



From Dharma to Sustainability: Traditional Ecological Knowledge and Environmental Ethics

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Abstract

The escalating environmental crisis of the twenty-first century, characterized by climate change, biodiversity loss, deforestation, water scarcity, and ecological degradation, has exposed the limitations of anthropocentric models of development and renewed interest in ethical frameworks that promote sustainable human–nature relationships. This paper examines the relevance of the Indian philosophical concept of dharma and Traditional Ecological Knowledge (TEK) as complementary foundations for environmental ethics and sustainable development. It argues that dharma, understood as moral duty, cosmic order, and harmonious coexistence, provides an ethical framework that extends environmental responsibility beyond legal and economic considerations. Likewise, TEK, developed through generations of close interaction with local ecosystems, preserves practical knowledge of biodiversity conservation, sustainable agriculture, water management, and community-based natural resource governance. Adopting an interdisciplinary approach that integrates environmental ethics, Indian philosophy, and sustainability studies, the paper explores ecological insights found in the Vedas, Upanishads, the Bhagavad Gita, Buddhist and Jain philosophies, and indigenous traditions. These philosophical and cultural traditions collectively advance an ecocentric worldview that recognizes the intrinsic value of all living beings and emphasizes ecological balance, restraint, and interdependence. The paper further evaluates the contemporary significance of these traditions in addressing global sustainability challenges, including climate resilience, ecological justice, and the United Nations Sustainable Development Goals. While recognizing the limitations of idealizing traditional knowledge, it argues that integrating indigenous ecological wisdom with modern scientific approaches can foster more inclusive, culturally grounded, and ethically informed models of environmental governance. The study concludes that the movement from dharma to sustainability represents a continuity of ethical commitments that prioritize ecological harmony, intergenerational justice, and the well-being of both human and non-human communities, offering a holistic philosophical framework for sustainable development in an era of ecological uncertainty.

Keywords: Environmental Ethics; Dharma; Traditional Ecological Knowledge; Sustainability; Indigenous Knowledge; Indian Philosophy.

1. Introduction

Contemporary societies face an interconnected set of environmental problems. Climate change, habitat destruction, biodiversity loss, pollution, water scarcity, and declining soil quality threaten ecosystems



and human communities. These challenges are commonly addressed through environmental regulation, technological innovation, economic planning, and scientific research. Such responses are necessary, but they are insufficient when environmental destruction is driven by values that treat nature primarily as a commodity.

Environmental ethics examines the moral relationship between human beings and the non-human environment. It questions the assumption that nature has value only because it serves human purposes and considers the ethical significance of animals, plants, ecosystems, and ecological processes (Palmer et al., 2014). The Land Ethic associated with Aldo Leopold similarly presents human beings as members of an ecological community rather than as masters of nature.

Indian philosophical traditions provide important resources for this broader understanding of moral responsibility. Concepts such as *dharma*, *ṛta*, *ahiṃsā*, *aparigraha*, and *lokasaṃgraha* connect individual conduct with social welfare, moral order, restraint, and the maintenance of life. Contemporary scholarship on Indian environmental thought links these concepts with sustainability, environmental justice, and ecological responsibility (Aravind et al., 2025).

Traditional Ecological Knowledge complements these philosophical ideas with practical experience. It includes the knowledge, values, practices, and institutions developed by Indigenous and local communities through sustained interaction with particular environments (Whyte, 2013). It may concern agriculture, water, plants, animals, forests, weather, soil, and seasonal change. Traditional knowledge is therefore not simply a collection of facts; it is connected with cultural identity, social organisation, and everyday environmental practice.

This paper examines the relationship between Indian philosophical ethics, Traditional Ecological Knowledge, and environmental sustainability. It argues that Indian philosophical traditions can provide ethical direction, while local knowledge can contribute practical approaches to conservation and adaptation. Their contribution must nevertheless be critically integrated with modern science, democratic governance, and social justice.

