



Riverbank Erosion and Internal Displacement in Mehendiganj Upazila of Barisal: An Analysis of Socio-Economic and Political Consequence.

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Abstract

Riverbank erosion is one of the most severe environmental challenges facing Bangladesh, especially in the southern coastal and riverine areas like Mehendiganj Upazila under the Barisal District. This natural process has not only reshaped the physical landscape but also deeply affected the lives of thousands of people who are forced to leave their homes, lands, and communities behind. This research examines the socio-economic and political impacts of river erosion and internal displacement in Mehendiganj upazila, Barisal. Using a qualitative-dominant mixed-methods approach, it combines household surveys, interviews, FGDs, and both statistical and thematic analysis. The study highlights changes in livelihood, social status, and institutional support, while addressing ethical considerations and limitations in field access and data reliability. This research aims to provide a comprehensive understanding of the various consequences of riverbank erosion, going beyond environmental aspects to examine the profound socio economic and political impacts of displacement. The study examines how the erosion of riverbanks leads to repeated displacement of communities, resulting in significant socioeconomic consequences such as the loss of homes, land, livelihoods, increased poverty, food insecurity, and disruption of education and healthcare services. The research also explores the political dimensions of displacement, focusing on the marginalization of affected individuals and the lack of meaningful representation in local decision-making processes. It critically assesses the roles of political and institutional actors in responding to erosion and displacement, highlighting weaknesses in coordination, accountability, and long-term planning. An important part of the study centers on community-based adaptation strategies and indigenous knowledge systems, showcasing how local people have developed their own coping mechanisms in the absence of adequate external support. Another key focus is on the relationship between displaced individuals and local government representatives. The study investigates how this relationship influences access to support, relief, and rehabilitation services.

Keywords: Riverbank erosion, Displacement, Vulnerability, Environmental Hazard, Community adaptation and Mehendiganj upazila.

1. Introduction

River erosion is one of the most devastating yet neglected environmental problems in Bangladesh. The country's population is currently 170 million, with an annual growth rate of 1.33 percent (UNDP, 2022), and more than 75 percent of this population lives in rural areas. The objective of this study is to assess the extent of riverbank erosion and to explore the relationship between the impact of riverbank erosion on the socio-economic and political conditions of the displaced people in the study area. Irregular floods and rapid riverbank shifts severely disrupt human settlements and activities. Rivers are dynamic natural systems as they constantly change their course. Erosion and sedimentation are a natural phenomenon in natural processes. Riverbank erosion occurs both naturally and through human intervention. Natural riverbank erosion can sometimes give positive results by forming fertile floodplains and alluvial soils. Some erosion can occur even in stable rivers; however, erosion occurring in unstable rivers or beyond their natural limits is a matter of serious concern. The socio-economic context created by riverbank erosion is of great concern as the number of marginalized people is increasing day by day.

In recent years, riverbank erosion has become a common natural disaster in Bangladesh. Bangladesh is one of the largest deltas in the world. The entire country is made up of a general mountainous region, limited highlands, and vast plains washed by rivers. Bangladesh is a low-lying delta region with over 700 rivers, including the three major river systems of the Ganges, Brahmaputra, and Meghna. This geographical feature makes the country highly vulnerable to natural disasters, especially river erosion. Compared to sudden disasters such as floods or cyclones, river erosion is a slow but continuous process. It gradually eroded river banks, causing fertile farmland, homes, schools, roads, and other important infrastructure to disappear into the riverbed. Every year, the powerful river currents cause extensive land erosion, and many houses, farmland, roads, and infrastructure collapse into the river. According to government and non-governmental organizations, riverbank erosion displaces between 50,000 and 200,000 people each year, making it one of the leading causes of internal displacement in the country.

River erosion-induced displacement creates a form of internal migration that has profound social and economic impacts. Displaced families often settle in overcrowded urban slums or remote rural areas, where employment opportunities are limited, educational continuity is disrupted, and access to health care and other basic services is almost non-existent. Many are forced into low-wage work in the informal sector, deepening poverty. In these situations, women, children, and the elderly are particularly vulnerable; they are exposed to exploitation, malnutrition, and social deprivation. This study will assess the socio economic and political situation of people in the identified areas and determine the relationship between riverbank erosion and population displacement.

2. Review of Literature

Riverbank erosion is a natural problem in Bangladesh. Every year, on average, around 10 thousand hectares of land are lost to the erosion of the Padma, Meghna, and Jamuna rivers. In the past 51 years, about 663 square kilometers of land have been engulfed by the Padma River alone. This information was recently published in a report by NASA, the United States space research agency. River erosion has brought significant social and economic changes to people's lives. Many people have become homeless and are living in inhumane conditions, being deprived of their basic rights. Khadiza Akter and Soma Dey point out the impact of river erosion and its effects on rural women in a village of the Barisal district. They attempt to highlight the sufferings of women in this area. The women here are deprived of their basic human needs, remain dependent on men, and are often treated poorly. They also emphasize that despite facing socioeconomic, cultural, and gender-based barriers, women continue to struggle for survival by adopting various strategies in the new environment. Hasan, M. R., & Toda, Y. (2024). Hasan's seminal work explores the human consequences of

riverbank erosion in Bangladesh, with particular focus on displacement and resettlement strategies. He argues that erosion along major rivers like the Jamuna and Meghna leads to a cyclical pattern of displacement, particularly in the southern delta regions. Zaman criticized the Govt officials that while government resettlement initiatives exist, they often fail to address the long-term socio-economic needs of displaced populations. His study suggests that displacement causes a loss of land, livelihood, and social networks, further pushing the affected communities into chronic poverty and marginalization. The Govt should take long-term adaptation to reduce riverbank erosion and its effects. Mamun, M. A. A., Islam, M. M., Rahman, M. M., & Hossain, M. I. (2022).

