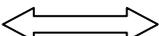


River Erosion and Its Socio-Economic Impact in Barpeta District with Special Reference to Mandia Dev. Block of Assam

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Abstract

Assam is full of natural resources and agricultural state. Above 80% of people depends on agriculture but last 40 years Assam faces huge river erosion problems, which has destroyed a lots of agricultural production and other fruits and house land of the people. Barpeta and Mandia dev. Block of Assam is mostly affected areas by river erosion. River erosion means current of river or wave of water of the river broken the banks of the rivers which accumulates huge mud and siltation in river bed and holding capacity of water decline in the river and creates flood and erosion Assam. It has to importance to study, because river erosion leads to huge socio-economic losses and have been great impact on eroded villages. This study includes causes of river erosion and impact of erosion, finding of the study also recommendation and measures and conclusion is that government should take immediate steps against river erosion, otherwise state has faces socio-economic crisis due to river erosion.

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I. Introduction

Assam is full of natural resources and agricultural state. Total population of Assam in 2001 was 276.0Lakh as on 1st March, 2001 census reports and 74 percent of population are engaged in agriculture, Agricultural land of Assam is 25Lakh hectare & 78 of land is used for food grain production. Soil erosion is the process by which soil particulars are taken way from one place to another through agent such as water in motion of wind. River erosion means current of the river hit the banks of rivers and broken the banks, which create most sensitive and dangerous situation in river areas. Barpeta District of Assam is mostly affected by Erosion and flood 80 villages are fully affected and some others are partially affected in the district. The gate way of the district Tarabari and Khola Bandha is famous river harbor which presently has become collector of chars in 1962 Semi urban areas Tarabari Bazar disappeared in the valley of Brahmaputra. Some of historical places mentioned in famous “Novel” Monumoties as Moinbari, Hadira Chaki Flora, Chatla are now in the valley of Brahmaputra, More over some other rivers like the Beki, the Velengi, the Chalkhaya, Pashuianara etc. and in Mandia of Barpeta also cause erosion creates great threat to the people of these areas. It also increases poverty, unemployment illiteracy improper care for health and education facilities, the changing population pattern and declining land area, leading to various socio-economic problems of Mandia Block of Barpeta about 2Lakhs people have been suffering last 40 years.

The Earth quake of 1897 and 1950 has changed the structure of land of Assam. Due to high rain fall, deforestation, Shifting cultivation, unplanned embankment and caring of siltation and fall down river bed and accumulation that decline the capacity of holding water where cause flood and erosion caused to damage of cropland and infrastructure including roads and bridge and inhabiting land of people.

From the ancient time Mandia Block of Barpeta district was the exiting inhabiting land of various cultural people. After the great Earth quake of 1897 western part of Barpeta, i.e. the plain land gone down 3/4 feet, and river Beneath of Brahmaputra come up to 8/10 feet up wards, thus the cause of river creates many sub divisible part in the river which causes flood and erosion that harm many Lakh of people every year. The former inhabitant shift to the northern part of high land. After a long period gap non Assamese miah people migrated from undivided British India, now Bangladesh and settled in Mandia Block and took agriculture as their main occupation. With the hard labour and struggle with natural calamities create green revolution in the field of agricultural production. Those people gave up their own culture and accepted Assamese language in their own profession. Thus the custom is going on farmer depending on agriculture are now living an agonizing life as their agricultural land have been eroded by river, which is the main cause becoming shortage of agricultural land and due to the shortage of land heavy pressure has been felt and which arises to socio-economic problems in the Mandia Block. Due to river erosion large number of people are displaced in the block. The eroded people were settled different places of the Barpeta district such as char chapuri town some other states and reserve areas of the Barpeta.

