



IMPACT OF RIVER BANK EROSION OF THE CHURNI RIVER IN CHAKDAHA BLOCK UNDER THE DISTRICT NADIA , WEST BENGAL

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ABSTRACT :-

The Churni River, an arm or distributary of Mathabhanga River, originates from near Majhdia Nadia district (southern part of Nadia district of West Bengal, India) . Mathabhanga River, a distributary of Padma River, originates at Munshiganj in the Kushtia district of Bangladesh. It then flows towards India, and there, near Majhdia in the district of Nadia (of West Bengal), it splits into two rivers; Churni River and Ichamati River. In course of the journey of the Churni River, it passes through many important places such as- Hanskhali, Birnagar, Aranghata and Ranaghat. After its incessant journey of almost 56 kilometers, it flows into the river of Bhagirathi at Shivpur and Nadia-Hooghly near Chakdaha. The paper also represents about the impact of River bank erosion has many social and economic impacts. It makes people homeless as they lose their property and are forced to migrate to elsewhere. Sometimes it causes death. Humans become poor and valuable land is lost due to erosion. Among the countries of the world, Bangladesh has the highest river bank erosion of churni .

KEY WORDS :- 1. River Bank Erosion 2. Occupational Shift 3. Churni River

INTRODUCTION :-

River bank erosion occurs when water wears away at the banks of a river or stream. While river erosion is a naturally occurring process, human impact can increase its rate. While almost all rivers will have some amount of healthy river bank erosion, unstable rivers that have large amounts of erosion are cause for concern in chakdaha block . At the site of the erosion, issues can include loss of businesses and farmland, which can bring economic hardship to the area. Additionally, erosion can lead to homelessness and migration if people are forced to move. The most significant problem with river bank erosion is mass failure, which occurs when an entire section of the river bank collapses into the river in bank of Chanduria Gram panchayats in chakdaha block .



Chakdaha is located at 23°05'N 88°31'E. Chakdaha CD Block is bounded by Ranaghat I and Ranaghat II CD Blocks in the north, Bangaon CD Block, in North 24 Parganas district, in the east, Haringhata CD Block and Kanchrapara, Halisahar and Barrackpore I CD Block, in the North 24 Parganas district, in the south and Chinsurah-Mogra CD Block in Hooghly district, across the Hooghly River, in the west. Nadia district is mostly alluvial plains lying to the east of Hooghly River, locally known as Bhagirathi. The alluvial plains are cut across by such distributaries as Jalangi, Churni and Ichhamati. With these rivers getting silted up, floods are a recurring feature. Chakdaha CD Block has an area of 288.80 km². It has 1 panchayat samity, 10 gram panchayats, 307 gram sansads (village councils), 158 mouzas and 137 inhabited villages. Chakdaha police station serves this block. Headquarters of this CD Block is at Chakdaha. Gram panchayats of Chakdaha block/ panchayat samiti are: Chanduria I, Dewli, Dubra, Ghetugachhi, Hingnara, Silinda I, Silinda II, Tatla I, Tatla II and Rautari.

BACK GROUND OF THE STUDY :-

In 17th century Maharaja (Maharajah Krishna Chandra) ordered to build an artificial canal against the Bargees or Bergirs of Maharashtra and this the Churni River is a run-out part of it. The water division got parted when the Jalangi River changed its course down the canal. However, Anjana, the upper part of the distributary got dried up due to the alluvial sedimentation while the lower part formed Kata Kal (another name of the Churni River) which means “dug river”. During heavy rainfall in the monsoon season, the banks of the river get flooded as the water from Padma river induces into the river of the Churni but in the dry season, the volume of the water remains moderate. These days, the intensity of floods increases due to the excessive siltation that causes the loss of depth of the surface in Chanduria Gram panchayats, under chakdaha block. Cut to the present scenario, in Chanduria Gram panchayats, this river serves as an important pathway for water travel and trade. A part of it is filled with silt that includes many small islands (visible or submerged). However, the water of this river gets polluted day by day because of the discharge of industrial waste (organic or inorganic) water. As lots of people lived by the banks of the river, the water gets polluted because of various untreated sewage, garbage, liquid wastes of households as well.



Objective

1. To know the impact of river bank erosion on migrational trend in chanduria gram panchayats , under chakdaha block .
2. To know the impact of river bank erosion on occupational shifting trend in chanduria gram panchayats , under chakdaha block .