Billah, M. M., Islam, M. M., & Rahman, M. S. (2023) discussed the need for institutional responses and policy interventions to address riverbank erosion-induced displacement in Bangladesh. They highlight that erosion affects 283 locations, leading to the loss of thousands of hectares of floodplain and displacing numerous communities. The study calls for comprehensive policies to support internally displaced populations. (Islam & Rashid, 2020). (Islam & Rashid Hossain (2025) focused on Hatia Union in Kurigram District, identifying significant impacts of flood and riverbank erosion on communication, food security, shelter, health, employment, and mobility. The study emphasizes the importance of policy development and effective project implementation to mitigate these challenges. Hossain, M. Z., & Fahad, S. (2023) conducted a study in Matlab Uttar, Chandpur District, revealing that 91% of households experienced complete destruction due to riverbank erosion. Approximately 87% of affected individuals resorted to borrowing money to cope with the disaster. The study emphasizes the need for strict regulations against sand dredging as an effective mitigation strategy. (Karim, 2019b). Ali and Khan (2023) conducted a study in the Lalmonirhat District, focusing on the socio-economic effects of riverbank erosion along the Teesta River. Their research revealed that erosion leads to significant losses of homesteads and agricultural lands, resulting in displacement and long-term livelihood challenges for affected households. The study emphasizes the need for targeted interventions to mitigate these impacts and support displaced communities. (Sultana et al., 2023). Though focused on cyclones, this study offers valuable insights into environmental vulnerability in the southern coastal areas, which overlap significantly with riverbank erosion zones. Alam and Collins emphasize the compounding effects of natural disasters and erosion, which jointly contribute to internal displacement. They highlight that affected populations face socio-economic marginalization and often lack access to education, health, and political participation. The research underscores the importance of disaster-resilient infrastructure and adaptive capacity as part of broader displacement mitigation strategies. (Alam & Collins, 2020)

Above all these literature reviews represent a comprehensive overview of riverbank erosion in Bangladesh. It highlights the socio-economic impacts, gendered vulnerabilities, displacement, and the need for policy intervention. But several important aspects are missing which are not included above these reviews. Notably, it lacks a clear discussion on the role of climate change in accelerating riverbank erosion, which is a crucial driver of such environmental hazards, there is limited analysis of community-based adaptation strategies or indigenous knowledge systems that affected populations often employ, the absence of a relationship between affected people and local representatives. Furthermore, there is no mention of the role of non-governmental organizations (NGOs) or technological tools such as remote sensing and GIS in monitoring erosion and aiding relief efforts.

3. Methodology

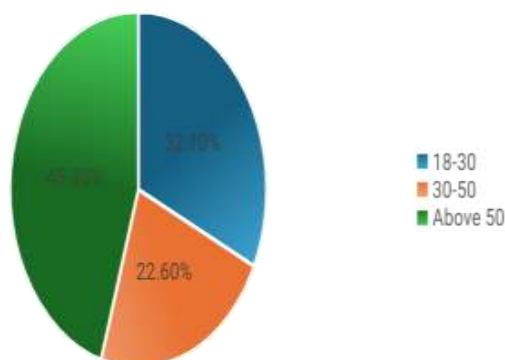
This study is a river-breaking area of Mehendiganj upazila, Barisal district, where a quality-based mixed research method (Qualitative-Dominant Mixed-Methods Research Design) has been applied to analyze the

socio-economic and political impacts of river erosion and internal displacement. Mehendiganj upazila is located about 5 km northeast of Barisal district headquarters and is one of the rivers and riverburn island upazilas of the region. Meghna, Tetulia, Elisha and Maskata - the area surrounded by these long and spiral rivers makes hundreds of people suffer from river breaks every year. As a result, they lost their homes and many went to the capital and went to seek shelter and livelihood. From my upazila, three unions have been selected, from which a simple sample of 103 individuals has been taken. This group includes young people, middle-aged, and elderly individuals who have long been affected by riverbank erosion and its consequences. Data is being collected through group discussions and case studies. Three Union of Mehendiganj upazila, Ulania Uttar, Ulania Dakhin and Gobindrapur are selected for data collection to meet study objectives. The total area of Ulania Uttar Ulania Dakhin and Gobindrapur are 89764, 94638 and 120477 acres and total population 158388, 130970 and 120638 respectively. The region has been selected for research due to its geographical risky position and the impact of frequent displacement on the local people. The main purpose of the study is to understand the living standards of the displaced, the change of livelihood, social dignity, political involvement and the institutional support structure. The study uses both primary and secondary data. Household surveys, Key Informant Interviews, and Focus Group Discussion (FGD) have been conducted to collect preliminary information. Information about earning income, education, profession, housing and services has been collected before and after their displacement using a structured question paper on 4 displaced families. Among the informants were local government officials, NGO activists and community leaders. Focus group negotiations have been realized by the real experiences of displaced men and women. The secondary information has been collected from government publishing, research articles, NGO reports and newspaper archives. The quantitative data collected has been analyzed using statistical software such as SPSS or Excel, and the quality of interviews and discussions have been analyzed through thematic analysis so that important genre and interpretation can be highlighted. The whole process of research has maintained moral criteria - working on the consent of the donors, protecting privacy and maintaining cultural sensitivity on the field. Although some restrictions such as access to access or biased self-report may arise, the systemic structure of this study will help to highlight a relevant and based image of the complex impact of river erosion-related displacement in Mehendiganj.

4. Results

This chapter provides an organized presentation of the collected data through the use of tables and visual elements. Various analytical tools, including frequency distributions, bar graphs, and pie charts, have been employed to ensure the data is both clear and accurate. These visual tools are thoughtfully selected to emphasize specific details within the dataset. By utilizing such aids, the insights and opinions of respondents become more transparent and easier to interpret. This approach highlights trends and patterns in the data, offering a more in-depth understanding of respondents' viewpoints.

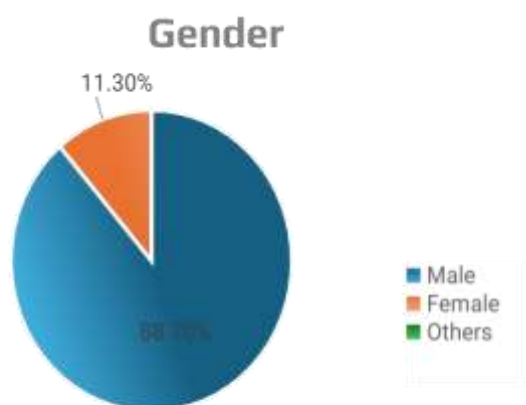
Age of Respondents



Source: *Field data, 2025*

The pie chart titled “Age” illustrates the age distribution of 106 respondents affected by riverbank erosion and internal displacement. The largest group of respondents, making up 45.3%, are aged above 50, highlighting that older individuals are the most affected demographic in this study. This may indicate long-term residence and deeper socio-economic ties to the riverbank areas. The second largest group, 32.1%, falls within the 18–30 age range, representing young adults who may face challenges related to livelihood and education due to displacement. Meanwhile, 22.6% of respondents are aged 30–50, showing a relatively smaller but still significant portion of the working-age population. This age distribution suggests that any policy or intervention should be age-sensitive, particularly considering the vulnerabilities of both elderly and younger populations.

