ISSN NO: 2583-7842 (Online)

Gateway International Journal of Innovative Research
Volume 3, Issue 4, December, 2024, pp 15-28.

Conservation Practices and The Integration of Traditional Ecological Knowledge Among the Nagas

***Ngaopunii Trichao Thomas, **M. Apao, ***Tuikhang Chuongam Koren**

Abstract

This study attempts to examine the conservation practices of the Naga people, analysing the integration of their traditional ecological wisdom with modern technology for effective biodiversity conservation. Employing qualitative methodology, the paper explores indigenous practices such as community-conserved areas and sustainable agriculture, revealing their significant contributions to ecological preservation and sustainable development. Case studies, like the Khonoma Nature Conservation, exemplify successful community-led initiatives. The Nagaland government's 2030 vision for sustainable resource management underscores the delicate balance between conservation and development, suggesting modern technology can bolster traditional methods. The findings advocate for the recognition and incorporation of indigenous knowledge into broader conservation and environmental policies. This research contributes to understanding the pivotal role of indigenous perspectives in global conservation efforts.

Keywords: *Indigenous knowledge; biodiversity conservation; sustainability; environmental policy integration.*

***PhD Scholar, Department of Social Work, University of Delhi. Email: chuongamkoren9@gmail.com

ISSN NO: 2583-7842 (Online)

Gateway International Journal of Innovative Research
Volume 3, Issue 4, December, 2024, pp 15-28.

Introduction

Indigenous societies have had a history of co-existing peacefully with nature, guided by a complex comprehension of their environment. Among such societies, the Nagas are unique in that they have effective, traditional means of conservation. The Nagas, a tribe residing within the north-east part of India and north-west of Burma, are composed of diverse tribes, each of which has its unique language, culture, and traditions. Despite their diversity, there is a unifying respect for nature and sustainable means. Traditionally, they have coexisted with nature, using the land to make their living. Their traditions, culture, and spiritual beliefs are closely connected to the natural environment, suggesting that there is great comprehension and admiration of the environment on their part. The objective of this research was to learn of the Nagas' native means of conservation. The research explored how the Nagas coexisted with nature, how ecological means were implemented by them, and how biodiversity conservation had affected society within them. It also explored challenges that face them regarding preserving nature, biodiversity, and ecology, along with possibilities of enhancing and developing it. The role of modern technology within conservation also formed part of what was explored by this study. The findings of this research can act as a reference point to other societies and spur further research on native means of conservation and how it can be integrated into modern means of conservation.

The rationale of this study is built on the recognition of the importance of native practice and know-how in maintaining ecology, nature, and biodiversity. The Nagas, like most native people, have evolved distinct ways of relating to the environment that have permitted them to use resources without harming ecology generation after generation. But mainstream plans of preserving things neglect or diminish these ideas. The objective of this study is to give priority to native traditions, stressing how effective they are and how much of a contribution they can make to global plans of preserving things. By knowing and learning how the Nagas treat nature, we can learn valuable lessons on sustainable life and how to save biodiversity. The study also attempted to learn what issues beset the Nagas in maintaining their environment and how there is room to improve and better things. Included is how modern technology can make things better. The findings of this study can serve as reference point to other civilizations, compelling others to make more inquiry on native means of preserving things and how to make use of it within modern plans of preserving things. Essentially, what this study seeks is to make contribution to global plans of preserving life-essential ecology and reinforce our responsibility

to save the globe for posterity. It underscores how much importance is to be assigned to native know-how and practice in our quest for sustainability tomorrow.

Review Of Literature

The existing literature on indigenous Naga conservation practice is diverse and far-reaching, indicating the extent of their historic ecological know-how and its applicability to environmental management. Biodiversity, defined by variety within and among species within ecosystems, is an important component of life on land. It is important to maintaining life on our planet, offering goods along with services ranging from nutrition, medicinal resources, to climate regulation (Lanzerath & Friele, 2014). Concurrently is that of ecology, that of relationships of organisms along with surroundings, useful to better understand what is around us. It identifies key relationships of plants, wildlife, along with surroundings, therefore informing our actions to maintain ecosystems along with biodiversity (Pomeroy & Alberts, 2012). It is society, on collective along with individual levels, that has much to contribute to activities of conservation. Actions of individuals along with decision making have far-reaching consequences on the environment, making it important to understand societal attitudes along with actions concerning ecology along with biodiversity. This comprehension is crucial for formulating efficacious conservation strategies, thereby highlighting the interconnectedness of biodiversity, ecology, and society in the preservation of our natural world (*Ecosystem Services*, 2016).

