

Flood Disaster in Assam and its Impacts on the Economy

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Abstract— Flood has been the major recurrent natural disaster of Assam. The havoc caused by flood in Assam is beyond description. We have various references to the disastrous flood in the past caused by Brahmaputra and Barak along with their tributaries. This article is an attempt to discuss the major causes of flood along with its various impacts and the role of governments for the victims with remedial measures to correct the critical situation. This paper is mainly descriptive in nature based on various secondary sources of data and information. It has been observed that the heavy monsoon coupled with various unscientific human activities is the main cause of heavy flood in the state. Flood causes sudden disruption to the normal life of a society with enormous damage of property. Like many other states of the country, the economy of Assam mainly is based on agriculture. A large number of agrarian people and vulnerable section of the society is affected by flood in every year. The increased monetary value of flood damage causes the state to lose a good percentage of its GDP which creates a hindrance to the progress of the economy. Government of India along with state government has taken various steps and approaches to mitigate the flood victims. They have also taken many initiatives every year to control flood and erosion. Modern technology and proper implementation of government schemes are needed to reconstruct the whole situation aggregate.

Key words: Flood, Assam, Brahmaputra, Barak, Economy

I. INTRODUCTION

Flood refers to an overflow of a large amount of water beyond its normal limits, especially over what is normally dry land. The European Union (EU) Flood Directive define flood as a covering by water of land not normally covered by water.

Assam is one of the eight states of North-East India which is located to the south of the eastern Himalayas. It comprises of the Brahmaputra Valley and the Barak Valley. The total geographical area of Assam is about 78,438 sq. km, out of which 56,194 sq. km and 22,244 sq. km fall under Brahmaputra and Barak Valley respectively including two hill districts. The economy of the state is based on agriculture. According to census 2011, more than 50% of the total population is engaged in agriculture, and all agricultural activities depend on climate. Though Brahmaputra and Barak, the two main rivers of the state are the major sources of agricultural water transportation, during monsoon they become the cause of flood disaster and river erosion due to their limited capacity of water conservation. We have various references to the disastrous flood in the past caused by Brahmaputra and Barak along with their tributaries. Flood causes sudden disruption to the normal life of a society with enormous damage of property. The havoc caused by flood in Assam is beyond description. Many people lose their lives. Thousands are rendered homeless. Standing crops are damaged. Cattle and valuable goods are washed away. Thus,

natural disasters like flood and erosion have a negative impact on the process of overall growth of the state. In Assam, flood is such a regular feature that today hardly anyone takes a serious note of it. The issue of flood calls for a permanent solution to this problem, if the state wishes to leap forward in all round development.

II. CAUSES OF FLOOD IN ASSAM

There are several natural factors coupled with various unscientific human activities are responsible for recurrent floods in Assam:

- 1) First and foremost, Assam lies in the heart of monsoon belt and thereby receives abundance of rains. It is said that only Amazon carries more water than Brahmaputra in the world. The 2900 km long Brahmaputra along with its tributaries such as, Subansiri, Manas, Gadadhar, kapili etc. gets flooded and overflows their banks flooding the vast plain of the state. Brahmaputra and Barak together with their tributaries have caused flood situation. Brahmaputra water contains more sediments raising river by 3 meters in some places and reducing the water carrying capacity of river.
- 2) The geographic setting of the region is also responsible for the critical situation, because the region is surrounded by the long range of mountains on its northern and eastern borders which compel the waters directly to flow down into the vast plain below causing the rivers to swell.
- 3) One major cause of flood has been inadequate countryside drainage capacity and drainage congestion. Restricted waterway of road and railway bridges and culverts obstruct the natural flow of water forcing to break the embankments of vulnerable areas.
- 4) Deforestation is a manmade cause of flood. It causes a massive amount of top soil come down during rains which flow into river and raises the level of river beds. This make impossible for the main channel to cope with the vast volume of water.
- 5) Landslide and increasing topsoil erosion in rivers catchment areas in Arunachal Pradesh from where most of the tributaries of Brahmaputra come have added to river sediments.
- 6) Accelerated rate of basin erosion, seismic activity, high population growth in flood prone belt, etc. is also responsible factor causing floods in Assam.

