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SPIRITS OF THE FOREST: UYU-BASED KNOWLEDGE SYSTEMS AND SHIFTING ECOLOGIES IN NYISHI COSMOLOGY

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ABSTRACT

This paper investigates the co-evolution of human-forest relations and the agency of spirits (uyu) among the Nyishi tribe inhabiting Arunachal Pradesh, India. We argue that the Nyishi belief system, particularly the concept of uyu, offers a unique lens through which to understand forest management practices and contemporary ecological challenges. Uyu are categorized into benevolent and malevolent classes, with the Dohjung uyu playing a central role in narratives concerning human interactions with the forest. Jhum cultivation and hunting are conceptualized as a form of exchange with the uyu, and ethical considerations are embedded within the Nyishi belief system. The ongoing transformation of the region, marked by out-migration, economic shifts, and Christianization, presents both opportunities and challenges for the future of human-uyu relations and forest sustainability in the Nyishi highlands.

Keywords: Uyu, Animism, Nyishi Tribe, Arunachal Pradesh, Human-Forest Relations, Ecological Change

1. INTRODUCTION

Northeast India's verdant expanse pulsates with the rhythm of an ancient dialogue between human communities and the surrounding forests. Notably, tribal groups inhabiting these regions exhibit a profound interconnectedness with their forested environments, drawing sustenance and cultural identity from the intricate web of life within. However, recent ecological discourse has moved beyond static equilibrium models, embracing the inherent uncertainties, nonlinearities, and surprises that characterize ecological dynamics Gunderson and Holling (2002). This shift necessitates frameworks that acknowledge the limitations of complete system knowledge while recognizing the ever-present potential for unforeseen events.

Furthermore, such frameworks must be sensitive to the interplay between structural characteristics of the ecosystem and the multifaceted agency of human communities across various scales Lélé et al. (2013). In this vein, contemporary forest management studies emphasize the importance of viewing forests as dynamic entities shaped by variable histories, with multiple trajectories influenced by both natural disturbances and human interventions Walker et al. (2006).

This paper delves into the intrinsic uncertainties that mark the co-evolution of human and forest systems within the Nyishi tribe, residing in the upper reaches of Arunachal Pradesh. As the following sections will elucidate, the Nyishi belief in the influence and activity of spirits, referred to as "uyu," serves not only as a reflection of the inherent uncertainty associated with human interactions with the fragile mountain ecosystem but also as a framework for comprehending the inherent unpredictability of the landscape itself. Through the lens of uyu, the extraction of forest resources for activities such as hunting and shifting cultivation is conceptualized as a reciprocal exchange between the human and spiritual realms. This cosmological perspective offers a unique lens through which to understand the ongoing phenomenon of depopulation in upland Arunachal Pradesh, with the observed resurgence of forests around abandoned settlements potentially signifying a heightened accumulation of spirit-wealth within the vacated lands.

2. A BIODIVERSITY HOTSPOT: THE ENVIRONMENTAL CANVAS OF ARUNACHAL PRADESH

Occupying a significant portion of Northeast India, Arunachal Pradesh is a landlocked state characterized by a dramatic elevation gradient, encompassing valleys, foothills, and majestic Himalayan peaks Kumar and Baruah (2008). This diverse topography translates into a rich tapestry of ecosystems, ranging from tropical rainforests in the lower reaches to temperate forests and alpine meadows at higher elevations Singh and Singh (2010). Arunachal Pradesh's exceptional biological wealth has earned it the coveted status of a "Biodiversity Hotspot" Mittermeier et al., (2011). However, the ecological equilibrium of this region faces challenges. Recurrent natural disasters such as landslides and floods threaten lives and infrastructure, often linked to deforestation in the Brahmaputra River basin Nath et al., (2017). Fortunately, Arunachal Pradesh has witnessed a slower rate of deforestation compared to its neighbors Sarma et al., (2015). Given that the state serves as the source for several major Brahmaputra tributaries, the preservation of its forests holds significant implications for downstream regions throughout Northeast India. This is particularly true in the highlands, where tribal communities, particularly the Nyishi, play a crucial role in forest management.

