Original Researcher Article

Reimagining Sustainability through Indian Knowledge Systems: Bridging Ancient Wisdom and Future Needs

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ABSTRACT

Sustainability has emerged as a critical global priority in response to escalating environmental degradation, climate change, and socio-economic inequalities. While modern scientific approaches offer technological solutions, they often overlook holistic and value-based frameworks essential for long-term ecological balance. Indian Knowledge Systems (IKS), rooted in ancient texts, traditions, and practices, present a comprehensive worldview that integrates environmental stewardship, social harmony, and ethical responsibility. Concepts such as Ṛta (cosmic order), Dharma (duty), Vasudhaiva Kutumbakam (the world as one family), and sustainable living practices embedded in agriculture, water management, architecture, and healthcare reflect an intrinsic alignment with sustainability principles. This paper reimagines sustainability through the lens of Indian Knowledge Systems, examining how ancient wisdom can be meaningfully integrated with contemporary scientific and policy-driven frameworks. By bridging traditional ecological knowledge with future-oriented innovations, the study highlights the relevance of IKS in addressing present and emerging sustainability challenges, fostering resilient communities, and promoting a balanced relationship between humans and nature.

Keywords: Indian Knowledge Systems; Sustainability; Traditional Ecological Knowledge; Environmental Ethics; Ancient Wisdom; Sustainable Development
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1. INTRODUCTION:

The Indian Knowledge System(IKS) is a reservoir of ancient wisdom encompassing philosophy, science, art, and spirituality that can provide invaluable insights for reimagining sustainability and addressing contemporary global challenges.(Mehta &Singh,2024) This system emphasises core principles like interconnectedness, balance, and self-realisation, which can guide solutions for issues such as environmental degradation and health crises.(Nath,2024) The integration of the Indian Knowledge System with modern practices holds significant potential for fostering sustainable development, environmental stewardship, and social equity, along with economic resilience.(Malik,2024)

Core Principles of Indian Knowledge Systems: Pathways to Sustainable Futures

Exploring the Connection between Ancient Wisdom and Modern Sustainability

Indian Knowledge Systems are deeply rooted in holistic principles and align with sustainable practices, offering timeless wisdom for addressing current global challenges.(Ghosh,2021)

The key concepts of the Indian Knowledge System that provide a framework for understanding and promoting sustainability are:

Interconnectedness (Advita)

The Indian Knowledge System(IKS) is comprehensive and diversified, based on the concept of connectivity among humans, nature and the universe.(Chaudhary & Nagpal,2025). This perspective treats the entire world as a single family, known as "Vasudeva Kutumbhkam" and reveres the five great elements-air, water, earth, fire and space-as central to the Samkhaya tradition.(Jasrotia et al,2024). Such a holistic worldview, which respects the environment and its resources, has been central to maintaining the fragile ecosystem for generations within local communities.(Mohanty et al,2024). Traditional Indian Knowledge passed through generations is vital for the long-term health of natural resources like forests, water and agroecosystems, and is crucial for biodiversity conservation.(Kumar,2021)

Balance(Rta) and Ecological Harmony

The concept of "Rta" or cosmic harmony was a primary driver of ecological awareness in ancient Indian philosophy. Ancient Indian wisdom encorages living in harmony with nature, contrasting with anthropocentric views that justify environmental exploitation.(Jasrotia et al,2024). Principles like dharma(righteousness) and ahimsa(non-violence) emphasise ethical approaches to environmental responsibility and sustainable living(Rathod &Trivedi,2025). Traditional Indian practices, such as those related to water management, agricultural productivity, and land use, are designed to ensure that resources are used in a permanent and sustainable manner.

Self-realisation (Atman)and Ethical Governance

Indian Knowledge System emphasises self-realisation and ethical frameworks that contribute to holistic well-being(Nath,2024). Ancient texts like the Bhagavad Gita, Arthashastra, and Thirukkural are ancient philosophical and ethical books that emphasise principles such as selfless action (Karma) and community-focused leadership. These teachings align with contemporary business challenges in moral leadership, sustainable practices, and corporate governance (Rathod & Trivedi, 2025). Indian Knowledge systems promote communal welfare and ethical ideals, promoting inclusive growth(Veena,2024)

Harnessing Ancient Indian Wisdom for Contemporary Sustainability Solutions

Integrating Traditional Knowledge Systems to Address Modern Environmental Challenges

Ancient Indian knowledge is being used to address modern sustainability concerns in a variety of areas, indicating its continued relevance and promise.

Environmental Conservation

Traditional environmental knowledge systems in India have long encouraged sustainability for ages through activities and cultures that inherently value nature and its resources (Mishra, 2017). For instance, indigenous activities in the Thar desert have shaped a distinct ecosystem by creating knowledge systems for managing scarce resources under harsh climatic circumstances (Saxena, 2019). Festivals like Makar Sankranti, Pongal, and Baisakhi highlight agricultural importance, while rituals using natural materials encourage environmental sustainability (Patel, 2024). Ancient Indian practices, such as recharging groundwater aquifers, demonstrate a long history of dealing with environmental issues.(Gupta&Vastag,2020)Eat Raja, a zero-waste juice shop in Bangalore, exemplifies the integration of traditional Indian knowledge with modern sustainability practices by minimising plastic, composting organic waste, and involving the community(S&Hans,2025)

Holistic Health and Well-being

Traditional healing practices in India, including Ayurveda and Tibetan healing, are storehouses of intangible knowledge that promote socio-cultural sustainability.

