



IMPACT OF FLOOD ON SOCIO-ECONOMIC ENVIRONMENT ON LOWER DAMODAR BASIN: A CASE STUDY ON CHABBISHPUR MOUZA OF HOOGHLY DISTRICT IN WEST BENGAL.

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Abstract

Flood is an overflow of water that submerges land from water bodies like rivers, lakes etc. Yet it is a natural of quasi natural phenomenon but its effects become vulnerable and disastrous. Chabbishpur mouza in Khanakul-I block of Hooghly district is situated over lower Damodar basin, which was affected by flood in the last year due to huge amount of water discharge from Damodar River and Harinakhali khal (braided from Mundeswari River) during monsoon period. Different civic amenities like education, healthcare, electricity, storage, transport and communication, etc have been highly affected by the natural calamity. Agricultural activity which is back bone of economy of this region was also reversed. This survey report has been prepared to present the impact of flood on the socio-economic environment of the study area in 2021 with some recommendations regarding the sustainable management of flood condition in future.

Introduction

Flood means inundation of vast land area with water for long days (Singh, 2006). Flood may occur when water overtops and breaks levees during peak discharge period, resulting in some that water escaping its usual boundaries, or it may occur due to an accumulation of rain water on low lying riverine tract. India is located under the monsoon climatic region. Due to heavy downpour, when rivers and water bodies reach in extreme capacity to hold water and then excess water creates flood. Floods are occurred by the river which bring huge amount of sediment (Laha, Chatterjee and Bera, 2014). Flood also causes enormous damages to the life and property of human beings. The causative mechanism of flood may be physical and

anthropogenic (Khan, 2016). Floods in this area occur only for high discharge from barrages of DVC and excess rainfall during monsoon period. The width of Damodar valley is increasing day to day while depth and gradient is also decreasing (Bera and Mistry, 2014). In this year the embankment of Damodar near Udaynarayanpur and embankment of Mundeswari near Balipur were broken. Besides the embankment of Harinakhali khal which is one of the distributaries of mundeswari river is flowing through chabbishpur village was also broken. Flood occurred due to the accumulation of the river water from the broken embankments of Damodar, Mundeswari and Harinakhali khal in chabbishpur and its surrounding region.

The study area:

Chabbishpur mouza is located between Damodar and Mundeswari rivers basin. The location of the study area is 22°42'16"N and 87°55'36"E. The village is situated to the south eastern corner of the Khanakul-I block in Hooghly District, West Bengal. This study area is located in the low lying flood plain region. The village is totally surrounded by rural flat villages. To the north Badaipur mouza, south Balaichalk mouza, west Parchabbishpur mouza and east Subal chalk mouza are situated. Harinakhali khal , one of the distributaries of mundeswari river is flowing from north to south direction in the eastern part and canals of Damodar river through central part of chabbishpur are flowing. The average levels of water of these water bodies are high.