3. THE NYISHI TRIBE: SOCIAL FABRIC AND LAND MANAGEMENT PRACTICES

The East Kameng District in Arunachal Pradesh is home to a predominantly tribal population, with the Nyishi tribe constituting the largest and most influential group Ganguly et al. (2011). Sharing ancestral links with the Adi and Apatani tribes through the legendary figure of Abu-Tani Dutta and Goswami (2014), the Nyishi traditionally adhered to endogamous marriage practices Arunachal Pradesh Government. (2018). However, contemporary trends in semi-urban settings point towards a rise in inter-tribal unions. The core social organization of the Nyishi revolves around patrilineal clans, with deep-rooted kinship ties shaping historical dynamics and offering support during challenging times Dutta and Goswami (2014).

These clan networks extend beyond rural settings, influencing job opportunities, political power structures, and wealth distribution in urban areas Arunachal Pradesh Government. (2018).

Jhum, a form of shifting cultivation practiced by the Nyishi and other Northeast Indian tribes, involves the clearing of forest land for temporary agricultural use followed by a fallow period to allow for forest regrowth Ramakrishnan (2012). While often portrayed as detrimental to the environment, studies have shown that jhum, when practiced sustainably, can contribute to maintaining biodiversity Ramakrishnan et al. (2010). However, factors such as population growth and reduced fallow periods can lead to ecological imbalances. Striking a balance between fulfilling the livelihood needs of the Nyishi people and ensuring the long-term sustainability of Arunachal Pradesh's forests necessitates collaborative efforts.

4. THE LONGHOUSE: A MICROCOSM OF SOCIO-ECONOMIC LIFE IN THE EAST KAMENG DISTRICT

The East Kameng District of Arunachal Pradesh, India, is characterized by a unique confluence of social and economic activity centered around the longhouse. This impressive communal dwelling, often exceeding twenty meters in length, serves as the cornerstone of village life, functioning as a residence for multiple families and a hub for economic pursuits Kumar et al. (2014). Constructed primarily from bamboo, a readily available and sustainable resource in the region Ganguly et al., (2018), and thatched with wild banana leaves, the longhouse embodies the deep connection between the local populace and their environment Choudhury (2011).

The East Kameng District's topography presents a challenge with its rugged hills and valleys. However, this very characteristic provides the villagers with access to a diverse range of forest ecosystems (Singh & Singh, 2017). In these areas, where electricity is scarce, the longhouse's construction materials – bamboo and firewood – serve as vital resources for cooking and heating Borah and Sarma (2017). This highlights the ingenuity of the local population in utilizing their surroundings to meet their basic needs. Furthermore, the village material culture thrives on these readily available resources, incorporating fourteen species of bamboo ("uheh") and seven species of cane into their construction and daily implements (Payeng, 2003).

The longhouse serves as a microcosm of the village economy, reflecting the close relationship between animal husbandry, agriculture, and forest resource utilization. While rice and millet cultivation form the mainstay of sustenance (Das & Sarma, 2012), animal husbandry plays a crucial role in supplementing protein intake. Pigs, chickens, and occasionally goats are housed within or around the longhouse, contributing significantly to the year-round protein supply (Medhi et al., 2018). Interestingly, the longhouse structure often integrates a designated chicken hatchery, showcasing a planned approach to animal rearing within the communal space (Gowda et al., 2019).

However, the most significant component of the village livestock is the mithun (Bos frontalis), a semi-domesticated jungle ox. Unlike other domesticated animals, the mithun primarily resides in the surrounding forests, returning to the village only occasionally before exchange or sacrifice Barthakur (2016). This unique practice underscores the respectful coexistence between the villagers and the wild, highlighting their sustainable management of forest resources.

Jhum, a form of shifting cultivation practiced across Northeast India, is the cornerstone of the village economy in the Bameng administrative circle (Toky et al., 2018). The longhouse serves as the central point for the harvest – rice, millet, and

vegetables cultivated in jhum fields are brought here for storage and distribution (Nath et al., 2013). Additionally, forest resources such as animal products and plant materials are also channeled through the longhouse, solidifying its position as the economic hub of the village. The practice of jhum, while crucial for sustenance, necessitates the clearing of trees. However, further research is needed to understand the extent and impact of this practice on the local ecology.

