

# Sustainable Urbanization in East India

Present trends and future concerns

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# Flood and Mathabhanga town

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## Abstract

Flood is the over flow of channel pattern. Most of the civilisations of the world developed near the large rivers. Even large cities of our country like Kolkata, Patna, Kanpur, Guwahati, Dhubri etc. are originated and developed near the large rivers like Ganga, Brahmaputra. Koch Bihar District of West Bengal is one of the most flood prone district in our country. More than half area of the district is prone to flood. The district has six urban centres – Coochbehar, Tufanganj, Dinhat, Mekhliganj, Haldibari and Mathabhanga. A large portion of these urban centres are affected by flood water almost every year. Mathabhanga town is the most vulnerable in the district. It lies in the bank of two large rivers – Jaldhaka-Mansai and Sutunga. Sutunga is the tributary of Jaldhaka-Mansai. These two rivers meet in the south east corner of Mathabhanga town. Heavy rainfall in the upper catchment area of this river is the main reason for flood in this town. Poor drainage system and damage of embankment are other reasons for flood. More flood shelters, strong embankment, proper drainage system and population consciousness about flood can minimise flood effects and damages of this town.

**Keywords:** Town, flood, river bank, flood shelter, embankment.

## Introduction

Flood is the overflow of a channel pattern. Floods are among the most destructive acts of nature. Floods damage to agriculture, houses and public utilities each year in addition to the loss of precious human and cattle lives. There are many disruptive effects of flooding on human settlements and economic activities. However, flooding can bring benefits, such as making soil more fertile and providing nutrients in which it is deficient. Koch Bihar District of West Bengal is most flood prone district of the State. Every year the District suffers from flooding. The district has six urban centres – Coochbehar, Tufanganj, Dinhat, Mekhliganj, Haldibari and Mathabhanga. A large portion of these urban centres are effected by flood water almost every year. Mathabhanga town is the most vulnerable in the district. It lies in the bank of two large rivers – Jaldhaka-Mansai and Sutunga. Sutunga is the tributary of Jaldhaka-Mansai. These two river meet in the south east corner of Mathabhanga town. But flood management and mitigation programmes are very rare. This paper tries to find out the proper and effective flood management and mitigation programmes to abate flooding effects for the Mathabhanga town.

## Objectives

The main objectives of the paper are:

1. To find out the causes of flood in Mathabhanga town.
2. To measure the intensity and destructivity of flood in this town.
3. To know the good effects of flood for the town.
4. To find out the ways to preventive measures of flood for the town.
5. To draw the mitigation and management plan for flood control of the town.



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# Sustainable Urbanization in East India: *Present Trends and Future Concerns*

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### Methodology

The paper consisted with primary as well as secondary data. Primary data collected through the field survey, interview with the local people who are directly suffered with flood and secondary data are collected from various sources like newspapers, souvenirs, and journals. By careful analysis of all primary and secondary data manual and computerised cartographic techniques are used to prepare this paper.

