

# FLOOD AND EROSION INDUCED SETTLEMENT DISPLACEMENT: A STUDY IN MORIGAON DISTRICT, ASSAM

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## **Abstract**

Flood and River bank erosion is a regular the phenomenon all over the world. Flood is one of the hydro meteorological events and its frequencies and magnitudes causes of the loss of human being, their livelihood and also affects on environment (M. Kar, 2012). Flood and bank erosion is one of the major natural hazards in Morigaon district. Bank erosion is a frequent natural hazard in Morigaon district. Every year more than one village either partially or fully eroded in northern side of Morigaon district. Due to shifting of bankline riverine people of northern side of Morigaon district faced lots of problems every year. Every year a large number of people move away from their homeland due to river bank erosion. The present paper is an attempt to analyze the flood and erosion induced displacement occurred in the northern part of the district. The present paper is based on both primary and secondary data.

**Keywords: flood, erosion, displacement, settlement, Morigaon**

## **Introduction**

River creates natural calamities e.g. Flood, bank erosion occurs when it overflows its bank when the river is insufficient to carry large amount of water it overflow its bank and low lying areas. Flood occurs as result of high rainfall, rapid snow melt, or the breaching of a barrier (Goudie, 2014). When the River water spread over the bank it impacts human

being most. Human occupation, settlement displacement, land use land cover etc. are heavily dependent on flood and its bank erosion. Every river has its own dynamism and play very important role in shifting its bank line. Due to some natural and man-made activities like-topography, water flow, soil texture, deforestation the river course is changed through time. Shifting

channel course is an integral part of river valley region and it becomes the causes of the formation of floodplains. Flood plains are integral part of River valley and most common output of fluvial process. A river sometime profligate its existing course and develops new course to maintain its natural flow regime and all function naturally. This change of river courses is known as channel shifting and it adverse effect on riverine people through flooding and bank Erosion every year.

Morigaon is the most worst affected one among the district of Assam and bank erosion in some parts of the district causes serious problems for the people by destroying their homes, damaging croplands, loss of income source etc. The present paper aims to investigate the flood as well as bank erosion and its impact on settlement of the people. The main problem of the study area is due to river channel shifting geomorphic hazards have been occurring and it causes displacement of people.

### **Study area**

Morigaon district is located in central part of Assam extending from  $26^{\circ} 06'25''$  north to  $26^{\circ} 28'47''$  north latitudes and  $92^{\circ} 20'50''$  east to  $92^{\circ} 33'32''$  east longitude. The river Brahmaputra flows to the northern side of the district. The total geographic area of the district is 1551 sq km (statistical Handbook

Assam, 2016). Being an integral part of the Brahmaputra River a large part of the district is an alluvial plain with number of rivers and waterways, beels and marshes. The district is a belt of flooded land. The area in the southern bank of the river Brahmaputra is liable to deep floods. The study area comprises the foothill zones and floodplains of the Brahmaputra River.

### **Objectives**

The main objectives of the research work are to analyze the impact of flood and erosion on the riverine dwellers and forced people to shifted another place or embankment every year.

### **Methodology**

The relevant data regarding the present research work has been collected both primary and secondary sources. The primary data collected from the respondents of the ten selected villages of northern part of Morigaon district. For the present study multistage sampling technique has been used for the collection of the primary data. For the present study ten floods affected and erosion prone villages have been selected for primary data collection. While the secondary data is collected from census of India (2011), published books, journals, Government records. Erosion induced settlement displacement data has been collected from revenue circle office of Morigaon. The findings

have been summarized using statistical technique, cartographic technique, tabulation, analytical and descriptive method.