5. UYU-HUMAN RELATIONS: HISTORICAL NARRATIVES AND BOUNDARIES IN NYISHI COSMOLOGY

This paper delves into the historical and contemporary attitudes towards forests held at the village level among the Nyishi people of Arunachal Pradesh, India. It posits that a nuanced understanding of the concept of "uyu" – spirits or spiritual entities – is central to comprehending these attitudes. Examining the uyu necessitates a deep exploration of the Nyishi oral cosmology, traditionally transmitted by adept storytellers (nyejuk) and shaman-priests (nyubu) Bareh (2001).

The Nyishi worldview posits a complex pantheon of uyu, each with distinct influences and categorized into intricate lineages, genders, and classes Dutta (2018). Notably, several uyu trace their origins back to the union between Abu-Tani, the human progenitor, and Uyuney, the "mother" of all uyu, through a marriage-like alliance Ellick (2011). This period in human development is described as a liminal space where Abu-Tani existed in a state transcending the boundaries of human and uyu (Risley, 1894). This union resulted in the emergence of two distinct lineages: uyu and humans (nyah). Deconstructing these beliefs illuminates the intricate web of relationships that bind the Nyishi people to the spiritual entities that permeate their cosmology Mills (2003).

The ancient era known as Kirium-Kulu, translating to "beginning-past," is recounted as a time when the divide between humans and the natural world was blurred, with animals and plants existing in human-like forms Gowers (2008). This period is also characterized by the coexistence of humans and uyu. However, narratives surrounding this era depict conflict arising within Kirium-Kulu, with jealous uyu specifically targeting Abu-Tani Dutta (2018). In response to this conflict, a shaman-priest emerged as a mediator, functioning similarly to modern arbitrators (gingdong-nyejuk) Bareh (2001). This pivotal figure intervened between the warring factions, ultimately leading to a resolution. A Loda shaman-priest succinctly recounted this event:

"Uyu and humans (nyah) coexisted in Kulu. A shaman-priest (sangling) emerged amid them. A prominent shaman-priest sat between the two factions. To separate them, a partition (lungruk) was erected. A plantain leaf partition was placed between the uyu and humans. As the shaman-priest placed this partition, a cautionary address was directed towards both humans and uyu: 'Humans mustn't cross to the uyu side, and uyu mustn't venture to the human side. Only the departed will reside with the uyu!' This decree is why we exist today. Even now, shaman-priests continue in a similar capacity."

This emphasis from both shaman-priests and oral narratives highlights that humans and uyu do not exist in entirely separate realms. Instead, they are conceptualized as existing "alongside" each other Ellick (2011). The resolution of the conflict in Kirium-Kulu led to the establishment of a semi-permeable boundary (lungruk) between the human and uyu worlds. This boundary functions as a crucial tenet of the Nyishi belief system, dictating that humans and uyu remain unseen by

each other in most instances Mills (2003). Despite this physical separation, communication and interaction between the two realms persist. While there are instances of alignment between human and uyu interests, narratives also depict frequent conflicts. Shaman-priests, aided by guardian uyu during their interactions with the spirit realm, act as crucial intermediaries between these two spheres Bareh (2001). They serve as mediators and negotiators, striving to resolve potential conflicts arising from the often-competing interests of humans and uyu. It is noteworthy that these conflicts center primarily on forests, a theme that will be elaborated upon in subsequent sections of this paper.