A study by Francis Sebastian Cheerangal highlights that Nagaland is a state inhabited by 16 hospitable tribes and other sub-tribes. Each tribe is distinctively different from the other in terms of tradition, customary practices, language, and attires are preserved. He discovered that over half of Nagaland is still covered by forest, with 88% of Nagaland's forests owned and managed by the communities who live alongside them. The indigenous Yimkhiung Naga residents own and manage a roughly 65-square-kilometre community forest. The history and traditions of the Nagas are preserved in the memories of the people and handed down to generation to generation (Cheerangal, 2022). Another study by Neema Pathak investigate the incorporation of indigenous knowledge and practices with scientific knowledge, with the aim of fostering a sustainable future and enhancing disaster management strategies. According to the study, a community of indigenous people in Nagaland has successfully maintained wildlife through the establishment of a community conserved area (Gokhale & Negi, 2011).

Several studies have elucidated the intimate relationship of the Nagas with nature and how unique is their mode of practice of conservation. For instance, Jamir's study explored how ecological knowledge of the Nagas helps ensure biodiversity conservation. The contribution of the Naga people to conservation activities has been well researched by researchers (Jamir et al., 2022). The contribution of community-based customary laws of natural resources management by Sashimatsung's studies elucidated how critical is community engagement in natural resources management and natural resources protection. The intimate relationship of the Nagas with nature together with adherence to community-based customary laws of the tribe is what has created a very much ingrained culture of sustainable use of natural resources (Sashimatsung, 2016). The social consequences of how the Nagas practice conservation have also been explored by researchers. The contribution of conservation activities on Naga society, particularly on activities of livelihood and cultural beliefs, is what researchers explored by Kikon and Barbora (Kikon & Barbora, 2021). A literature on how challenges of biodiversity conservation by the Nagas have evolved together with how they have solved them is on the rise every day. For instance, Lanusunep's study explored challenges and possibilities of agrobiodiversity conservation by the Nagas (Gajurel et al., 2015).

Despite the vast literature on how the Nagas practice conservation, there were areas of identified gap within it. A critical gap was that there had been very little inquiry into how emerging technology can improve Naga conservation practice. More also needed to be investigated on how effective were the Nagas' means of doing conservation, considering that environmental issues were on the increase. The areas of identified gap have scope of exploration in the future.

Methodology

The research formed part of a qualitative inquiry of the indigenous practice of conservation of the Nagas and its sustainability for maintaining biodiversity. Document analysis, informal key informant interviews of Naga community leaders, farmers, and practitioners of conservation, and observation of Naga people through field trips were utilized to collect data. The acquired data were analyzed through thematic analysis to make sense of the indigenous practice of conservation of the Nagas, its sustainability for maintaining biodiversity, and its applicability to global sustainable practice. The researchers utilized triangulation, where findings were cross-checked through diverse sources of information and means of collecting information, to

ensure findings were valid. The researchers followed guidelines of ethics while conducting the research, upholding respect of Naga people and indigenous knowledge. The utilization of this approach provided a holistic means of making sense of the indigenous practice of conservation of the Nagas and its sustainability for maintaining biodiversity.

Findings

The Nagas' Relationship with Nature

The Nagas' cultural traditions The research findings point out that there is very intimate co-evolution of people of the Naga tribe, residing in northeastern India and northwestern Burma, with nature. The relationship is defined by vision that views people as part of the ecosystem, leading to sustainable activities like jhum cultivation or shifting cultivation. The practice allows land rejuvenation and keeping its fertility intact. The practice of maintaining sacred groves by people of the Naga tribe is evidence of its interest in preserving biodiversity. The sacred groves are pieces of forest that have been spared on religious or cultural reasons. The areas function like reservoirs of biodiversity, keeping diverse plant life and animal life. A good example is that of the Khonoma Nature Conservation and Tragopan Sanctuary (KNCTS), established by people of the Angami Naga tribe residing around Khonoma village in 1998. The sanctuary is dedicated to protecting Blyth's Tragopan, pheasant bird that is on the endangered category of pheasants of that region. The initiative by people of the Khonoma Nature Conservation and Tragopan Sanctuary (KNCTS) set good precedence by banning people around Khonoma from hunting. The move followed after demarcation of 20 sq km of land by people of the village council to establish the KNCTS. The initiative by people of the KNCTS is to protect natural environment and keeping the Tragopan Sanctuary safe. As a result, hunting activities within Khonoma have been strictly prohibited.

