

# Notun Rangagora Gaon, Flood Affected Village in Tinsukia, Problems and Remedies



Jaya Kalita Gogoi

**Abstract:** Assam is a flood prone region due to its numerous rivers and heavy rainfall. Assam represents highly flood-prone region characterized by severe hazards of floods. Although occurrence of flood has been an age-old phenomenon in the riverine areas of this region, the extent of damage caused by the flood has increased significantly in recent years. With more than 40 percent of its land surface susceptible to flood damage, the total flood-prone area in the Brahmaputra valley is about 3.2 Million hectare. Flood occurs when the capacity of the river channel to carry the discharge is exceeded. Notun Rangagora gaon of Tinsukia district of Assam is largely control by the Dibru river and frequently affected by flood during the heavy showers in monsoon. An empirical study was done in flood prone village through simple random technique. Notun Rangagora gaon is assessed as one of the most flood and erosion affected village of the Tinsukia district where strategie are extremely essential to mitigate the gravity of suffering of the effected people and to upgrade the socio-cultural and economic conditions by the sustainable protection of the village. The increasingly growing flood and erosion problems have been affecting human habitation, economy as well as cultural landscape. The main livelihood in the village is agriculture and this sector is badly affected by the flood water every year. In order to sustain the rural livelihood, it is important to sustain resources in scientific way. Food security and environmental quality are the important aspects of Sustainable rural development and pre and post flood preparedness and management is essential to cope with the problem of flood.

**Keywords:** afforestation, erosion, flood, Stream Channelization

## I. INTRODUCTION

The present study is an attempt to find out the impact of flood on the people living in the plains of Assam, the assamese society of Notun Rangagora gaon of Tinsukia district. Humanity has been living and making adjustments with natural events since the dawn of civilization. While episodic and flash floods may occur almost anywhere with devastating effects, there are some parts of the world such as China, Bangladesh, the Indian subcontinent and North American coasts where regular floods are very common. Assam is full of natural resources and agricultural state. Above 80% of people depends on agriculture but since more than 60 years Assam has been facing huge river erosion problems, which is closely related to flood problem. Erosion along with flood has destroyed lots of agricultural production and other fruits and house land of the people (Khan, 2012).

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Every year in Assam the floods leave a trail of destruction, washing away villages, submerging paddy fields, drowning livestock, besides causing loss of human life and property in billions. Social system gets affected, as families in large number come to reside in temporary camps leaving their all belongings behind. Their inundated houses get damaged and they have to adapt themselves in different system of environment where there is neither any social control mechanism nor any social institution to rely on. The essence of rural development is the environmentally prudent use and management or the widest possible scale of soils, water supplies and other natural resources of the earth, so that development is not only promoted and accelerated but managed in such a way as to be sustainable.<sup>1</sup>

## II. OBJECTIVES OF THE STUDY

- To conduct an extensive survey of a contiguous region to analyze the flood affected region and the people.
- To highlight the different problems of people related to flood.
- To suggest remedial measures to the problem.

## III. METHODOLOGY

The study was carried out both at theoretical as well as empirical levels. The empirical study was based on both primary and secondary data. Primary source information was gathered through direct observation of the conditions and incidents of the study area. Primary data was collected in the form of household-level survey. In order to fulfill the objectives of the study, different sample households were chosen randomly in flood affected village. Primary source information were gathered through schedule which included questions and information concerning different aspects of the subject of study. Simple random sampling technique was used for collecting data. After collection of data, they were processed accordingly to drawn different results and different aspects. Secondary data sources included the population census, public or official documents. Secondary data included the records and the published data by governmental and non-governmental departments. Journals, magazines and newspaper are important public documents including a wide variety of information which were utilized in the study.

<sup>1</sup>Tolba, M.K. (1982); Rural Development and Environment, Statement to the world conference on Agrarian Reform and Rural Development, 1979, in *Development without Destruction Evolving Environmental Perceptions*. pp. 102-103.

## IV. STUDY AREA

Tinsukia district is known for its tea gardens and natural resources. It is situated in between 27°23' to 27°48'N latitude and 93°22' to 95°38'E at the north partially by the mighty Brahmaputra River separating the district of Dhemaji from Tinsukia, by Arunachal Pradesh in the east west and by Dibrugarh district in the south west.

Soils are sandy to clayey and acidic in nature. The climate is characterized by hot and humid summer and cool winter with an average annual rainfall of 2500 mm and average rainy days are 140 to 150 days per year. The annual mean temperature is about 27°C during the summer and 18.8°C during the winter. The climate is excellent and nature has bestowed all its blessings in the form of deep forest, grand rivers, exquisitely beautiful landscape, diverse flora and fauna, lovely tea gardens and bio-diversity hot spots.

The present Tinsukia district was formed by carving out Tinsukia subdivision from undivided Dibrugarh district. At present Tinsukia district comprises of three subdivisions: Tinsukia, Margherita and Sadia and there are seven blocks of the district namely-Sadiya, Saikhowa, Hapjan, Kakopathar, Guijan, Itakhuli and Margherita.