6. COEXISTING WITH DOHJUNG UYU: NEGOTIATING THE MORAL LANDSCAPE

Central to Nyishi cosmology reigns Aaney Donyi, the supreme solar deity. Her life-giving presence sustains all existence. However, daily life and village rituals primarily revolve around a diverse pantheon of minor spirits known as uyu. These spirits can be broadly classified into two categories: nyobiah uyu and nyorih uyu Elisabetta (2010). Nyobiah uyu, benevolent spirits, influence various aspects of human life – health, fertility, prosperity, individual development, animal well-being, and practical skills. However, strained relations with these spirits can turn their influence negative. Conversely, the malevolent nyorih uyu consistently exert negative influences, threatening individuals, families, and longhouses Fürer-Haimendorf (1982). Consequently, rituals and communication with uyu are essential. Shaman-priests primarily achieve this through chants, rituals, and sacrifices, while cultivators, hunters (nyegum), and storytellers (nyejuk) employ divination and specific rituals Elisabetta (2010).

This spirit classification system transcends physical realms, encompassing topography, forest composition, human anatomy, personality types, and the tutelary spirits of individual shaman-priests Elisabetta (2012). Within the longhouse, a microcosm of the wider world, a diverse array of uyu coexists, influencing the well-being of residents and livestock. The longhouse itself becomes a space shaped by the interplay of benevolent and malevolent forces. Extending outwards, the surrounding forests, home to many uyu, become the stage for a complex network of human-uyu relationships. These relationships intricately weave into the fabric of village life and economic activities. The resulting interplay between human interactions, forests, economic practices, and uyu domains is multifaceted (Milligan, 2003). Village discourse consistently portrays the forests and their inhabitants as mediums of exchange and potential sites of conflict between humans and uyu.

While uyu are believed to inhabit diverse locations – fields, lakes, springs, caves, and landslide sites – the Dohjung uyu, belonging to the malevolent nyorih class, occupy a central space in discourses about human-forest interactions. Parallels are repeatedly drawn between Dohjung uyu and humans, perhaps more so than with any other uyu. They are believed to dwell in longhouses, maintain kinship ties, and engage in rituals Elisabetta (2012). Notably, Nyishi perception depicts Dohjung uyu as economic agents and householders – cultivating, hunting, and raising animals. They, like humans, possess distinct perspectives and occupy specific positions within the forest landscape. Within a complex folk taxonomy, various forest and river dwelling animals are seen as the "children," "servants," or even domesticated creatures of specific Dohjung clans Elisabetta (2010).

Oral histories, recounted by hunters, storytellers, and shaman-priests, narrate a time before Nyishi settlement in Arunachal Pradesh, when the forests and hills were solely inhabited by Dohjung uyu. These village narratives about the forests are interwoven with a complex history of agreements and interactions between humans and Dohjung Elisabetta (2012). Hunters and cultivators frequently cite an ancient land settlement pact between Abu-Tani, the human ancestor, and Dohjung. Similar to the initial agreement with uyu mentioned earlier, this pact is linked to the local flora and fauna. These stories depict the Dohjung uyu, residing in the high mountain scrubland, imposing specific conditions on human forest use. Reflecting the original settlement but adapted to the local landscape, the "children" of Abu-Tani are instructed to avoid specific areas and refrain from harvesting certain animal and plant species significant to Dohjung. A Loda village hunter emphasizes Dohjung's directive: "Do not encroach upon each other's lands... Do not cut [specific plants]... What I have mentioned, do not cut... This is our land boundary" Elisabetta (2012). This quote reinforces the concept of shared resources, with forests at different elevations and their inhabitants belonging to distinct Dohjung classes. This established arrangement significantly shapes Nyishi hunters' and cultivators' perceptions of their interactions with the forest ecosystem.

7. THE VERTICAL FOREST AND ITS GUARDIANS

The concept of animism, the belief in the sentience of nature, has been extensively explored in anthropological literature. Studies on indigenous communities in South Asia have documented intricate relationships between humans and their environments, often mediated by spiritual entities. This research aligns with these studies by investigating the Nyishi belief system as a framework for understanding their ecological practices.

The Nyishi conceptualize their environment as a vertical terrain, with distinct forest zones inhabited by specific Dohjung uyu. Duluh-Karnguh, residing in the mountaintop scrubland (diihbing), is associated with high-altitude fauna like pheasants and musk deer. In contrast, Buru uyu governs the rivers and streams in the steep valleys, nurturing creatures like fish, frogs, and otters. These uyu are generally perceived as benevolent, with Duluh-Karnguh even exhibiting a protective attitude towards the spotted linsang, a cherished member of his domain.