The Nagas' cultural traditions also reflect their admiration of nature. For instance, the Sumi tribe, one of the Naga tribe, utilizes bamboo, grass that is very precious to people of Nagaland, to predict weather conditions. The Nagas also have a well-documented history of producing and weaving clothing of their own, each people group of its distinct designs, utilizing diverse sources of material of adornments. From birth, children of people of Naga learn how to survive, endure, and have respect for nature and all of humankind through myths and myths of old times. The social norms of the Nagas and rituals have impacts on conservation also. For instance, there are taboo on hunting by people of some of its people within particular times,

amounting to seasonal ban on hunting that helps animal population replenish itself. Such traditions give valuable lessons on sustainable living that can serve others too as role model. The importance of biodiversity, ecology, and people's role of preserving the web of life is what is emphasized by the Nagas. With every part of the globe facing environmental challenges, lessons of the Nagas along with that of others of its people assume greater importance. Their traditions point out what is possible through indigenous knowhow of guiding sustainable actions and maintaining biodiversity too.

The Nagas and Nature Conservation

Community-Conserved Areas (CCAs) are areas that are voluntarily preserved by people at the local scale by reasons of ecosystem values, cultural values, or values of biodiversity. The areas range from natural to anthropogenic ecosystems, and management is controlled by customary law or cultural norms. The CCAs of India have acquired legal recognition since 2000 through amendments of the Wildlife Act, Biodiversity Heritage Sites, and the Scheduled Tribes and Other Traditional Forest Dwellers Acts, where Conservation Reserves and Community Reserves have been incorporated as legal terms. The management of 128 of its Community Reserves and 407 of its areas is currently controlled by customary rules or is unregulated informally in Nagaland. Even though there are legal frameworks, issues of policy and implementation have generally restricted community-based biodiversity conservation activities. The absence of technical support is commonplace, management planning is top-down, and management of the areas is poor by default. The financial support provided to CCAs is generally ad-hoc and poor, limiting management activities that can actually be implemented.

The Nagas have also developed native conservation means, such as Community Conserved Areas (CCAs), to ensure ecology and biodiversity, meaning that they have intimate familiarity of what is around them. The areas are conserved by native people and native groups on voluntary terms using customary laws and effective measures. Apart from CCAs, the Nagas have also accepted other means of conservation such as keeping around 65-square-kilometre of community forest. The native people of Yimkhiung Naga own this forest that contains diverse plants and animals and ensures ecology and biodiversity. The people of Nagas use video traps in their community forest to monitor wildlife, providing valuable lessons on how to protect wildlife and possible risks. With our deteriorating environmental issues, lessons of individuals like the people of Nagas and others indigenes are of greater importance today. For

effective resolution of issues that haunt us today and increasing effectiveness of CCAs, there is need to employ a more integrated and professional practice. For optimization of utilization of Community-Cultural Areas (CCAs), there is need to ensure sustained facilitation of technology, participatory management planning, and adequate financial resources. The natural resources of Nagaland, held mostly by individuals and clan groups, are managed by customary institutions such as village councils and district councils. The centuries of sustainable agriculture experience of the Nagas through terrace cultivation, willow and alder planting where suitable, and shifting cultivation have well prepared them. The people have also developed innovative agricultural devices to farm efficiently and harvest maximum yield, ensure old land fertility, preclude landslides, and stabilize earthquakes. The people have also harnessed the versatility of bamboo to agricultural use, e.g., constructing fences and traps to defend crops from wildlife. The Naga traditional agriculture, although effective, requires comparative analysis to determine its practicability and benefits, especially its scalability to other contexts around the globe.

Case Studies of Successful Conservation

The research findings have numerous case studies that reflect on effective conservation by the nagas. For instance, the village of Khonoma declared itself to be the Khonoma Nature Conservation and Tragopan Sanctuary (KNCTS), making it a unique example of ban on hunting throughout the year within Nagaland. The town of Pangti, notorious for Amur falcon murders, is also noteworthy. However, through massive educational and awareness programs, patrolling, and enforcing no-kill, the town successfully brought its death count of these birds to zero within a relatively short timescale. Furthermore, there is also a pilot scale project that initiated within villages of Sukhai, Kivikhu, and Ghukhuyi of Zunheboto district that attempted to establish and link Community-Conserved Areas within the landscape and facilitating conservation through generation of livelihoods. The project had positive impacts on sustainable use of biological resources by utilizing long-term sustainability, good governance, and effective management of Socio-Ecological Production Landscapes and Seascapes (SEPLS). The majority of natural habitats of this region lie under individuals' and clan control. For instance, custodianship by the Nagas has sustained diverse ecosystems and species. The Khonoma Nature Conservation and Tragopan Sanctuary (KNCTS), developed by the Angami Naga tribe, is dedicated to preserving the Blyth’s Tragopan, threatened pheasant bird of the region. It is a concrete example of how one specific species has gained benefits through

