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Biodiversity Conservation in Nagaland: A Case of Kigwema Village

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ABSTRACT

Nagaland is a State in the Indo-Myanmar biodiversity hot spot and is blessed with abundant flora, fauna and cultural heritage. Nevertheless, the fragile ecosystem is still endangered by unsustainable activities like shifting cultivation, logging as well as forest fires. The paper is based on a case study of community-based biodiversity conservation in a village, Kigwema village, which is designated as a Home Stay Village by the Government of Nagaland. The paper puts much emphasis on the positive actions of the community, such as the prohibition of hunting and logging, the creation of the Kigwema Biodiversity Conservation Trust, and the encouragement of eco-tourism (homestays, trekking paths, and education). Such projects have created self-sustainable livelihoods and at the same time maintained environmental balance. In spite of its success, there are still obstacles, including infrastructural deficiencies, cultural obstacles, and regulatory obstacles such as the Inner Line Permit. This paper ends by stating that the combination of community governance, eco-tourism, and enabling policy frameworks can help to improve conservation impacts and make such a combination a replicable model of sustainable development in biodiversity-rich areas in Northeast India.

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INTRODUCTION

Northeast India is considered to be one of the most important biodiversity hotspots in the world, incorporating eight states, Nagaland being the part of the Indo-Myanmar Biodiversity Hotspots. Nagaland is blessed with rich biodiversity with unique flora and fauna as well as different ecosystems with a total geographical area of 16,579 square kilometers and a population of 1,980,602 (Census, 2011). This ecological wealth is, however, being threatened more by unsustainable activities which include shifting cultivation, commercial logging, forest fires, quarrying, and high rate of population growth. These strains point to the necessity of the effective conservation strategies that will not only safeguard the natural resources but will also preserve the livelihood and culture of the local people.

The case of Kigwema village, located in the Kohima district is an interesting example of community-based biodiversity conservation. In 2012, the Kigwema Village Council signed a Memorandum of Understanding (MoU) with the Department of Forests, Ecology, Environment, and Wildlife, Government of Nagaland, and the Kigwema Biodiversity Conservation Trust was established (Chale, 2019). The community has since made major strides such as prohibition of hunting and logging, encouraging homestay-based tourism and coming up with the eco-tourism facilities. In 2018, the village was designated as a Home Stay Village by the Department of Tourism, Nagaland, and shows its increased significance as an eco-tourism site.

Regardless of these successes, the issue of community-based conservation in Nagaland has not been well covered in studies and a systematic documentation of the challenges and opportunities that come with conservation efforts has not been done. The experience of Kigwema may offer a good idea of how the traditional institutions, local engagement, and eco-tourism can be utilized to achieve sustainable conservation of biodiversity.

The purpose of this study is thus to:

- Examine community-based conservation activities in village of Kigwema.
- Research the potential of eco-tourism as a supplementary instrument of preserving biodiversity and generating livelihoods.
- Determine the difficulties of the community in conserving and maintaining tourism.
- Recommend policy interventions to enhance sustainable community based conservation in Nagaland.

Through these dimensions, the paper can contribute to the overall discussion concerning the conservation and sustainable development of biodiversity in Northeast India, as well as show the importance of the local communities as the custodians of the ecological heritage.

LITERATURE REVIEW

Biodiversity conservation has become one of the current issues of concern in the world especially in the ecologically vulnerable areas like the Northeast part of India. The area is considered a part of the Indo-Myanmar biodiversity hotspot that features enormous number of species and ecosystems (Mekro, 2014). According to scholars, biodiversity is crucial not only to the ecological balance but also a set of ecosystem services that include soil fertility, water management, and cultural resources that help humans survive (Sharma, 2012; A et al., 2018).

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The significance of biodiversity was also brought into the limelight of the world at the Rio Earth Summit in 1992 that gave rise to the Convention on Biological Diversity (CBD). The CBD highlighted three objectives, one of them being conservation, sustainable use, and equitable sharing of benefits that are a result of genetic resources. A legal system of conservation and equitable use of biodiversity in India was given initial legal structure in the Biological Diversity Act of 2002, which was assisted by such institutions as the National Biodiversity Authority (NBA) and State Biodiversity Boards (Prem, 2018). Nevertheless, the success of such frameworks usually relies on the local-level involvement and implementation.

