



Adaptation of Livelihood Practices in Flood-Prone Regions of Majuli District, Assam

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Abstract:

Floods and riverbank erosion are among India's most common natural disasters, particularly affecting deltaic regions. In Assam, the Majuli district is especially vulnerable due to its location in the heart of the Brahmaputra River. As a flood-prone river island, Majuli necessitates adaptive livelihood strategies. Promoting alternative income sources like handicrafts, ecotourism, and fish farming can help support affected communities. Introducing skill development programs aimed at sustainable agricultural practices and encouraging community-based disaster preparedness initiatives can strengthen local resilience. Coordinated efforts with local authorities and NGOs are vital for implementing comprehensive and lasting solutions.

This article is based on my recent research on flooding and riverbank erosion in the Majuli district of Assam. A total of 250 households were selected using a stratified random sampling method from 20 Gaon Panchayats within the Majuli Development Block and the Ujani Majuli Development Block. The study utilized both primary and secondary data sources. An analysis of data spanning from 1990 to 2023 reveals that the Brahmaputra River continues to widen its course, gradually eroding one village after another. Residents are confronted with a range of challenges in sustaining their livelihoods. Every year, many are displaced due to land loss, with some relocating permanently to safer areas. A significant number of individuals have been forced to change their occupations, often resulting in long-term economic hardship. Various organizations are making dedicated efforts to reduce the damage and support affected communities.

Keywords: Floods, River-Bank Erosion, Displacement, Alternative Livelihoods, Occupational change, out migration.

Introduction

The people living along riverbanks are in a constant battle with the river, often finding themselves repeatedly defeated. Time and again, they lose their homes, land, and crops to the powerful currents, yet they continue to rebuild with unwavering resilience and hope. Through continuous and conscious struggle, they have come to accept this cycle of destruction and reconstruction as an inherent part of life. Natural disasters are widespread across the globe, causing severe impacts on human lives. On average, such hazards result in approximately 60,000 deaths worldwide each year (Ritchie & Roser, 2014). In India, a range of natural disasters—including droughts, floods, cyclones, and earthquakes—occur annually, with floods and riverbank erosion being the most frequent, particularly in the deltaic regions.

Assam is highly vulnerable to floods and has been grappling with severe flood-related challenges over the past several decades. The state's infrastructure and economy have suffered significantly due to recurring flood disasters. Several regional organizations, including AASU and TMPK, have advocated for the recognition of floods as a national issue in India. A substantial portion of the state's revenue has been spent on flood mitigation efforts.

Socio- Economic profile of Majuli

Majuli, encircled by the Brahmaputra River and its tributaries, is one of the most flood-sensitive districts in Assam. Recognized as the world's largest inhabited river island, Majuli has experienced numerous major floods in recent decades, including those in 1950, 1988, 1996, 1998, 2000, 2002, 2003, 2013, 2015, and 2020. Local sources highlight the 1998 flood as the most devastating in Majuli's history, with the 1996 and 1998 floods recording the highest water levels and submerging nearly the entire island.

Rivers have long been central to the life and livelihoods of Majuli's residents. While the annual floods bring nutrient-rich silt that enhances soil fertility, they also come with destructive consequences, particularly riverbank erosion and land slumping. This erosion has had far-reaching impacts on homes, livelihoods, and the overall well-being of the island's population.

In many instances, floods have completely destroyed settlements, displacing families permanently. The loss of homes, agricultural land, and crops has made life increasingly difficult, often with irreversible outcomes.

Riverbank erosion continues to displace approximately 1,000 households each year in Majuli. Those living along the riverbanks are at constant risk due to the recurring floods. Many residents have lost nearly everything — their land, homes, and livelihoods. A significant number have lost faith in agriculture and been forced to relocate in search of safer living conditions and alternative sources of income. As a result, many have become landless and are now dependent on daily wage labor or other informal and unstable means of earning a living.

Livelihood Strategies

Livelihood strategies encompass the various ways individuals and households meet their essential needs, such as food, shelter, and income. These strategies may involve activities like agriculture, fishing, trade, or wage-based employment. The selection of livelihood options is typically influenced by factors such as geographic conditions, access to resources, individual skills, and the availability of economic opportunities. In the context of sustainable development, strengthening and diversifying livelihood strategies is key to building community resilience and reducing vulnerability to external shocks.

Chambers and Conway (1991) defined a livelihood as the combination of capabilities, assets (both material and social), and activities necessary for securing the necessities of life.

Livelihood Strategies in Majuli

Agriculture

Agriculture remains the primary livelihood for a majority of Majuli's population. The fertile alluvial soil and close proximity to the Brahmaputra and its tributaries make the region ideal for cultivating crops such as rice, pulses, and various vegetables.

Fishing

Owing to Majuli's riverine setting, fishing plays a vital role in sustaining livelihoods. Many locals depend on fishing, either to support household consumption or as a commercial activity for income generation.

Handicrafts

Majuli has a rich tradition of handloom weaving and pottery-making. Women, in particular, are actively involved in producing traditional Assamese textiles and pottery, both as a cultural expression and a source of income.

Poultry Farming

Some households engage in poultry farming, raising chickens for eggs and meat. This activity not only provides food security but also serves as a supplementary source of income.

Livestock Rearing

The rearing of livestock—such as cows, buffaloes, goats, and pigs—is another important livelihood, especially in rural parts of Majuli. A considerable portion of the population depends on livestock for both subsistence and commercial purposes.

Handicraft Trade

Traditional crafts such as mask-making, pottery, and handwoven fabrics are traded both locally and beyond Majuli, supporting the livelihoods of many artisans.