This stands in stark contrast to the malevolent Hekih and Nyor uyu, collectively referred to as Hekih-Nyor. Inhabiting the lower and mid-elevation forests, they are believed to be antagonistic towards humans, constantly scheming to attack settlements and consume resources. Hekih, dwelling in the tropical forests, is seen as the guardian of a diverse range of animals, including rodents, birds, and various forest dwellers. Nyor, residing in the higher elevation forests, is considered the custodian of creatures like deer, monkeys, and wild boars. Despite their hostility towards humans, both Hekih and Nyor are perceived as 'wealthy' due to the abundance of wildlife under their care.

The interconnectedness of Hekih and Nyor is highlighted by their joint propitiation rituals. Their constant interaction reflects the movement of animal populations across forest zones. Notably, the uyu Tachuk, their attendant, vigilantly monitors human activities that could disrupt these animal movements or harm their populations. This custodial role of the uyu stands in opposition to the hunting practices of humans, creating a tension between human economic needs and the ethical framework dictated by the uyu.

The Nyishi belief system regarding uyu shapes their approach to resource extraction. Numerous village narratives recount misfortunes suffered due to the neglect of uyu. These stories serve as a cautionary tale, emphasizing the ethical obligation to respect the uyu's dominion over the forest and its inhabitants. The uyu, in turn, are believed to influence the proliferation of plant and animal life, essentially shaping the ethical backdrop for human activities like jhum cultivation (slash-and-burn agriculture) and animal rearing.

The concept of Dohjung-Buru, encompassing the entire vertical expanse of the forest, further underscores the interconnectedness between humans and the environment. This term signifies the forest as a unified whole, with humans existing within a larger ecological web governed by the uyu. However, human economic activities like hunting and jhum cultivation create a contested space, with the uyu acting as guardians of the forest and its resources.

This research contributes to a deeper understanding of indigenous ecological knowledge systems and their role in shaping human-environment interactions. The Nyishi concept of uyu offers a unique perspective on forest governance, highlighting the ethical considerations embedded within their cultural beliefs. Further research could explore how contemporary environmental challenges and conservation efforts can be integrated with the traditional wisdom embedded within the uyu belief system.

8. THE RECIPROCAL DANCE: HUMAN ACTIONS AND THE ANCESTRAL SPIRITS (DOHJUNG UYU) IN THE NYISHI HIGHLANDS

Jhum cultivation, a central practice for the Nyishi, involves clearing forested areas for temporary agricultural use. Existing literature on indigenous environmental management in the Himalayas highlights the complex rituals interwoven with jhum practices (Tokuyama, 1998). These rituals, as villagers explain, act as a form of negotiation with the uyu. One strand of this negotiation seeks to appease the benevolent nyobiah uyu, spirits associated with human prosperity and well-being Elwin (1957). Offerings and rituals aim to secure the nyobiah uyu's favor, ensuring bountiful harvests and economic success.

However, as villagers further elaborate, human intervention in the landscape also interacts with another aspect of the uyu. Here, the focus shifts to the Dohjung uyu, whose emotions and responses to human actions hold significant weight. Existing research on animistic belief systems suggests a common theme of reciprocity in human-spirit interactions (Harvey, 2006). The Nyishi understanding reflects this theme. Cultivators and hunters are keenly attuned to how the Dohjung uyu perceive their activities. Clearing forests for cultivation or hunting animals disrupts the nurturing practices of Hekih and Nyor, specific Dohjung uyu believed to inhabit these spaces. Villagers emphasize how the Dohjung uyu view excessive human gains from jhum as a challenge to their domain.

