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RESEARCH ARTICLE

A Sustainable Approach: Navigating through the Mishing Tribe's Indigenous Knowledge and Disaster Management Strategies

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Abstract

The Mishing tribe, a Sino-Tibetan community native to the north-eastern part of India, engages in a custom of floodplain farming that is flexible enough to adjust to the river's unpredictable flow. The sustainability practices of the Mishing community amalgamate traditional knowledge with modern environmental techniques to create adaptive and ecologically resilient floating farms and agroforestry that capitalize on nutrient-rich silt deposits left by the river and further foster agricultural sustainability. This article researches the indigenous knowledge and modern flood management techniques of the Mishing tribe, illustrating the community's employment of early warning systems, flood-resistant crop varieties, and community-based disaster management strategies. Another crucial engagement regards how such practices used to be operated autonomously, often without direct external intervention, and now offers useful pointers for larger environmental policies as they integrate with modern technology. This research also incorporates the architectural adaptations they made, such as bamboo-stilted *chang ghar* constructions that reduce flooding problems, sets an example for sustainable living in flood-prone regions, thereby adding to the contemporary discourse on flood management. With an interdisciplinary approach that combines historical analysis and environmental studies, this study assesses the relevance of traditional practices in contemporary contexts and their adaptability to changing climatic conditions. The significant contribution shall add to the sustainable development by showing how indigenous knowledge can work alongside contemporary innovations to construct a much richer environmental framework. The report also addresses climate change-related questions that are still a concern today and offers pathways for including Mishing agricultural and architectural knowledge in larger sustainable development initiatives. It highlights the need to retain Indigenous ecological knowledge in climate adaptation and resilience-building frameworks.

Keywords: Chang Ghar, Disaster Strategies, Flood, Indigenous Knowledge, Mishing Tribe, Sustainable.

Introduction

Mishing is developed from the two words 'Mi' and 'Toshing/Anshing'. 'Mi' signifies Man and 'Toshing/Anshing'signifies worthiness. The term is common to many of the tribes in Southeast Asia. Another designation is that "Miri" also supports the identity of the Mishing people. The Mishing, being originally hill tribes of the Arunachal Pradesh, migrated to the plains of Assam in quest for a peaceful and good economic life in bygone days. It is opined that the initial group of Mishing settled in the top part of the valley between 13th and 14th centuries A.D. when the region surrounding Sadiya was governed by the Chutia kings. They are part of the larger Tani community that includes numerous tribes in Arunachal Pradesh of India and the Tibet Autonomous Region (TAR) of China, having linguistic, cultural and ritualistic similarities. They have their root tracing back to Abutani or Abo Tani (the first man of earth according to the Adi and tribe) like any other Tani tribe. The Mongoloid stock of the Indo-Burmese speaking population settled near the Brahmaputra valley defines the Mishing Tribe, also known as Miri. Upper Siang, East Siang, Lower Dibang Valley and certain parts of the West Siang district of Arunachal Pradesh were the main residing places among the mountain ranges. 'Miri' or Mishing residing currently in the

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riverine zone of Upper Assam Valley are blood relations of the tribal population residing in the Abor Hills of Arunachal Pradesh. The history of Miri is proven to be the history of the Mishing, Moyongias, Pasi, Padams, and other hill tribes, who follow the cult of 'Mirui', reverence 'Donyi' (Sun) and 'Polo' (Moon) as their main gods and addressing themselves 'Ami' or 'Tani', signifying Man.

As per the folk literature of the Mishing community, they migrated down to the plains of Assam in search of the river Brahmaputra around the 12th and 13th centuries (Pegu 2021). They were from the nearby areas of the Yangtze and Wang Ho, belonging to the Mongols from the Northwestern frontiers of China. Around 4000 years ago, the Mishings migrated to the lands near the Subansiri and Siang rivers of Arunachal Pradesh. They settled there for centuries, and probably brought similarity to other tribal communities like Adi, Nishi, Apatani, and Hill Miri of Arunachal Pradesh. The rising population, owing to the concentration of many tribes and the shortage of land, led some of the communities to migrate from the region to the landscape adjacent to the Brahmaputra River. They etymologically complement their settlement, where the Mishing also means the 'humans who come from water'. As a result, they settled in the adjacent valleys near the river Brahmaputra. The migration has landed the community with a blend of their indigenous culture and the existing Assamese traditions, thereby emerging with a renewed identity with a language that is linked to the Tibeto-Burmese linguistic systems; however, they speak Assamese too. They are the second-largest tribal community in Assam, mostly found in Majauli with a population of over 5 lakhs, which contributes to 16% of the total tribal population of Assam. After years of struggle for their autonomy, in the year 1995, they finally formed the Mishing Autonomous Council.