Government Employment

A section of the population is employed in government sectors, including administration, education, healthcare, and other public services, which offer stable income and job security.

Vulnerability of Livelihoods in Flood-Affected Area

Flood-prone areas experience a variety of livelihood-related challenges due to the disruptive effects of frequent inundation. **Livelihood vulnerabilities** refer to the conditions that hinder individuals and communities from maintaining stable incomes, well-being, and daily routines when faced with flood events. Common livelihood vulnerabilities in such areas include:

- **Decline in Agricultural Output:** Floodwaters often destroy crops and kill livestock, severely affecting the income and food security of farming communities.
- **Infrastructure Damage:** Essential infrastructure such as roads, bridges, and irrigation systems are often damaged, disrupting access to markets, healthcare, and other vital services, which hampers economic activity.
- **Displacement and Homelessness:** Many families are forced to flee their homes during floods, facing either temporary or permanent relocation. This displacement leads to loss of shelter and basic belongings, further straining livelihoods.
- **Health Hazards:** Floods increase the risk of waterborne diseases and infections, negatively affecting health and reducing people's ability to work and earn a living.
- **Losses in Livestock and Fisheries:** Flooding can displace or kill livestock and negatively impact fish populations, disrupting the livelihoods of those involved in animal husbandry and fishing.
- **Destruction of Property and Savings:** Homes, small businesses, and valuable personal assets are often lost in floods, leaving families financially vulnerable and delaying economic recovery.
- **Educational Disruptions:** Flooded schools and unsafe conditions interrupt education, limiting the future prospects of children and impacting long-term community development.
- **Loss of Jobs and Income Sources:** Economic activities, particularly small businesses, often come to a halt during floods, leading to job losses and reduced employment opportunities.

- **Heightened Vulnerability for Marginalized Groups:** Women, children, the elderly, and other marginalized populations are often the most affected, with reduced access to resources and support systems.
- **Emotional and Psychological Strain:** Flooding can lead to significant mental health impacts, including stress, anxiety, and trauma, which undermine people's ability to focus on rebuilding their lives and livelihoods.
- **Limited Financial Access:** In flood-hit regions, access to credit, banking, and financial services is often restricted, making it difficult for communities to rebuild their livelihoods or invest in recovery.

Addressing these vulnerabilities requires a comprehensive strategy that includes early warning systems, resilient infrastructure, sustainable land management, and community-based planning. Supportive measures such as social safety nets, financial aid, and promotion of alternative income sources can greatly enhance the capacity of communities to recover and adapt to recurring floods.

Impact upon Livelihood Strategies of Majuli

Natural disasters like floods have a detrimental effect on the livelihoods of households and communities, often stripping people of their primary income sources and reducing their ability to earn a living. These disruptions may be temporary or long-lasting, depending on the severity and frequency of the floods. Recurrent flooding significantly alters the traditional livelihood patterns, with the scale and diversity of changes varying based on local resources and circumstances.

Majuli, a river island situated in the Brahmaputra River in Assam, is particularly vulnerable to flood hazards. The evolving livelihood patterns in Majuli are shaped by changes in environmental conditions, the socio-economic context, and the adaptive strategies adopted by local residents. Key shifts in livelihood strategies include:

- **Livelihood Diversification:** To reduce dependence on flood-prone occupations, residents are exploring alternative income avenues such as handicrafts, tourism, and non-farming jobs.
- **Adoption of Flood-Resilient Crops:** Many farmers are now cultivating crops that are more tolerant of waterlogging and have shorter growth cycles, reducing losses during flood events.
- **Shifts in Cropping Patterns:** The community has moved away from solely cultivating traditional subsistence crops like rice, vegetables, and pulses, and is now introducing cash crops during the dry season to improve income.
- **Migration and Urban Job Search:** Due to repeated crop failures and loss of land, many individuals have migrated to urban areas in search of work, often taking up daily wage or manual labor jobs. A significant number of flood-affected residents are now employed across different cities in India.
- **Occupational Transition:** Agriculture is no longer the sole source of income for Majuli's residents. Many have taken up alternative occupations such as carpentry, shopkeeping, skilled trades, and service-based work.
- **Community-Led Adaptation:** Local communities have initiated collective efforts to respond to flooding through cooperative farming, resource sharing, and forming local organizations to strengthen resilience.
- **Climate-Resilient Livestock Rearing:** Livestock practices are adapting to flood conditions through the adoption of more resilient animal breeds that can withstand adverse environmental conditions.
- **Tourism-Based Livelihoods:** With its rich cultural heritage and scenic landscape, Majuli has begun tapping into tourism as a sustainable livelihood option. Locals have started offering homestays, guiding services, and selling handcrafted goods.
- **Government Support and Policy Influence:** Public sector initiatives such as financial relief, awareness programs, and infrastructure development have played a key role in encouraging and enabling the transition to more sustainable livelihoods in Majuli.

Conclusion

It is crucial to recognize that these livelihood trends may differ across various population groups, with responses to flood hazards influenced by factors like socio-economic status, resource availability, and geographical location within Majuli. Addressing the evolving livelihood patterns in flood-prone areas requires a comprehensive approach, considering both immediate adaptation measures and long-term development goals.

Before 1996-1998, the majority of Majuli's population relied directly or indirectly on agriculture and related activities. People lived primarily at a subsistence level, striving for self-sufficiency and having modest aspirations. However, the situation has drastically changed. Today, residents are involved in a wide range of livelihoods. While agriculture was once primarily for personal consumption, people are now diversifying their farming practices. Cash crops are being cultivated for commercial purposes, and modern farming techniques such as intensive cultivation and multiple cropping have become more common.

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