



## Climate change and natural disaster: A case study of flood affected women of Assam, north-east

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### Abstract

Northeast India is home to rich traditions and great diversity of cultures and languages. Equally, it is home to great tragedies-political, social as well as natural. The natural tragedies or disasters such as landslides, earthquakes, droughts, floods etc. affect populations on a large scale. The impact of floods on people in general and women in particular is immense and is most felt in Assam. In the lives of women, the floods take a heavy physical, mental, emotional and economic toll. In the rural areas they have to experience risk in their pregnancies, ill health, shortage of foods and pure drinking water. Poor sanitation facilities, early drop-out of girls from schools, early marriages etc. make the lives of women more pitiful. The current paper, therefore, makes a study of the impact of floods in the lives of women in Assam where the floods are recurrent due to the torrential rains and the rising level in the river Brahmaputra. Thus, this paper throws light on the impact of flood in general and on women life in particular. Further this paper will scrutinise the government policies and programme to cope up such natural hazard.

**Keywords:** northeast, equally, natural

### Introduction

Northeast India in general and Assam in particular is like a theatre of natural disaster such as floods, landslides, earthquake, frequent drought etc. The impact of climate change particularly during the time of heavy rainfall leading to flood is most pronounced in Assam. Every year this annual tragedy leads significant danger particularly in the life of women. In rural areas they have to experience severe risk in their pregnancies, ill health, unhygienic camp, shortage of food and pure drinking water, poor sanitation facilities, dropout of girls from schools, forced marriage etc all together made women life worst. Therefore, this paper intended to highlight the impact of flood especially on women life. Not only short-term women have to bear the impact in long term also, they bear the responsibility of rebuilding house, child care and so on. Women the mother of mankind became the queen of tragedy in this natural disaster. Topography and high rain fall lead to heavy flood in Assam. Moreover, high water level in *Brahmaputra* the largest water carrying river in India affected the life of people, animal and property immensely. As a result, it affects Assam's contribution to national income also.

### Climate change

The changes in climate have been the accompanying negative dividend of the economic successes that the world has witnessed. The economy since the Second World War has grown manifold, nearly ten times till the start of this millennium <sup>[1]</sup>. This fast growth in the economy has been largely propelled and driven by the high consumption of energy coming from oil, gas and coal (and now nuclear energy) <sup>[2]</sup>. The fallout of the burning and using these fuels is that they emit gasses – greenhouse gasses – that control the temperature of earth's atmosphere. However, there has been an exponential growth in the emission of these gasses since the beginning of the industrial revolution. In the 1780s these gasses were in the proportion of 280 parts per million, compared with the 400 parts per million today. In

consequence, the global mean surface temperature is 1 degree Celsius above the average <sup>[3]</sup>. The untamed rise in the greenhouse gasses and the global mean surface temperature is having deleterious effects on environment and posing a threat to humankind itself.

Climate change poses a double challenge to the developing countries like India. They have to resolve the contradiction between the continued development and the emission of these gasses from the industries that drive their development. The threats that climate changes pose are immense. The most serious threat posed is on water. There have been estimates that the gross per capita availability of water in India is projected to decline from 1820 cubic meter per year in 2001 to 1140 cubic meter per year in 2050 <sup>[4]</sup>. One of the important reasons cited is that due to recurrent flash floods, the downpour of water will increase making the availability of water scarcer. We are already witnessing the recurrent flash floods in many parts of India including our case study Assam. The floods not only make the availability of water an issue, it serves out a whole range of existential problems to the people of Assam in general and women in particular. The other sections will deal with the floods in Assam and its effect on the well-being of Assamese women.

### Brief description of flood in Assam

The year 2017 is a devastating year for Assam. Lakhs of people have lost everything including their loved ones. Affected villages more than 3186, and 15 districts were severely destroyed such as Lakhimpur, Jorhat, Golaghat, Cachar, Dhemjai, Biswanath, Karimganj, Sonitpur, Majuli, BARPETA, Nagaon, Nalbari, Sivasagar, Morigaon, Chirang, Dibrugarh, Dhubri Kokrajhar and so on <sup>[5]</sup>. Topography of Assam plays a significant role because most of the rivers flow from downstream. Both Brahmaputra and Barak the two main rivers of Assam crossed danger level during heavy rainfall. Dhansiri, Jia Bharali, Kushiyara are some tributaries continue to flow above danger line.