Community-based conservation has been significant in the conservation of the ecosystems in the context of Nagaland. One of the best-known and most written of the first models is the Khonoma model of community conservation, known as the Khonoma Experience, in which local institutions imposed hunting and logging bans to protect forests and wildlife (Zinyii, 2012). Pilot programs in other Northeast India states, including Manipur have also confirmed that the role of community in the implementation of conservation programs is of central importance (Vungzamawi, 2018). These illustrations indicate that conventional forms of governance, e.g. village councils and customary laws, are still a potent tool in the management of biodiversity.

In line with conservation, ecotourism has been a major instrument towards enhancement of ecosystem as well as community livelihoods. In the ecotourism movement, which is discussed as conscientious travel to the natural environs to preserve the natural ambiance and maintain the livelihood of the locals in the area (TIES, 2015), there have been numerous advocations highlighting that ecotourism offers a sustainable development approach to the economically underdeveloped and geographically rich regions in biodiversity. Research indicates that ecotourism may allow the local communities to create alternative means of earning income, lessen overreliance on exploitative economic activities such as shifting cultivation, as well as, raise awareness on the need to conserve (Lanunungsang & Ovung, 2012). Yet researchers also warn that in the absence of proper regulation, ecotourism may become the cause of over-tourism, ecological degeneration, and the commodification of culture (Vungzamawi, 2018).

Research Gap

Although these studies offer a general picture of biodiversity conservation and ecotourism in the Northeast part of India, there are still fewer case studies about Nagaland. The small number that are in existence like Khonoma highlights the value of community ownership and participatory governance in assuring success. Nevertheless, it is not yet possible to realize that little scholarly interest is paid to Kigwema, though the village is listed among Homestay Villages and actively works to protect it. This paper will thus aim at bridging this gap by examining the work of Kigwema who has struggled to incorporate biodiversity conservation with eco-tourism, as well as the challenges and how this can be addressed through policy.

A Brief Historical Background of Kigwema Village

Kigwema village, spanning approximately 37 square kilometers, is situated in the southern region of Nagaland, India. Located 15 kilometers south of Kohima, the state capital, the village falls under the Jakhama Sub-Division of Kohima district. The village is predominantly inhabited by the Angami tribe, with around 99% of the population practicing Christianity, while a few families adhere to traditional religious practices and beliefs.

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The climate is temperate, characterized by hot summers with heavy rainfall and cold winters with minimal rainfall. Kigwema's unique location, with access to a superior water source and protected catchment forest along the Mt. Japfu range and Dzukou valley, facilitates agriculture through terrace field cultivation, reducing the pressure on deforestation associated with jhum cultivation. Agriculture is the primary source of sustenance for the majority of the population. However, population growth poses a potential threat to the forest land, necessitating immediate intervention from the village community to manage their environment efficiently.

In recognition of this need, the Kigwema village council signed a Memorandum of Understanding (MoU) with the Department of Forests, Ecology, Environment, and Wildlife, Government of Nagaland on May 27, 2012. The MoU earmarked 265 hectares of forest in the foothill of Japfu range for conservation (Chale, 2019).

The village, with a population of 3,872 (2011 census), is divided into five khels, each comprising multiple clans. The village council, a democratic structure, serves as the head organization, vested with customary authority, judicial powers, and a customary court. Various social organizations, committees, and boards function under the council's consent and are accountable to it. The village council plays a crucial role in implementing developmental programs, whether initiated by the village or the state government, and is a participatory partner in all community programs (Thorie, 2019).

Concept and Definition

It has been estimated that more than 50 million species of plants, animals and micro-organisms are existing in the world. Out of these, about 1.4 million species have been identified so far. Each species is adapted to live in specific environment, from mountain peaks to the depth of seas from polar ice caps to tropical rain forests and deserts. All this diversity of life is confined to only about one-kilometer-thick layer of lithosphere hydrosphere and atmosphere which form biosphere.

Though the study of environment and ecology is quite old, the term biodiversity has been introduced by Walter Rosen in 1986. The importance of biodiversity was one of the key subjects of the 1992 World Summit held in Rio de Janeiro,Brazil, which resulted in the Convention on Biological Diversity (CBD). The goals of the CBD are “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits from the use of genetic resources.”

The united Nations Earth Summit (1992) has defined Biodiversity as “the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this include diversity within species, between species and ecosystems.”