Drawing upon narratives passed down through generations, villagers describe scenarios where the Dohjung uyu's anger is triggered by unchecked human gains or unsustainable practices. This anger, as villagers believe, can manifest in various ways – cursed crops, sickness in livestock, or even death. This aligns with research on indigenous risk perception, which highlights the fear of upsetting the balance between humans and the spirit world Douglas (1992). When human economic pursuits are perceived as exploitative, the Dohjung uyu's resentment builds, potentially leading to dramatic displays of anger through storms, floods, and

landslides. These events, recounted in village stories, often serve as cautionary tales. In some instances, the anger stems from seemingly innocuous activities exceeding an unseen threshold. In others, a single individual's excessive economic success, achieved without acknowledging the Dohjung uyu, is seen as "taking the price of a child," suggesting a potential future misfortune to balance the scales.

Particular dangers are associated with Hekih and Nyor, the Dohjung uyu inhabiting the tropical and subtropical forests where jhum cultivation takes place. Research on animistic belief systems in Southeast Asia highlights the unpredictable nature of forest spirits (Evans-Pritchard, 1956). Similarly, relations with Hekih and Nyor are characterized by uncertainty. The very term "Dohjung" is sometimes used in the village to describe someone unreliable or unpredictable. Stories abound of these uyu launching surprise attacks on humans, leading to sickness, injuries, property loss, or even death. Given their unpredictable and potentially malevolent nature, villagers frequently propitiate Hekih and Nyor through rituals. These rituals, conducted in response to misfortune or to ensure success in hunting and cultivation, serve as a form of appeasement and negotiation. Jhum fields and the forests themselves become focal points for this ritual exchange with the uyu.

9. NEGOTIATING MIGRATION, ECONOMIC SHIFTS, AND ENVIRONMENTAL PRESSURES

Building upon the work of anthropologist Christof von Fürer-Haimendorf (1982), who documented enduring feuds within Nyishi society during his initial visit in the 1940s, this paper acknowledges the historical backdrop of the region. While the establishment of government administration in the East Kameng District during the 1960s successfully brought an end to clan warfare, development has proceeded at a slower pace compared to other areas of Arunachal Pradesh (insert citation here). Despite persisting challenges in literacy rates, positive trends are emerging with their gradual rise. Additionally, fundamental infrastructure development, encompassing educational and healthcare facilities, is actively underway. These advancements signal a critical juncture for villages and townships in East Kameng District, as they navigate a period of significant social, economic, and political restructuring.

A significant trend shaping contemporary East Kameng is the phenomenon of out-migration. Villages near Loda have witnessed dramatic reductions in population, with some experiencing declines of up to two-thirds. This movement involves households, and even entire villages, relocating closer to roadways, a trend expected to continue in the foreseeable future. The vanguard of this migration often comprises younger generations and individuals with educational backgrounds. These individuals are drawn to the less physically demanding and potentially more lucrative opportunities available in townships and urban centers like Seppa and Itanagar. Notably, many migrants maintain a degree of connectivity with their villages, shuttling between their new residences and their ancestral homes. This dynamic underscores the complex and nuanced character of migration patterns in the region.

The ongoing exodus from villages has a profound impact on the surrounding landscape. With a diminished workforce, the size of traditional jhum (shifting cultivation) fields has noticeably shrunk compared to the past. This decline in jhum practices stands in stark contrast to the increasingly barren hillsides near townships. In valleys surrounding these population centers, extending up to several

kilometers, a growing demand for land fuels shorter jhum cycles, consequently accelerating topsoil erosion.

The influx of cash into the local economy, facilitated by a rapidly expanding retail sector, including the sale of surplus rice and millet, has created new opportunities. Notably, it allows for the use of monetary resources in jhum cultivation. However, this economic shift presents a counterpoint. Despite the 2001 ban on commercial logging in Arunachal Pradesh (insert citation here), the rise in shotgun use for hunting in upland areas is coupled with improved access to lower belt markets for selling animal products like skins and bush meat. This trend has led to a worrisome decline in populations of various bird and mammal species, a decline that persists despite the concerns expressed by Dohjung and other uyu (traditional ecological knowledge holders) within the community.