However, district wise population affected by flood till 5<sup>th</sup> July 2017 has shown as follows <sup>[6]</sup>:

**Table 1:** District-wise Population Affected by Floods

District	Resident Population	Total Affected	% of Population Affected
Karimganj	1,217,000	180,766	14.85%
Lakhimpur	1,040,644	79,354	7.63%
Golaghat	1,058,674	45,943	4.34%
Cachar	1,736,000	25,102	1.45%
Sonitpur	1,924,110	22,510	1.17%
Nagaon	2,823,768	9,722	0.34%
Biswanath	580,000	8,679	1.50%
Dhemaji	688,077	7,501	1.09%
Nalbari	769,919	5,105	0.66%
Manjuli	167,304	3,782	2.26%
Jorhat	1,091,295	3,133	0.29%
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Barpeta	1,693,190	2,519	0.15%
Sivasagar	1,151,000	465	0.04%
Hojai	347,627	208	0.06%
Total	1,73,79,903	3,97,922	100.00%

Source: Asdma5/7/17

As shown in the table numbers of districts were affected in Assam during flood. Apart from this, floods heavily destroyed agriculture which in turn impact state contribution to national income. Assam is predominantly a rural society and two third of its population is directly or indirectly depends on agricultural activities. Agriculture meets the food requirements of large population of Assam. It ensures food security for the state. Substantial increase in the production of food grain like-rice, wheat etc makes Assam self-sufficient. Agriculture also contributes to the state income also. It contributes 30 percent of the state domestic produced. The growth of most of the industries depends on agriculture. It produces several materials for industries. It forms the basis of many industries of Assam like-cotton, textile, jute, sugar industries etc by providing cotton, sugarcane, oilseeds etc. Agriculture and its allied activities played an important role in the socio- economic development of the State of Assam as this sector is the major contributor to the State economy as well as providing livelihood to a significant proportion of the population of the State. But flood hampered state economy heavily.

### Impact on women's lives

Throughout ages women have always bore the brunt of tragedies that have befallen the humanity, including at the time of natural calamities. Assam's floods are not an exception as every year this natural disaster brings sufficient hardship for people in general and women in particular. Traditionally women have been assigned the roles of home-making and bearing and rearing of women. Women especially in rural areas have to bear a difficult life. Besides taking the responsibilities of home-making, they have to take care of the dependents at home like her parents-in-law, children, etc. She has to shoulder these responsibilities at the cost of her own well-being. In the region where the basic health facilities are in the shambles, floods wreak literal havoc on the people. Women need proper care during menstruation, pregnancy and so on but keeping aside these,

She has to bear all hardship imposed by nature to nurture the family <sup>[7]</sup>.

The lack of facilities during the floods account for the sufferings that women have to undergo. When flood makes impossible to stay at home, then people are forced to move to outside and due to lack of boats and rehabilitation camps, they are left out to suffer and sometimes they "have no option but to take shelter under tarpaulin sheets along the roads <sup>[8]</sup>. Where rehabilitation camps are available, the basic sanitation facilities are abysmal. In 2016, out of merely 40 rehabilitation camps, 7412 people had already taken shelter <sup>[9]</sup>. While in a boat or open rehabilitation camp they have to restrict their natural call for toilet and bathroom which in turn brings severe health issues in later time. Moreover, when open toilets and latrines merged with flood it caused sever health issues on people as a whole.

Floods make women and girls insecure in camps as many a time abuse, sexual violence, and ill behaviour are rampant. Pregnant women do not get proper nourishment and medication and they have to give birth in an unhealthy and uncouth situation. Lack of government facilities or poor attention makes the situation more horrible. Government does not provide any special facility for the flood affected women. Some NGOs however provide some relief to women but the beneficiaries are very few in number. Moreover, displacement of girls, women and children which takes place during flood also leads to trafficking, kidnap etc which is a burning issue of Assam. Trafficking of young and minor girls also takes place rampantly. Young girls are taken with the promise to give them jobs and are forced in flesh trade and these young and minor girls are hardly able to escape the vicious walls of the brothels. Floods also cause large scale migration to metro cities where people have to work hard at low wages and unhealthy situations.

Floods also cause a negative impact on the education of women. A number of girls are forced by circumstances to drop out from school and take up the task of earning livelihood for their families at a very young age. These girls end up marrying at an earlier age and shouldering the burden of family at the age at which they should have been at school.

### Government policies on flood

Floods in Assam have not always been a bane for the people of Assam. Historically, the floods used to be a boon for the people, particularly agriculturists, since it brought a fresh layer of rich and fertile alluvial soil with it. However, with time, due to the changes in climate, the untimely and uncontrolled floods brought distress and suffering to the people of Assam. The floods have since been increasingly catastrophic and in need of a government intervention. In the period following the independence of India, the floods were declared to be a matter in the list of state jurisdiction. In 1954, the Government of India declared National Policy on Flood comprising three phases as follows:

1. The immediate – including revetments, spurs and embankments at selected sites.
2. The short term – including in its fold construction of embankments and channel improvement covering large parts of affected areas.
3. The long-term measures – including building of storage reservoirs on certain rivers, and additional embankments if found necessary <sup>[10]</sup>.