Notun Rangagora Gaon of Gottong Gaon Panchayat is under Guijan development block. The topography of the surveyed area is largely control by the Dibru river, one of the tributary of Brahmaputra river, is a plain area. The slope of the place is almost gentle type. The village is drained by the Dibru river, one of the tributary of Brahmaputra river. This village is situated near Dibru river and is frequently hit by the flood. The climate is characterized by hot and humid summer and cool winter with an average annual rainfall of 2500 mm. It is characterized by heavy rainfall in summer. January is the coldest month and July and August are the hottest months. As the place is situated near the river we can easily identify its soil type that is alluvial soil. Soils are sandy to clayey and acidic in nature. The soils are fertile enough to support a variety of crops but due to occurrence of the flood, cropping is very difficult. The vegetation of the surveyed area is characterized by the mixed semi evergreen types owing mainly to the impact of monsoonal rainfall.

There is approximately 2000 population in the village, 250 households and 318 families in the Notun Rangagora Gaon. For the study, 30 households were selected.

## V. ANALYSIS OF HUMAN ASPECTS

### A. Population

The analysis of human aspects is very important as it represents the knowledge of socio-economic situation of an area. In order to fulfill the stated objectives 30 households were chosen for the study. Out of 30 households the male population is 81 and female population is 85 hence sex ratio is 1049.38 females per thousand male. In the surveyed households maximum families are belongs to hindu religion

### B. Literacy

The literacy rate of the surveyed households was also found satisfactory. The total numbers of literates are 128 out of 166 of total population and the literacy rate is 77.10%. This indicates that this flood affected region has better scope of upliftment if the local people will unite together. There are

four L.P. School and one M.E. school in the village area and for higher education, they use to go outside the village.

### C. Occupation

In the surveyed village, 33% of populations are in service sector, 36% of populations are in the business sector, 31% of populations are in agriculture sector and 18.57% of populations are engaged in other activities. Though the surveyed region is a village area but the dependency on agriculture sector is less because the annual floods use to damage their crops. Tea cultivation is done by few families but the quality and maintenance is not up to mark.

## VI. ANALYSIS OF FLOOD AND ITS DIFFERENT ASPECTS

Man has been dependent on the natural resources for his subsistence since his appearance on the surface of the earth and in turn man also influences his environment. The Dibru river cause sufferings to people during flood time but at the same time they give respect to this river. The Notun Rangagora gaon is situated near the Dibru river. This river is responsible for flood situation in the surveyed area.

Flood is a state of high water level along a river channel or on coast that leads to inundation of land which is normally submerged. It is a natural hazard which occurs in response to heavy rainfall and it becomes a disaster when it inflicts heavy loss of life and property. Floods are generally caused by one or more unfavorable meteorological factors like heavy rainfall, cyclones, cloud burst etc and physical factors like large catchment area, inadequate drainage arrangement etc. In recent times, the impact of meteorological and physical factors has been accentuated by unwanted human activities like deforestation, faulty agricultural practices, bursting of dams, siltation, accelerated urbanization etc.

Floods have multipronged effects on human life. A more frightening fact is that floods are becoming more damaging as their frequency, intensity and magnitude increases with the passage of time. The most damaging effects of flood is the colossal loss of life and property. The other losses include damage to crops, cattle loss, break down of communication, dislocation of transport system and disruption of essential services.

In the Dibru river, floods are almost an annual feature. The main cause of floods here is heavy rainfall, deposition of large amount of silt by the Dibru river which makes the river channel shallow and its capacity to carry large amount of water is reduced. This results in flooding of the vast areas in and around. In the year 2004, the flood was very devastating and the next more devastating flood occurred in the year 2012.

### A. Causes of Flood

Floods are generally caused by meteorological factors and physical factors. In the surveyed area the general causes of flood are-

- Dibru river is the tributary of Brahmaputra river. Likewise many other small streams join the Dibru river. This brings huge quantities of water and silt which cause flood.

- Very heavy rainfall exceeding 250 cm per annum.
- Heavy deposit of silt has raised the river bed considerably which has reduced the water accommodating capacity of the river.
- High population pressure which forced people to live in the flood prone area.

According to Surveyed population, the different causes of floods are shown in Fig.1. The problem of Deforestation is stated by 5 households, Erosion activity of river stated by 4 households, Opening of china gate stated by 3 households, Low and broken embankment stated by 6 households, Silt deposition stated by 10 households and house near the river stated by 2 households.

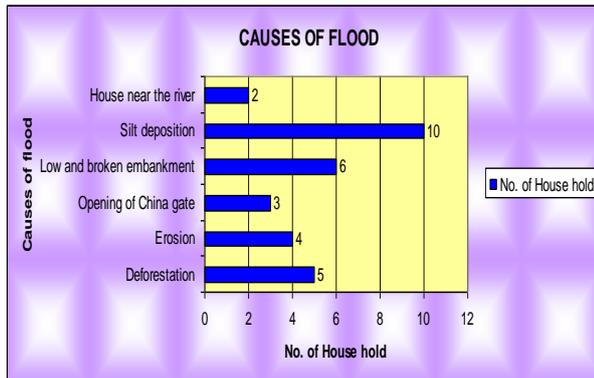


Fig. 1. Diagram showing Causes of flood in surveyed village

The most damaging effects of flood is the colossal loss of life and property. The other losses include damage to crops, impure and unsafe water, cattle loss, break down of communication, dislocation of transport system and disruption of essential services and several other problems of the people. In the surveyed household, house damage reports for 30%, Crop damage for 27%, Animal loss for 22%, Road damage is 19% and human injuries 2%.