protection by the Nagas. The custodians of nature operate under observation of village councils, district councils, and other customary institutions, offering a strong framework of environmental management. The history of protection by the Nagas is well-documented dating back to the 1800s through Community-Conserved Areas (CCAs), protecting areas of well over 1,700 square kilometers through biological diversity protection and sustainable land use management. Their devotion to social institutions and cultural traditions is testament to their promise. It is testament to how power is held within people's custodianship of nature and people's knowledge to fight environmental challenges.

The Sumi tribe of the Nagas have acquired much experience through cultural practice and observation of surroundings over centuries. The people use varied ecological signs to predict agricultural activities and seasonal changes. For example, they believe that hoolock gibbon shrill cry is also a sign of incoming heavy rainfall on sunny days too. Similarly, by monitoring Phyllostachys group of bamboos' mode of growth, monsoon severity is predicted by them. The uprise of shoot of bamboos is predictive of heavy rainfall, while Bambusa pallida flowering is predictive of famine through rodents' allure that destroys crops. The two activities predict rainfall and crop damage. The activities portray how well aware people of the region are of their surroundings and how adaptable they are. Their customary practice and knowledge give valuable lessons on sustainable living and on maintaining biodiversity. Their religious belief-based customary practice and means of maintaining resources are of great significance to maintaining biodiversity. The people of the region's lifestyle represents how ecological diversity is important to what comprises indigenous cultures' sociocultural and economic activities.

Indigenous Knowledge and Practices Promoting Biodiversity

The Nagas have developed native know-how and traditions to promote biodiversity, including forming Community Conserved Areas (CCAs), natural or altered natural habitats that are conserved. Because of the rapid loss of forest cover and wildlife of the previous decades, Nagaland's village councils have attempted to recognize ecological and cultural values of their water bodies and common lands by declaring them as CCAs. The Salim Ali Centre for Ornithology and Natural History locates 765 protection areas of forests (CCAs) of eastern Nagaland. The Yimkhiung Naga people, along with others like them, have control of 65 square kilometers of forest through monitoring of wildlife using camera traps. All of this know-how and practice is well covered within book 'Biodiversity Conservation, Indigenous Knowledge

and Practices: A Naga Perspective'. The book's author suggests that indeed native know-how is scientific and puts emphasis on valuable lessons of conservation gained through native know-how, values, and traditions of the Nagas. It is evidence of how important is native people like the Nagas' role of enhancing activities of protection of biodiversity. Their very old traditions and great care of nature provide valuable lessons of insight to attempt to protect biodiversity.

Impact of Biodiversity Conservation on the Nagas' Society

The Nagas have gone far in preserving biodiversity, significantly impacting society and culture. The Nagas have created over 407 Community Conserved Areas (CCAs), reflective of how much they care to save the region's unique biodiversity. Their activities of preserving have brought new wildlife, ranging from hog badgers, bear, wild boar, sambar deer, barking deer, to varied bird life. The activities of the Nagas have served to protect wildlife but have also provided people varied employments options. Their customary practice, techniques, and knowledge have been pivotal to ensuring protection of the state's biodiversity on sustainable terms. It has enabled them to continue customary life but also contribute significantly to global activities of protecting biodiversity. The relationship of the Nagas to biodiversity is closely linked to culture, customary practice, and societal advancement. Their success of preserving biodiversity creates avenues of sustainable life and is exemplary to people that aim to ensure people's activities harmony and preserving biodiversity.

Influence of Ecology on the Nagas' Culture and Traditions

Research indicates that Naga culture is highly ecological-oriented, where children learn through myths and stories right from early ages, teaching values of harmony with surroundings, perseverance, and survival. Such myths, conveyed through centuries by word of mouth, are part of cultural heritage. The society of Naga educates girls on how to pack up parkas and carry around toys, while boys are prepared to fight through games and old-fashioned exercises. Both train them for life roles to follow and reinforce how much connected they stay to surroundings. The cultural traditions of Naga reflect how much they care for surroundings and how much ecology influences lifestyle.