Hypothesis

1. **H₀₁** – There exists no relation between the impact of river bank erosion and migrational trend in chanduria gram panchayats , under chakdaha block .
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2. **H₀₂** - There exists no relation between the impact of river bank erosion and occupational shifting trend in chanduria gram panchayats , under chakdaha block .

Research Question

1. What is the impact of river bank erosion on migrational trend in chanduria gram panchayats , under chakdaha block .
2. What is the impact of river bank erosion on occupational shifting trend in chanduria gram panchayats , under chakdaha block .

Methodology/Procedure To Be Followed

Data Collection And Analysis

1. Primary data was collected from ganga proshadpur , raninagar , mukunda nagar villege .
2. Secondary data was collected from draft report – 2021 n.nadia district . "Provisional Population Totals, West Bengal, Table 4". Census of India 2001, Nadia district (10). Census Commissioner of India. Archived from *the original* on September 27, 2007. Retrieved 2011-03-25. "Provisional Population Totals, West Bengal. . Census of India 2001. Census Commission of India. Archived from *the original* on September 27, 2007. Retrieved 2012-04-12. "District Census Handbook Nadia, Series 20, Part XII A, 2011 census" .

- **Sampling Method**

The research was conducted by survey based method and also use simple random sampling and stratified random sampling for analysis of primary and secondary data .

Population And Sample

One block (chaduriya -I) was observed and Two g.p region (shib pur and mukunda nagar) was observed. Survey will be conducted on 150 families. Sample size should be 550 (public survey).

Delimitation Of Study

The area of research was delimited in only one block as chakdaha block and two grame panchayate as a shib pur and mukunda nagar GP.

The research was delimited only 600 male and 600 female rural resident of shib pur and mukunda nagar village region .

ANALYSIS AND INTERPRETATION :-**IMPACT OF FLOODS AND RIVER – BANK EROSION :-**

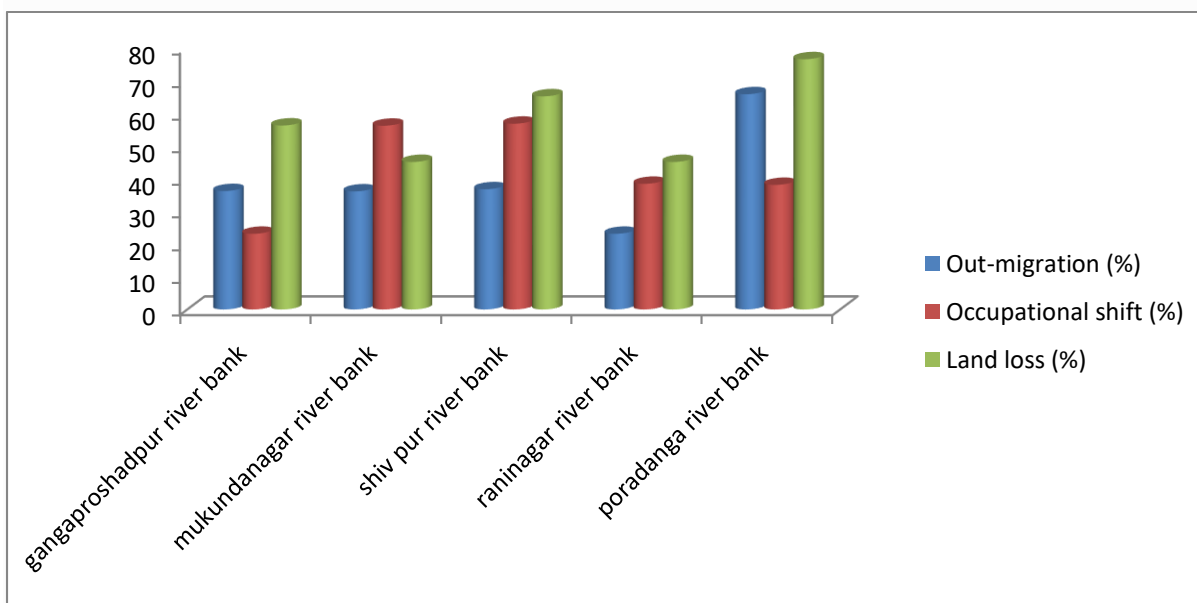
This section will present the impact of floods and river-bank erosion on the livelihoods of the inhabitants in Chanduria Gram panchayats , under chakdaha block. The floods and river bank erosion in the study area are quite severe, and these hazards have a wide range of negative impacts on people who reside there. The inhabitants are constantly under the threat of losing their agricultural lands, horticulture farmlands, their lives, houses, and livestock. They frequently have to displace their households to other places, leaving behind their homeland, which creates social instabilities and leaves them reeling under psychological distress. Due to the loss of land and resources, their income and employment opportunities are also reduced. Displaced people are compelled to resettle in open spaces, embankments, lands, or other parts of the emerging *chars* or river-banks, making their lives and livelihood more vulnerable in Chanduria Gram panchayats , under chakdaha block