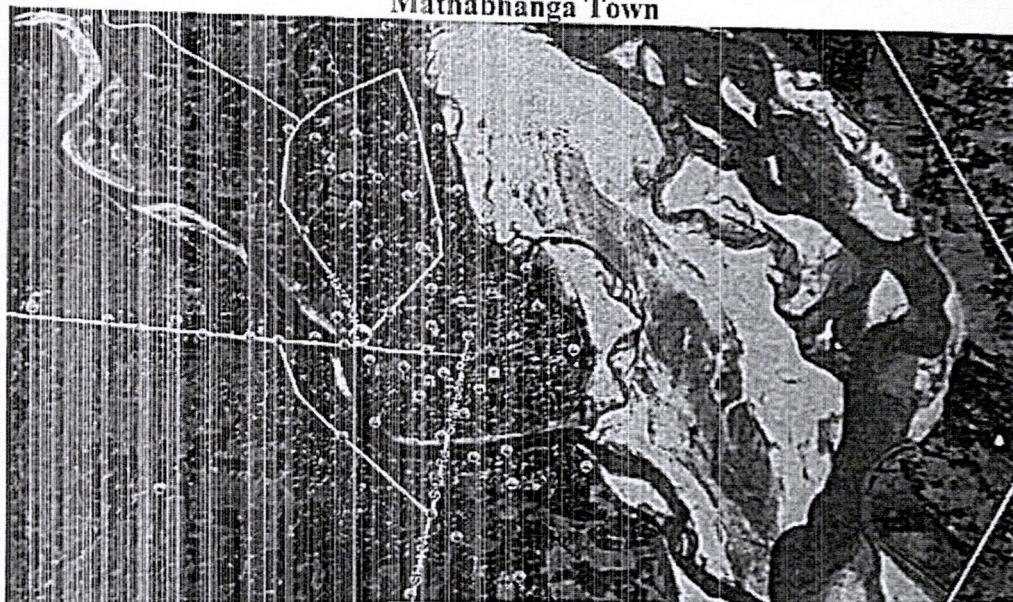
### Study Area

The Study area is Mathabhanga municipality or town lies in Koch Bihar District of West Bengal. The district of Koch Bihar is one of the most flood prone district of West Bengal as well as our country. Total area of the District is 3387 sq. Km. It lies between  $25^{\circ}57'40''$  N to  $26^{\circ}32'20''$  N latitude and  $88^{\circ}47'40''$  E to  $89^{\circ}54'35''$  E longitude. The Mathabhanga municipality lies in  $26.33^{\circ}$ N latitude and  $89.22^{\circ}$ E longitude. Total area of the town is only 3.71 sq. Km. Total population of the town is 23,890 according to 2011 census.

### River system of the Mathabhanga town

The District of Koch Bihar is the land of rivers. There are many large and small rivers are flowing over the district. Mathabhanga town surrounded by two large rivers –Jaldhaka- Mansai and Sutunga. These two rivers fully encircle the town and meet near south east corner of the town.

Mathabhanga Town

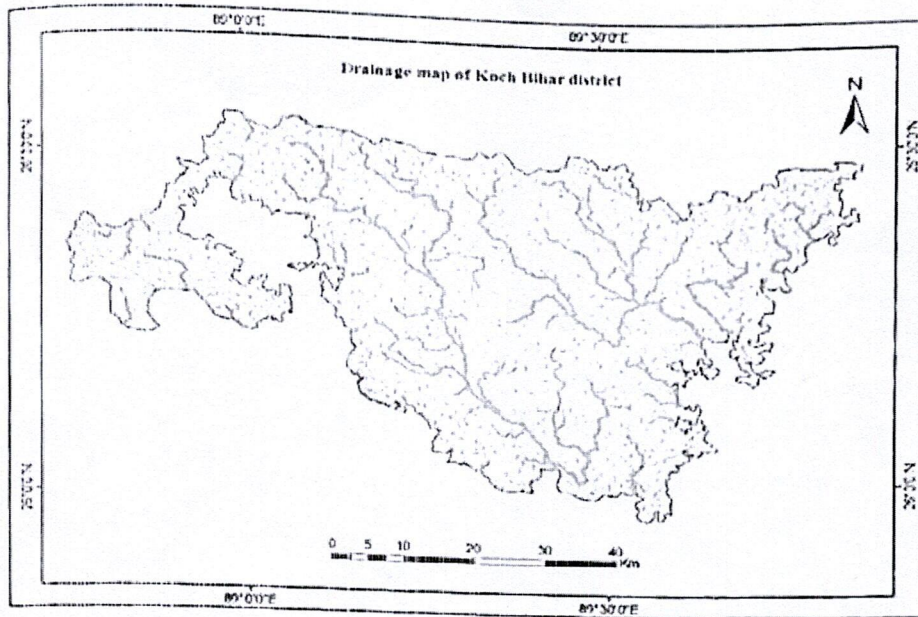


Source: Google Earth.



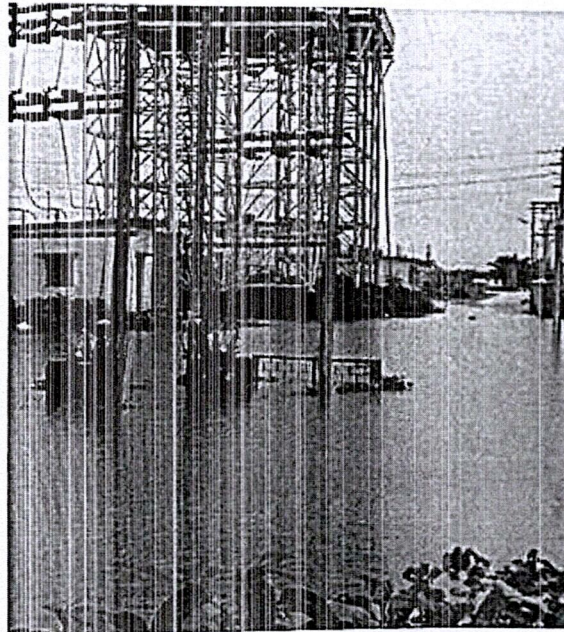
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**Flood scenario of Koch Bihar District**

West Bengal has 42.43% lands which prone to flood and only 10.17% area of our country are flood prone areas. But the District of Koch Bihar has 51.45% areas prone to flood. Every year a portion of the District suffer with floods. Every of the twelve blocks of the district is flooding prone. Most flood affected blocks are Tufanganj I & II, Dinhata I & II, moderate flood prone blocks are Coochbehar I & II, Mathabhanga I & II, Haldibari, and less affected blocks are Sitalkuchi, Mekhliganj, and Sitai.



Flood scenario in Mathabhanga Power House in 2017.



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