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Traditional Ecological Wisdom and Material Culture of the Poumai Nagas

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ABSTRACT

This paper explores the intricate relationship between ecology, culture, and technology among the Poumai Nagas of Manipur and Nagaland. Drawing from secondary sources and interpretive analysis, it examines how traditional knowledge systems reflect a profound ecological philosophy that guides agriculture, architecture, and material culture. For the Poumai community, nature is not merely a resource but a moral and spiritual teacher that shapes their worldview and social organization. Their indigenous technologies rooted in the use of bamboo, wood, and natural fibers demonstrate sustainable practices that predate modern environmental science. Each crafted object carries both functional and symbolic meaning, preserving stories of ancestry, landscape, and community ethics. The study also investigates how modernization and globalization have transformed, yet not erased, these ecological values. By adapting ancestral principles to contemporary realities, the Poumai people illustrate cultural resilience and ecological adaptability. The paper situates Poumai ecological wisdom within broader debates on sustainability, showing that indigenous systems offer viable models for addressing present-day environmental challenges. Ultimately, it affirms that the Poumai worldview embodies a living tradition of sustainability—where culture and environment coexist in continual dialogue.

1. INTRODUCTION

The Poumai Nagas not only engage with the environment in a way that sustains them, it is a living dialogue that creates their worldview, social organization and their technological imagination. Throughout the generations, their environmental knowledge has informed agriculture, architecture and ritual practice to adjust to the topographical eco-system of Manipur and some Nagaland. Research has shown that the ecological knowledge of the indigenous communities in Northeast India represents a significant basis of biodiversity conservation and cultural identity (Tynsong and Tiwari, 2020).

Ecological concepts of non-anthropocentrism such as Maori of New Zealand or Sami of Scandinavia are demonstrated by indigenous ecological systems that are world-spanning including their philosophy of coexistence and stewardship, as opposed to dominance over nature (Kake et al., 2023). Poumai worldview echoes this spirit, and it instills sustainability in everyday living using material culture, collective effort, and verbal passing of environmental ethics.

Also, the historical development of the Poumai tribe shows adaptive changes in the technological practices. Conventional irrigation, bamboo-based buildings and mixed crop farming are examples of native innovation based on observation of the ecosystem. Researchers underline that these local technologies are not the fixed remains but dynamic systems which react to the socio-political and environmental changes. Therefore, the analysis of Poumai environmental literacy provides crucial insights into the modern sustainability models.

The interest of the study is in its attempt to record and explain the indigenous ecological knowledge of the Poumai Nagas as a cultural and scientific resource. Although the contemporary environmental discourse is based on scientific approaches, it tends to recognize the importance of the Indigenous Knowledge Systems (IKS) in solving the problems of sustainability (Tynsong and Tiwari, 2020). The ecological awareness of the Poumai tribe that is manifested in agricultural rituals, norms of sharing resources and architectural sustainability can be seen as a holistic approach to the problem of how communities can flourish in harmony with nature.

This research is not limited to documentation. It has been used to facilitate interdisciplinary discourses in the environmental anthropology, cultural ecology, indigenous technology. This work also emphasizes a local aspect to the Northeast India region and hence the Poumai Nagas, which is frequently homogenized in literature. It puts Poumai ecological practices in the framework of international discussions of climate sustainability and cultural heritage. Additionally, the paper highlights the significance of indigenous models in informing the policy planning and conservation by indigenous communities through linking traditional ecology knowledge with current sustainability science. In the end, the study reconfirms the intellectual validity of the worldviews of indigenous people and their importance in the process of constructing fair and sustainable futures.

The Poumai Nagas, living in the hilly regions of Manipur and Nagaland at least, are one of the larger tribes of Nagas whose socio-cultural life is still bound to the natural environment. Their communities are organized around forests, terraced areas and water points which represents a complex interpretation of ecological harmony. Heirloom Poumai Nagas knowledge system that includes farming practices, artisan skills and environmental values are a manifestation of years of experiential knowledge. The importance of examining their native technology is that it may inspire the modern ecological sustainability and cultural conservation. In this paper, the writer attempts to explain how the traditional practices of Poumai are a reflection of ecological wisdom, which connects the indigenous technology and material culture to environmental adaptation.