Modernization: Ecological Challenges and the Nagas' Response

Modernization poses numerous challenges to old traditions, most striking of which is people's poor understanding of what modernity is. Many individuals do not understand that modernization is not discarding cultural traditions but is actually adopting rational customary

traditions and rituals. The prevalence of religious fundamentalism and primitive religious traditions makes it increasingly problematic to adjust to modernity. Such traditions deter people mostly from promoting logical reasoning and adopting logical customary traditions. With modernization and urbanization on the move, people have acquired inclinations towards products produced on a mass scale, pushing customary crafts to the realm of nostalgia. Such a shift is putting artisans' means of sustenance at risk along with undermining the country's cultural texture. Traditional weaving traditions, pottery, and handicrafts are making room for products produced by machines, leading to losing valuable customary know-how and know-what. Indigenous people are confronted by climate change, deforestation, pollution, development, and loss of biodiversity, as they are much reliant on their lands and resources. Thus, these challenges translate into losing customary know-how, collapse of customary governing institutions, and loss of their unique cultures.

The Nagas have ecological challenges that are exacerbated by modern consumer society and information technology. Urban settlements and villages have considerable amounts of littering. The resilience of the Nagas is demonstrated by using native know-how and cultural values to endure environmental challenges and construct a new ethnic identity. Many advantages can be accrued through modernization but also disadvantages to customary practice that have to be balanced by preserving customary know-how while adjusting to modern benefits. The ecological traditions of the Nagas, how ecology influences their traditions and culture, and how they endure ecological challenges provide insight into how they coexist within their environment. The insight acquired is that ecological challenges can only be endured through indigenous know-how and practice that can provide sustainable living.

Role of Community in Conservation Efforts

The Sendenyu Community Biodiversity and Wildlife Reserve was formed by Rengma tribe people through land donation and declaration of wildlife protection law in 2001. The reserve is part of 407 of Nagaland’s Community Conserved Areas or CCAs, totaling nearly one-third of villages of the state. The private or community ownership of nearly 88% of the state’s forest cover is supported by its management through customary laws implemented by people. The ownership pattern along with its management through customary laws is important to CCA management and administration. Apart from the Sendenyu reserve, there are also other community-driven conservation activities by the Nagas. For example, part of its community-

owned forest of the Khonoma hamlet of the Angami Naga tribe is designated to the Khonoma Nature Conservation and Tragopan Sanctuary. The sanctuary, declared in 1998, is dedicated to protecting Blyth's Tragopan, regionally native pheasant of threatened species. The instances remind how people's engagement is important to conservation activities. It is evidence of how people's or community-based conservation is effective. The sanctuary, dedicated to maintaining Blyth's Tragopan, regionally native pheasant of threatened species, is developed through people's initiative and ownership. The focus of people's use of customary know-how by the Nagas is of pivotal importance to sustainable environmental management. The case studies prove that people's conservation by the Nagas is effective and that people have vowed to maintain ecology and maintain biodiversity, offering lessons on sustainable living and offering others a role model society.

Impact of Conservation on Societal Development

The Nagas' contribution to activities of conservation has had far-reaching consequences on societal development by promoting environmental sustainability and providing means of livelihood. The activity of documentation of Indigenous Ecological Knowledge (IEK), one of the most critical activities that have been executed by the Nagas, is of great significance. The IEK that is acquired is valuable in informing sustainable practice, including regulation of processes of the local ecosystem. The Nagas also developed ecological monitoring techniques that have been valuable in monitoring changes of biodiversity and informing measures of conservation. The people have also organized campaigns to mobilize individuals within society on issues of protecting the landscape. The people have been empowered through activities of building capacity, including trainings on identification of biodiversity, documentation, and monitoring, to ensure that they have suitable levels of skill to carry out activities of conservation.

The Nagas have embraced ecotourism as a new means of sustenance that is friendly to environmental protection and awareness. It has fostered sustainable use of resources, good governance, and effective management of Socio-Ecological Production Landscapes and Seascapes (SEPLS), leading to societal advancement.

