



Sustainable Environmental Conservation in Meghalaya: Role of Traditional Indigenous Knowledge Systems

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Citation: Mr. Ajoy Kumar Sardar and Dr Ravi Kant Mishra (2024), Sustainable Environmental Conservation in Meghalaya: Role of Traditional Indigenous Knowledge Systems, Educational Administration: Theory and Practice, 30(5), 15443-15448
DOI: 10.53555/kuey.v30i5.9181

ARTICLE INFO

ABSTRACT

In the era of modernization and globalization, climate changes and environmental degradation are a big threat to all the species of earth and their sustainability. The Indigenous knowledge and behavior of the tribal people towards nature are generally based on sustainability, productivity, and optimum balanced utilization of available land and other natural resources. Meghalaya is one of the states in India that is rich in traditional knowledge and best practices practiced by indigenous tribes many of which are of old age traditions. Many of these knowledge and practices were closely related to their livelihood. Indigenous communities of Meghalaya own, manage, and occupy at least a quarter of the world's landmass. They have been relying on the forests to gather and produce food in a sustainable manner that demonstrates the traditional value of caring, sharing, and living in harmony with nature. However, due to globalization, the influence of modern culture, intermingling, and cultural hegemony, most tribal cultures are on the way to extinction.

In light of this context, the study explores the concept of traditional indigenous knowledge and its importance in the sustainable conservation of the environment in Meghalaya. This paper emphasizes the challenges encountered by the Indigenous community in safeguarding the environment in Meghalaya. Additionally, this article proposes ways to leverage indigenous knowledge for environmental conservation in Meghalaya.

Keywords: Modernization, Globalization, Indigenous Communities, Traditional Indigenous Knowledge, Matrilineal Communities

I. INTRODUCTION

As we navigate the escalating environmental crises, it's imperative that we turn to those who have long been custodians of our planet -Indigenous Peoples, who manage 22% of the Earth's surface, areas that are ecological treasures brimming with biodiversity.¹ Their cultures and traditions, born from a deep-rooted connection with their native land, aren't just a cultural relic; they are a dynamic approach to sustainability and conservation.

Traditional Indigenous Knowledge (TIK) is essential to the identities, cultural heritage, and lifestyles of Indigenous peoples. Transmitting TIK from one generation to another is vital for preserving and promoting the cultures and identities of Indigenous communities, guaranteeing sustainable livelihoods, and resilience against both anthropogenic and natural disasters, and encouraging economic development that is in harmony with their cultural values.² TIK highlights Indigenous peoples' holistic approach to life, a fundamental aspect of global cultural and biological diversity.

¹ Megha Shruti and Dr. Aarkriti Wachao, The Power of Stories: Conservation through Traditional Storytelling in Meghalaya's Indigenous Communities, *available at:* <https://ioraecological.com/the-power-of-stories-conservation-through-traditional-storytelling-in-meghalayas-indigenous-communities/> (Last visited on Jan.15, 2024).

²United NATION Permanent Forum for Indigenous Issues, *available at:* <https://www.un.org/development/desa/indigenouspeople> (Last visited on Jan 19, 2024).

Indigenous communities worldwide stand out as actors of change, guardians of natural resources, and carriers of unique worldviews, knowledge, and skills. They have always been catalysts of transformation, upholding our planet's resources while illustrating unique skills, wisdom, and traditions.³ Their intimate understanding of ecosystems, along with a profound respect for the interconnectedness of all living things, has been a blueprint for the sustainable use and conservation of natural resources for centuries.

Indigenous communities in Meghalaya occupy and steward at least a quarter of the Earth's land surface. The Khasi, Jaintia, and Garo tribes of Meghalaya are characterized by their matrilineal social structures and represent this cultural legacy. Situated within the Indo-Burma biodiversity hotspot, this region has been the home of these indigenous populations for millennia.⁴ They rely on the forests to harvest and produce food sustainably, reflecting traditional values of care, sharing, and harmony with nature. However, due to the influence of modern cultures, the blending of different cultural practices and cultural hegemony, and globalization have put many tribal cultures at risk of disappearing.⁵

The state of Meghalaya is rich in natural resources. The main natural resources that the economy of the state significantly depends on include forests, minerals, and water. In recent decades, these resources have been subjected to severe strain due to rampant exploitation, misuse, and overconsumption for both survival and developmental purposes. Such activities have resulted not only in the depletion of these resources but have also led to considerable degradation of environmental quality.⁶ The vital life support systems such as air, land, and water are facing substantial stress. Major environmental challenges arise from population growth, the transformation of forests into agricultural land, deforestation, urban sprawl, mining, and industrial development. The increasing human-induced pressures in the state could exacerbate environmental issues in the future.⁷

II. MEANING OF TRADITIONAL INDIGENOUS KNOWLEDGE

Traditional Indigenous Knowledge (TIK) encompasses the knowledge, innovations, and customs of indigenous communities. This knowledge, cultivated over generations and adapted to local cultures and environments, is typically passed down orally from one generation to the next. It is generally held collectively and can be conveyed through stories, songs, folklore, proverbs, cultural principles, beliefs, and rituals, among other forms.⁸ It is also the source for the traditional use and management of lands, territories, and resources, with indigenous agricultural practices that care for the earth, without depleting the resources. Indigenous peoples follow oral traditions, with dances, paintings, carvings, and other artistic expressions that are practiced and passed down through millennia.