Since the declaration of 1954 national policy on flood, within five decades 5222 km of embankment and 997 km of drainage channel have been constructed in Assam and its neighbouring states. 110 major shices and 873 anti-erosion have been taken up for implementation. With these short-term measures, attempt has been made to provide protection of 1.80 mha but 1.78 mha areas still remains to be protected. However, between 1954-2007, the average damage caused due to flood is 172.90 crore out of which 88.14 crore. In 2002 the maximum damage in Assam due to flood approximately 753.03 crore. And in 2017 it rose up to 2993 crore. The flood control activities in Assam started mainly after the announcement of National Water Policy. Subsequently, "outlined plan for flood control in Assam" along with various comprehensive plans were prepared and the priority areas, which need immediate and urgent attention were identified.

Till date, the Water Resources Department has taken up works primarily for the general development of the rural sector and for the protection of major townships in both the Brahmaputra and Barak valley. Schemes have also been taken up to relieve the drainage congestion in the cities and other important areas.

1. Construction of Embankments and Flood walls -
2. River training and bank protection works
3. Anti-erosion and town protection works
4. River channelization with pro siltation device
5. Drainage improvement/ Sluices
6. Raised Platform
7. Flood forecasting and warning
8. Flood zoning

The Water Resources Department, Assam has been implementing the above-mentioned flood management schemes from the beginning of 2nd Five Year Plan and is continuing till now. No long-term measures have been implemented so far to mitigate the flood and erosion problems of the state. Till date only immediate and short-term measures have been implemented by the state Water Resources Department.

The flood management works of the state are being funded from the following sources. Due to limitations of fund of its own, the state has to rely more upon the grant of the Central government. At present, the flood management activities are being carried out with the following funding – Flood Management Programme (FMP), Additional Central Assistance (ACA), State Plan, State Disaster Response fund (SDRF), North Eastern Council (NEC), Non-lapsable Central Pool of Resources (NLCPR), Joint River Commission (JRC), Assistance from external agencies (NABARD), Externally Aided Project (ADB & World Bank).

The Task Force on Flood Management and Erosion Control constituted by the Government of India in its Report in 2004 provided some guidelines for flood protection work. It suggested that the flood protection schemes should be funded by centre to the tune of ninety per cent and the states should provide ten per cent. It also suggested levying of 'flood cess' of 1-2% on roads, buildings, power plants etc in the states that are more prone to floods. Despite all this, the situation has gone from bad to worse and the floods have not subsided in the flood prone areas, much less in Assam.

## Conclusion

On the governmental front, there has been virtual lack of flood policies that are women specific. As highlighted in the paper, women are the primary victims of floods and have gotten a biggest share of agony and misery in the floods. But they have been ignored by the government and have been left to fend for themselves thus making them vulnerable to many crimes. As an adage goes, much talk and less action, lot of lip-service has been paid towards empowering the women but there has been lesser translation into action these words spoken on high pedestal.

In April 2017 Guwahati was a host to one of the biggest river festivals in India, called 'Namami Brahmaputra'. Celebrations went on for five days, and government organised this in honour of the river Brahmaputra, to show the cultural and economic strength and importance of Assam to the world and promote tourism. The event was inaugurated by President Pranab Mukherjee, with Union ministers including Babul Supriyo, Nitin Gadkari and Mahesh Sharma in attendance. The event was also attended by the Dalai Lama and Baba Ramdev amongst others. Lot of money was spilled on the event, but no heed was paid towards the aspect of Brahmaputra that wreaks havoc on the people of Assam.

Assam's floods throw a lesson to India that government must take it in a serious way and mainstream media also contribute to spread the news of flood victims' situation in this regard. Disaster management plans and policies should be women oriented and women should involve in such policies so that they can make women specific plans and policies especially for pregnant ladies, girls, aged women and so on. Local NGOs can play significant role in combating girl trafficking, kidnap, displaced women. Moreover, seminars, workshop, symposium etc should be organised in flood affected areas such as Dhemaji, Lakhimpur, Majuli, Kokrajhar to make people aware about the government policies and programmes. Rehabilitation camps, shelter houses etc should be constructed in a proper way and more importance should be given to sanitation and hygiene. Medical facilities should be provided to all in a fair manner to combat health issues.

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