II. Scope and Importance of the Study

The study has great scope and importance the study tries to focus on the problem of river erosion and its effect on the socio-economy of the people of Mandia Block. The erosion has declined agricultural land and increased land has labour to 16.92 % in 1991 of the district Barpeta. The percentage of agricultural labour is 29.20 % the people of the district, face various type of problems such as poverty unemployment, illiteracy growth rate, land less labour displacement of erosion. Due to erosion some historical place has vanished and the people have lost their land. So the agricultural problem faced up. From the study we can know the rehabilitation of the district and areas. The river erosion cause huge destruction of agricultural production and other fruits. If presently flood and erosion control measures are not taken Assam will face the economic crisis and other social problems like schooling, health, sanitation, unemployment and poverty of the eroded areas. River erosion creates problems of identity for some people who are sometime suspected as illegal foreigners.

If the government can control the rivers the Brahmaputra and its tributaries creates some big dam, power plant project then it benefited the people of Assam as well as the economy. The agricultural land also will save from erosion if Banks are constructed properly. If agricultural areas are not protected, it will create shortage of food supply. More over every year flood and erosion destroyed road, embankment and other institutions which duly give rise to social as well as economic problems.

III. Objective of the Study

There are many important and reasons for studying the research topic. The Barpeta district of Assam 85% of people is engaged in agriculture and in Mandia Block about 90% of total population engaged in agriculture. There are no other dependable sources for livelihood due to illiteracy, poverty, unemployment, disguised unemployment, high growth rate and super situations so socio-economic conditions of the area are not satisfactory. The objectives of the study are as follows-(1) To study the population structure of Mandia Block. (2) To analyses the causes of river erosion problem. (3) To know the displacement of the family of the Mandia Block. (4) To focus on rehabilitation of the displacement of people of Mandia Block.

Hypothesis –

- (i) Poverty rate of Mandia block is high as compared to the Barpeta district.
- (ii) There is high land less agricultural labour in Mandia block.
- (iii) River erosion of Mandia Block is high as compared to the district of Barpeta.
- (iv) Displacement of family is high in the Mandia Block.

IV. Methodology

the study on “River Erosion and its Socio-economic problems of Barpeta District with special reference to Mandia Block of Assam” primary sources of data include field study on river erosion, observation methods, offices records of the circle etc. secondary data will be collected various publication of central state and local government offices, Magazines, News paper, reports Various association reports prepared by various writers economists, statistics, public records and some others previous dissertation etc.

V. Cause of River Erosion

As per Assam government revenue department records an area of 6116 hectares of land was affected by soil erosion in upper Brahmaputra valley and North Bank plain zone during 1994. It is observed that at some places a kilometers of bank along the villages, fertile agricultural lands and roads are being eroded by the rivers. The extent of loss to the bank erosion and virtually facing the threat to existence. The extent of loss to the bank erosion varies from year to year depending on the severity of flood in the state. More than 4200 square kilometers of productive farmer land in Assam were eroded in the last 40 years about 0.9 million people mainly poor small holders and their families lost their land were left homeless and in poverty by losing their land they also lost their social identity and backup with in the rural community. Total economic losses directly and indirectly caused by bank erosion although difficult to quantity in their economic and social impacts in detail, were estimated in the range of billions of Euro.

In Barpeta like Mandia is mostly affected by river erosion by different rivers, following are the main causes of the river erosions

1. Flood: One of the most burning problems of erosion in Assam is flood. From June to September weather is wet and rainfalls regularly end thus. These happen flood is firmly said after 1950 in Assam Assamese people fall the problems of flood and erosion of Brahmaputra and its tributaries. If we justify about the losses of flood than we can include that the socio-economic condition of people has degraded due to flood in Assam. More physical, mantel, hand lab our men cannot be by statistical methods. Bui the demand of various political, man political parties student unions of Assam have arisen questions about the solution of flood problems. The Mandia Block of Barpeta district of Assam which is fully surrounded by rivers so it also called riverien area, because there are various rivers such as the Brahmaputra the Block in autumn season flood and erosion create very dangerous situation. Which damage a lot of and domestic animals others and these loss are extremely suffered by the people of Assam.