According to WIPO, "Traditional Indigenous knowledge, know-how, skills, and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity."⁹ WIPO currently uses the term TIK to refer to "cultural and traditional expressions found in literature, art, or science; different performances; inventions; scientific developments; designs; unique marks, names, and symbols; confidential information; and all other innovations and creations that arise from intellectual endeavors within the industrial, scientific, literary, or artistic fields."¹⁰

III. ROLE OF TRADITIONAL INDIGENOUS KNOWLEDGE IN SUSTAINABLE ENVIRONMENTAL CONSERVATION IN MEGHALAYA

In an era characterized by modernization and globalization, the degradation of the environment poses a serious threat to all species on the planet and their ongoing survival. Tribal communities in India account for

³Suneetha M. Subramanian and Balakrishna Pisupati (eds.), *Traditional knowledge in policy and practice: Approaches to development and human well-being* (United Nations University Press, Hong Kong, 2010).

⁴ Repositories of local biodiversity and traditional knowledge set up across Indigenous Communities in Meghalaya through NESFAS, available at: <https://nesfas.in/repositories-of-local-biodiversity-and-traditional-knowledge-set-up-across-71-indigenous-communities-in-meghalaya-through-nesfas/#:~:text=For%20the%20state%20of%20Meghalaya,these%20indigenous%20communities%20for%20millennia.> (Last visited on Feb.10, 2024).

⁵*Ibid.*

⁶Meghalaya Human Development Report 2008, available at:

http://re.indiaenvironmentportal.org.in/files/Human_De.pdf (Last visited on Feb. 15, 2024).

⁷*Ibid.*

⁸*Supra* note 4.

⁹ WIPO, Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions, 2020, available at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_933_2020 (Last visited on March 2, 2024).

¹⁰ *Ibid.*

8.6% of the total population, with 89.97% of them living in rural areas.¹¹ This subcontinent contains the largest tribal population globally, where diverse ethnic groups share the same geographical space, each with its own distinct traditional cultures. A significant portion of tribal people resides in the northeastern region of India, with Meghalaya being one such state. Meghalaya is rich in biodiversity, which is supported by its three primary tribes: the Khasi, Garo, and Jaintia. The components of this forest ecosystem play an essential role in its ecological balance. The interconnections among these elements, both within the ecosystem and with the wider environment, are typically mutualistic. But the globalization, the influence of modern culture, cultural blending, and the prevalence of cultural dominance pose significant threats to the survival of numerous tribal cultures. Rural communities frequently embrace contemporary cultural practices without fully understanding their implications and seek to migrate to urban areas for better services and job opportunities.¹²

In Meghalaya, there is a growing appreciation of the value of traditional indigenous knowledge (TIK). TIK is valuable not only to those who depend on it in their daily lives but also to modern industry and agriculture. TIK about land and species conservation and management and revitalization of biological resources conservation is grounded in the daily lives and practices of indigenous peoples in Meghalaya and their close understanding of their environments cultivated over thousands of years.¹³ It has the potential to play a crucial role in sustainable development and in addressing the most pressing global problems, such as climate change, land management, and land conservation, and to strengthen scientific, technological, and medical research, as evidenced in inter alia pharmaceuticals. Furthermore, TIK can offer promising avenues for achieving food security for not only indigenous peoples but for inhabitants around the globe. Many indigenous land and environmental management practices have been proven to enhance and promote biodiversity at the local level and aid in maintaining healthy ecosystems.

TIK systems in Meghalaya offer valuable insights into sustainable environmental management and conservation practices, which are increasingly recognized for their potential to address contemporary ecological challenges. No matter how crude TIK is, it still possesses benefits that can aid the conservation efforts of the tribal people of Meghalaya. It has been proven over time that a major benefit of indigenous knowledge in any subject, especially with nature, is the holistic approach it brings to solutions, which mostly encompass spiritual, cultural, and practical elements that promote a harmonious relationship between humans and nature.

Aside from the major benefits above, several other key benefits reveal the value of TIK in environmental conservation in Meghalaya. Sustainable resource management is worth mentioning. Indigenous practices in Meghalaya often emphasize the sustainable use of natural resources, ensuring their availability for future generations. This approach includes techniques like crop rotation, agro-forestry, and the conservation of Meghalaya's rich biodiversity. This system ensures sustainable livestock management and preserves grassland ecosystems.