2. Indian Philosophical Foundations of Environmental Ethics

2.1 Dharma as Environmental Responsibility

The concept of *dharma* is associated with duty, righteousness, moral conduct, social order, and the principles that sustain the world. In environmental thought, it can be interpreted as an obligation to protect the relationships that make life possible (Debajyoti & John, 2024).

This interpretation changes the central environmental question. Instead of asking only what nature can provide for human beings, it asks what responsibilities human beings have toward nature, other communities, and future generations. Forests, rivers, animals, soil, and biodiversity are not merely economic resources. They are part of the ecological systems upon which human life depends.



A dharmic environmental ethic therefore supports responsible resource use, ecological stewardship, biodiversity protection, and intergenerational responsibility. It also provides a basis for evaluating development projects according to their social and ecological consequences rather than only their economic returns (Gaur, 2025).

2.2 *Rta* and Ecological Balance

The concept of *rta* refers to cosmic and moral order. It is associated with the regularity of natural processes and the ethical conduct required to maintain order in the world (Roy, 2025). In contemporary environmental interpretation, *rta* can be understood as a principle of ecological balance.

This does not mean that *rta* is identical to modern ecological science. Rather, it provides a moral vocabulary for understanding the natural world as ordered and interconnected. The destruction of forests, the pollution of water, or the exhaustion of soil can consequently be seen as disturbances of relationships that sustain life. The concept encourages humans to respect ecological limits instead of assuming that natural systems can absorb unlimited damage.

2.3 Vedanta and Interconnectedness

Contemporary interpretations of Vedanta emphasise the unity and interconnectedness of existence. Nature is not presented simply as a collection of isolated objects but as part of a wider reality in which living and non-living elements are related (Verma & Dwivedi, 2020).

This view challenges a strict division between human society and nature. Human beings depend on water, soil, plants, animals, and atmospheric systems, while human activities also influence those systems. Ecological degradation therefore affects human well-being through food insecurity, loss of livelihoods, disease, and displacement.

The environmental value of this perspective lies in its ethical orientation. It encourages humility and recognition of dependence. It should not, however, be treated as a complete substitute for empirical ecological research.

2.4 *Lokasamgraha* and Collective Welfare

The concept of *lokasamgraha* refers to the welfare or preservation of the world. Contemporary research connects it with social responsibility, collective welfare, and sustainable development.

Applied to environmental policy, *lokasamgraha* requires decisions to consider their effects on communities, ecosystems, and future generations. Development that creates benefits for a limited group while producing pollution, displacement, or ecological destruction cannot fully represent the welfare of the world.

The concept also highlights the connection between individual behaviour and collective consequences. Consumption and production may occur at the individual or institutional level, but their accumulated



effects are ecological and social. Sustainability therefore requires both personal responsibility and structural changes in economic and political systems.

2.5 Buddhist and Jain Perspectives

Buddhist approaches to social responsibility emphasise ethical conduct, compassion, and the reduction of harm. These principles are relevant to environmental sustainability because ecological destruction often results from excessive consumption and indifference to the effects of human activity on other beings and communities.

A Buddhist environmental ethic can therefore encourage moderation and greater awareness of interdependence. It questions the assumption that human well-being depends on unlimited material accumulation.

Jain environmental ethics provides a related framework through *ahimsā*, or non-violence, and *aparigraha*, or non-possessiveness. Jainism and environmental ethics are connected through the expansion of moral concern and the need to reduce harm to living beings (Godha, 2025). *Aparigraha* offers a critique of excessive accumulation and can be interpreted as an ethical basis for restrained consumption and ecological stewardship.

These principles do not offer a complete environmental policy. They do, however, provide ethical resources for challenging consumerism, ecological violence, and the assumption that nature exists solely for human use.

3. Traditional Ecological Knowledge and Sustainability

3.1 Meaning and Characteristics

Traditional Ecological Knowledge develops through long-term relationships between communities and their environments. It includes observations, practices, values, skills, and institutions associated with local ecosystems (Whyte, 2013). Such knowledge may concern plants, animals, soil, water, agricultural cycles, weather patterns, medicine, and resource management.