Table- I: Percentage of household reports damaging effects of flood

Damaging effects of flood	Percentage of household
House damage	30%
Crop damage	27%
Animal loss	22%
Road damage	19%
Human injuries	2%

Source: Field survey 2019

The damaging effects of flood results on the socio-cultural and economic development of the people and the village and thus creates many problems.

**B. Problems**

In the surveyed area, Notun Rongagora gaon different problems related to floods were marked.

- Floods affected the village because it had destroyed much agricultural land during different years and still have its reflection where deposition of sand took place.
- Erosion process by the river swallows many hectares of land. Despite lack of afforestation along river bank is also the cause for this.

- Due to flood the economic life of the people is badly affected. The people those who are depended on daily wage work have to suffer a lot.
- Flood cause house damage, cattle loss, break down of communication, dislocation of transport system and disruption of essential services and several other problems to the people.
- Small boats are seen in few houses which are used by the people during the time of flood in order to travel to different places. But the conditions of these boats are not so good.
- After the flood the people have shortage of food and pure and safe water. Government provides different flood relief camps to the people including rice, pulses distribution etc.
- School education of the children is badly affected due to flood. School remained close for many days.
- The household items like furniture, utensils are badly affected by flood.

In this way, the life of the people living in the flood affected region is very much influenced and affected by the flood.

**C. Remedial measures**

Flood is a natural hazard and natural hazards are difficult to control. The village Rangagora gaon is annually affected by the flood water but remedial measures can be taken in order to reduce the extent of flood.-

- Erosional problem can be minimized by plantation. Deforestation should be control. Afforestation programme can be operated by the local people.
- Reduction of runoff is one of the very effective methods of flood disaster management. Runoff can be reduced by inducing and increasing infiltration of the surface water into the ground in the catchment area. This can be done by large scale afforestation particularly in the catchment area.
- Construction of RCC creeps along the river side in order to minimize the action of erosion. RCC creep can be made by bamboo and by using solid materials.
- Government should provide strong embankment.
- Flood forecasting- Flood forecasting involves giving prior information regarding the occurrence of floods. This is essential and is extremely useful for taking timely action to prevent loss of human lives, livestock and movable property.
- Flood Plain Zoning- Flood Plain Zoning is another very effective method of flood management. It is based on information regarding flood plains, particularly the identification of floodways in relation to land use.
- Stream Channelization- A close network of canals reduces flood hazard to a great extent because flood water flowing in the river can be diverted to canals.
- People should construct Chang house in order to prevent themselves and their property from flood water.
- Government should provide life Jackets and boats before the flood to the people of flood affected region.
- Post Flood Management- It includes Speedy restoration of transport system particularly roads, supply of safe drinking water to the affected areas, repair of power, telephone lines, proper arrangement for supply of food, shelter and clothing to affected people, adequate supply of necessities of life,

Constitution of a survey team to assess the loss and compensation to be given to the affected people, assistance for repair/ rebuilding of private properties etc. Preparedness is very important steps for the people living in natural hazard zone. Hence, it should be prepare according to the requirement of the people and place.

## VII. CONCLUSION

Man has been facing natural hazards and disasters since the dawn of civilization. Flood is natural hazard which occurs in response to heavy rainfall. After conducting and analyzing the survey one fact is highlighting that the Notun Rangagora gaon is situated very near to the Dibru river and the continuous erosional activity by the river in addition with heavy rainfall further making the situation more alarming to the local people. Both the Government and Local people should unite together in order to face challenging situation during the time of flood emergency situation. Though it is difficult to stop natural hazard and disaster but can be minimized the extent of flood by flood disaster management and pre and post flood preparedness and management. There is a intimate relationship between man and nature. Notun Rongagora gaon has scope to develop but it is necessary to develop right scope at right time. Accordingly, socio cultural affairs can be viewed as human attempts to solve the problems rising out of specific ecological situations. They devise plans to work out strategies in order to utilize resources. There is always a human responses to physical problems like flood, and it is physical environment tends to help man to adopt himself to this vibrant situation in different ways.

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## AUTHORS PROFILE



**Dr. Jaya Kalita Gogoi, M.A., B.Ed., Ph.d.**

Author is interested in Planning and development as the subject of specialization is Regional planning. The primary field investigation is the special interest of the author, as it provides good insight to the investigator to understand the suffering of the people and to get practical aspect of the study. The author is interested to reveal the nature of such burning problem and provide suggestions in case of management of flood problem. The study may help to some extent to the planners as they will formulate new techniques to harness the situation in near future.