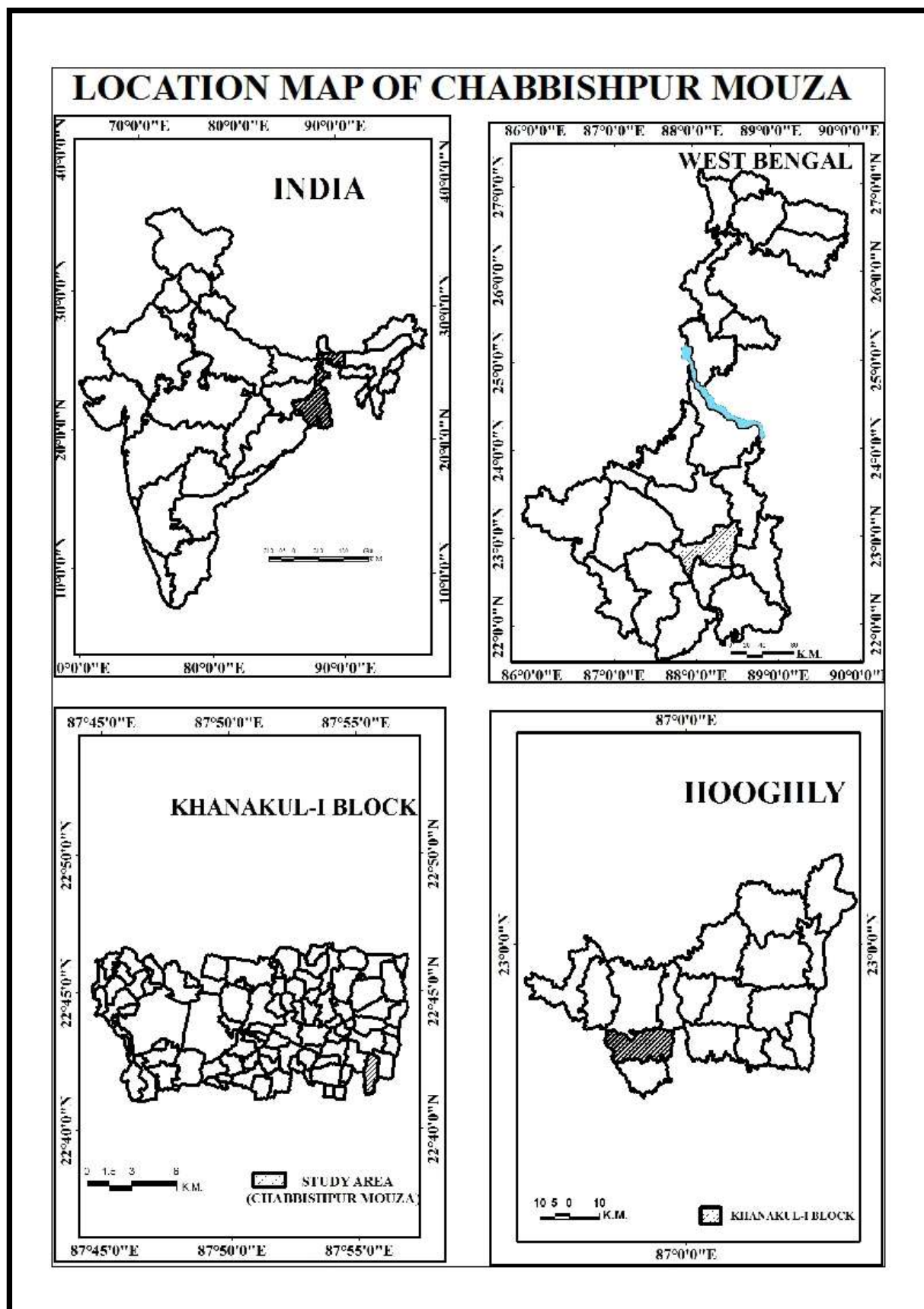
Objectives:

The main objectives of the study are –

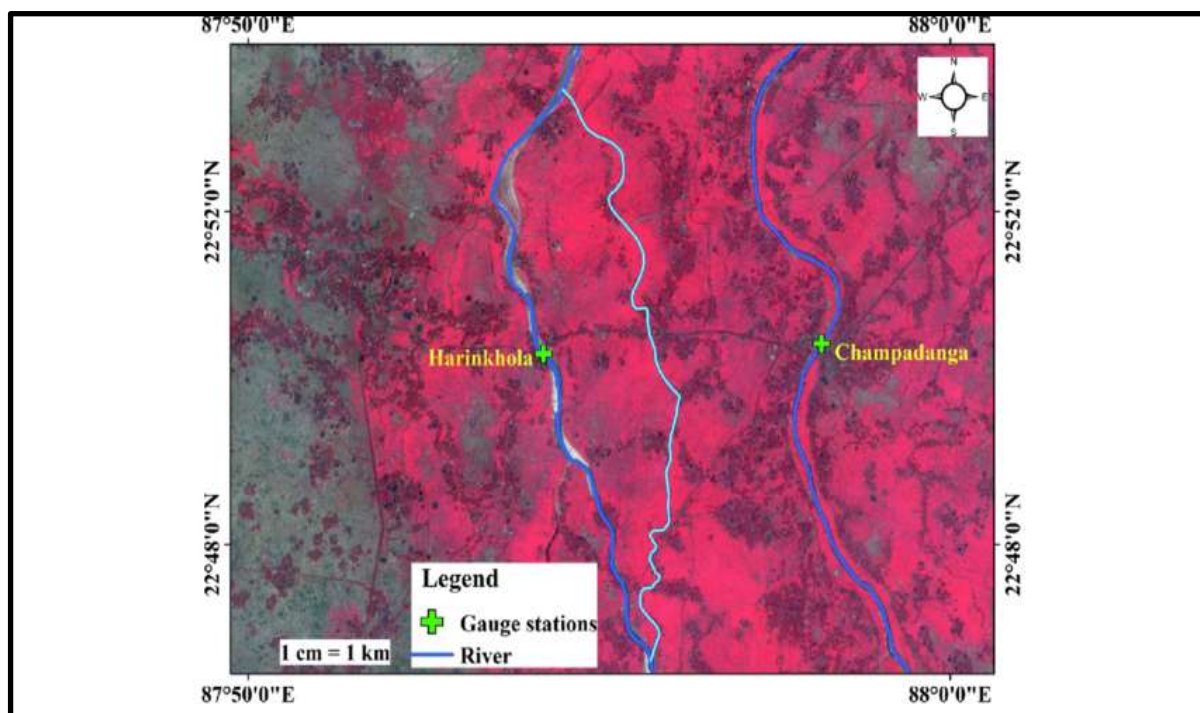
- To identify the economical loss due to flood.
- To find out impacts of flood on the social environment during flood.
- To find out problems faced by the residents during the flood period.

Database and methodology:

Both primary and secondary data have been used for the study. Secondary data i.e. damage related data, relief materials related data were collected from local panchayet office and Khanakul-I block development office. Primary data was collected by perception study of the people of concerned area. Primary and secondary data have been tabulated with the help of Microsoft Excel and map of study area has been prepared using GIS software.



DAMODAR AND MUNDESWARI RIVER IN SATELLITE IMAGERY



Impact of flood on social environment

Although flood is a natural or quasi natural hazard but its effects are found everywhere (i.e. physical, social, economic environment.). In the study area the social environment and social spaces like school, market, transport network etc became totally unusable due to water logging condition during the period of flood.

Education system

One primary and upper primary school, two ICDS centres are present in this mouza. Due to the water logging condition during flood, all roads were submerged. All the school premises became water logged. One high school of nearest village Balaichak was closed about fifteen days during flood period. Students who were engaged with higher education detached from their institutions.

Transport

In 2021 when excessive water from Mundeswari River reached in this area became totally disconnected. Height of flood water became near about fifteen feet in this region. It has been identified during secondary data analysis that 66 metres embankment breached, 1.2-kilometre metalled road damaged in this mouza. One culvert and one bamboo made bridge



were collapsed by flood. It has been noticed during perception study that 71% area of this village was fully submerged and 29% area was semi-submerged.

Health service

In Chabbishpur only one health care centre give service to the residents of the village. Due to less connectivity during flood period no health services were provided to villagers. It has been noticed during the perception study on the effect of flood that about 61.79% people suffered from fever, 15.73% by skin infection, 12.35% by diarrhoea etc. About 70% people received very poor health services from the local health care centre.

Drinking water

Most of villagers suffered from the crisis of drinking water. Without any filtration they had to drink water which pushed them to diarrhoea type diseases. During field survey it has been found that only 17% resident used drinking water by boiling but 83% flood affected residents used without any filtration. During flood period some pouches of drinking water were collected by the villagers from government organizations and some local clubs.