The Mishing community lives mostly in the flood-prone Brahmaputra Valley, which witnesses massive soil erosion and waterlogging every monsoon due to the annual flood of the Brahmaputra river. Mishing lifestyle accommodates sustainable agriculture and housing to combat the annual flood hazard and disaster. They adopt numerous other sustainable practices as part of their lifestyle to promote harmony and integration with nature as their survival mode. These practices have been carried on for generations and have helped the community to thrive in the face of disasters. As per the local narratives of the community, it is brought up that earthquakes and floods do not cause any casualties to the Mishing people because they are in perpetual harmony with Mother Nature. They consider the annual flood of the Brahmaputra river to be auspicious and a lifeline of the northeast because the flood brings the rich alluvial silt deposited on the Brahmaputra basin to their crops. The alluvial soil is extremely suitable for agriculture, and hence the traditional Mishing community had devised their lifestyle to accommodate the flood and its benefits in a productive way, without affecting their lifestyle. The floodwater also eases the tedious task of manually keeping the paddy waterlogged. The Brahmaputra River, which runs from the Tibetan Plateau down through Assam before it enters Bangladesh, is one of the most dynamic and demanding environments for rivers in the world. The community lives in perfect peace and mutual trust, where there is no concept of locking their houses. The families are usually bigger with members as much 86 in one family is also reported. They are independent farmers. They grow wheat, rice, and mustard. The economy is primarily dependent on agriculture and fishing.

Sustainable practices have always been a predominant part of the Indigenous culture for most of the northeastern tribes since they allow them to thrive remotely in alliance with nature. The Mishings too have definite adaptive strategies to combat yearly monsoon flooding, bank erosion and channel migration to establish a state of continuous environmental stability. But now, with the added dimension of climate change, the inherited wisdom held by the Mishing on managing the deluge is more relevant to the real-life challenges of environmental management than ever before. The practice of setting up chang ghar, cultivating floating agriculture, farming the flood-resistant crops and employing early warning signs of flood were the implemented measures of their traditional ecological knowledge, which faulters with the modern climate change and requires immediate integration to sustain the past with the present.

Literature Review

The Mishings were originally hill tribes from northeastern India's Himalayan region, residing between Arunachal Pradesh's Suvansiri and Siyang districts. They are distributed throughout the districts of North Lakhimpur, Dhemaji, Dibrugarh, Sivasagar, Golaghat, Sonitpur, and Tinsukia in the Brahmaputra valley of Assam. (Kakoti, 2017). Mostly a Mishing village with 50–60 houses, it is situated on the riverbanks. Charah (2014). One of the unique aspects of Mishing culture is the community's participation in the traditional craft of weaving (Payun 2021). The Mishing community obtains their basic food, water, wood, fibre, and other necessities from natural ecosystems in places like Majauli Island and Gogamukh (Sarnah 2017). Before the cultivation, in the month of Phagun, the Mising Community celebrates Ali-ai-ligang, their main festival. In order to obtain blessings for the profusion of production, the tribe worships Mother Earth. (Kumbang, 2024). Because flooding is a big issue in Mishing villages, people used to move from one village to another in order to fight it, which led to resource depletion and deforestation. However, now they are unable to relocate because of the population explosion. (Pegu 2021). With a flight of five to seven stairs, stilt houses are the traditional homes of the Mishing community and are associated with