Another advantage of Meghalaya's TIK systems is that they offer conservation by matching solutions to local environmental conditions, making them highly effective for managing and adapting to specific ecosystems. Indigenous communities of Meghalaya often have a deep understanding of local biodiversity, including knowledge of species' medicinal, nutritional, and ecological value. This understanding can aid in the preservation of endangered species and ecosystems.

The traditional institutions of the Khasi hills such as the Syiems, Myntris, Lyngdohs, Sirdars, Wahadars, and village headmen constitute the Khasi political institutions. These institutions continue to exercise their influence over the various activities including forest administration and management through customary laws.¹⁴ In Meghalaya, sacred groves represent an age-old tradition of environmental conservation based on indigenous knowledge, culture, and religious beliefs. Sacred Groves originated in Meghalaya since time immemorial much before the advent of Christianity. They are unique features of Khasi and Jaintia Hills. They are among the few least disturbed forest patches which serve as the natural treasure house of biodiversity and a refuge for a large number of endemic, endangered, and rare taxa. A baseline floristic survey revealed the presence of at least 514 species representing 340 genera and 131 families in these sacred groves.¹⁵

According to a survey conducted by the Regional Centre of NAEB, Meghalaya's indigenous tribal communities have preserved approximately 1,000 square kilometers of forested land as 'sacred groves' under the governance of District Councils as part of their spiritual practices. Meghalaya features 125 sacred groves, each differing in size from 0.01 to 900 hectares, which makes them notable features of the state.¹⁶

¹¹ Dr. Sinchini Kundu, "Indigenous Khasi Tribe of Meghalaya and Environmental Sustainability: A Study" 21(1) *Global Journal of Human Science* (2021).

¹² *Ibid.*

¹³ *Supra* note 8.

¹⁴ *Supra* note 5 at 221.

¹⁵ B. M. Kharkongor and B. K. Tiwari, "Sacred Groves of Meghalaya: A Review" 6 (3) *International Journal of Science and Research* (2017).

¹⁶ Sacred Groves, available at: https://www.megforest.gov.in/forest_sacredgroves.html (Last visited on Feb.21, 2024).

The native tribes of Meghalaya believe that 'U Basa,' the goddess, dwells within these lush, untouched forests. Throughout the year, they engage in various ceremonies and rituals in these woodlands. They are convinced that by honoring 'U Basa' with the sacrifice of animals such as pigs, goats, cows, buffaloes, and poultry, along with performing dances, she will protect their villages or clans from hunger and other calamities or bad signs, as well as keep evil spirits at bay.¹⁷

In the past, people did not dare to enter or destroy these forests. It is interesting to know that to date, in some sacred groves, people are not allowed to pluck twigs of plants, use wire or steel, wear shoes or slippers, take photographs, or attend a nature's call. No timber or forest produce shall be removed for sale or trade but allowed for religious purposes.

Apart from being a repository of rich biodiversity harboring many rare, endangered & threatened plant species including rare medicinal and aromatic plants, sacred groves are living examples of a strong symbiotic relationship between the forests and the indigenous tribal population of the Meghalaya. The District Council has entrusted the management of sacred groves to the Lyngdohs or religious priests. Sacred groves shall be registered with the District council.¹⁸ However, sacred groves in Meghalaya are now increasingly threatened as tribal ways of life change, raising concerns about sustainable environmental conservation in the region.

IV. CHALLENGES FACED BY THE INDIGENOUS COMMUNITIES IN THE CONSERVATION OF ENVIRONMENT

Indigenous peoples control, manage and inhabit at least 25% of the planet's land area. In light of the rising environmental degradation globally, along with recent climate and economic shifts, local livelihood strategies have faced significant adverse effects. These changes, however, extend beyond the local inhabitants and have also impacted urban residents.¹⁹

The hill communities of Northeast India living in the eight states possess a wealth of traditional knowledge aimed at preserving nature and biodiversity. Their religious beliefs, taboos, mythical stories, and wisdom acquired through centuries of harmony with the natural world have served as protective measures against human disturbances in these regions for generations.

Indigenous communities in Meghalaya, which is one of the North Eastern states endowed with natural beauty, encounter a multitude of challenges in their efforts to protect and preserve their traditional knowledge and cultural heritage. These challenges often stem from historical injustices, systemic inequalities, and the complexities of integrating traditional practices into modern legal frameworks.

A major challenge is biopiracy, where external parties exploit indigenous knowledge for financial gain without obtaining consent or offering fair compensation to the communities of origin. Biopiracy often involves the patenting of traditional remedies, plant life, or genetic resources that indigenous populations have relied on for generations.²⁰ The lack of legal structures to prevent such exploitation endangers Indigenous communities and undermines their rights to control their intellectual and cultural assets.