Gender of Respondents:

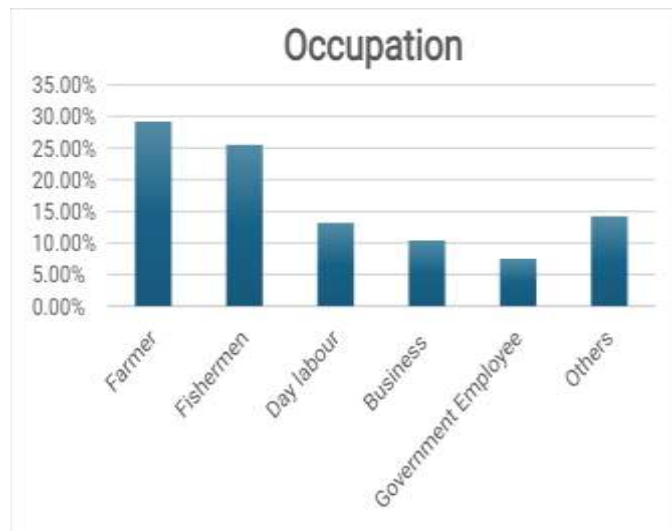


Source: *Field data, 2025*

The survey data shows that among 106 respondents affected by riverbank erosion and internal displacement, 88.7% were male and 11.3% were female, indicating a male-dominated response. This may reflect household

representation or social norms influencing participation. In terms of education, a significant number had no formal education, suggesting limited access to learning opportunities. These findings highlight the socio-demographic challenges faced by displaced populations, underlining the importance of gender-inclusive approaches and educational support in policy and intervention planning.

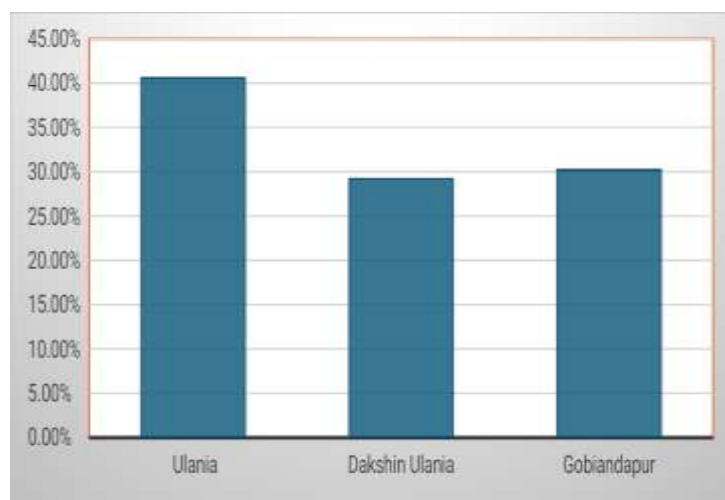
Occupation of Respondents:



Source: Field data, 2025

The survey data reveals that the majority of respondents affected by riverbank erosion are farmers (29.2%), followed by fishermen (25.5%) and day laborers (13.2%). Others include businessmen (10.4%), government employee (7.5%), and miscellaneous occupations (14.2%). This indicates a high dependence on agriculture and fishing—livelihoods highly vulnerable to riverbank erosion. In terms of current residence, the highest proportion of respondents now live in Gobindapur Union (30.2%), followed by Dakshin Ulania and Uttar Ulania. These shifts highlight patterns of internal displacement and the occupational challenges faced by affected communities in erosion-prone areas like Mehendiganj.

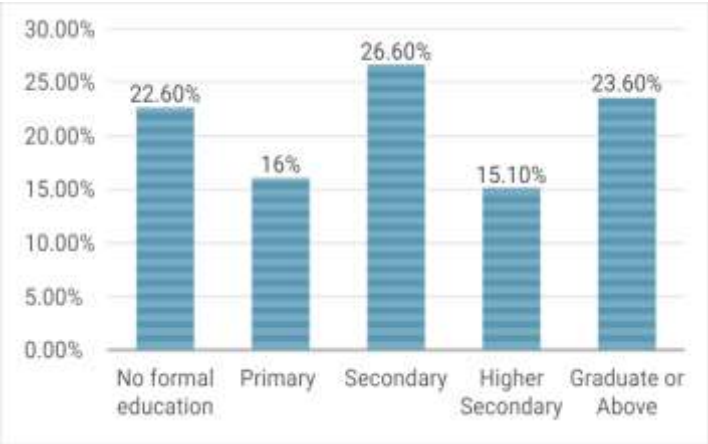
Current Place of Residents (Union)



Source: Field data,2025

The data on the current place of residents highlights the distribution of displaced individuals across three unions in Mehendiganj upazila. Uttar Ulania accounts for the highest proportion, with 40.6% of the displaced population now residing there. This suggests it may offer relatively safer ground or better access to basic services and social networks. Gobiandapur follows with 30.2%, indicating its growing role as a host area, while Dakshin Ulania hosts 29.2% of the displaced population. The near-even distribution between the latter two unions reflects the widespread impact of riverbank erosion across the region and the adaptive movements of affected communities seeking stability and livelihood opportunities within nearby, less vulnerable areas.

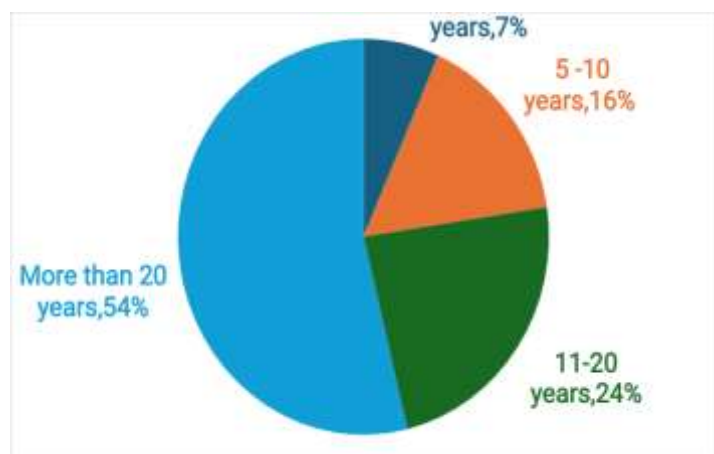
Education Level



Source: Field data, 2025.