Discussion

The Nagas have many challenges that beset them in keeping ecology, biodiversity, and nature intact. The challenges mirror challenges that beset global indigenous people generally. The

most outstanding of these challenges is that of modern consumerism and global transmission of technology and information. Change of lifestyle and consumption trends within Naga locations has brought environmental challenges of littering and loss of biological diversity and forest cover. Habitat loss and degradation is induced by human activities, logging, clearance of vegetation, and mining, hence making sustainable practice and policy very critical. The Nagas' traditions and customary knowledge teach valuable lessons on this matter, underscoring people-centric programs' role in surmounting challenges. It is critical that people-centric programs are supported by societal and policy measures to ensure there is sustained protection of ecology, nature, and biodiversity. The challenges of ecology, nature, and biodiversity protection confront the Nagas but there is also a vision by the Nagaland government of sustainable management of resources of biodiversity by 2030. The focus areas are sustainable production, combat climate change, and protection of seas, oceans, and marine resources for sustainable development. While Nagaland is a landlocked region, this vision dimension emphasizes ecosystem process interconnectedness and integrated measures of protection, restoration, and sustainable use of terrestrial ecosystems. The second key dimension is protection, restoration, and sustainable use of terrestrial ecosystems. CMCAs can make very great impacts on increasing the quality of forest cover and biological diversity, especially where there is anthropogenic pressure. However, where there is this kind of initiative, harmony between conservation and development is of critical importance. The social institutions that form the base of conservation, active role of people in conservation activities, and how conservation is linked to societal advancement provide valuable lessons on how the Nagas coexist with their environment. The social institutions that form the base of conservation, active role of people in conservation activities, and how conservation is linked to societal advancement provide valuable lessons on how the Nagas coexist with their environment.

Conclusion

This study is a critical observation of how traditional environmental management traditions intersect with indigenous traditions of conservation. It reveals how cultural riches of the Nagas, spiritual attachment to environment, and ecological traditions have been playing pivotal roles in sustaining and enhancing Northeastern India's biological diversity. The initiative of developing Community Conserved Areas (CCAs) and other community-based activities by the Nagas is offering a replicable model of sustainable environment management that can serve as

inspiration or guide to global environmental protection programs. While enjoying the impressive range of customary traditions, the paper also finds synergies that can be generated by integrating modern technological means on board. Such modern technological means, utilized along with customary knowledge, have the capability of complementing measures of protection by offering better means of collecting, monitoring, and putting into practice data. Such integration, however, calls for prudent planning of costs, dependence, and potential impacts of modern means on Northeastern India's ecological harmony.

Modernization, climate change, and socio-economic changes are challenges, but also possibilities of innovation and renewal of conservation policy. The measures of policy have to promote indigenous people, absorb customary practice, and uphold cultural values. The concluding point of this paper is that there is need to embrace the integrated approach of the indigenous people to conservation by integrating and developing these processes through modern scientific and technological means. Such integration can ensure that there is greater resilience and sustainability of our environment, bringing out the practice of the Nagas as valuable assets to employ in global environmental protection and sustainable development pursuits. While formulating its vision of 2030, lessons taken from the practice of the Nagas can make great contribution to balancing people's prosperity with our planet's thriving biodiversity.

References:

Cheerangal, F. S. (2022). *Yimkhiung Nagas: Polity and Social Life*. Heritage Publishing House.

Ecosystem Services: From Biodiversity to Society, Part 2. (2016). Academic Press.

Gajurel, P., Panmei, R., & Rethy, P. (2015). *Indigenous healing practices and ethnomedicinal plants used against Jaundice by some Naga tribes in Nagaland, India*.

Gokhale, Y., & Negi, A. K. (2011). *Community-based Biodiversity Conservation in the Himalayas*. The Energy and Resources Institute (TERI).

Jamir, K., Seshagirirao, K., & Meitei, M. D. (2022). Indigenous oral knowledge of wild medicinal plants from the Peren district of Nagaland, India in the Indo Burma hotspot. *Acta Ecologica Sinica*, *42*(3), 206–223.

https://doi.org/10.1016/j.chnaes.2021.04.001

Kikon, D., & Barbora, S. (2021). The rehabilitation zone: Living with lemons and elephants in Assam. *Environment and Planning E: Nature and Space*, *4*(3), 1121–1138. https://doi.org/10.1177/2514848620946973

Lanzerath, D., & Friele, M. (2014). *Concepts and Values in Biodiversity*. Routledge.

Pomeroy, L. R., & Alberts, J. J. (2012). *Concepts of Ecosystem Ecology: A Comparative View*. Springer Science & Business Media.

Sashimatsung, G. M. (2016). *An Economic Analysis of Production and Marketing of Chilli in Mokokchung District of Nagaland*. http://gnanaganga.inflibnet.ac.in:8080/jspui/handle/123456789/935