These practices are deeply impacted by spatial settings, with unique physical constructs that enable their sustenance in rapidly urbanising societies. (Singh &Madan,2020). Yoga, an ancient Indian practice, serves as a holistic system for personal and societal transformation, encompassing physical postures, breathing techniques, and meditation, and is increasingly relevant for promoting well-being and cultural identity among youth globally(Kathuria & Sharma,2023)

Sustainable Architecture and Urban Planning

The Indian Knowledge System in architecture, founded on literature such as Vastu Shastra and principles of sacred geometry, promotes spatial harmony, sustainability, and human well-being (Sobti & Arora, 2025). Traditional building knowledge systems (TBKS) provide low-carbon, place-adaptive architectural solutions that reflect simplicity and holistic sustainability by using locally available materials that are climate resilient (Athira et al., 2023). Despite obstacles such as a lack of formal education in conventional systems and opposition to incorporating ancient wisdom, solutions such as interdisciplinary collaboration and policy assistance are being investigated to overcome this gap (Sobti & Arora, 2025). The Kallil Cave Temple in Kerala exemplifies this integration, displaying Indian Knowledge System concepts in its architectural design and ecological factors harmony(K.P,2025)

Policy and Education

The integration of Indian Knowledge Systems (IKS) into modern policy and educational frameworks is gaining pace (Patel, 2025). The National Education Policy (NEP) 2020 in India recommends combining IKS with current education to promote comprehensive, inclusive, and interdisciplinary learning that respects India's cultural heritage. (Mishra et al,2024) This integration attempts to enhance critical thinking, ethical reasoning, and sustainability among students, bridging the gap between contemporary scientific methodologies and time-tested traditional knowledge(Naniwani &Naniwani,2024)Policy papers and government studies are exploring how ancient Indian wisdom can be integrated into contemporary sustainability strategies, promoting sustainable practices and holistic public health(Gohel,2024) Incorporating IKS into curriculum design for business education, with the focus on ethics and sustainability, may provide future leaders with ethical skills to address global concerns.(Rathod & Trivedi,2025)

Integrating Indian Knowledge Systems (IKS) into modern educational frameworks and policies presents numerous important problems, including a lack of defined regulations, limited teacher training, and opposition to change within existing educational institutions.(Moitra&Madan,2025)These hurdles prevent the proper incorporation of India's rich intellectual legacy into the current curriculum and larger policy initiatives(Bhatt,2025)

Overcoming Barriers: Integrating Indian Knowledge Systems into Current Education and Policy Frameworks

Integrating IKS into the educational system poses a varied set of problems, ranging from resource constraints to pedagogical concerns.

Resource Constraints and Infrastructure

A key problem is the lack of a systematic framework and institutional support for incorporating IKS into higher education(Lal et al,2024). There are also resource limits, which include the requirement for suitable infrastructure and relevant education material(Thomas et al,2025). Effective implementation necessitates innovative teaching strategies, teacher training, and infrastructural assistance(Vageeshan&Kamalakar,2025)

Curriculum and Pedagogical Issues

Integration of IKS requires culturally relevant textbooks and innovative pedagogical approaches.(Ramanbhai&Patel,2025). Furthermore, a standardised framework for assessing and certifying traditional knowledge is necessary.(Mishra et al,2024). The technical complexity of modern technologies also poses a challenge when trying to incorporate traditional Indian Knowledge into educational programs focused on cutting-edge digital innovations like blockchain and the Metaverse(Garg,2024)

Resistance to change and acceptance

Resistance to change within established educational institutions is a significant barrier to adopting IKS(Garg,2024). This resistance can stem from various factors, including a lack of formal education in traditional systems. Promoting IKS also involves overcoming challenges in preserving, promoting and incorporating this massive information resource into worldwide academic and practical debate (Bhatt,2025)

Navigating Challenges in Integrating Indian Knowledge Systems into Modern Policy and Educational Frameworks

Integrating IKS into contemporary policy frameworks also faces distinct challenges, particularly concerning clarity, scope and implementation.

Policy Clarity and Definition

The National Education Policy(NEP)2020 promotes the integration of IKS, nonetheless there's a distinction between the" Indian Knowledge System" referred to in the policy and indigenous knowledge systems(Sharma,2024). The NEP2020 primarily focuses on knowledge from ancient India and its contributions to contemporary India, while largely neglecting the inclusion of indigenous knowledge prevalent during Muslim rule. Although the strategy encourages the use of indigenous and traditional learning techniques, as well as tribal knowledge, with a significant amount dedicated to ancient knowledge. (Amani,2024)

Teacher Training and Development

A critical challenge is the insufficient training for teachers to effectively deliver IKS content(Sharma&Mahashwari,2024)The NEP 2020 highlights the importance of research and teacher training in IKS, and the University Grants Commission (UGC) guidelines support faculty development in this area(Abbasi,nd,2024)However, special training centres and specific focus topics in Indian Knowledge are needed to improve the quality of classroom teaching in IKS(Vageeshan&Kamalakar,2025)

Disparities and systemic issues

Disparities in access to resources and technology also present a challenge(Garg,2024) The overall evolution of the Indian education system, influenced by colonialism and westernisation, continues to shape the system today due to globalisation and capitalism, leading to the marginalisation of traditional Indian systems of education(Amani,2024)

The proposals for future initiatives include establishing teacher training centres focused on specific topics within the Indian Knowledge Systems (Khan&Sharma, 2024). These centres aim to train teachers to better understand and teach IKS (Kamalakar&Vageeshan, 2024). The curriculum for such training programs should include the application of evidence-based psychosocial strategies, skill-building in administration and management, policy development, and research methods. Furthermore, instructors should periodically attend seminars to improve their teaching abilities using modern technologies such as audiovisual media, computers, and the internet. The importance of promoting IKS research in teacher education to advance the integration of IKS principles and practices is also underscored (G&V, 2024). When there is a recognised lack of structured teacher training programs for the inclusion of IKS, there is a clear need for renewed efforts in this area (Prasad&Kumar, 2025)...

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