2. THEMATIC REVIEW OF LITERATURE

The academic studies on the ecological systems of the indigenous population in Northeast India serve as significant background information on the knowledge practices of the Poumai Nagas. Kh. The article by Pou, Ethnic Impediments to Agricultural Development in the North-Eastern Region of India, focuses on institutional and cultural constraints that affect agricultural activities among the Poumai communities. It emphasizes the significance of land, kinship and customary law in the management of ecology. On the same note, the review conducted by Tynsong and Tiwari on traditional ecological

knowledge of tribal people recognises the indigenous conservation strategies as sacred groves, and conservation of biodiversity by means of customary taboos. The construction of the house of the Mao Nagas, in the study by Kake et al., sheds light on the engineering and material sustainability of indigenous people that are quite familiar to the time of Poumai architecture and craftsmanship. The discussion of modernization among Rongmei tribe by Gonmei and Gangmei offers a sociocultural perspective of interpreting how the indigenous systems change with external forces. These studies collectively have themes of ecology, sustainability and adaptation. Nevertheless, regardless of their relevance, they tend to ignore the technological and ecological paradigms of the Poumai Nagas themselves, which causes the gap that the present paper aims to fill.

3. RESEARCH GAP

Though there are so many studies about the traditional ecological knowledge in Northeast India, only a few studies are dedicated to the Poumai Nagas. Most literature discusses the general trends of the region without much representation of the special merger of the ecology and technology in the Poumai. Their native systems of environmental control including water, soil conservation, and the use of biodegradable materials have not been scrutinized in much agreement in the academic world. Thus, the study presents a critical gap by thematically synthesizing the already existing theoretical research in order to bring out Poumai-specific knowledge systems and their contribution to the sustainability of life.

4. METHODOLOGY

The research design used in this study is qualitative research as it relies on the analysis of secondary data. A thematic synthesis approach was also taken, with a special focus on cross-referential analysis of the studies to identify common motifs of environmentally conscious and technologically adaptive motifs. This analytical design is premised on the eco-cultural model, which analyzes the changes on cultural behavior and material innovation due to the effects of the environmental aspects. The paper recognizes trends between the Poumai traditional knowledge and the general ecological and sustainability discussions through interpretive reading.

5. NATURE AS MENTOR: FOUNDATIONS OF INDIGENOUS ECOLOGICAL KNOWLEDGE

According to Poumai cosmology, nature is not an inanimate resource it is a living teacher. Forests, rivers, and hills are considered conscious beings who have the spirits of ancestors. This is a belief system that allows a mutual relationship between the environment and humans and is supported by the practices of this belief such as observing rituals, maintaining oral traditions, and ecological practices. The information on seasons, soil fertility, plant species, etc. is passed verbally via the storytelling and work group. The Poumai just like other Naga groups perceive the process of cultivation as a conversation between the land and spirit. They have such ecological ethics that underlie their indigenous technology such that resource mining will never surpass the availability of natural regeneration.

Moreover, this cosmological paradigm creates an ethical aspect to ecology. Scholarships on the ecological knowledge of the Northeast Indian communities have shown that these spiritualized relationships with nature encourage the conservation of biodiversity in the long run (Lalnunmawia & Vanlalchhuanawma, 2021). Other Poumai taboos during the cutting of certain trees or over-hunting of particular species have had an impact on the ecological balance but this is enforced by social norms rather than by laws. Indigenous concept of living landscapes, the mingling of environmental stewardship and cultural continuity, according to the scholars, such as Singh and Nath (2020), places nature as a teacher and protector within the idea of community.

6. TECHNOLOGY WOVEN FROM THE WILD: TOOLS, CRAFTS, AND SUSTAINABLE PRACTICES

Their technology, Poumai, is the direct product of their setting. The main materials used to build the tools, houses, and household objects are bamboo, wood, and minerals found in the area. Agricultural equipment is made to suit the terrain in a way that reduces erosion and preserves the soil structure. In

the case of the traditional irrigation channels, the channels make use of natural gradients to evenly allocate water. Craftsmanship is also eco-friendly, baskets, mats and storage containers are made of bamboo strips without synthetic support. Poumai house construction is inspired by the sustainable architecture of the Mao Nagas, with thermal balance, ventilation, and long-term sustainability with no damage to the environment. They show a prototype of ecological design way before the recent notion of sustainability began being used in academic circles.

