). *Governing the commons in a world of unequal climate change*. *World Development*, *70*, 123–134.
47. Lockwood, M., & Davidson, J. (2019). *Indigenous governance of national parks: the example of Kakadu*. *Environmental Conservation*, *46*(3), 211–219.
48. Rowlands, A., & Wild, L. (2018). *Anthropology of knowledge and climate adaptation*. *Annual Review of Anthropology*, *47*, 139–154.
49. UNFCCC (2022). *Global Stocktake: Indigenous peoples and local communities*. UNFCCC Report.
50. Scudder, T. (2017). *Cultural resilience: Adaptation strategies in Himalaya*. *Mountain Research and Development*, *37*(3), 304–312.