The histogram representing the education level of respondents shows a varied distribution. A significant portion, 22.6%, have no formal education, indicating a critical need for basic educational outreach. An equal percentage, 22.6%, have completed secondary education, showing moderate literacy. Primary education accounts for 16%, suggesting that a segment of the population has only basic schooling. Meanwhile, 15.1% have reached higher secondary level, and the highest percentage, 23.6%, are graduates. This peak at the graduate level reflects growing access to higher education in the area. The histogram highlights both educational progress and existing gaps, which are crucial in understanding community resilience and development, especially in disaster-prone regions like Mehendiganj.

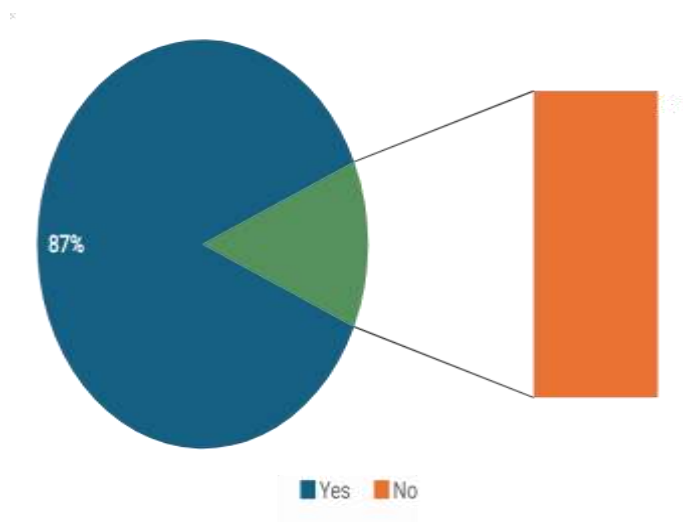
How long they have been in Mehendiganj



Source: field data, 2025.

The data on the duration of residency in Mehendiganj indicates a predominantly long-term population. A significant 53.8% of respondents have lived in the area for more than 20 years, while 23.6% have resided there for 11 to 20 years. Additionally, 16% reported living in the region for 5 to 10 years, and only 6.6% have been residents for less than five years. When presented in a histogram, the distribution clearly shows that most residents have longstanding ties to the area. This suggests a community deeply rooted in place, with likely generational presence and strong social networks. It also implies that many have directly experienced the long-term impacts of riverbank erosion and may possess valuable insights and adaptive strategies for coping with displacement.

How many of them faced displacement

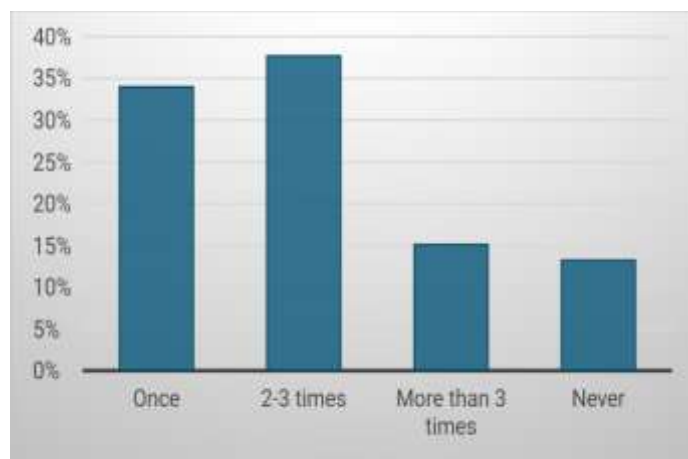


Source: Field data, 2025.

The data reveals that a significant majority, 86.8%, of respondents have experienced displacement due to riverbank erosion, indicating a severe impact on the local population. Only 13.2% reported not being displaced, highlighting the widespread nature of this issue. This high displacement rate underscores the urgent need for

effective mitigation strategies and support systems to address the socio-economic challenges faced by affected communities.

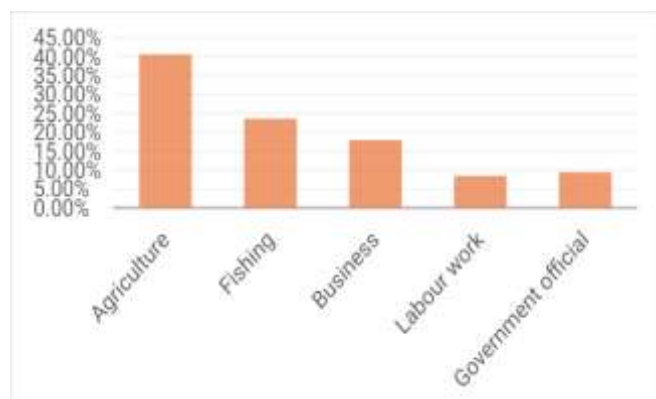
Times they have been displaced



Source: Field data, 2025

The data indicates that riverbank erosion has caused repeated displacement for many individuals. About 34% of respondents have been displaced once, while a larger portion, 37.7%, have faced displacement two to three times, showing a pattern of recurring vulnerability. Moreover, 15.1% reported being displaced more than three times, which highlights the chronic and ongoing nature of the problem. Only 13.2% have never been displaced, suggesting that the vast majority of the population in the affected area has been impacted. These findings emphasize the severity of riverbank erosion and the pressing need for long-term, sustainable interventions to protect vulnerable communities and reduce the frequency and impact of displacement.