OUT – MIGRATION :-

Out-migration is a very common phenomenon in the study area in Chanduria Gram panchayats , under chakdaha block. Migrant labour is a rapidly emerging livelihood option for the *char* and river-bank inhabitants. Several small farm holders and landless people have migrated to different metropolitan towns such as Delhi, Gujarat, Kerala, Mumbai, Kolkata, Asansol, and Bardhaman. They were once engaged in agriculture, but presently, they have become wage labourers due to the loss of their agricultural lands. In the slack period, they tend to return to their homelands. Most of the migration has been seasonal or temporary in nature. People mainly migrate during the rainy season when there is acute shortage of rural work and fewer opportunities of earning a livelihood. Therefore, the migrants return after the monsoon season and when bank erosion has stopped. Sometimes, they also return when crops are harvested or the mango and litchi cultivation happens. The impact of constant losses incurred by the river-bank erosion is also in Chanduria Gram panchayats , under chakdaha block, west Bengal .



Name Of Vilge (2015-2022)	Out-Migration (%)	Occupational Shift (%)	Land Loss (%)
Gangproshadpur River Bank	36.32	23.21	56.32
Mukundanagar River Bank	36.21	56.25	45.21
Shiv Pur River Bank	36.87	56.87	65.21
Raninagar River Bank	23.21	38.54	45.21
Poradanga River Bank	65.85	38.21	76.52



OCCUPATIONAL SHIFT :-

In Chanduria Gram panchayats , under chakdaha block , After losing their land holdings, people are forced to relocate and resettle their homes in different places (newly emerged *chars*, embankments, and *patta* land). After displacement, they also lose their sources of income. Therefore, they have to shift their occupation. However, there is a slight decrease in the number of agriculture labourers after erosion-induced

displacement. A massive enhancement has been noticed in the percentage of the casual manual labourers, which was 35.14% before erosion-induced displacement, but rose to 24.33% after the displacement. According to the people's perception, the leading cause of this occupational shift is the loss of fertile agricultural lands in Chanduria Gram panchayats , under chakdaha block .

LAND LOSS :-

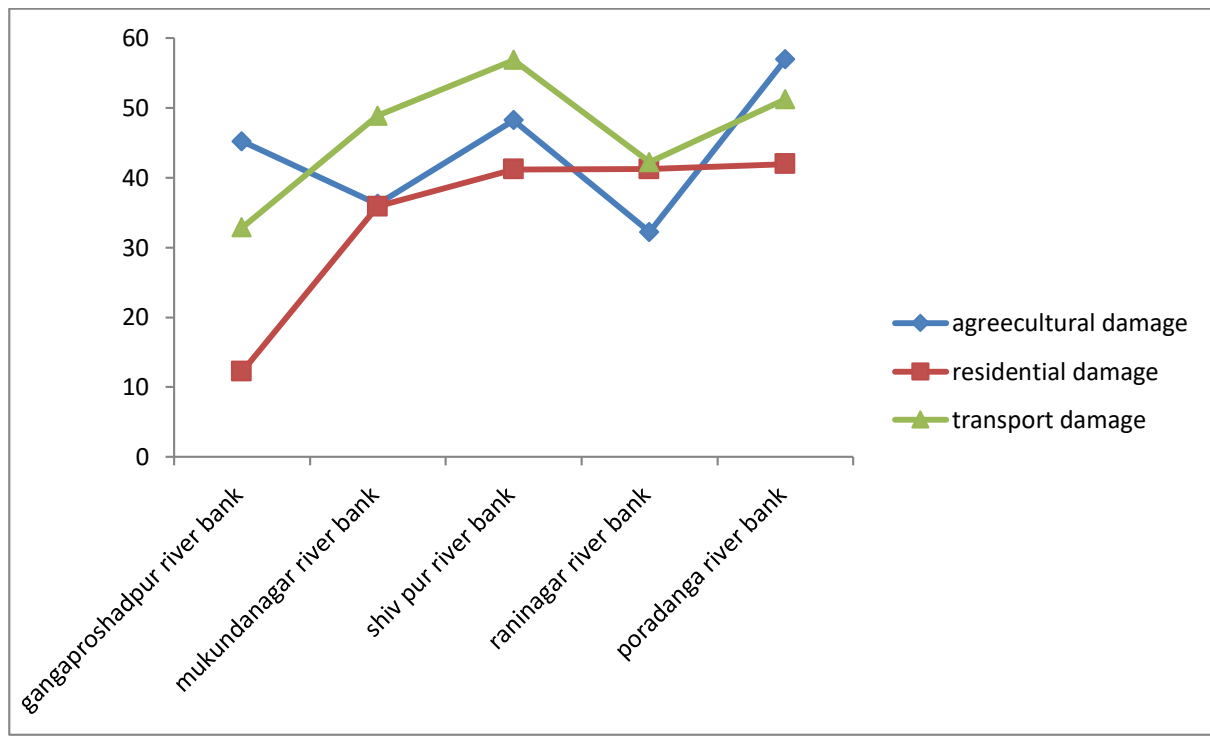
River-bank erosion creates land loss at a large scale in chakdaha block . Several hectares of land, including homesteads, fertile lands, and mango gardens/orchards, are washed away by the river due to river-bank erosion in bank of chakdaha river basin . In the in Chanduria Gram panchayats , under chakdaha block , some people have lost more than half of their land.