Traditional knowledge is dynamic rather than frozen in the past. Communities modify practices in response to ecological change, social pressures, and experience. Research on the rediscovery of Traditional Ecological Knowledge describes it as relevant to adaptive management because it is based on observation, learning, and responses to environmental change (Berkes et al., 2000).

The value of TEK is also connected with place. A practice developed for a particular landscape may reflect its soil, rainfall, vegetation, species, and social organisation. It should therefore be assessed in relation to the environmental and cultural conditions in which it developed.



3.2 Sacred Groves and Biodiversity Conservation:

Sacred groves are forest areas protected through religious beliefs, cultural practices, and customary restrictions. They illustrate how cultural values can contribute to biodiversity conservation. Their significance lies in the relationship between ecological protection and community institutions. A forest may be preserved because it is associated with sacred beliefs or ancestral obligations, rather than only because it is controlled by a formal state regulation. Sacred groves can therefore support the protection of local biodiversity while also preserving cultural identity (Khan & Evi, 2008).

Their future protection requires attention to changing land use, urbanisation, development pressure, and the weakening of customary institutions. Cultural recognition should be combined with appropriate legal and institutional support.

3.3 Traditional Agriculture and Soil Protection

Traditional agriculture includes practices based on local crops, ecological diversity, resource recycling, and adaptation to local conditions. Research on traditional agriculture emphasises the relationship between food production, soil health, and the maintenance of soil microbial diversity.

Agroforestry provides another example of ecological integration. By combining trees or shrubs with crops and livestock, agroforestry can connect agricultural production with soil protection, biodiversity, and livelihood diversification (Pantera et al., 2021).

These practices should not be treated as universally applicable or automatically sustainable. However, their emphasis on diversity, local adaptation, and ecological relationships offers useful principles for contemporary food systems.

3.4 Water Management and Food Production

Traditional water-management systems in India include locally adapted structures and practices for storing, distributing, and conserving water. Their effectiveness depends not only on physical design but also on collective rules and maintenance.

The Zabo farming system in Nagaland is identified as a traditional approach to sustainable farming and natural-resource management. Integrated rice-fish farming similarly demonstrates how agricultural systems can combine food production with local ecological knowledge (Sathoria & Roy, 2022).

The importance of these systems lies in their adaptation to local environments and their integration of resource management with community practice. Modern engineering can improve infrastructure, but sustainability also requires attention to local knowledge, collective responsibility, and ecological limits.



4. Community Participation, Climate Adaptation, and Justice

4.1 Local Participation in Environmental Governance

Local communities often possess detailed knowledge of their environments and have developed institutions for managing common resources. These may include rules relating to forests, water, agricultural land, grazing areas, and biodiversity.

Effective participation requires more than inviting communities to provide information. Communities should have meaningful influence over decisions affecting their lands and resources. Research on participation and inclusion in collective decision-making highlights the importance of examining who participates, whose knowledge is recognised, and how decisions are made (Hayes & Murtinho, 2023).

Local governance should not automatically be considered perfectly equal. Issues of gender, caste, class, land ownership, and political authority must also be addressed. Participation must therefore be combined with accountability and attention to marginalised groups.

4.2 Indigenous and Local Communities in Conservation

Indigenous peoples and local communities are often directly affected by conservation policies, development projects, and resource extraction. When their rights and knowledge are ignored, environmental programmes can produce social injustice as well as ecological conflict.

Research on conservation identifies the important role of Indigenous peoples and local communities in effective and equitable conservation (Dawson et al., 2021). Their participation can strengthen the legitimacy and durability of environmental initiatives. Conservation should therefore recognise communities as knowledge holders and rights-holders rather than treating them merely as beneficiaries or obstacles.

4.3 Integrating Local Knowledge and Science

Modern science is essential for climate modelling, biodiversity monitoring, pollution analysis, and environmental planning. Local knowledge can complement these approaches by providing detailed observations of particular landscapes and long-term ecological changes.