Source of income before displacement



Source: Field data, 2025

The data reveals that before displacement, agriculture was the primary source of income for 40.6% of respondents, making it the most dominant livelihood in the affected area. This is followed by fishing at 23.6%, reflecting the community's reliance on river-based occupations. Business activities accounted for 17.9%, indicating a moderate level of entrepreneurial engagement. Day labour represented 8.5%, suggesting

a smaller segment depended on irregular, low-income jobs. Government employment was the least common, at 9.4%, highlighting limited access to formal employment opportunities. This income distribution shows that the majority depended on natural resources and informal sectors, making them highly vulnerable to environmental shocks like riverbank erosion, which severely disrupts traditional livelihoods and deepens economic instability after displacement.

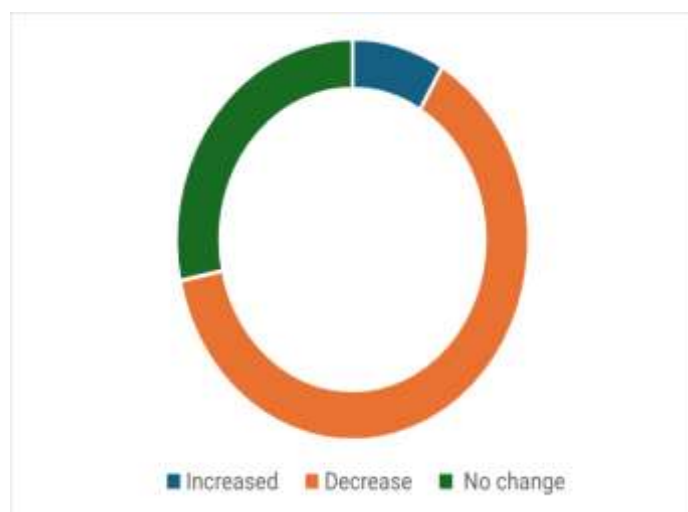
Current source of income



Source: Field data, 2025

The data presents a clear picture of the primary sources of income among the local population, reflecting both economic dependency and vulnerability. Fishing is the most prevalent occupation, involving 29.2% of respondents, which emphasizes the community’s reliance on aquatic resources. Unemployment is notably high at 22.6%, indicating a significant portion of the population lacks regular income, possibly due to limited employment opportunities. Farming accounts for 18.9%, showing the importance of agriculture, although it is no longer the dominant livelihood. Business activities support 17.9% of the population, suggesting some engagement in small-scale trade and commerce. Government jobs are held by 11.3%, reflecting limited access to stable, formal employment. These figures highlight the need for income diversification and job creation initiatives.

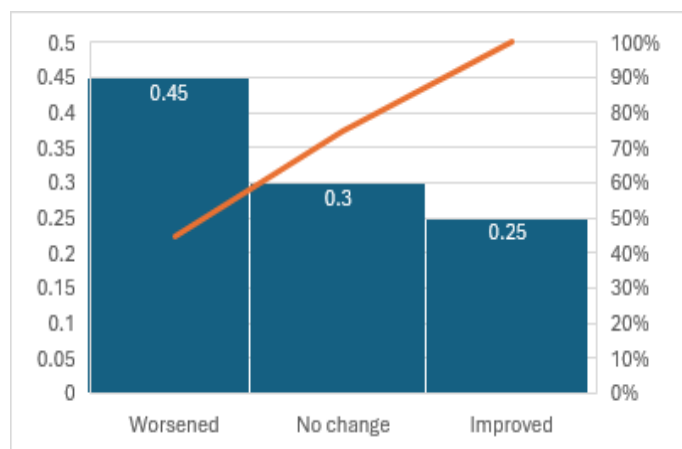
Impact on household of displacement



Source: Field data, 2025

After displacement, household income experienced notable changes, with the majority of respondents (63.2%) reporting a decrease. This decline suggests significant economic hardship, likely due to the loss of property, land, and employment opportunities. In contrast, only 8.5% of households saw an increase in income, which may reflect successful adaptation, access to new income sources, or support from aid programs. Meanwhile, 28.3% reported no change in their income, possibly due to consistent employment or stable livelihood options despite relocation. Overall, the data reveals that displacement has had a predominantly negative impact on household income, deepening economic vulnerability for many families.

How has access to the following services changed after displacement? (Education, Health, Water and Sanitation)

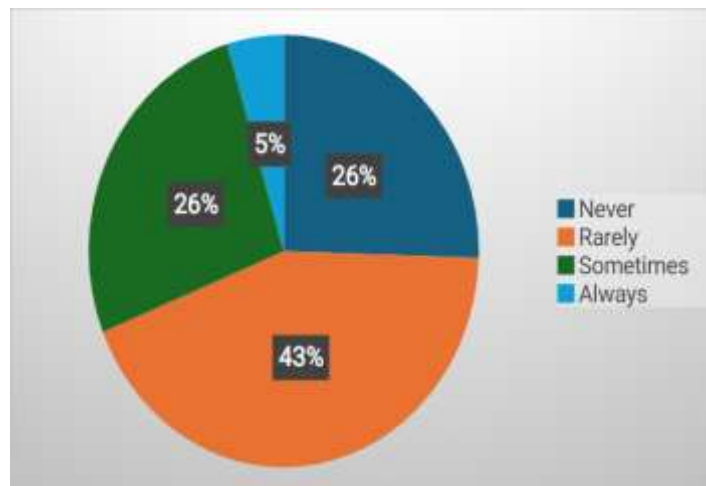


Source: Field data, 2025

Access to essential services such as education, health, water, and sanitation has been significantly affected by displacement. According to the data, 58.5% of respondents reported a worsening in access to these services, indicating serious challenges in meeting basic needs after relocation. This may be due to inadequate

infrastructure, overcrowding, or limited service availability in resettlement areas. On the other hand, 21.5% experienced improvements, possibly due to relocation to areas with better facilities or targeted aid interventions. Meanwhile, 20% reported no change, suggesting some level of continuity in service access. Overall, the data highlights a predominantly negative shift post-displacement.