Different types of the land which generally get eroded during floods and river-bank erosion. It has been found that around 22.63 of respondents have lost agricultural lands which forced them to shift their occupation into wage laboring .

Agriculture In Chanduria Gram Panchayats , Under Chakdaha Block :-

Although the Bargadari Act of 1950 recognised the rights of bargadars to a higher share of crops from the land that they tilled, it was not implemented fully. Large tracts, beyond the prescribed limit of land ceiling, remained with the rich landlords. From 1977 onwards major land reforms took place in West Bengal. Land in excess of land ceiling was acquired and distributed amongst the peasants. Following land reforms land ownership pattern has undergone transformation. In 2013–14, persons engaged in agriculture in Chakdaha CD Block could be classified as follows: bargadars 2.70%, patta (document) holders 10.54%, small farmers (possessing land between 1 and 2 hectares) 5.64%, marginal farmers (possessing land up to 1 hectare) 26.68% and agricultural labourers 54.44%. As the proportion of agricultural labourers is very high, the real wage in the agricultural sector has been a matter of concern also in Chanduria Gram panchayats , under chakdaha block .

name of villege	agrecultural damage	residential damage	transport damage
gangaproshadpur river bank	45.21	12.24	32.85
mukundanagar river bank	36.21	35.89	48.87
shiv pur river bank	48.21	41.21	56.87
raninagar river bank	32.21	41.25	42.21
poradanga river bank	56.98	41.96	51.25