2. Deforestation: Another factors caused of river erosion is deforestation. In Assam the problem of deforestation or degradation of forest is quite acute. Total area under forest has been gradually declining in Assam due to its total mismanagement. Due to rapid urbanization process and consequent factors; degradation of forests is also occurring which is estimated (1991-92) at 23577 sq km and classified as forest waste land. The factors which are largely responsible for large scale deforestation include growing demand for raw materials for forest based industries and increasing demand for state government from forests. From the very beginning state government were very much interested to collect a big volume of revenue by selling timber and other forest products. Moreover forest bureaucracy allowed illegal feeling off trees with the sole intension to get illegal gratification. Besides indiscriminate cutting of trees standing in the forest adjacent to the village by the villages is also responsible for massive deforestation in the country. Thus deforestation has created both ecological and socio-economic problems in the state like Assam. This sort of continues large-scale deforestation is directly responsible for soil-erosion greater frequency and intensity of flood continues heavy siltation of costly dams and river bonds change in climate condition and ecological imbalance. So deforestation is one of the cause of river erosion.

3. Heavy Rainfall: Another responsible factor of erosion due to this land slide heavy siltation of streams and mud caring the river beneath these accumulated in river and water holding capacity of river decline and the current of the river change the direction of the river which cause erosion of the banks. Due to heavy rainfall it is the cause of erosion. In Assam as per an estimated in January 2006 to December 2006 the annual average rainfall is 1740.0mm where as in Barpeta district it is 258.6mm so rainfall is responsible for river erosion because water of the Brahmaputra depends upon many extend on rainfalls.

4. Strong Current of the River: The River beneath of the Brahmaputra come up due to the earth quake in 1850, so current of the river flows speedly. On account of deepnest of the river causes eroded the banks of the river. There are four major consequences of rainfall erosion need to be emphasized changes in farm productivity damages from uncontrolled run off and flooding siltation of water channels and storage reservoirs and environmental alterations at sendiment destination such as oceans lakes or estuaries.

5. Uncontrolled Traithing: In the river system there is no control on the traithing in river water transports. If governments control the traithing system then erosion may decline which eroded on account of uncontrolled traithing of the river.

6. Silt Deposition:- Deforestation, land slide and other unplanned embankment and destruction of hills for road construction which carried huge amount of silt in the river beneath by the tributaries of Brahmaputra. Which result accumulation of silt. This produces the water holding capacity of the Brahmaputra causes changes the direction of the river and eroded the bank of the river.

Effect of River Erosion:

River erosion which creates socio-economic problems of the areas, The river erosion affects are social and economic aspects of the Blocks. The river erosion which affected in earning sources and creates some social problems such as health education, housing and water etc. which creates directly economic problems and social problem like displacement.

1. Displacement of people: - The people of the block displaced due to river erosion of their housing land and earning sources. For their better livelihood they rush to some better places and for their better livelihood to various parts of the districts and town areas like Charchapuri, nearest villages some reserve places of Assam.

2. Affect in Health: When river eroded the housing land they take shelter, some slum areas like road embankment. Which is not suitable for health more over flood and erosion affected areas does not get adequate medical facilities. Some medical centre also affected by erosion.

3. In Erosion The People Suffer Proper Education: This is lack of educational facilities due to erosion and better transport people cannot take proper education. More over there is not available school premises teachers also many school destroyed by river and shifted to another place from the origin Chashra High School shifted at Goral and imparts teaching to the students.

4. Affect in occupation: when river eroded villages and then fall adverse affect to the occupation of the people of eroded areas and losses all lands of occupation with agriculture for better earning people run to urban areas.

5. Unemployment Problems: in India the incidence of unemployment is more pronounced in the rural areas. Rural unemployment is again of two types. Seasonal unemployment and disguised unemployment. Agriculture through a principal occupation in the rural areas of the countries is seasonal in nature. There cannot work to the rural population of the country throughout the year. In the absence of multiple cropping system and subsidiary occupation in rural areas a huge number of rural populations have to sit idle 5th to 7th months in a year. Disguised or perennial unemployment Indian agriculture is also suffering from disguised or perennial unemployment due to excessive pressure in agriculture and allied activities. In the eroded areas people felt heavy pressure in agriculture due to erosion.