social and religious customs and beliefs. (Pangging 2020). Some Mishing people live in the Kaziranga National Park area, and they have a sociocultural relationship with plants, particularly when it comes to using them as medicine (Kutum et al 2011). The economically disadvantaged Mishing community is vulnerable due to frequent flooding and a lack of infrastructure and road communication (Sonowal and Morong 2008). Farming is the main occupation of the Mishing people who live in Majauli. Approximately 80.635% of the community's working population, according to the 2011 census, worked in agriculture and cultivation. They grow a variety of vegetables, oil seeds, potatoes, onions, garlic, pulses, sugarcane, bananas, chillies, and paddy as their primary crops. They (Saikia and Nookathoti 2024) grow different types of rice, including Sali, Bao, and Ahu. The Mishing community is often involved in regular conflicts over the possession of valleys and hill slopes for their shifting cultivation, which questions their independence. There is a need for cultivable land, and the regular conflict has taken the shape of a warfare in the Diho Valley (Bhandari 1984)

Framework

The research was conducted among the Mishing Tribe of Assam. A qualitative approach and literature review process is included in framing the discussion and findings. The article aims to identify the traditional sustainable farming practices and flood management used among the Mishing Community. The study of such sustainable practices aims to impart the plausibility of flood management processes in a wider prospect by foregrounding the traditional methodology and the challenges with a detailed socio-cultural background.

Chang Ghar: Ancient Flood-Resilient Architecture of the Mishing Tribe

The chang ghar is one of the most ingenious instances of flood-adaptive architecture in northeastern India, testifying to the environmental intelligence of the Mishing. A standard and usual house of the Mishing is known as Kare Okum (or chang ghar in Assamese), which is an indigenous solution to avoid floodwater because of its high raised construction on a platform held up by bamboo stilts at least 10 feet high (Prevention Web 2021). This architectural innovation highlights how tribal people have fashioned sustainable solutions to environmental crises through centuries of experience and learning. The bamboo house can further be dismantled and constructed again, making it portable and non-destructive. When the Mishing people notice that a particular area has been waterlogged for a prolonged period of time, they further have the option to shift their entire house and re-construct it in a different suitable land. The community provides the compelling narrative of the intricate relationship of co-existence of humans and the non-humans. The chang ghars were also used by them to provide safe shelter for the livestock, which were usually kept downstairs, but during rain, they were moved up. The presence of hegemonic predators in the form of wild animals destabilised the usual harmony. As a result, the setup was also utilised to keep away wild animals by setting fire at night. Staying in chang ghars also enabled them to keep an eye on their farm from the top.

Not only the Mishing communities but even the Dhiuli communities have also exemplified their excellence in the architectural process in constructing bamboo houses to combat the flood in their own indigenous way. Apart from chang ghar, there is another traditional man-made method called pithiya, which is a man-made mound. It aims to solve the waterlogging problem. These mounds are built in the shape of a semi-circle like which takes up the shape of a turtle shell rising above the flood water. Pithiya is a temporary process when the place gets waterlogged and the soil is saturated with water and there is no way for the water to be drained out. During such times, the houses are built on top of this pithiya to avoid the floodwater weakening the foundation. And as they are raised above the water, they will not get waterlogged. Hence, it solves the problem of dirt and silt that is left behind when floods recede. Many communities have even built this kind of highland to not only keep the water at bay but also to protect the biodiversity in the form of animals and wildlife that can take refuge on the soil mounds that rise above the water level during floods.

The custodian of invaluable knowledge in conserving and sustainably managing flood, the Mishing community's