III. IMPACT OF FLOOD DISASTER IN ASSAM

1) Socio-economic impacts

The immediate impact of flood in Assam include loss of human life, damage to property, destruction of crops, loss of livestock, non-functioning of infrastructure facilities and deterioration of health condition owing to waterborne diseases. According to the report in The Assam Tribune, 29 July 2016, about 17, 94,554 people are affected and it

submerged 3,374 villages under 81 revenue circles of 22 districts.

The July 2017 monsoons have caused floods and flood-like situations across Assam killing scores of people and leaving several hundred homeless. According to a report by Assam State Disaster Management Authority (ASDMA) almost 60,000 people are affected at present in Lakhimpur, Biswanath, Barpeta, Nagaon, Morigaon, Golaghat, Jorhat, Sivsagar, Karimganj districts. The total number of people losing their lives in this year's flood related cases by August 14, stand at 76 including 8 in Guwahati. Due to the impact of flood waters, many roads, embankments, and bridges have been damaged in several districts.

2) *Agriculture and Allied Activities*

Agriculture is the main source of the Assam's Economy. Huge amounts of agricultural plots coupled with different seasonal and non-seasonal crops are also affected by flood in every year. In the previous year, the current flood has damaged a total crop area of 99,416.44 hectares, according to The Assam Tribune report of 26 July, 2016.

Livestock remains as the supplementary source of income for the rural population. As a consequence of flood, a huge number of livestock suffers from various diseases and at the end they accept death.

ASDMA said, by July 23, 2017, 2,240 villages were under water at present and more than 79,000 hectares of crop areas inundated.

Across the state, 1,418 animals and poultry have been affected by the flood.

3) *Road and Communication*

Parts of the National Highway 37 connecting western and eastern Assam got submerged at Jakkhalabandha, 175 km east of Guwahati on 14 Aug, 2017 disrupting movement of vehicles for several hours.

Rail link between North-East and the rest of the country also snapped on 14 Aug, 2017 after railway tracts got submerged or damaged at several places in Assam and West Bengal due to flooding. A number of trains had to be stopped at various stations and many other trains had to be cancelled or rescheduled or short terminated. (Report by spokesperson of Northeast Frontier Railway) State Highways, Bridges, PWD Roads were severely damaged due to inundation and water logging. The scarcity of goods due to the communication problem caused high inflation in these flood affected areas of the state. In the year 2011, it happened in NH 15 in Lakhimpur District, the Ranganadi Bridge was badly affected by flood which creates a problem in communication system of Dhemaji and Lakhimpur District with rest of the regions for few hours.

4) *Employment and Labor Force*

Agriculture is the principal occupation in the rural areas of Assam. So flood creates an unemployment situation in these areas as they cannot work for a few months after the floods. Flood disaster causes increased land less labor in the rural areas and farmers suffer from indebtedness.

5) *Wildlife, Forest Resources and Development Activities*

Assam is known as one of the richest biodiversity zones in the world consisting of various forests and wildlife sanctuaries. The recorded forest area of Assam is 26,832 sq km accounting for 34.21% of the total geographical area of the state. The protected area network of the state includes 5 national park and 18 wildlife sanctuaries. Assam is famous

for one horned rhino, tiger, wild elephant, wild horse, leopard, swamp deer, buffalo etc. Over the years, flood has been badly affecting the resources and killing numbers of animals causing great loss to the economy of the state.

The high cost of relief and recovery may adversely impact investment in infrastructure and other developmental activities in the area. Recurrent flooding in a region has a tendency to discourage long term investments by the government as well as private parties alike.

During July 2017, at the Kaziranga National Park 62% of the area was under water, leaving some animals dead and some moving to nearby highlands.