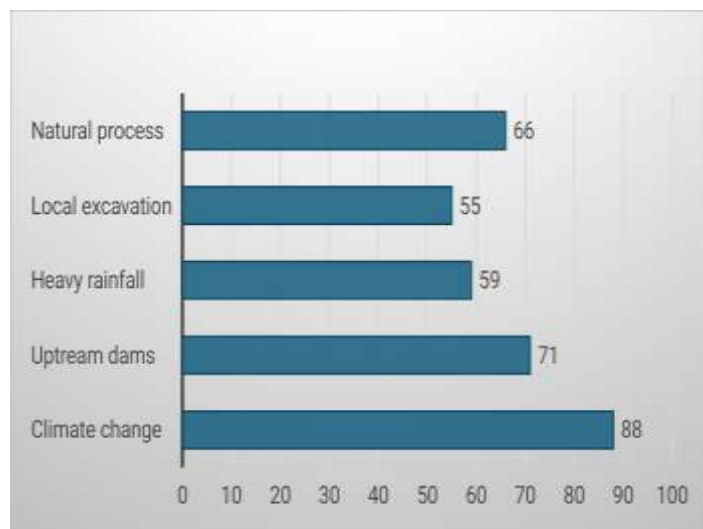
Has any local or representatives visited your area after riverbank erosion?



Source: Field data, 2025

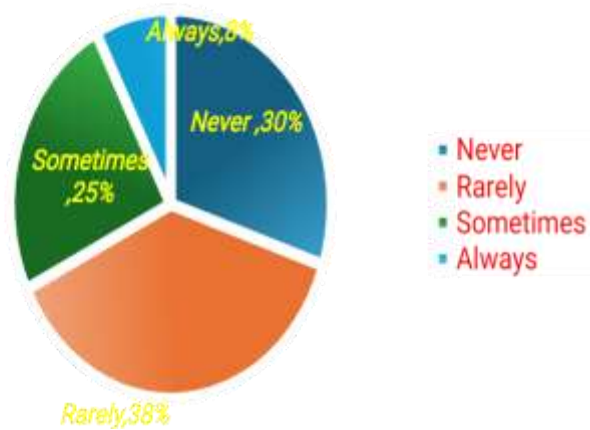
The survey results indicate a concerning lack of consistent engagement from local government representatives following riverbank erosion. A significant 43.4% of respondents stated that visits from officials are rare, while 25.5% reported they have never seen any representative in their area after such incidents. Only 26.4% said visits happen occasionally, and a mere 4.7% claimed they are regularly visited. This suggests that most affected communities feel neglected by their local authorities, pointing to a critical gap in disaster response and support mechanisms that needs urgent attention to ensure better resilience and accountability.

In their opinion, what are the main causes of River bank erosion (Select multiple options)



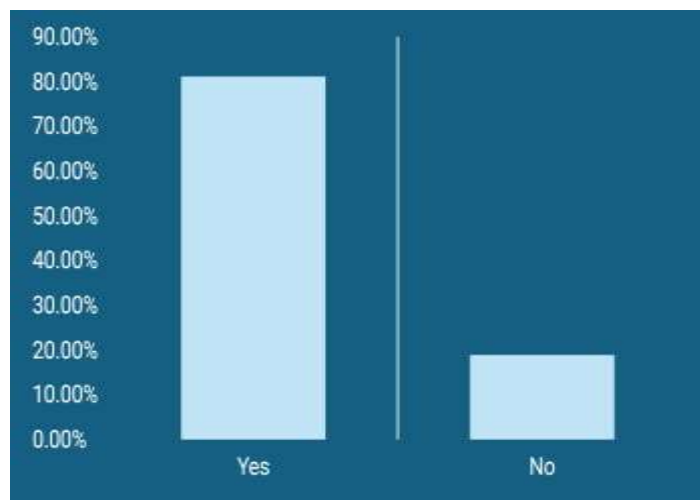
Source: Field data, 2025

The histogram presents respondents' opinions on the primary causes of riverbank erosion based on 106 responses. The majority (83%) identified climate change as the most significant factor, highlighting growing concerns over global environmental shifts. Upstream dams and river control structures were the second most cited cause (67%), indicating the impact of human interventions in river systems. Natural processes also contributed notably, with 62.3% recognizing them as a key factor. Heavy rainfall and floods (55.7%) and local excavation or sand mining (51.9%) were also perceived as major contributors. These results suggest that both human activities and natural phenomena are closely intertwined in accelerating riverbank erosion, requiring integrated and multifaceted solutions for long-term mitigation and community protection.

Do you believe elected representatives raise your voice regarding riverbank erosion?**Source: Field data, 2025**

The data shows that a significant portion of respondents feel that their elected representatives do not effectively raise their concerns regarding riverbank erosion. Specifically, 38.7% believe that representatives “rarely” raise their voice, while 32.1% stated that they “never” do so. About 24.5% felt that the issue is addressed “sometimes,” and only a small minority, around 4.7%, believe that representatives “always” advocate on their behalf. This suggests a strong perception of political neglect or insufficient advocacy among affected communities. The findings highlight a need for greater accountability and more active engagement from elected officials to address the pressing concerns related to riverbank erosion.

Do you think political will is necessary to solve riverbank erosion and displacement?

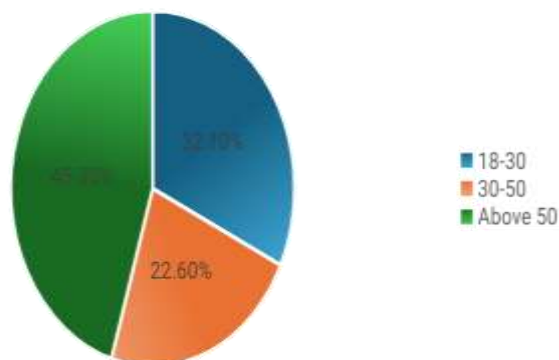


Source: Field data, 2025

The data shows that a significant majority, 65.3%, believe political will is necessary to address riverbank erosion and displacement, indicating strong public recognition of the government's role in finding sustainable solutions. Only 12.7% disagree, suggesting limited confidence in non-political or alternative approaches. Meanwhile, 22% remain neutral, which may reflect uncertainty or lack of awareness about political influence on environmental and displacement issues. Overall, the data highlights that most respondents view political commitment as a crucial factor in effectively tackling the challenges posed by riverbank erosion and the resulting displacement.

Is there any government or disaster management committee working in your area?