Research on the IPBES Global Assessment examines ways of incorporating Indigenous and local knowledge into large-scale ecological assessment (McElwee et al., 2020). Such integration should involve dialogue and knowledge co-production rather than the extraction of information from communities.

Local knowledge should not be valued only when it has been confirmed by scientific institutions. At the same time, it should not be treated as universally correct or sufficient for every environmental problem. The strongest approach combines scientific analysis with community experience while respecting the authority and rights of knowledge holders.



5. Critical Limitations

Traditional knowledge is threatened by land-use change, displacement, the loss of local languages, market integration, industrialisation, and the weakening of customary institutions (Gómez-Baggethun et al., 2013). When communities lose access to their lands and resources, the transmission of ecological knowledge is also threatened.

The critique of anthropocentrism must likewise be approached carefully. Anthropocentrism is an important subject in environmental philosophy, but debates about it involve questions concerning human needs, cultural pluralism, ecological value, and the relationship between ethics and environmental science. A responsible environmental framework should protect non-human life without ignoring human rights and social inequalities.

6. Toward a Holistic Sustainability Framework

A holistic sustainability framework can draw on several complementary principles:

1. **Dharma** can be interpreted as a duty to protect the ecological and social conditions that sustain life.
2. **Rta** can provide an ethical language of ecological order and balance.
3. **Ahimsā** can support the reduction of harm to human and non-human life.
4. **Aparigraha** can challenge excessive accumulation and irresponsible consumption.
5. **Lokasamgraha** can connect individual and institutional decisions with collective welfare.
6. **Traditional Ecological Knowledge** can contribute practical approaches to conservation, agriculture, water management, and climate adaptation.
7. **Democratic governance** can ensure that communities participate in decisions affecting their lands, resources, and knowledge.

This framework does not require a return to an idealized past. Instead, it requires the critical reinterpretation of traditional ethical principles in response to contemporary environmental conditions. Scientific research can provide monitoring and analysis, local communities can contribute place-based knowledge and philosophical traditions can provide ethical motivation.

7. Conclusion

The environmental crisis is a crisis of both ecological systems and human values. Climate change, biodiversity loss, pollution, water scarcity, and environmental injustice reveal the limitations of development models based on domination and excessive consumption.

Indian philosophical traditions provide ethical resources for a different approach. *Dharma* presents environmental protection as a responsibility. *Rta* emphasises ecological order. *Ahimsā* expands moral concern beyond human beings. *Aparigraha* challenges excessive accumulation. *Lokasamgraha* connects individual action with collective welfare.



Traditional Ecological Knowledge gives practical expression to these values. Sacred groves connect cultural belief with biodiversity protection. Traditional agriculture and agroforestry support ecological diversity and soil care. Local water systems reflect adaptation and collective management. Community knowledge can strengthen environmental governance and climate adaptation.

These traditions cannot replace modern science, law, technology, or public investment. Their importance lies in the ethical perspectives and locally grounded practices they contribute to these fields. A critical dialogue among Indian philosophy, Traditional Ecological Knowledge, modern science, and democratic governance can support a more inclusive and just model of sustainability.

The movement from *dharma* to sustainability should therefore be understood as an ethical translation. It involves reinterpreting responsibility, restraint, reciprocity, compassion, and collective welfare in response to present environmental challenges. Human beings are not separate from the Earth but participants in a larger ecological community. Protecting the natural world is consequently also a way of protecting the relationships on which human and non-human life depends.

References:

- ¹ Palmer, C., McShane, K., & Sandler, R. (2014). *Environmental Ethics*. <https://doi.org/10.1146/annurev-environ-121112-094434>
- ¹ Aravind, C., Sreeja, V., & Rushitha, V. (2025). *Dharma and the Earth: Sustainability, Ethics, and Environmental Justice in Indian Literary and Philosophical Traditions*. <https://doi.org/10.48001/978-81-988770-0-0-3>
- ¹ Whyte, K. P. (2013). *On the role of traditional ecological knowledge as a collaborative concept: a philosophical study*. <https://doi.org/10.1186/2192-1709-2-7>
- ¹ Debajyoti, B., & John, R. (2024). *Environmental Humanities in India*. <https://doi.org/10.1007/978-981-97-3933-2>
- ¹ Gaur, A. (2025). *A CRITICAL EVALUATION OF THE CONCEPT OF 'DHARMIC DUTY' AND MODERN ENVIRONMENTAL ETHICS*. <https://doi.org/10.54513/joell.2025.12105>
- ¹ Roy, T. (2025). *Rta: The cosmic blueprint of ethical life and the ontological foundations of morality*. <https://doi.org/10.33545/27068919.2025.v7.i12c.1831>
- ¹ Verma, P. K., & Dwivedi, P. S. (2020). *Reconceiving the Ecological Wisdoms of Vedānta in Anthropocene: An Eco-aesthetical Perspective*. <https://doi.org/10.21659/rupkatha.v12n5.rioc1s29n2>
- ¹ Godha, Y. (2025). *Jainism and Environmental Ethics*. <https://doi.org/10.12794/journals.sujjs.v1i1.292>
- ¹ Whyte, K. P. (2013). *On the role of traditional ecological knowledge as a collaborative concept: a philosophical study*. <https://doi.org/10.1186/2192-1709-2-7>



- ¹ Berkes, F., Colding, J., & Folke, C. (2000). *REDISCOVERY OF TRADITIONAL ECOLOGICAL KNOWLEDGE AS ADAPTIVE MANAGEMENT*. [https://doi.org/10.1890/1051-0761\(2000\)010\[1251:roteka\]2.0.co;2](https://doi.org/10.1890/1051-0761(2000)010[1251:roteka]2.0.co;2)
- ¹ Khan, M. L., & Evi, A. A. D. (2008). *The Sacred Groves and Their Significance in Conserving Biodiversity An Overview*. <https://www.activeremedy.org/wp-content/uploads/2014/10/ml-khan-et-al-2008-the-sacred-groves-and-their-significance-in-conserving-biodiversity.pdf>
- ¹ Pantera, A., Mosquera-Losada, M. R., Herzog, F., & Herder, M. den. (2021). *Agroforestry and the environment*. <https://doi.org/10.1007/s10457-021-00640-8>
- ¹ Sathoria, P., & Roy, B. (2022). *Sustainable food production through integrated rice-fish farming in India: a brief review*. <https://doi.org/10.1017/s1742170522000126>
- ¹ Hayes, T., & Murtinho, F. (2023). *Diagnosing Participation and Inclusion in Collective Decision-Making in the Commons: Lessons from Ecuador*. <https://doi.org/10.5334/ijc.1200>
- ¹ Dawson, N., Coolsaet, B., Sterling, E. J., Loveridge, R., D, G.-C. N., Wongbusarakum, S., Sangha, K. K., Scherl, L. M., Phan, H. P., Zafra-Calvo, N., Lavey, W. G., Byakagaba, P., Idrobo, C. J., Chenet, A., Bennett, N., Mansourian, S., & Rosado-May, F. J. (2021). *The role of Indigenous peoples and local communities in effective and equitable conservation*. <https://doi.org/10.5751/es-12625-260319>
- ¹ McElwee, P., Fernández-Llamazares, Á., Aumeeruddy-Thomas, Y., Babai, D., Bates, P., Galvin, K. A., Guèze, M., Liu, J., Molnár, Z., Ngo, H. T., Reyes-García, V., Chowdhury, R. R., Samakov, A., Shrestha, U. B., Díaz, S., & Brondízio, E. S. (2020). *Working with Indigenous and local knowledge (ILK) in large-scale ecological assessments: Reviewing the experience of the IPBES Global Assessment*. <https://doi.org/10.1111/1365-2664.13705>
- ¹ Gómez-Baggethun, E., Corbera, E., & Reyes-García, V. (2013). *Traditional Ecological Knowledge and Global Environmental Change: Research findings and policy implications*. <https://doi.org/10.5751/es-06288-180472>