Value of Biodiversity

Biodiversity is both essential for our existence and intrinsically valuable in its own right. It provides clean air, fresh water and food products, as well as the many other products such as timber and fiber. Other important services provided by our biodiversity include recreational, cultural and spiritual nourishment that maintain our personal and social wellbeing. It is also vital for economic growth and poverty reduction. Agriculture is totally dependent on ecosystem processes and functions provided by biodiversity soil formation, nutrient cycling,

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pollination of crops, maintaining water cycles, protection from soil water loss and erosion, keeps the bacteria and fungi in a healthy understory cause the constant breaking down and recycling of nutrients increased agricultural production land value. So Looking after our biodiversity is an important task for all people.

The Biological Diversity Act 2002

The Biological Diversity Act, 2002 is an Act of the Parliament of India for preservation of biological diversity in India, and provides mechanism for equitable sharing benefits arising out of the use of traditional biological resources and knowledge. The Act was enacted to meet the obligations under convention on biological Diversity to which India is a party. The National Biodiversity Authority (NBA) is a statutory autonomous body; headquarter in Chennai, under the Ministry of Environment and Forest, Government of India established in 2003 to implement the provision under the Act. State Biodiversity Boards (SSB) has been created in 29 states along with 31,574 Biological management committees (for each local body) across India

Conservation of Biodiversity

Biodiversity conservation is crucial for maintaining the health of the environment and sustaining life on Earth. It involves preserving the natural world in all its forms, ensuring the continued functioning and well-being of ecosystems. By conserving biodiversity, we can protect the intricate web of relationships between ecosystems, species, populations, and genes, as well as the complex interactions that support life on our planet. This conservation effort ensures the long-term persistence of the natural world, including its beauty, diversity, and functionality.

METHODOLOGY

The paper will follow a qualitative case study method to analyze the conservation of biodiversity in the village of Nagaland called Kigwema. Case study approach is the more appropriate approach towards comprehending local and community based conservation efforts because it enables one to examine the socio-cultural, ecological and economical aspects in detail.

The research is founded on the primary and secondary sources of information. The primary data were collected using personal interviews and informal talks to the Kigwema Village Council, villagers and homestay owners, which gave information regarding the conservation efforts and tourism activities in the village. Field visits also aided in recording the community-based projects like forest protection, homestay development and eco-tourism projects.

The secondary data were collected through published books, government reports, academic journals, unpublished village council records, and reliable online sources. Literature on previous papers on biodiversity conservation and ecotourism in Nagaland and Northeast India was used to put the experience of Kigwema into a broader context relating to both the regional and global discourse.

The data obtained were themed based on three areas, which were (i) community-based biodiversity conservation initiatives, (ii) eco-tourism contribution to conservation and livelihood, and (iii) barriers and policy implications. Through this strategy, it was possible to gain a holistic insight into the manner in which the traditional governance structures, local

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participation, and external partnerships overlap and are integrated in maintaining biodiversity conservation in Kigwema.

Result and Discussion

Kigwema's Contribution to Biodiversity Conservation

The Kigwema village community plays a vital role in conserving biodiversity. In response to the detrimental effects of commercial logging, which began in the area due to increasing population demands, the community took proactive steps. In the early 1990s, logging was banned, followed by prohibitions on fishing, forest fires, and wildlife hunting. Initially, some community members opposed the ban on hunting and fishing, as it was a long-standing tradition. However, through the efforts of ecologically conscious groups, the ban was eventually enforced.

In 2012, the Kigwema village council signed a Memorandum of Understanding (MoU) with the Department of Forests, Ecology, Environment, and Wildlife, Government of Nagaland, establishing the Kigwema Biodiversity Conservation Trust (KBCT). The trust, comprising representatives from various village organizations, aims to conserve the forest and promote sustainable development. The community has earmarked 265 hectares of the Mt. Japfu range forest as a Community Conservation Area (CCA), with community-based rules and regulations.