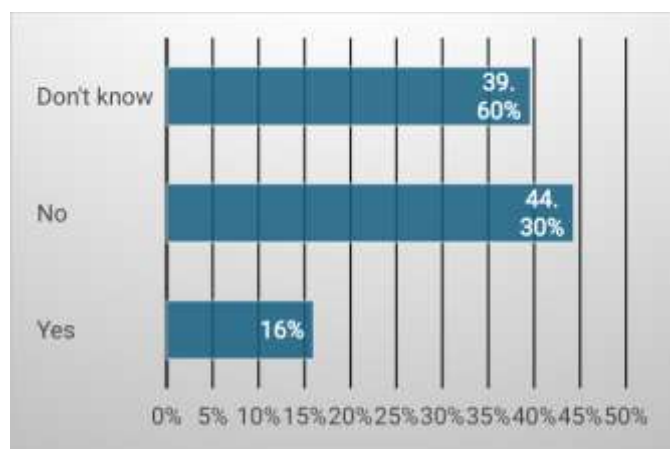
38



Source: Field data, 2025

The data reveals that awareness and presence of government or disaster management committees in the area are notably low. Only 16% of respondents confirmed the existence of such committees, while a significant 44.3% stated that there is none. Additionally, 39.6% of respondents reported not knowing whether any committee exists, indicating a substantial information gap or lack of community engagement. This suggests either a deficiency in disaster management infrastructure or poor communication between authorities and local residents. The findings highlight the need for stronger institutional visibility, community outreach, and better coordination to ensure effective disaster preparedness and response in the region.

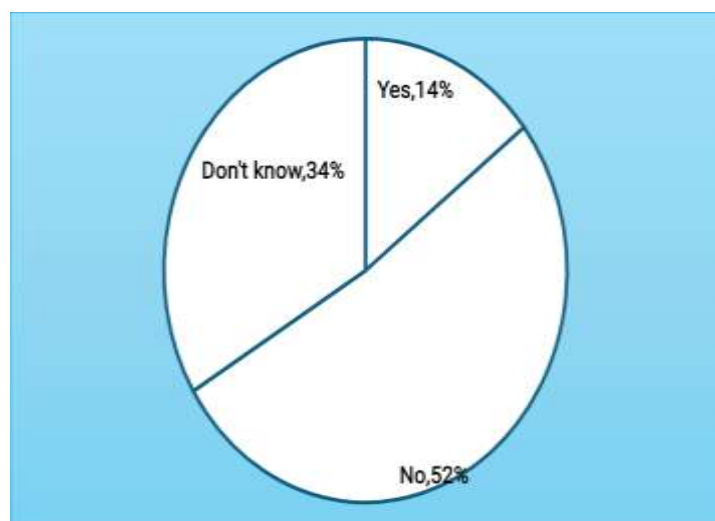
Is there any government or disaster management committee working in your area?



Source: Field data, 2025

The data indicates a concerning lack of awareness and presence of government or disaster management committees in the study area. Only 16% of respondents confirmed the existence of such committees, while a significant 54.3% stated that no such body operates in their locality. Moreover, 29.6% of participants reported not knowing whether any disaster management committee exists. This suggests a critical gap in institutional presence and communication regarding disaster preparedness and response mechanisms. The absence or invisibility of these committees reflects a weakness in local governance and coordination, which could hinder effective disaster risk reduction and management efforts, especially in areas frequently affected by riverbank erosion and displacement.

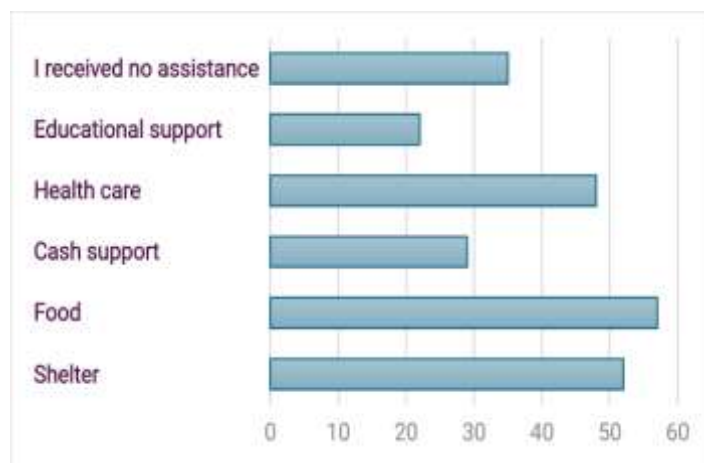
Does your community use any local or traditional methods to prevent riverbank erosion?



Source: Field data, 2025

The data indicates that the use of local or traditional methods to prevent riverbank erosion is limited in the study area. Only 24.4% of respondents reported that their community employs such methods, while a majority of 51.9% stated that no traditional practices are used. Additionally, 23.7% of participants were unaware of any such initiatives. This suggests a decline or lack of knowledge regarding indigenous practices that could contribute to erosion control. The findings highlight a potential gap in community-based adaptation strategies, pointing to the need for awareness programs and the integration of traditional knowledge with modern techniques to strengthen local resilience against riverbank erosion.

Have you received any assistance from NGOs or or private organisations (select multiple options)



Source: Field data, 2025

The data reveals the types of assistance received by individuals from NGOs or private organizations in response to riverbank erosion and displacement. Among the 104 respondents, food support was the most common form of aid (54.8%), followed by shelter (50%) and healthcare services (46.2%). Cash support was received by 27.9% of the participants, while 21.2% benefited from educational assistance. Notably, 33.7% of the respondents reported that they did not receive any kind of support. This indicates that although a significant

portion received basic needs assistance, a considerable number of affected individuals remain without adequate support from external agencies.

What kind of actions do you think the government should take to tackle riverbank erosion and internal displacement?

Based on respondents' feedback, several strategic actions are recommended to address riverbank erosion in Bangladesh.

A key priority is the construction of **durable embankments** using modern engineering materials such as geobags, concrete blocks, and steel reinforcements. These structures should be scientifically designed, regularly maintained, and based on river dynamics and flood risk assessments.

Regular river dredging is also essential to manage siltation and maintain river flow. Environmentally responsible dredging, guided by hydrological studies, can reduce pressure on vulnerable riverbanks.

Rehabilitation of displaced populations is critical, including provision of land, permanent housing, basic services, and livelihood support through vocational training to ensure long-term recovery.

Afforestation programs along riverbanks should be expanded, involving local communities in planting and maintaining trees to stabilize soil and reduce erosion.

Strict regulation of **illegal sand mining and soil extraction** is necessary, supported by modern monitoring tools such as drones and satellite surveillance.