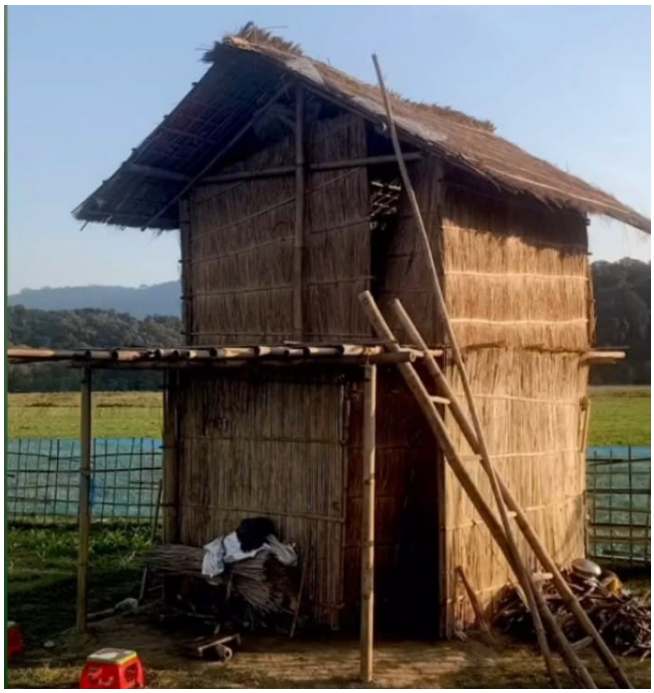

Figure 1: Traditional Chang Ghar built with bamboo and hay straws

comprehensive local knowledge stands as an example to adapt and mitigate climate change and biodiversity loss. They depend on ecosystems that are particularly vulnerable to extreme forms of weather events, such as floods. With the passage of time, the present scenario witnesses the construction of a dam, the intervention on the river bed in the form of embankment, which led to the man-made changes to the geography of the Brahmaputra River, and so far, no efforts have been made to study the flood plain or even the map of the river properly. As a result, the disruption in the natural flow of the river has caused a lot of devastation and regular flooding in the last 10-15 years. Although the Assam government has spent around 38 billion dollars in the last 60 years to construct embankments, it has not been successful at controlling floods because of the poor construction quality and the overgrowing population, which led to the encroachment. The problem is not only with the embankment alone; it also occurs due to a lack of coordination and warning when the dams' water is released.

Assam State Disaster Management Plan has six priority areas to focus and designing climate resilient habitats is one among them. This is aligned with India's National Action Plan on Climate Change. The resilient structures are often overlooked, and what is looked for is the improvement of the vulnerability of the houses. Schemes like Pradhan Mantri Awas Yojna promise housing for all, and are implemented for the procurement of Chang Ghars in Assam. The problem arises when only 3-4 houses can avail that from the entire village. Hence, the engineering design and architectural finesse, no matter if they are durable, do not fit into the scenario. The North East Affected Area Development Society (NEADS), an NGO, along with the Sustainable Development and Ecological Development Society (SEEDS), has now started working on projects that would redefine the construction of Chang Ghar, making it more durable. The residents of the community offer to claim that they have already started using it, which is built of cement and sand, because the bottom end of the bamboo poles gets rotten with the impact of water. This weakens the base, and during the monsoon, the entire setup gets washed away. The new methodology of building the base of concrete makes it durable, which could be incorporated in the mainstream construction of houses situated near the rivers.

Flood Management and Flood-Resistant Crops

Mishings have an agro-based livelihood, depending largely on the various kinds of rice cultivation. They thrive on river fish and meat as their primary staple. The agricultural practice of the community is largely based on homegrown leafy greens and vegetables. This provides a wholesome nutritional balance. The women mainly grow a wide variety of leafy greens known as Xaak, and source fish from the river. Mishings inhabit the land near the riverbanks, which is suitable for cultivation. The well-ploughed, wet, and marshy soil pulverized by a bamboo ladder is usually used as a fence. This method of agriculture involves fencing with bamboo cultivation on the borders of the crops. This is used as a flood-resistant technique, preventing soil erosion. Bamboo has the ability to soak maximum water for its growth, and also holds the soil intact. Since paddy cultivation can be done in waterlogged areas, the annual rainfall and floods don't affect the crops much. They cultivate mainly three types of paddy: *Ahu, Bao* and *Sali*. The rich alluvial soil deposited at the lower course of the Brahmaputra complements the bountiful growth of rice. The weeding process starts only when the *Ahu* sprouts up; the bullock sets up the bamboo sticks known as bindha (Chutia 2020). The land chosen for the *Ahu* crop is usually lowland. *Bao* is usually the deep-water rice, which is commonly known as red rice. This is grown in a flood-prone area and is locally bred indigenous rice that is cultivated using the traditional broadcast method, analyzing the advent of the monsoon. The third category *Sali,* is grown at a higher elevation in muddy alluvial soil. The availability of ready and abundant natural water doesn't require any other form of man-made irrigation system, unlike other parts of the rice-cultivated area. Bora Saul is another popular variant of rice grown by the community, which does not require any use of chemical fertilizers. It is a sticky variant of rice, short-statured, making it easy to cultivate and harvest with minimal straw production. The straws after reaping the harvest are fed to the cattle. The seeds are sown on the first Wednesday of the month of Phagun of the Assamese calendar (Chutia 2020). The cultivation of barley also requires waterlogging and they have chosen the crops accordingly.