The conservation efforts include:

i. Planting fruit trees to divert interest from shifting cultivation and reduce forest loss.
ii. Organizing awareness programs, educational tours, seminars, training, and exposure visits.
iii. Promoting the use of *keta* leaves as an alternative to polythene bags.
iv. Celebrating Wildlife Week with themes and resource persons to raise awareness.
v. Constructing view towers and forest viewpoints to monitor the reserved area.
vi. Developing water reservoirs and irrigation canals to facilitate wetland terrace cultivation and reduce slash-and-burn practices.
vii. Creating trekking routes and fire lines to enable immediate action in case of forest fires.
viii. Building rest houses and protecting traditional rock bee sites.
ix. Organizing demonstration programs on sustainable agriculture practices, such as cardamom cultivation.
x. Conducting workshops on the importance of homestays and promoting eco-tourism.
xi. These initiatives demonstrate the community's commitment to biodiversity conservation and sustainable development.

Kigwema Potentialities in Eco-tourism

The International Ecotourism society defined Ecotourism as “responsible travel to natural areas that conserves the environment, sustains the wellbeing of the local people, and involves interpretation and education” (TIES, 2015).

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According to Swarbrooke (1999) "ecotourism can be a way to facilitate the sustainable development of economies and societies in developing countries."

Ecotourism has great source of livelihood to local communities in conservation of natural resources. The concept of ecotourism is to take assessable steps for the preservations of biodiversity and while promoting ecotourism the existing management system of enforcement, administration and forest management becomes important components to look upon.

The community of Kigwema in the recent years has given due priority and importance to the infrastructure and service for the development of tourism in the village.

Community approach towards eco-tourism:

i. Destination development like homestay, biodiversity reserve area, watch tower, base camp, Pony farm, resort, etc.
ii. Adventure tourism development (climbing competition, adventure sports: shooting competition with the theme "shoot the target not wild-life", cultural exchange programme, trekking etc).
iii. Culture, arts and crafts, handloom, indigenous games promotion.
iv. Construction of organic vegetables marketing shed.
v. Publicity and promotion activities of eco-tourism.
vi. Development of tourist circuits.
vii. Tourism master plan.
viii. Documentations of tourism site.
ix. Organizing and participating in workshop for eco-tourism.
x. Celebrations of Festivals.
xi. Participating in state level programme like world tourism day.

Kigwema an ecologically rich zone with lust green forest and variety of colorful flora and fauna, beautiful landscapes, scenic beauty, lovely mountains, serpentine rivers and a rich cultural heritage has a huge possibility for ecotourism. The possible ways reach Kigwema village is via Air, Rail and Road. Dimapur is the one only airport in Nagaland at present. The Dimapur railway station is well connected with Guwahati the Gateway of North-East India. A good number of taxi ply from Dimapur to different parts of Nagaland. To reach Kigwema one can take taxi from Dimapur via Kohima. (Ovung, 2012, pp. 11 -12)

The community with the locational advantage of the village as the premier eco-tourism destination has collaborated with the Tourism Department of Nagaland and officially declared Kigwema as the "Homestay Village" in 2018. *Merriam Webster* defined homestay as "a stay at a residence by a traveler and especially by a visiting foreign student who is hosted by a local family" Presently their number of homestays in the Village and are in service throughout the year. Some of the homestay in Kigwema are Greenwood Villa, Abi Homestay, Natives Stories, Lalhous's Homestay Vales Homestay, Dawn Homestay, Sobu Homestay, Cedar Homestay, SK Homestay, Albina Homestay, Japfu Homestay etc. Home stay has become a good alternate source of income for some families and gradually people are developing interest into this

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business. The peak season of the tourist in the village is from November to December. So, for booking of homestay, one have to do it in advanced. During the peak season on can also spend their nights in different campsites. Most of the campsites operate during the peak season to accommodate both high-budget and low-budget tourist. The village with its unique natural beauty and rich cultural heritage attracts so many tourists throughout the year.

Tourist Destinations in Kigwema

Kigwema, a hill station in Nagaland, is a treasure trove of natural beauty and biodiversity. Located about 1,500 meters above sea level, it offers breathtaking landscapes of the majestic Japfu mountain range, Shuhro Mountain, and the unique Dzukou Valley. The valley's pristine wilderness and stunning natural beauty make it an attractive destination for nature lovers and adventure seekers. Its potential as a World Heritage biodiversity site and nature reserve draws visitors from far and wide. Some of the tourist destinations are enumerated below:

Naga Heritage Village:

The Naga Heritage Village, also known as Kisama Heritage Village, is a cultural hub situated on the border of Kigwema and Phesama villages, about 12 kilometers from Kohima. Designed in traditional Naga style, it showcases the rich cultural heritage of Nagaland's 17 ethnic groups. All the major tribe of Nagaland has constructed a Morung or Youth Dormitory in their own indigenous design and materials available. Naga heritage village is the replica of an indigenous Naga village. Every year the Nagas celebrate the hornbill festival at Kisama from 1st to 10th of December where different tribes come to showcase their unique traditions, cultural identity, language, rituals and practices. This festival attracts many tourists from different countries and within, to witness the mega festival of the Nagas where one gets a glimpse of the colorful and vibrant culture of the Nagas. Simultaneously with the Hornbill festival the Kigwema village organized a mini-Hornbill festival in their local ground which is three km away from Naga Heritage village. The rich culture of the village is showcase and the exotic cuisines, simple indigenous snacks, local wine are made available to let one experiences the simple delicious food of the village.

Japfu Peak:

Japfu Peak, standing at 3,048 meters above sea level, is the second-highest peak in Nagaland. Located near Kigwema village, it's a haven for nature lovers and adventure seekers. The Japfü range with the lust green forest is a store house of some rare spices like the tallest Rhododendron tree recorded in Guinness record with a height of 130 ft and 11 ft girth, the beautifully exotic Blyth's Tragopan (Nagaland state bird), colorful Orchids, Ginseng plant, Alder tree, hundreds of medicinal plants, etc. The exquisite picturesque landscape, vibrant colorful sunrise on the sunny day and thrilling trial attracts many adventures lovers every year. The best time for trekking is during the dry season. It is a five to six hours trekking from the village. On reaching the top of the peak on can see the exotic panoramic view of the famous Dzukuo valley and several Angami and Chakhesang villages. During the mid-winter the mountain is some time covered with white snow. Small peaks like Shhüro peak, Zetsorinute peak, Vipikhoro peak and Lemvu are multi- pronged tourist destination too.

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Dzukou Valley: A Nature Lover's Paradise

Located about 30 kilometers south of Kohima, Dzukou Valley is a breathtakingly beautiful destination that showcases the best of Northeast India's natural splendor. This pristine valley is nestled at an altitude of 2,452 meters above sea level. The valley is known as the paradise on earth for its serene beautiful landscape covered with carpet of dwarf bamboo grass and wide range of colorful flowers blooming in different season. In summer the valley is covered with multi-colorful flowers and in winter the temperature drops and sometimes the valley is covered with white snow. A crystal clear river flowing in the middle of the valley adds beauty to the valley. A deep bucket size footprints believing to be the footprint of elephant is evidence on the soft valley (Mekro, 2014, p. 2) . The cleft rock in the valley offers the lovers of rock climbing to ease the breath. Large rock natural caves offer a beautiful and cozy campsite one can pitch a tent in the valley. A land as such is bliss for adventure seeker. To trek the long lust greenery uphill there are two starting point one from Jakhama which is more demanding and thrilling takes less time to reach the valley and the other from Viswema which is easy but takes more time to reach the valley. The fresh valley attracts not only the local tourist but also a foreign tourist where thousands of people trek to this valley. Dzukou Valley's natural beauty, diverse flora and fauna, and adventure opportunities make it a must-visit destination for nature lovers and adventure seekers.

Lieutent-General Kōtoku Sato's Historic Hut in Kigwema

During World War II, Japanese forces, led by Lieutenant General Kōtoku Satō, stationed at Kigwema village in Kohima district, Nagaland. The hut where General Sato stayed, located still stands today and has become a significant historical landmark. Interestingly, General Sato was known for his respectful behavior towards the locals, paying for goods and services, and even living with a local family, the Neihu family, like one of their own.

Pony Farm Trial:

Located at the foothills of Mt. Japfu, the Pony Farm Trail is a serene getaway from the city's hustle and bustle. The farm is owned and maintained by the Department of Animal Husbandry &Veterinary Services, Nagaland. Many local and foreign tourists visit the site to enjoy the pony ride,pony cart rides and the beautiful landscapes. It is a perfect picnic spot with fresh water flowing from the mountains and a pleasant weather. The Pony Farm Trail is a popular destination for both local and foreign tourists, offering a unique and memorable experience

Terrace Fields:

The village is surrounded by breathtaking views of the terrace fields. The lush green paddy fields in summer and the golden yellow fields with haystacks in autumn make the village even more beautiful and attractive to nature lovers. Visitors can experience the excitement of village life by taking a stroll down to the terrace fields, breathing in the fresh air, collecting fresh and organic vegetables and wild leaves, and then cooking and enjoying them in a traditional hut.