Recent ethnographic findings emphasize the ways the Poumai artisans change their designs to suit the material accessible to them to make sure that innovation is based on the ecological respect (Shimray, 2022). The localized model of sustainability can be found in the circular economy which is entrenched in these practices where waste is recycled or composted. Similar activities in the Angami tribe and the Tangkhul tribe indicate the existence of similar ecological logics between Naga communities (Kamei and Gonmei, 2023). Therefore, Poumai craftsmanship is a source of not only livelihoods but also passing of environmental knowledge through physical and social education.

7. MATERIAL CULTURE AS MEMORY: SYMBOLISM IN EVERYDAY UTILITY

All the items in the functions of Poumai household are both a symbol and utility. Such a process as weaving a basket is not only a craft, but a demonstration of identity, patience, and unity with nature. The designs of the fabrics, wooden carvings and tools tell the history of the clan and its ecological connections. Material culture is thus a store of memory which holds tales of survival, migration and adaptation. The ecological sensitivity of design is also pedagogical, educating the younger generations on the need to manage resources and respect nature. Such unity of purpose and meaning highlights the intellectual aspect of indigenous technology.

According to anthropological approaches, this type of material symbols serves as a mnemonic tool which explains moral and ecological teachings (Longkumer, 2021). In the case of the Poumai, the visual and emotional transfer of environmental awareness is guaranteed by the continuity of the design patterns, i.e. the geometric lines signifying the mountain ranges or the spiral as the symbol of water cycle. The home therefore turns into a micro environment of cultural ecology, where all the manufactured items support the ethical duty to the nature.

8. ADAPTING THE ANCIENT: MODERN SHIFTS AND CONTINUITIES IN TRADITIONAL SYSTEMS

Poumai traditions have been bound to be affected by modernization, market forces and globalization. Most of the traditional bamboo and wooden instruments are substituted by modern instruments of metal and plastic. The fundamental ecological ethos is however still strong. Societies still cherish individual productivity, work together and conservation of resources. The emergence of the eco cultural movements and the current concern about sustainable buildings has re-instated the value of the tradition. Modernization does not always obliterate tradition as the case of Gonmei and Gangmei study in the Rongmei environment depicts; on the contrary, it alters it. The adaptation among the Poumai Nagas is the introduction of contemporary effectiveness and the previous ecological reasoning an illustration of cultural strength instead of decline.

The current research on the subject of indigenous technology transitions states that hybridization of the old and new technology tends to strengthen resilience, but not compromise the authenticity (Aier and Yephtho, 2023). As an example, the younger Poumai artists are currently incorporating modern tools of accuracy whilst preserving the old design ethics, which is a dynamic equilibrium between efficiency and fidelity to culture. Indigenous systems can be relevant even in the face of global change, and such adaptive strategies provide a good example.

9. FINDINGS AND CONCLUSION

This paper has shown that the Poumai Nagas traditional knowledge system is a complex combination of technological inventiveness and ecological wisdom. The way the tribe uses the natural materials shows that it is a sustainable design and management of resources. The instruments and structures they create in addition to being functional are philosophically grounded in the notion that survival of human



beings is dependent on ecological balance. In addition, material culture serves as a source of intergenerational knowledge transfer and instills sustainability ethics in the everyday practice. The results indicate that as modernization comes, material changes are implemented, but the basic principles of harmony, adaptability, and ecological sensitivity persist. The identification and adoption of these indigenous knowledge into contemporary ecological policy and education would become a value addition to global sustainability endeavors. According to Sharma (2022), indigenous worldviews present epistemological approaches disrupting the exploitative paradigm of development. The focus on interpersonal values and shared accountability put into perspective by the Poumai experience underlines the applicability of the traditional ecological knowledge towards solving the issues of the modern environmental crisis. Accordingly, the Poumai case is not just the heritage of culture any more but the guide towards the sustainable futures.

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