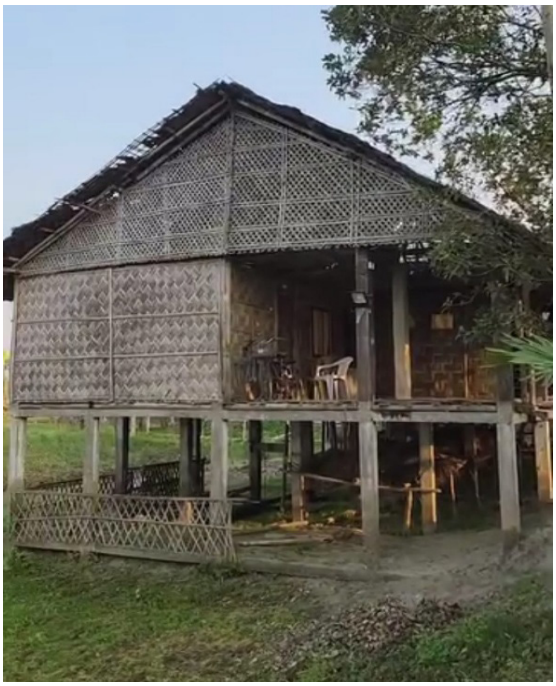

Figure 2 : Integrating Modern technology in Chang Ghar with a concrete foundation

The places where the Mishing community lives are often under a political jurisdiction where the authority is not from the community. This creates a linguistic and cultural barrier, because the local government officials are posted from different parts of the country, who witness the community's cultural resistance as a form of activism. Since the Mishing people have educational backwardness, they have constated issues with land and property rights. This is intensified by the fact that they are traditionally climatic nomads. Secondly, upper Assam was also a hub of the United Liberation Force of Assam (ULFA), a former militant group of Assam. As a result, often several Mishing farmers were wrongly interrogated or reprimanded, which created a local hostility towards anyone outside the community. This often led to the houses, crops and livestock being vandalised. Thirdly, the Mishing women do a tedious and laborious job of solo weaving, which often takes months altogether. This harbours intense labour on the women who also work in the field, take care of the children, livestock and then practice weaving (Borah 2023). Since the UN's International Fund for Agricultural Development (IFAD) aligns with the UN Declaration on the rights of indigenous people, where their projects aim at strengthening their self-driven development, hence, as a founding member of IFAD, India can propose financial support and policy management to promote inclusive and sustainable agricultural growth among the Mishing community to strengthen rural innovation.

Floating Farming: A Sustainable Ecological Practice Among the Mishing

Certain plants do not need deep soil, and moist conditions work best for them. Vegetables like spinach, bottle gourd, pumpkin, bitter gourd, and beans are grown by the Mishing community, showcasing their close relationship with the riverine ecosystem. This process of cultivation is called floating bed cultivation, which is very effective in flood-prone areas. The Majauli district in Assam, the core location of the Mishing community, uses local materials like hyacinth and bamboo constructively and integrates with modern technologies like hydroponics, solar irrigation and integrated aquaculture. The NGOs like South Asian Forum for Improvement (SAFE) is playing an instrumental role in the process since 2015. Till 2025, around 620 floating farms have been adopted in Majuli, covering more than 50 villages with their ponds and lakes, making them adaptive to the innovative technique of farming. Ladies' finger, ridge gourd and chillis are the easily grown vegetables. The advantage of this kind of sustainable farming over the conventional mode of farming is that it aims to offer stability during unpredictable monsoons and erosion.