Jhum Cultivation:

The Jhum cultivation on the lush green slopes of Mt. Japfu is a breathtaking sight, with multiple organic crops thriving in harmony. The area is particularly renowned for its large-scale organic potato production. During harvest season, visitors can witness the picturesque

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scene of manual potato picking and experience the traditional practice of carrying potatoes down the slopes in bamboo baskets.

Village Assets:

The village boasts a rich heritage, featuring beautifully designed traditional houses, Morung (Dormitory), Dahu (stone sitting circle), Tehou Ba (wooden sitting circle), and Kharu (village gate). These structures showcase the village's unique cultural identity and architectural style

Other Attractions in Kigwema

Kigwema is steeped in myths and legends, and is known for its indigenous games, artistic handlooms, and handicrafts. The village also holds historical significance, having been occupied by Japanese troops on April 4, 1944, during World War II. The village was heavily shelled during the Siege of Kohima in 1944.

Historical Significance:

- National Highway 2: The village is situated along the National Highway 2, which was the same path used by the Indian National Army and the Japanese during World War II.
- War Memorial Heritage Road: This route is a significant part of India's freedom struggle against the British Empire.
- These attractions, along with its natural beauty, make Kigwema a must-visit destination for tourists and nature enthusiasts

Analytical Perspectives

Although the descriptive narrative of the conservation activities conducted by Kigwema presents the successes of its activities, a more critical interpretation would show how the practices can be placed in the wider theoretical and comparative frameworks.

- Environmental Governance and Community Agency.

Biodiversity-related issues, such as the formation of Kigwema biodiversity conservation trust and the imposition of hunting, logging, and fishing bans, are examples of how community-based form of governance can help in the management of biodiversity. As part of the concept of community development, the village council organized customary authority and local action to gain collective adherence. This grassroots strategy replaces the ineffective enforcement mechanisms by the state, and it shows how common resources can be managed through the institutions of the indigenous people.

- Sustainable development as eco-tourism.

The homestays, trekking trails and festivals like the hornbill festival are examples of how sustainable tourism frameworks have been applied and the conservation and livelihood earning processes have been strengthening each other. With economic incentives being channeled to conservation, eco-tourism decreases the use of exploitative activities such as shifting cultivation. Nevertheless, such initiatives require a close regulation to ensure sustainability to prevent over-tourism and environmental degradation.

- Tensions and Trade-Offs

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The paradox of eco-tourism can be also traced in the experience of Kigwema, on the one hand, eco-tourism brings money and cultural pride to the country; on the other hand, it threatens the cultural commodification, overcharging, and environmental strain. the inner line permit (ILP) policy, social-cultural opposition against tourism, and ownership of privately owned land depict how tricky conservation meets the demands of local people and market relations. These tensions bring out the necessity of balancing the benefits of the community and ecological boundaries.

- Comparative Insights

Kigwema has some similarities and uniqueness when compared to the model of the green village program implemented by Khonoma. similar to Khonoma, Kigwema prohibits hunting and logging by village organizations. nonetheless, that it is considered a homestay village highlights a greater inclination towards establishing eco-tourism as part of conservation efforts. Locating Kigwema within a larger trend of community-driven biodiversity conservation in northeast India, this hybrid model highlights its uniqueness in introducing the connection between cultural tourism and ecological oversight.

Challenges of Promoting Ecotourism in Kigwema

While ecotourism aims to conserve and appreciate nature, its increasing development poses several challenges to the local community. Some of the key challenges include:

i. Inadequate Infrastructure: Lack of proper roads, accommodations, and facilities hinders the growth of ecotourism.

ii. Poor Communication Systems: Limited access to reliable communication networks makes it difficult for tourists to plan and navigate their trips.

iii. Environmental Degradation: Excessive stone quarrying and forest fires threaten the natural beauty and biodiversity of the area.

iv. Regulatory Issues: Restrictions on foreign entry, such as the Inner Line Permit, can deter international tourists.

v. Community Resistance: Some locals view tourism as a threat to their culture and environment, leading to indifferent attitudes towards tourists.

vi. Over-Tourism: Popular destinations can suffer from overuse, leading to resource depletion and degradation of natural attractions.

vii. Private Land Ownership: Attitudes of "My property, My rights" can hinder community-led conservation efforts.

viii. Unregulated Pricing: High charges for homestays and lack of price regulation can make tourism unaffordable for many.

ix. Lack of Guidelines: Insufficient information and guidelines for tourists can lead to unintended consequences, such as littering and disrespect for local customs.

x. Waste Management: Inadequate waste management systems can harm the environment and detract from the tourist experience.