6. Poverty in Society: The incidence of poverty in India has also been declining in recent years. The planning commission estimate of poverty shows that the proportion of total population lying below the poverty line has declined 54.9 percent in 1972-73 to 38.9 percent in 1987-88 than to 24.4 percent in 2001-02. Thus it is found that during the last 51 years of planning period, India has achieved a considerable progress on its various fronts. Considering the level of development achieved both agriculture, industry infrastructure and other areas of country. Against the percentage of population lying below the poverty lines as per planning commission recent estimates stands at 36.09 percent in 1999-2000. The Barpeta district poverty was in 1991 nearly 75% in char areas, and it was 55% in 2001 which is much more than district level, it was only 45%.

7. Affected in Transport System: In River erosion there is lack of proper transport facilities due to natural calamities in the areas. Due to river erosion roads construction are not possible those areas, so society faces the social problems in river eroded areas.

8. Primitive Technology In Agriculture: In Mandia of Barpeta are riverian area, so there is no any modern technique in agriculture due to some risk which cannot able to invest on the agricultural field. So agricultural production are not satisfactory.

9. Losses Crops:-River erosion destroyed the agricultural crops in eroded areas which creates the economic problems of the farmers because they lost their capital totally when crops land eroded by the river

10. Deforestation Problem: Due to river erosion country faced the deforestation problems which creates some land less labour and marginal labour in eroded areas which automatically influences social aspects that execute economic problems.

11. Shortage of Cropland: Due to erosion agricultural land become short, which also reduces the housing land for people. Growing population cannot capable to feed for them and arises economic problems in society.

12. Increase Landless Labour: Due to river erosion of Mandia Block there is increased land less labour about 90% which is much higher. Compared for the district of Barpeta. It is only 16.08 in 2001. Due to deforestation marginal and land less labour increases which acquired fuel for fire wood and waste valuable cowdung of cows. Hence river erosion automatically increases deforestation of the areas.

13. Salinity of Land: The soil contains certain salts which are harmful for the plants so long as these salts lie deep in the earth there is no problems. But they are brought to the surface known as salt offer resented by the seeping of the canal water into the lower layers thus forcing sub soil water to come up. As the sub soil ground water land rises. The salt of the earth come up to the surface ruining crops and making cultivation impossible. The problem can be tackled best by liming canals and distributaries with concrete to prevent water from seeping in pumping out sub soil water by tube well can also prevent it from coming up. It major portion of the salt affected lands lies in fertile. Which automatically affect in agricultural production which results in food and economic crisis.

14. Isolation From The Geographically of Eroded Areas: The eroded area are geographically isolated from the forward places and therefore many problems arises in those eroded areas.

15. Acquisition of Land by Government: When some khash land eroded that land does not return to the owners which are acquired by the government due to lost of their occupation and government also deprived of these areas for given the permanent ownership.

16. In Debtness : Another important impact of eroded areas, farmers. Remain indebtness due to destruction of their agricultural crops land.

17. Low Investment: Due to erosion farmer are not invested to invest in the agricultural and other productive fields. So the amount of investment is very low on account of flood and erosion.

18. Hinder of capital formation: Hinder of capital formation of the eroded areas, because capital cannot forms due to production. which turn lack of income due to their indebtness the farmer does not make capital formation which leads to lack of funds.

19. Affect Productivity In Eroded Soils: The continuing population explosion and accompanying "Shrinkage" of land resources show clearly that the impact of social erosion on farm productivity should be of foremost concern to developing tropical countries. However only limited data are available on the effects of erosion on crop yield. Reiche (1977) postulating that land degradation may be a continues natural process indicated that soil productivity undergoes drastic changes only upon accelerated degradation due to increased human activity.

Erosion impact may therefore be quantified by expressing the ratio between yields before and after the start of accelerated erosion or the magnitude of yield decline per unit time in the area subject to degradation.

20. Division of Joint Family: Division of joint family which creates one land problems for their shelter and other agricultural land fragmentation of herding create the social and economic problems of the areas.

All the factors stated above are the main Socio-economic impacts of the river erosion.