Employment of the Early Warning System

The residents of the community often claim that they have an intrinsic relationship with the floods and can predict their advent, which helps them to prepare accordingly. The elevation of the houses is planned as per the rainfall of a particular year. If the water level is high, they usually build more elevated houses for the upcoming year. Aaranyak, the NGO in Assam, works on biodiversity and the environment, and the head of the department of Water, Climate and Hazard Programme declares that the Mishing community works on flood management better than any other community because their habitation is near the river, which enables them to understand the behaviour of the river very well. Though the tribe has passed on the indigenous knowledge of understanding the rainfall pattern to subsequent generations, the recent anomalous pattern of the rainfall in north-east India has challenged the coping mechanism altogether. The change has been observed in the past four decades, where the traditional method has become quite ineffective. The anthropogenic factors have made the practice of epistemological knowledge systems questionable. The monsoon has become unpredictable; there is either no rainfall or moderate or flash floods. Rainfall has become deficient by 30-50 percent, and Assam has even been witnessing drought years (Guha 2021). Among all the 12 states in the Indian Himalayan range, Assam is the most vulnerable to climate change. The people from within the community, however, claim that their flood adaptation techniques have not become outdated. All that has changed is that the entire procedure has become expensive, and they need an upgrade of the same.

Findings

Challenges in the Traditional Ecological Practices

Despite being a sustainable practice and bio-conventional, the sustainable practices like setting up chang ghar are under threat from modernization forces. In the current situation, the Mishing people have been undergoing transitions in their lifestyle, with the new generation choosing to go out of their villages to bigger towns and cities for a better livelihood. They are also facing the brunt of being considered backward and primitive; as such, this process of building and rebuilding the chang ghar is not acceptable to the new generation. In a distant island like Majuli, the conventional stilt house is gradually being transformed into an Assam-type concrete house (Parnashree, 2021). Such a transformation raises questions regarding the conservation of indigenous knowledge of architecture and its compatibility with modern climate adaptation policies. The chang ghar, made of bamboo, was readily available before, but now the residents have to buy from the market at a higher cost. Also, they cannot make the entire setup with bamboo. They have to make some part of it concrete, which is also costly. Chang ghar is effective only if the water does not damage the house. However, now the change in the river course sweeps away the entire chang ghar during

flash floods. The indigenous practice of flood management does not work here because of the time constraint. The logging process is banned; as a result, the woods are not freely available. Hence, the boats cannot be prepared, and many Mishing don't even know how to construct boats. To live up to the present changes, now the boats are made with cheaper woods, such as banana trunks known as Ollungs. Also, given the fact that building concrete houses is not going to solve the flood problem, the government needs to seriously think about whether it needs to promote and rehabilitate the chang ghar culture. The Mishing tribe has concerns with their land, which they inhabit and cultivate to engage other prospects as well. Another challenge lies in property rights and land retention. At times, many of the lands belonging to the Mishing people get occupied, and disputes arise regarding land ownership. The majority of them are not educated; hence, it becomes easy for people to cheat of their land. This is a great concern because the land is of great significance to the Mishing community, and if they lose it, they might be forced to abandon their homes. Therefore, they must ensure that they own their lands and resources, such as the water and forests surrounding their villages, so they can safeguard their lifestyle. The eco-friendly and climate resilient floating farming too has its own challenges, where the maintenance becomes a major concern because the raft used in such kind of farming requires regular restructuring. The impact of water pollution can also further contaminate the water, affecting the crops. Not a wide variety of crops could be grown in such a form of cultivation, leading to limitations to only leafy greens and certain specific kind of vegetables.