A **national river erosion management policy** should be established to ensure coordinated planning, clear institutional roles, sustainable funding, and accountability mechanisms.

Community participation must be central, incorporating local knowledge into planning, monitoring, and awareness programs to improve resilience and preparedness.

In addition, a dedicated **river erosion monitoring cell** under relevant agencies should use GIS and satellite data for early warning and hotspot identification.

Finally, investment in **research and innovation** is needed to develop cost-effective and context-specific erosion control strategies.

1.22. What long - term solutions do you expect for tackling riverbank erosion? (e.g. embankment, construction, rehabilitation, compensation)

Analysis of community responses highlights three major long-term solutions to riverbank erosion: embankment construction, rehabilitation, and compensation.

Embankment construction is overwhelmingly viewed as the most important and effective solution. Most respondents described it as the primary or ultimate protection against river erosion. Embankments are seen not only as physical barriers but also as symbols of government action and security. Communities reported increased safety where embankments exist and emphasized the need for strong, well-engineered, and environmentally sustainable structures. However, concerns were also raised about proper maintenance and potential downstream erosion effects.

Rehabilitation is identified as essential for already displaced populations. Respondents stressed the need for planned resettlement with adequate housing, education, healthcare, and livelihood opportunities. Many viewed rehabilitation as a continuous process rather than a one-time intervention. They also highlighted the importance of location-specific planning and long-term integration into stable communities, while criticizing existing efforts for inadequate infrastructure and weak coordination.

Compensation is considered necessary for immediate relief but received mixed perceptions. While financial assistance is important for rebuilding lives, concerns were frequently raised about delays, corruption, and unequal distribution, reducing trust in existing systems.

Overall, respondents strongly support a **multi-pronged approach** combining embankment construction, rehabilitation, and fair compensation. They also suggested complementary strategies such as afforestation, community awareness programs, and regular dredging. These findings indicate that effective riverbank erosion management requires integrated physical, social, and institutional responses supported by strong accountability and community participation.

5. Findings

This study shows that riverbank erosion in Mehendiganj Upazila has caused repeated internal displacement and significant socio-economic disruption among long-term residents. The demographic profile indicates that 45.3% of respondents are over 50 years old, and 53.8% have lived in the area for more than 20 years, reflecting strong place attachment. A large majority of respondents are male (88.7%), while educational attainment is mixed, ranging from no formal education (22.6%) to graduate level (23.6%). Livelihoods have shifted drastically due to displacement. Before displacement, agriculture (40.6%) and fishing (23.6%) were the main income sources. After displacement, agriculture declined to 18.9%, while unemployment increased to 22.6%, though fishing remains important (29.2%). Moreover, 63.2% of respondents reported a significant decline in household income. Access to essential services has also deteriorated, with 58.5% reporting reduced access to education, healthcare, and sanitation. Displacement is widespread and recurring, as 86.8% have been displaced at least once and 52.8% more than once, highlighting the chronic nature of erosion in the area. Respondents identified climate change (83%), upstream dam construction (67%), and natural river dynamics (62.3%) as key causes of erosion. However, governance challenges are evident, as 68.9% believe elected representatives rarely advocate for them, and only 16% are aware of local disaster management committees. In terms of solutions, embankment construction is the most preferred intervention, followed by rehabilitation, dredging, and compensation. Yet only 54.8% reported receiving any government or NGO support, while just 24.4% engage in community-based adaptation practices. Overall, the findings highlight that riverbank erosion in Mehendiganj is a complex and recurring crisis requiring integrated solutions involving infrastructure development, effective governance, livelihood support, and community participation to reduce long-term vulnerability.

6. Limitations

Despite the comprehensive nature of this study on riverbank erosion and internal displacement in Mehendiganj Upazila, several limitations were encountered. Difficult access to remote and severely affected areas due to poor infrastructure and ongoing erosion risks limited the inclusion of the most vulnerable populations.

The cross-sectional design also restricted the ability to capture long-term socio-economic and political impacts, which require longitudinal analysis to better understand changing adaptation patterns over time.

In addition, bureaucratic barriers and limited transparency reduced access to official data, reports, and institutional records, constraining a full evaluation of government responses.

Some respondents, particularly displaced individuals, were reluctant to discuss sensitive political issues due to fear of repercussions, which limited deeper insights into governance and marginalization.

Time and resource constraints also limited detailed analysis of gendered and youth experiences, while the lack of reliable quantitative data made it difficult to assess economic costs and adaptation effectiveness.

These limitations highlight the need for future research that is more longitudinal, participatory, and data-rich in erosion-prone regions like Mehendiganj.

7. Conclusion

This study examined the socio-economic and political impacts of riverbank erosion and internal displacement in Mehendiganj Upazila, showing that erosion acts as both an environmental hazard and a major driver of livelihood loss, landlessness, and social disintegration. It also weakens community cohesion and identity while exposing significant governance gaps, including weak coordination, limited accountability, and inadequate rehabilitation efforts.

Although institutional responses remain largely reactive and fragmented, affected communities demonstrate notable resilience through indigenous knowledge and local adaptation practices. However, strained relationships between displaced populations and local governance systems highlight issues of trust, inclusion, and representation.

In conclusion, the study emphasizes the need for an integrated response combining infrastructure development, institutional reform, participatory governance, and community-based adaptation to effectively address erosion-induced displacement and reduce long-term vulnerability.

8. Recommendations

- ☐ Build durable embankments in the most erosion-prone areas using modern engineering and community participation.
- ☐ Conduct regular river dredging with proper environmental assessment to reduce pressure on vulnerable riverbanks.
- ☐ Strengthen local disaster management committees through training, funding, and active presence in affected unions.
- ☐ Provide inclusive rehabilitation support, including land, housing, and basic services for displaced families.

- ☐ Promote livelihood recovery through vocational training, financial assistance, and alternative income opportunities.
- ☐ Support community-based adaptation methods such as bamboo piling, tree planting, and homestead elevation.
- ☐ Improve access to education, healthcare, sanitation, and emergency services in affected and resettlement areas.
- ☐ Ensure transparency in aid distribution through monitoring systems and community grievance mechanisms.
- ☐ Increase communication between local representatives and affected communities through regular dialogue and participatory planning.
- ☐ Conduct long-term research on erosion impacts, including gender, youth, and adaptation strategies.

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