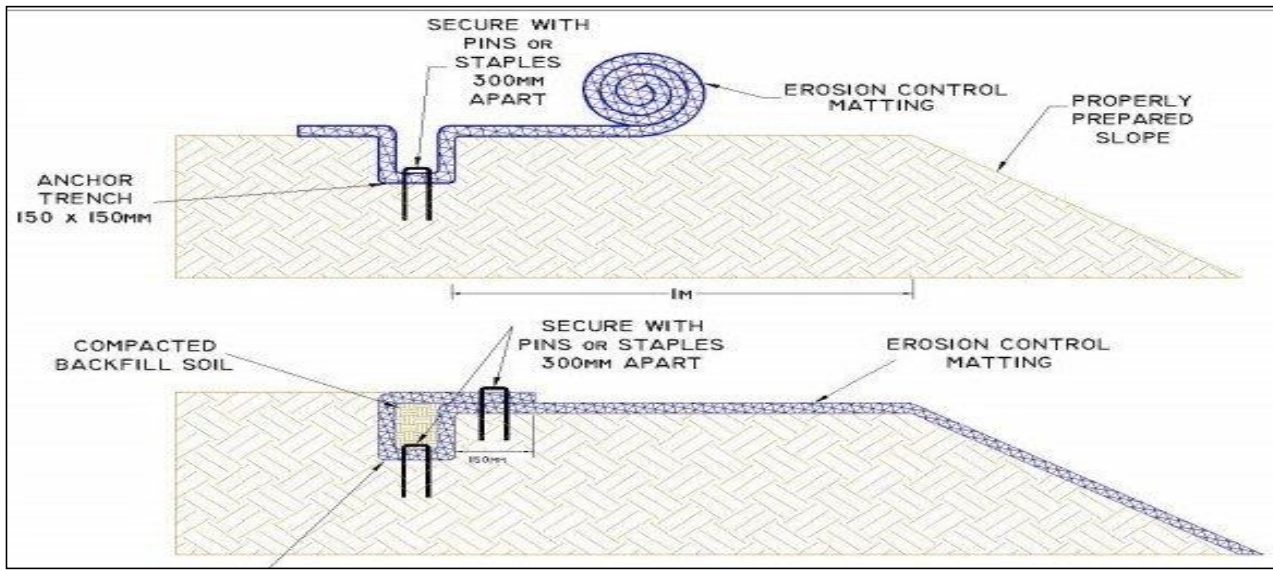


RIVER BANK EROSION CONTROL METHODS :-

There are several methods to control river bank erosion and protect the bank in Chanduria Gram panchayats, under chakdaha block

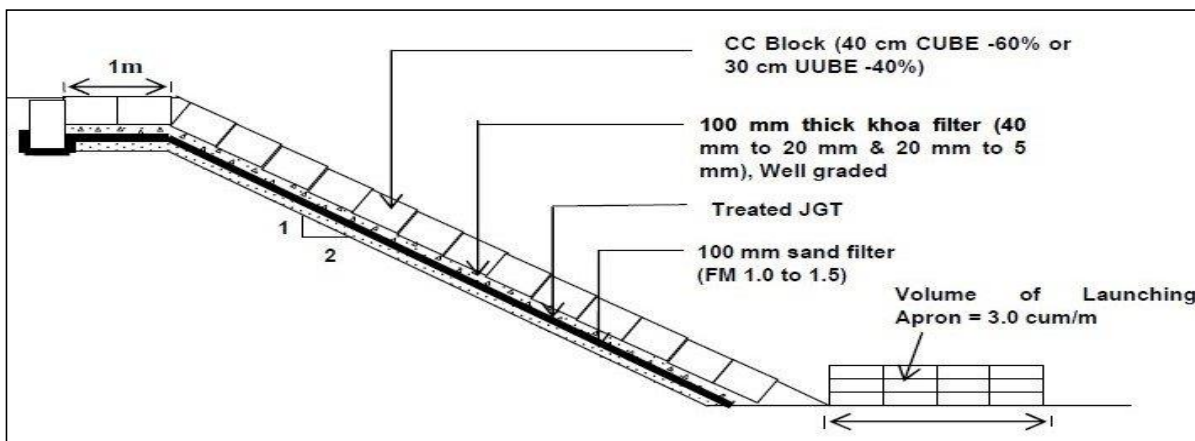
Soil erosion mats or blankets

Soil erosion mats or blankets are stabilization fabric which reinforce the soil and support the bank until plants are ready to take root. They help to slow down the flow velocity of water along the surface. The main purpose is to retain the soil and prevent from shifting away. They maintain ideal grow condition as well as protect and cover the soil. Thus they prevent formation of gullies. They can be used on a flat surface or a steep slope area.



CONCLUSION AND RECOMMENDATIONS :-

While river bank erosion is an ongoing issue in Chanduria Gram panchayats , under chakdaha block, there are certain river bank control methods available that can slow down or even stop the process. Because erosion occurs in a natural environment on the water, most people prefer to use natural materials to control river bank erosion in Chanduria Gram panchayats , under chakdaha block . River-bank erosion and floods are unpredictable, devastating hazards in Chanduria Gram panchayats , under chakdaha block . Their impacts put the livelihood of the inhabitants at risk, forcing them to live lives full of uncertainty. However, all the communities prone to floods and river-bank erosion are not equally vulnerable.



The impact may vary according to time and space. People living along the river-bank are affected by bank erosion and floods, but the impacts are more severe in the *char* areas. The people of the *char* are more vulnerable and prone to hazards than river-bank people due to its isolation from the mainland. However, the situation of the people residing along the river-bank is not straightforward either. River-bank erosion takes away everything from the poor inhabitants, including their homes, leaving them with no option other than migration. They are compelled to resettle in open spaces, on embankments, in areas of Chanduria Gram panchayats , under chakdaha block .

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