Problems in daily life

Villagers became helpless after flood in 2021. Different types of problems were faced by the villagers during flood period. During primary field survey it has been noticed that 24.02% resident were suffered from food, 27.93% residents from the unavailability of drinking water, 20.11% from damage of sanitation and most of people from the damage of transport route.



Breakdown of a Bamboo made bridge on mundeswari River beside the Chabbishpur Village

Pollution

Huge amount of air pollution took place when the height of flood water decreased. Most of crops, orchard etc. were decomposed by the flood water. Lots of paddy, jute, some vegetables and banana, jackfruit etc. were decayed in everywhere. Water pollution was a great problem during flood. These types of pollution were a great problem during flood. These pollutions were creating different kinds of diseases.

Electric service

Electricity is one of most vital service during flood period. Electric service helps people to keep safe themselves from living creatures like snake, insects etc. A perception study was held to understand the electric service during flood. Some areas which fully submerged under flood water were disconnected from electricity. But the residents of semi submerged area under flood water got moderate electric service. In study area three electric posts were fallen. For this reason a large part of area disconnected from electricity during flood period.

Impacts on Economic environment

Economic condition of the study area was inverted like the social environment during the flood period. Economic transaction was totally collapsed in the flood period. Though there were some variations among the economic loss of this area. The residents of the study area faced different problems during flood period like crop failure, collapse of houses, loss of cattle and their shelters, loss of daily usable household articles etc.

Loss of properties and Agricultural products

Total 60.52 % of residents lost their agricultural crops, 31.57% houses were damaged and 7.89% household lost their cattle. Agricultural crops were totally damaged due to high level of flood water. It has been identified from secondary data that 81.77% land of this mouza practised as cultivable land. During field survey it has been noticed that 46.49% people lost rice, 47.36% jute and 6.14% vegetables.



Impact of flood situation in the study area due to excessive water discharge and overflow through Mundeswari River in 2021.

Relief and Rehabilitation

Various problems were raised after water logging condition. Some residents became homeless, suffered from the crisis of basic nutrition and various diseases. Even some people had no sufficient food for their children. Some types of relief materials distributed by Government and NGOS which were not sufficient. Some residents took shelter in primary school. Some residents left the place temporarily and went to the home of their nearest relatives. 130 piece tarpaulin, 6 packet potato, 15 packet rice, 7 bag chira, 5.5 packet cattle feed, 60 packet baby food were distributed among the flood affected people . Relief materials were not sufficient for the flood affected villagers of this mouza. Those materials, which was distributed among villagers hardly satisfied them for one day.

Recommendations

The impacts of flood can be minimised by man's technological skill, better warning systems and various measures adopted by the government. Some measures which can be taken by man to reduce the impact of flood-

1. Flood forecasting news should be announced at least before twenty four hour so that the residents can leave the place with valuable properties.

2. Permanent brick built rescue camp should be constructed to protect the flood affected people in future.
3. A good integration is needed among the local people, Government and NGO so that the flood affected people can receive some basic needs like dry food, drinking water, first aid treatment etc.
4. The depth of river valley should increased by digging of sedimentary deposition.
5. Mud built homes should be replaced to brick built homes of the study area immediately.

Conclusion

Chabbishpur village is situated in lower Damodar basin. As it is an agricultural land, most of villagers are depended on cultivation. Here the agricultural system is subsidence in nature. Every year agricultural crops of monsoon and post monsoon season are damaged due to flood. As a result, maximum farmer's family and villagers face huge economical loss every flood affected year. Proper management of embankment of Damodar River, digging of sediment in river channel to increase the depth of river, fully relief system for flood affected people, financial help from government and NGOs for the flood affected people of this village are needed. As the maximum people of the study area are poor, they wait for the relief materials like food and cloths during flood period. So adequate relief materials should be arranged and distributed properly to reduce the painful life of the helpless villagers during flood.

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