Suggestive Measures to integrate Traditional Practices with Modern Intervention

In spite of the practical constraints, the traditional Mishing people still believe that their indigenous practices have not become redundant, and they focus on how to live in harmony with the rapidly changing uncertainties of nature, rather than trying to tame it. The recent challenges make it very clear that their ecological knowledge would struggle to survive alone and requires upgradation in the form of economic and political intervention. India's response to changing trade and environmental standards reflects its commitment to climate sovereignty and strategic defiance (Bora and Dwivedi 2025) and as per the Prime Minister's Asian Ministerial conference on DRR at New Delhi in November 2016, the agenda for disaster risk reduction included that the universities should work on disaster-related issues. The traditional ecological knowledge of the flood control measures of the Mishings could be used as case studies in Higher Educational Institutions (HEIs) to create awareness and generate research-based structural efficiency to study bamboo stilt durability under flood conditions by preparing 3d models. Delocalisation of the strategies could be an effective proposal to enhance and make disaster risk management strategically efficient. A collaboration and cohesion with international response is required to strengthen the local capacity and women's leadership for the optimal functioning of the disaster risk management. The Governmental housing schemes could be modified, where Pradhan Mantri Awas Yojana (PMAY) can model the house in flood-prone areas on stilt-based designs, making them flood resilient. The Chang Ghar adaptation model could be used for the low-lying areas in flood zones to build elevated structures during construction. The village layouts of the Mishing community can also serve as an example to elevate roads and drainage systems for flood-resilient township planning. Also, the Mishing architects and designers could be hired by the construction houses to lend them their knowledge. A research partnership for the promotion of the practice and documentation of the traditional ecological knowledge is required for future usage and materialisation of plans. Resilience building, encompassing preparedness, prevention, emergency response and immediate rehabilitation, would be the necessary steps of action with a productive integration of the local and the centre.

Factors like deforestation, human intervention in the upstream and downstream areas of surrounding hills, high birth rate and immigration from the border countries leading to unplanned settlement, high rate of change of land use, urban development, and temporary flood control measures are some of the factors that contribute to the state of Assam getting into vulnerability to floods. Although getting flooded is not a very uncommon event in Assam but a new issue has come up in recent years, which shows that the flood comes early and also it prolongs for a longer period of time. As per the Assam Disaster Management Plan 2022 Volume 1, this kind of unusual rain tends to become more common with climate change by expecting that between 2021-2050, extreme rainfall events may increase by 5-38% and incidents of flood by 25%. Hence, the increased risk of disasters requires a comprehensive disaster risk management arrangement to protect people and eliminate the vulnerability of these risks to their lives, which can be achieved by identifying the elements of risk, such as physical, social, and economic. Assam was the first state in India to adopt the Sustainable Development Goal in the form of Agenda 2030, and a few of the principles that it aims to follow include sustainability of water resources and sustainability of the agricultural system, making the habitat climate resilient, addressing the issues, which will include the enhanced impact of anticipatory extreme events. The state has already integrated with national priorities on disaster management, such as the Disaster Management Act 2005, National Policy on Disaster management, the national

disaster management plan 2019, and the Prime Minister's 10-point agenda for disaster risk reduction.

Conclusion

The Mishing tribe's chang ghar and floating farming are a compelling integration of natural adaptation, cultural heritage, and sustainable building practices. What the research abstract describes as 'bamboo-stilted' houses is an exemplary model of how traditional architectural expertise can influence modern practices in addressing floods and coping with climate change. However, there are social hurdles in the integration process because the chang ghar is adopted by the Mishing community and the community is recognised as a scheduled tribe under the Indian constitution, which indicates a kind of socio-economic marginalisation. Hence, the mainstream society might express its resistance to adopting practices from those who have been historically looked down on. Furthermore, challenges like the traditional knowledge-based flood resistance methods lack the adaptability of a huge population. When conceived, the primitive method had witnessed minimal people coming under the purview of this localised practice. With the aim of delocalisation, the methodology needs to be compromised with additional improvisation and make it competent to combat floods with minimum failures. However, with the proposed governmental intervention and modern technology recognising the adaptive qualities of the chang ghar—its adjustable height, quick build-up, and climate sensitivity—provide important lessons for sustainable development in flood-risk areas. The incorporation of such local architectural advances into larger environmental policy models may open doors to greater climate adaptation approaches that respect both traditional knowledge systems and modern environmental concerns. The practice of floating farming's prevention of crop damage during high water levels and providing a continuous supply of yield even during a lack of monsoon makes the procedure sustainable, aiming to pave the path for revitalising such traditional methodologies of cultivation.

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