IV. GOVERNMENT INITIATIVES ON FLOOD IN ASSAM

After the unprecedented flood in the country in 1954, the government of India announced a National Policy on Floods comprising three phase viz., the immediate, the short term, and the long term measures. The flood control activities in Assam started only after the announcement of National Water Policy.

A. *National Flood Commission- 1980*

National Flood Commission released their report in March, 1980 with the recommendation of total 207 activities. Some of the important recommendations are:

- Data collection for providing information on their long term performance and their impact on various socio-economic factors.
- Legislation and enforcement by states to prevent unauthorized river bed cultivation and encroachments into drains etc.
- Separate reporting of flood damage for protected, unprotected and areas situated between embankments.
- Legislation for flood management.

B. *Flood Management by District Administration*

Central Water Commission (CWC) is responsible for monitoring the rivers of the State. In case of rise in the level of water and any such possibility, CWC issues the warning to the State or District Disaster Management Authority (SDMA/DDMA) for further dissemination through Early Warning System. The state government has employed a resource person for the dissemination of early warning in his/ her villages during flood.

C. *Water resource department of Assam and The Brahmaputra Board*

Till date, water resource department has taken up several works primarily for the general development of the rural sector and for the protection of major townships of both Brahmaputra and Barak Valley. It has also taken up schemes to relieve drainage congestion in the cities and other important areas such as, construction of embankments and flood walls, river training and bank protection works, anti-erosion and town protection works etc. In Assam, flood control activities mainly started after the announcement of National Water Policy. The department has provided reasonable protection to about 16.5 lakh hectares of flood affected areas out of the total 31.05 lakh hectares.

The Government of India has set up Brahmaputra Board under Brahmaputra Board Act, 1980 under the Ministry of Water Resources. The Board has been assigned

with the responsibility to do survey and investigations in the Brahmaputra Valley and thus prepares master plan for control of floods, bank erosion and also plans to inadequate drainage system.

D. Assam State Disaster Management Authority (ASDMA)

The Assam State Disaster Management Authority was notified in the year 2007 with the adoption of the Disaster Management Act in the year 2006. The state plan shall be prepared by the State Executive Committee and shall be approved by the state authority. All hazard events, whether natural or man-made the state is vulnerable to, will be managed in accordance with the ASDMP. This plan will be further supported by hazard specific plans; department wise preparedness, mitigation and emergency response plan; state disaster management guidelines (SDMG).

E. Extra Departmental Supervisory/ Monitoring Agencies and Initiatives

Schemes under FMPs: For the 11th Five Year Plan the Ministry of Water Resource, Government of India has given financial approval to 73 nos. of schemes with benefitted areas of about 3,12,672 hectares.

NABARD Sponsored Schemes: The schemes and programs executed from the funding by NABARD also monitored and field verification done by NABARD official before releasing the funds and installment. Under NABARD (RIDF-XV) has sanctioned a loan amount of 48.0925 crores for 13 numbers of schemes for the year 2009-10.

Schemes under ACA/ State Plan: district level committee headed by Deputy Commissioners as chairman and members from different engineering and other department monitor the quality and execution of works.

F. Some Ongoing Projects

1) Use of Space Technology

The Water Resource Department with North Eastern Space Application Center (NESAC) and ARSAC, Guwahati has adopted latest space technology for flood control. Remote sensing, Geographic Information System are the examples of such technology.

a) Under FMP XII Plan

- In Hailakandi, Anti-erosion measures at Panchgram Das colony area from the erosion of river Barak on its left bank (0-800 m)
- In Sivsagar, R/S to Dehing bund left bank from Joongaon to Laibeel including anti erosion measures at different reaches.
- In Kamrup, Protection of Makadhu area from the erosion of river Brahmaputra (Construction of land spur at ch9560m).

b) Under CM Package

- In Karimganj, strengthening and widening of embankment from Anipur to Mookamcherre covering both bank of river Shingla.
- In Hailakandi, Protection of erosion from river Barak at Bagmara area at Katakhal.