Addressing these challenges is crucial to promoting sustainable ecotourism in Kigwema and ensuring that tourism benefits both the local community and the environment.

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Critical Reflections on Challenges

Although the above problems of ecotourism in Kigwema are presented above, it is possible to see their underlying implications that are deeper than superficial constraints.

- Inner Line Permit and Tourist Inflow.

Though supposed to safeguard native population, the Inner Line Permit (ILP) system actually diminishes the number of foreign tourists coming. Existing state tourism statistics indicate that the number of foreign inflow is still out of proportion to the number of domestic visitors, which restricts the level of international exposure and possible revenue generation. A more open and adaptable ILP system would allow to strike a balance between cultural conservation, and tourism development.

- Socio-cultural Resistance

The local distrust towards tourism is not just an question of a lack of concern but indicates the fears of commodification of culture and loss of values. This stress is consistent with the results of the sociology of environment, where commercialization at a very fast pace tends to conflict with the local identity. Unless these are dealt with using community awareness and benefit-sharing mechanisms, resistance may be a deterrent to long-term sustainability.

- Policy and Infrastructure Gaps.

Tourism programs by the government usually focus on the advertising programs with no real investment in infrastructure like roads, garbage collection systems, and communication systems. This disparity brings on the disparity between the vision of the policy and the implementation on the ground level. This gap has to be bridged through collaborative planning between the state, local councils, and NGOs.

- Examples of Environmental dangers of Over-tourism.

Dzukou Valley and Mt. Japfu are delicate ecosystems that are at risk because of over-tourism. The ecological carrying capacity of such places could be superseded without regulatory measures like tourist numbers, zoning and eco- certification in homestays. Experiences of other locations within the Northeast India indicate that the unchecked inflows may cause degradation of natural resources that keep the ecotourism industry afloat.

- Land Property and Equity Problems.

Attitudes of ownership of property of a privately owned land which is characterized as my property, my rights reflect a greater inequality in distribution of benefits. As long as conservation and tourism revenues are not distributed equally among households and khels, the fragmentation of collective efforts might undermine the community-based governance systems.

Placing these issues in a larger structural, cultural and ecological context, one realizes that sustainable ecotourism in Kigwema must not only be realized through local efforts but also through policy advocacy, cultural protection and policy creativity.

Suggestive Measures for Sustainable Ecotourism in Kigwema

To promote sustainable ecotourism in Kigwema, the following measures can be taken:

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1. Collaborative Development: Village communities and the government can work together to develop tourism industries, ensuring that benefits are shared equitably.
2. Environmental Conservation: Efforts can be made to conserve and beautify the environment, protecting natural attractions and promoting eco-friendly practices.
3. Cultural Preservation: A mini museum can be established to display traditional attires, ornaments, tools, handicrafts, and other cultural artifacts.
4. Historical Preservation: Historical monuments can be preserved and maintained to showcase the village's rich history and cultural heritage.
5. Community Awareness: Awareness and sensitization programs can be conducted to educate local communities about the benefits and challenges of tourism.
6. Promotion of Local Crafts: The culture of weaving and other local crafts can be promoted, providing economic opportunities for local artisans.
7. Regulated Tourism: Restrictions can be imposed on the number, location, timing, and nature of tourists visiting protected areas to prevent over-tourism and ensure sustainable tourism practices.
8. Tourist Registration: Tourist registration booths can be set up to monitor and manage tourist flow.
9. Documentation Permissions: Permission can be required for documentation and recording to protect local culture and ensure that tourism activities are respectful and sustainable.
10. Promotion of Local Cuisine: Traditional exotic cuisines can be promoted, providing tourists with a unique culinary experience and supporting local food systems.