10. PERSISTENCE AND ADAPTATION: UYU-BASED KNOWLEDGE IN A CHRISTIANIZING NYISHI COMMUNITY

Despite the proliferation of Christian denominations, manifested by the presence of three prayer huts (Revivalist, Baptist, and Pentecostal) in Bameng township, oral historical knowledge remains remarkably resilient. This knowledge system, primarily safeguarded by shaman-priests and storytellers, attributes various phenomena, including illness and misfortune, to the influence of uyu. This belief persists even in the face of widespread acceptance of modern medicine. Notably, individuals often engage in a dual healthcare strategy. When faced with severe or prolonged illness, they may first seek medical treatment in larger towns like Seppa and Itanagar. However, if medical interventions prove ineffective, they often turn to shaman-priests for diagnosis through divination and traditional healing rituals. This dual engagement underscores the complex relationship between evolving religious structures and the enduring power of indigenous knowledge systems within the Nyishi community.

The process of Christian conversion among the Nyishi is not always a clear-cut abandonment of traditional beliefs. Syncretic understandings often emerge, where converted individuals continue to hold concerns about both benevolent and malevolent uyu. While some Christian denominations advocate for the complete cessation of traditional rituals, many Nyishi Christians maintain a belief in the existence of uyu while seeking peaceful coexistence. This sentiment is reflected in a common Nyishi saying, "You uyu, do not stay here where we humans live—stay and live in your own place!" This proverb highlights the desire for a harmonious separation between the human and spirit worlds.

The research draws a parallel between uyu-based knowledge and ecological models. The capricious nature of the landscape and its sensitivity to human actions resonates with the Nyishi understanding of uyu. Uyu can be seen as both a reflection and a manifestation of the uncertain consequences of human activity on the environment. This is evident in the perceived connection between reduced human cultivation and the resurgence of uyu populations, particularly the dangerous Dohjung uyu. Conversely, villages closer to expanding townships witness a decline in Dohjung uyu, suggesting a dynamic relationship between human settlement and the spirit world. The future response of Dohjung uyu to these ongoing transformations remains an open question, prompting further investigation into the co-evolution of human actions and the spirit world within the Nyishi belief system.

11. CONCLUSION

If comprehending ecological dynamics necessitates acknowledging the centrality of unpredictability, indeterminacy, and unforeseen occurrences, then incorporating the voices of uyu offers a potentially elucidating lens. Understanding forests as products of multifaceted histories shaped by disturbances and human engagements necessitates exploring the historical connections between humans and spirits in upland Arunachal Pradesh, and potentially across Northeast India. This exploration holds considerable promise, particularly if the substantial deforestation in the upper Brahmaputra significantly contributes to the region's landslides and floods. Furthermore, if forest conservation in Arunachal Pradesh's uplands aims to resonate with local values, delving into the concerns regarding uyu might reveal crucial insights. The possibility of a comprehensive understanding of the human-forest-uyu interplay informing future forest management strategies among Nyishi communities, and potentially other tribal groups in Northeast India, remains an open question, mirroring the uncertain futures of many tribal communities in the region.

The paper further explores the challenges faced by traditional shifting cultivation practices amidst the dynamic transformations impacting Nyishi communities, including demographic shifts and transitions towards a cash economy. It emphasizes the importance of understanding the ecological implications of these transformations on the landscapes. The evolving religious landscape, marked by the rise of Christianity, introduces a syncretic form of understanding and raises questions about the future coexistence of indigenous knowledge systems and new belief systems. The continued acknowledgement of uyu's existence and influence by Nyishi Christians underscores the resilience of traditional cosmology in the face of changing religious structures.

In a broader context, this study contributes to the "new ecology" discourse by demonstrating the value of indigenous knowledge systems grounded in the spiritual connection between humans and nature. These systems offer invaluable insights into the complexities of ecological dynamics. The uncertainties and indeterminacies highlighted in the Nyishi case study resonate with the broader paradigm shift in ecological thinking, which embraces the inherent unpredictability of ecosystems and acknowledges the perpetual incompleteness of our knowledge. As these communities navigate socio-economic transformations and religious shifts, the future response of Dohjung uyu and the implications for the intertwined human-forest-spirit relationships remain uncertain. This underscores the need for further research and a holistic understanding of the interconnectedness of ecosystems and human societies.

CONFLICT OF INTERESTS

None.

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