Finding: In the light of the above study we have observe that river erosion problem of Assam create acute socio-economic problem in Assam economy. The river erosion damages lots of production every year. Moreover loss live stocks and other roads embankment bridge destroyed because disastrous flood in Assam leads to accelerate erosion. In Mandia Block, the most of the villages are damaged in erosion. Which destroyed agricultural land, housing land of the area, etc. it has been seen that the problems day by day growing in the block and socio-economic problems faced by people.

In Mandia Block displacement problems arises more and more due to erosion, for which people losses their identity as same time suspected to than as illegal foreigner, when they are searching the better jobs and batter placement for their livelihood. Due to erosion displacement people settled at same reserve areas, and cause deforestation which lead to increase land less agricultural labour and marginal famers in the forms of loss of fuel wood and fooder for their cattle. Thus deforestation has created both ecological and socio-economic problems in the state like Assam.

River erosion increased disguised unemployed person which lead to increase poverty which cause affected health and education and other social problems like population growth, illiteracy and improper nutrient and housing problems. In case of agricultural land sand covered by erosion which causes unfit for production of agricultural products and creates food problem in the society.

The study found that the total char's population is more in Mandia block of Barpeta district in 1991 total char population more than two lakhs. And at the official reports total char population of district reached 250 lakh on 2009 and Mandia block it was 1,62,367(House hold survey).

More over the study found that the transport facilities are not satisfactory in the Block, lack of pacca Road, Bridge and other means for communication of the area. Population of some villages is living in the roads and Embankment that mostly seen the villages like Digirpam, Digirpar, Satra kanara etc.

The study approves the hypothesis that poverty in the block is higher that Barpeta district. The number of land less labour is high in case of agriculture in Mandia Block. River erosion is very high in Mandia Block as compared to Barpeta district. The displacement of families cause by river erosion in Mandia Block is very high.

The hypothesis proved to be positive that the erosion problem creates a dangerous situation in Assam and which are also creates some other problems in the society of the area.

Recommendation And Measures :- We are giving some recommendation about the erosion problems and population of eroded areas faces some socio-economic problems which can be reduces to take some proper steps which may relax the problems of the people.

Absolute prevention of Soil erosion is unattainable and obtains unnecessary. Therefore a realistic goal is to keep soil losses with in tolerable limits a major step will have been taken towards alleviating critical world food shortages and reducing the frequently climatic and constrains that may have been considered to use particular land area wisely. The land capability concept was first developed in the united state but in our topic the river erosion are some different from soil erosion to control the river erosion we should take some important factors which aggravated river erosion as given as flood control measures – (i) Short termed temporary or semi permanent protective measurement. (ii) Long termed permanent and solving measurement up to date to control flood of Brahmaputra, The Borak and its tributaries (a) Embankment (b) Breach closing (c) Better retirement bound than embankment, (d) Sluice gate etc.

(B) Deforestation measures or a forestation programme plantation should be alone in char areas of river erosion and both the banks of the river than it can reduces the erosion.

Other Measures to control River Erosion :- (i) The erosion river treading system should be follow, without traithing erosion may not be control, (ii) Temporary Brouz and perqupining system done in the river, (iii) Spur bedber construction (iv) Banks boulder pitching should be practiced.

To solve the problem of erosion of erosion political representative should head their interest on the problem and pressurize the central government and compel the same to declare. The national problem and solve it. New technology should be applied for the problem of erosion retirement bond than embankment road construction scientific methods application in agriculture if a power plan is set up in Manas river in the border area of Barpeta and Bongaigaon district will be benefited profusely in the field of electricity and irrigation. The people of the district will be able to rear fished if the embankment is setup and erosion will be protected.

If we can trench the Brahmaputra and boulder pitching on the both sides then erosion protected will be permanent.

VI. Conclusion

Thus from the above discussion we can conclude that river erosion problems is crucial problems, which is main obstacle for economic development of the state more creates all kinds of social problems which turn economic problems. In case of Mandia block is logging behind than all other blocks of the Barpeta district and Assam. People of these areas facing financial burden of eroded land also from which cannot aspect any future returns from that portion they paying as a rent eroded land. The government should give relaxation of taxes on the eroded land. So government should take immediate action against river erosion otherwise Assam will faces economic or land crisis.

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