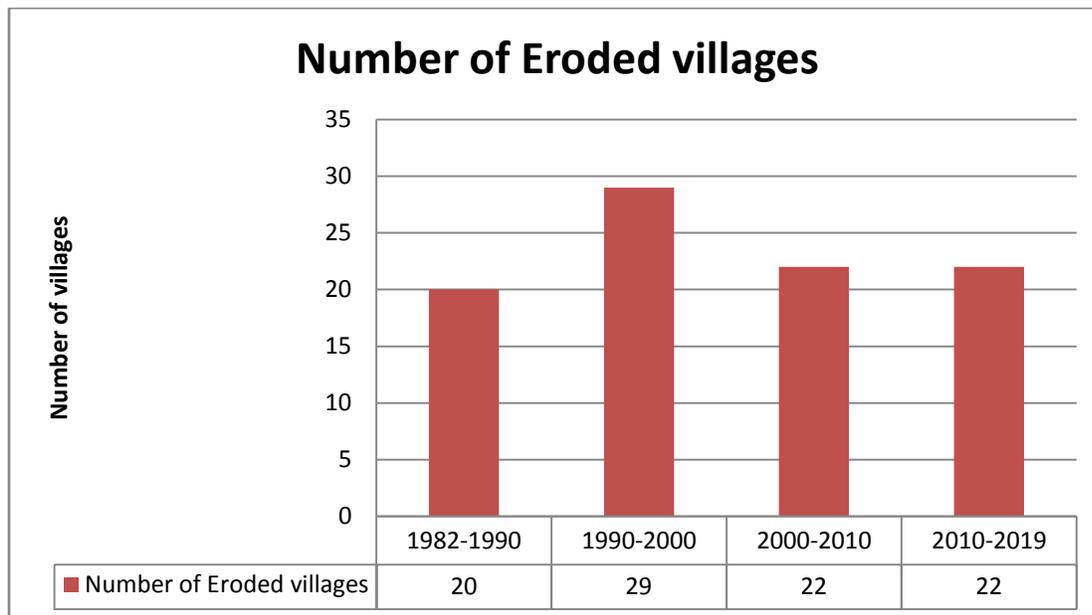
**Result and discussion**

Due to river bank erosion of River Brahmaputra most of the settlements are now shifted to the embankment or other side (A. Siddik et.al, 2017). River bank Erosion, bank line migration is the main reasons of degradation of land and these are mostly affect on human habitation and agriculture. People either used Embankments for settlement in such cases or they shifted to nearby areas. The table 1.1 shows the number of eroded villages along the bank of River Brahmaputra due to flood hazard, bank erosion and bank line migration.

**Table 1.1: Number of Eroded villages of the study area (1982-2019)**

Year	Number of Eroded villages	Percentage
1982-1990	20	21.50
1990-2000	29	31.18
2000-2010	22	23.65
2010-2019	22	23.65
Total	93	

Source: Circle office



**Fig 1.1: Eroded Villages of Morigaon (1982-2018)**

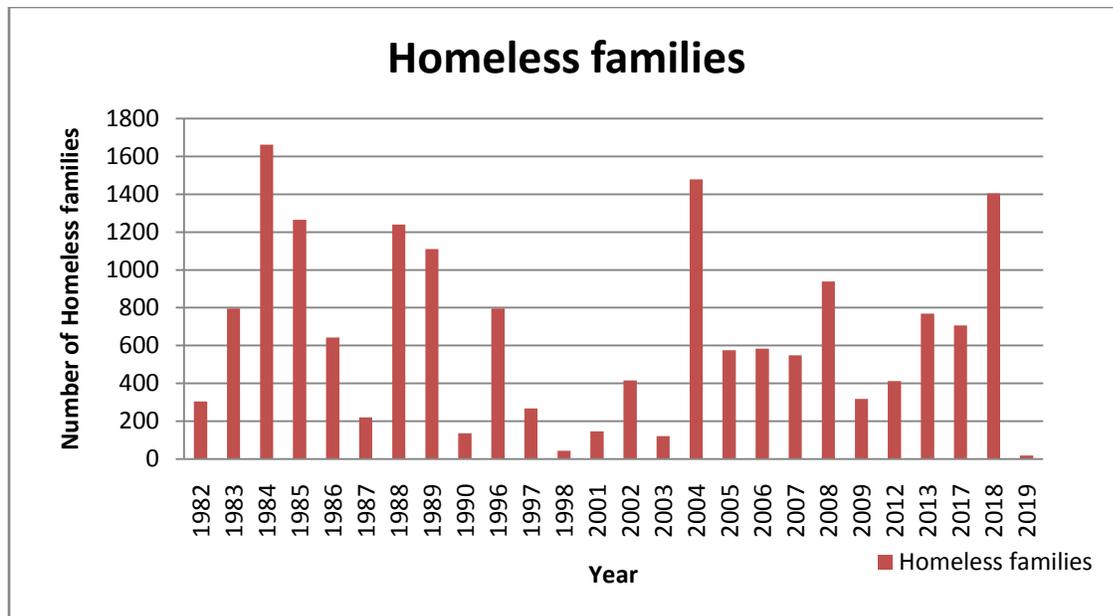
The table 1.1 reveals that total 93 numbers of villages from the year 1982-2019 have been fully affected by erosion and the local village people are migrated from their own place. From the bar graph and the table it is clear that highest number of village has been under the river Brahmaputra during the year 1990-2000 about 29 villages have been submerged in the River Brahmaputra. During 2000-2019 total 44 villages have been eroded. A large number of villages have been partially eroded due to Bank Erosion in the Northern side of the District till now.