G. Immediate measures taken by Government and NGOs

During the time of flood disaster in Assam, SDRF, NDRF and Army have been deployed ever since the floods started for search and rescue operation as immediate action. Both central and state government have been providing huge package of

funds to the flood victims along with essential commodities and hospital facilities for the victims. The Non-Governmental Organizations also try to give full support for the victims by providing their essentialities.

This year, Authorities are running 363 relief camps and distribution centers in 19 districts, where 25,269 people have taken shelter.

The government has distributed 2,903.25 quintals of rice, 596.92 quintals of pulses, 366.25 quintals of salt and 472.52 liters of mustard oil among the flood victims since yesterday, ASDMA said. (JULY 14, 2017 report)

V. SUGGESTIVE MEASURES AGAINST FLOOD DISASTER

- Factories created illegally and unscientifically create damages of forests which lead to erosion and flood disaster. Several construction units also destroy environmental resources. That is why government should manage to develop strong awareness programs on the importance of trees, forestation and reforestation. Forestation will reduce soil erosion as a result of which accumulation of sediment on the river bed reduces and it will lessen the effects of flood and bank erosion.
- The concept of Generally Modified Seeds (GMS) will give some hope among the flood victims. So it is important to provide training programs to the farmers about the modern agriculture and other government schemes.
- Assam Agriculture Department has recently introduced a concept of soil health and new agricultural insurance scheme with the purpose of promoting the farmers from situational risk.
- The income generating livelihood activities/ programs needs to be initiated urgently to support the agrarian society. Government investments as well as training and awareness programs about multi-cropping system are strongly recommended to fulfill the lack of production and income after the flood.
- Construction of reservoirs to hold water during monsoon can be one way to reduce floods.
- Some countries practice 'Room for River' where wetlands were rejuvenated which work as flood cushions. Assam has around 3500 wetlands, if we rejuvenate them they can act as flood cushions.
- It is also recommended that the construction of storage dams upstream would increase the power generation and helps in regulating the flow.

VI. CONCLUSION

Flood has devastating consequences and negative impacts on the people, agriculture, infrastructure, environment and the economy. For the development of the flood affected regions, such effects need to be minimized and the natural resources should be properly managed. While natural hazards cannot be prevented, measures can be initiated for preventing hazards from turning into disasters by strengthening the coping capacity of the communities (Singh, R.B. 2006). The government needs to identify flood hazard and potential flood risk from all sources as the initial stage of planning. Then the implementation of such plans and measures need to be scrutinized with the involvement of the people from flood affected area.

REFERENCES

- [1] Yadav, Neelam Prasad, Gangabhushan, M., A Study on the Role of Assam State Disaster Management Authority (ASDMA) and Social Worker: Some Aspects of Community Based Flood Management in Assam, The Echo, A Journal On Humanities and Social Science, (2013)
- [2] Gogoi, M., Flood Disaster in Assam: Socio-economic vulnerability and Control Measures, South-Asian Journal of Multidisciplinary Studies (SAJMS), 3(6), 147-158, 2016.
- [3] Das P. J. (2004), Rainfall Regime of North East India : A Hydro meteorological Study with Special Emphasios on the Brahmaputra Basin, Gauhati University, Guwahati, Assam, India.
- [4] Sharma, D., Gayan, A., A Study on the Flood Mitigation of Assam, Journal of Civil Engineering and Environmental Technology, 1 (5), August, 2014.
- [5] Deka, p. p., a Study on Flood Disaster in Assam: Threats and Measures, Paripex- Indian Journal of Research, 4(7), July, 2015.
- [6] Barbhuiya, F., Natural Disaster, Especially Flood and its Management in India: With Special Reference to Assam, International Journal of Humanities and Social Science Studies (IJHSSS), 2(3), November, 2015.
- [7] The Assam Tribune, an English Daily News Paper, published simultaneously from Guwahati and Dibrugarh.
- [8] www.brahmaputraboard.gov.in
- [9] www.thetimesofindia.com
- [10] www.ndma.gov.in
- [11] www.sdmaassam.nic.in
- [12] www.assam.gov.in/web/department-of-water-resource