By implementing these measures, Kigwema can promote sustainable ecotourism that benefits both the local community and the environment.

Policy Implications

Kigwema experience highlights the importance of the coordination of policies that would be able to connect the local efforts with the state and national ones. The policy implications of the study are as follows:

1. On behalf of Nagaland State Government.
    - Infrastructure Enhancement: Invest in environment friendly infrastructure like roads, waste management facilities and internet connectivity to enhance accessibility without damaging the environment.
    - Amend ILP Framework: Examine the idea of reforming the system of Inner Line Permit that would promote regulated international tourism without compromising on the rights and cultures of locals.
    - Support Capacity Building: Conduct frequent training to the village councils, the owners of the homestay, and the youth groups in eco-tourism management, hospitality and conservation practices.
2. In the case of the Departments of Tourism and Environment

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- Eco-certification: Establish eco-certification guidelines to the homestays, campsites and tour operators to achieve sustainability.
- Tourist Control: Implement visitor control measures including limit on the number of people allowed to visit Dzukou Valley on a given day, zoning of seasons and proper waste disposal procedures.
- Integrated Planning: Consistency of tourism promotion in the conservation of biodiversity policies such that the growth would not compromise on ecological stability.

3. Whereas in the case of the NGOs and Civil Society Organizations.
   - Awareness and Sensitization: Conduct community awareness on cultural issues regarding tourism and stress on the benefit-sharing models.
   - Technical Support: Use the skills in waste management, organic farming, and environmentally-friendly building to enhance the work of communities.
   - Networking and Advocacy: Visibility Networking Kigwema with regional and international eco-tourism networks to exchange best practice.
4. In case of Community-Based Organizations (CBOs).
   - Inclusive Governance: Secure a fair share of the benefits between the clans and khels to avoid fragmentation and disputes on ownership of land.
   - Cultural Preservation: Build community museums, archives, and cultural festivals which do not commercialize traditions.
   - Youth Engagement: Promote youth-based eco-tourism ventures, adventure sports and online promotion in order to increase the chances.

Following multiple levels of policy can make Kigwema model upscale and replicated in other Nagaland village, where the biodiversity conservation and eco-tourism work can be interdependent to achieve a sustainable development.

CONCLUSION

Ecotourism offers numerous benefits to the Kigwema community, including conservation of natural resources, preservation of cultural heritage, and generation of employment opportunities. With its stunning landscapes, majestic mountains, and rich biodiversity, Kigwema has immense potential for ecotourism. By promoting sustainable tourism practices, the village can conserve its natural beauty and cultural heritage while generating revenue and promoting sustainable development. The official declaration of Kigwema as a "Home Stay" village by the Department of Tourism, Nagaland, is a significant step towards realizing this potential. Through ecotourism, Kigwema can showcase its unique attractions and provide economic benefits to the local community, ultimately contributing to the village's sustainable development. This paper shows that the model of biodiversity conservation proposed by Kigwema is entrenched in the community engagement, native government and novel incorporation of eco-tourism. The key findings highlight:

- Communal governance has played a significant role in prohibiting unsustainable activities, establishment of conservation zones, and collective obligation.

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- Homestays, cultural festivals and trekking routes are some of the eco-tourism programs that have offered alternative livelihoods, decreased reliance on shifting cultivation, and cultural pride.
- The obstacles associated with sustainable tourism include ILP limitations, social and cultural opposition, inadequate infrastructure and environmental dangers, which need structural remedies.

Kigwema is important in the fact that it has shown that local communities can become custodians of biodiversity with the support of the policy frameworks and livelihood incentives. In contrast to top-down conservation models, the experience at Kigwema shows that even the ecological heritage can be preserved with the help of traditional councils and the agreement of the local communities.

The practical recommendations are towards:

- Extending the principle of participatory model used by Kigwema in Nagaland to other villages.
- State-village congruity in policies to provide a sustainable infrastructure, tourism management, and communal benefits and sharing.
- The sustainability in the long term via eco-certification, youth and evenly managing the visitors in sensitive areas such as Dzukou Valley.

After all, Kigwema represents a direction in which conservation is not viewed as a limitation to it but rather as a means through which culture is retained, livelihoods are insured and the environment can withstand certain challenges. Its pattern can provide important insights to Nagaland and other biodiversity-rich Southeast India in an attempt to develop sustainably.

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