**Table 1.2: Number of Homeless families from (1982 - 2019)**

Year	Displaced families	Percentage of Displaced families
1982	305	1.80
1983	795	4.70
1984	1662	<b>9.82</b>
1985	1265	7.48

1986	643	3.80
1987	220	1.30
1988	1239	7.32
1989	1111	6.57
1990	136	0.80
1996	795	4.70
1997	268	1.58
1998	44	0.26
2001	146	0.86
2002	416	2.46
2003	121	0.72
2004	1479	8.74
2005	576	3.40
2006	584	3.45
2007	548	3.24
2008	938	5.54
2009	318	1.88
2012	412	2.44
2013	769	4.55
2017	706	4.17
2018	1404	8.30
2019	18	0.11
Total	<b>16918</b>	

Source: Disaster Management office, Morigaon



**Fig 1.2: Homeless people, Morigaon (1982-2018)**

The relevant data and information are collected from Revenue Circle offices of Morigaon and also by interviewing people from these localities. From the above table and graph it is clear that during the year 1982-1986 highest numbers of people displaced from their own place. During the period 1984 about 9.82% people has been displaced followed by 8.74% in 2004 ,8.30%

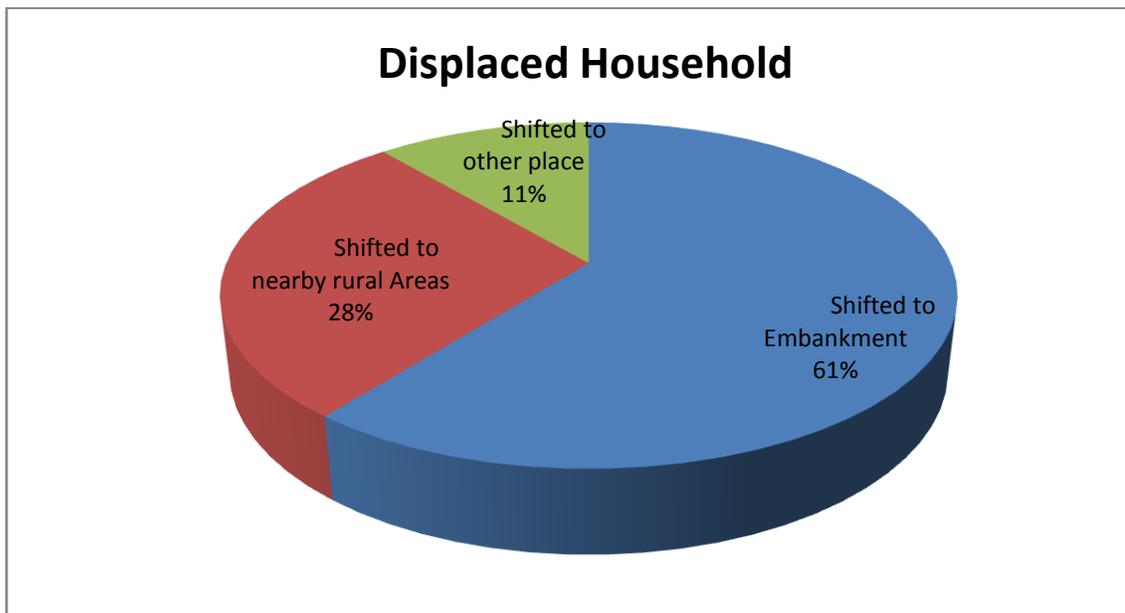
in 2018,7.48% in 1985 and 7.32% in 1988 shifted or migrated due to the River bank erosion. The total number of 16918 displaced families during 1982-2019has lost their houses, their multiple croplands. During the year 2018, about 8.30% people are displaced because most of the villages are partially eroded till now.

**Table 1.3: Displacement scenario of the flood and River Bank Erosion affected people in the study area**

Resettlement Place or Displaced Household	Number of displaced household	Percentage of displaced household
I) Shifted to Embankment	54	60.67
II) Shifted to nearby rural Areas	25	28.09
III) Shifted to other place	10	11.24

89

Source: Field Survey,2019



**Fig 1.3: Displaced household**

The table 1.3 indicated that total ten villages are selected for field survey namely- Shipaguri, Jhargaon, Lecharibori, HiduJapori, Gohainburi, Balipara, Bardobatoop, Chatiantoli, Tengaguri Kachari Gaon and Chenimari and out of these villages ten villages has to be taken from each village for surveying. After displacement people choose embankment, road, nearby rural areas, town for shelter. The displaced people suffered from the sanitation facilities, drinking fresh water, homeless, unemployment, health care services etc. Again from the table 1.3 it is clear that 60.67% people resheltered in embankment or

roads, 28.09% are sheltered in nearby rural areas and 11.24% people shifted to town or other place.

### Conclusion

There is positive correlation between flood and bank erosion and its adverse impact on socio economy of the flood plain dwellers. From the above discussion it is clear that flooding people temporarily shifted to the other place for sometime but Erosion makes people homeless permanently and after that they have no identity, even they have no source for survival. The frequently occurring flood and bank erosion in study area threats towards socio-economic development of people, land

use land cover and forced people to move another place, their livelihood.

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