One more issue that is encountered by the indigenous communities in Meghalaya is the lack of proper legal recognition and protection for their TIK within existing intellectual property frameworks. Many indigenous practices, oral traditions, and cultural expressions fall outside the scope of conventional IP laws, leaving them exposed to unauthorized usage or exploitation by outside parties.²¹ The lack of formal documentation and recognition of oral traditions of many indigenous practices also poses challenges in asserting ownership rights and protecting against unauthorized use or appropriation.

Socio-economic factors such as poverty, marginalization, and limited access to legal resources exacerbate the challenges faced by Meghalaya's indigenous communities in protecting their TIK and cultural heritage. Many indigenous groups lack the financial resources, technical expertise, and institutional support needed to advocate for their rights effectively.

In Meghalaya, many TIK systems are at risk of disappearing due to cultural assimilation, globalization, and the loss of elder knowledge holders who do not transfer their traditions to the younger generation. Additionally, younger individuals may not find traditional practices attractive, resulting in a decline in important ecological

¹⁷ *Supra* note 13.

¹⁸ B.K. Tiwari, S.K. Barik, *et.al.*, Sacred Grove of Meghalaya, available at: https://www.researchgate.net/profile/B-Tiwari/publication/309010769_Sacred_Groves_of_Meghalaya/links/57fdd0bc08ae49db475542a8/Sacred-Groves-of-Meghalaya.pdf (Last visited on March 5, 2024)

¹⁹ Julia E Fa, James EM Watson, *et.al.*, "Importance of Indigenous Peoples' lands for the conservation of Intact Forest Landscape" 18(3) *Frontiers in Ecology and the Environment* 135 (2020).

²⁰ The Role of Indigenous Knowledge in Environmental Conservation, available at: <https://olamidefrancis.medium.com/the-role-of-indigenous-knowledge-in-environmental-conservation> (Last visited on March 7, 2024).

²¹ *Ibid.*

awareness.²² Furthermore, TIK is often unrecognized or dismissed by policymakers, scientists, and conservation organizations. This lack of recognition can hinder the integration of traditional practices into formal conservation strategies.

In addition, legal and land rights remain a bottleneck in the application of TIK for nature conservation. Indigenous communities frequently face challenges related to land rights and access to natural resources. Without secure land tenure, their ability to practice and benefit from traditional conservation methods is compromised.²³ Moreover, indigenous conservation knowledge is mostly in conflict with modern practices. For instance, there can be friction between traditional knowledge and modern agricultural, forestry, and fishing practices. These conflicts arise from differences in priorities, such as short-term economic gain versus long-term sustainability.²⁴

Indigenous nature preservation forms a vital part of Khasi culture, and the tradition of sacred groves among them is an important part of it. The origin of forest preservation on religious grounds could be found in the institution of nature worship that constitutes an essential element of the indigenous Khasi religion.²⁵ However, the area under sacred groves is shrinking, and quite a few have been turned into degraded forests. Some sacred groves, though protected in the past, have fallen prey to encroachments and degradation due to the decline of the very social and ethical values that had helped them to thrive. The erosion of traditional values and deterioration of Sacred groves in recent times is, however, a matter of concern.

V. CONCLUSION

The study on “Sustainable Environmental Conservation in Meghalaya: Role of Traditional Indigenous Knowledge Systems” offers crucial insights into theoretical frameworks by emphasizing the significance of incorporating indigenous knowledge systems into established sustainability theories. In examining the role of Traditional Indigenous Knowledge (TIK) in sustainable environmental conservation in Meghalaya, it becomes evident that TIK is a vital asset that offers valuable insights and practices for achieving long-term sustainability. TIK, deeply rooted in the cultural and ecological frameworks of indigenous communities in Meghalaya, contains a vast array of knowledge regarding sustainable resource management, biodiversity preservation, and adaptation to climate change. Incorporating TIK into contemporary sustainability initiatives not only enhances our comprehension of ecological systems but also offers culturally appropriate and effective solutions to modern environmental issues.

Education and skill development should be integral to our efforts to harness the potential of indigenous knowledge for environmental conservation. Educational initiatives should address indigenous and non-indigenous groups to foster mutual respect and understanding of TIK. Furthermore, capacity-building efforts can enable Indigenous communities to manage their resources more effectively.

One further initiative in this area is collaborative research. Cooperation between scientists and indigenous communities can integrate traditional wisdom with contemporary scientific methods. These partnerships must be based on mutual respect and the sharing of benefits, guaranteeing fair results for all involved parties.

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²³*Ibid*.

²⁴ Reeta Goel, Ravindra Soni, *et.al.* (eds.), *Microbiological Advancements for Higher Altitude Agro-Ecosystems & Sustainability* 106 (Springer Nature, Singapore, 2020).

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