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Effects of Flooding on Socio-Economic Status of Two Integrated Char Lands of Jamuna River, Bangladesh

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Abstract: The study observed the effects of flooding on socio-economic status of two integrated char lands of Jamuna River in Bangladesh during the period from March 2011-September 2011. Data were collected on primary and secondary sources. The Primary data was collected from the field level through intrinsic study and secondary data were collected from various sources vz. Bangladesh Water Development Board, Statistical Bureau, Agricultural office, published journals etc. The questionnaire survey was conducted on the char land's people in order to reveal their perception regarding effects of flooding and management and adaptation strategies. The study revealed that floods have long-term negative implications on socio-economic status. According to survey followed by the most affected sector was agriculture (53.33%), followed by health (17.77%) and property (26.66%), diseases as Diarrhea occurred at alarming levels (77.77%). In the year 2011 the crop damage (57.77%) and house damage wise significant (26.66%) and roads communications were also highly affected by flood. The study obtained the difference-in-difference estimates the magnitude of impact of flood on socio-economic status depending on the relative flood prone area and the severity of flooding and its associated impacts.

Key Word: Char land, Flood, Livelihood, Socioeconomic status

Introduction

Bangladesh is a disaster prone country; it is subject to colossal damages to life and property almost every year. Bangladesh is most vulnerable to several natural disasters and every year natural calamities upset people's lives in some part of the country. The major disasters concerned here are the occurrences of flood, cyclone and storm surge, flash flood, drought, tornado, riverbank erosion, and landslide. These extreme natural events are termed disasters when they adversely affect the whole environment, including human beings, their shelters, or the resources essential for their livelihoods (Bangladesh: State of the Environment, 2001).

Bangladesh is one of the least developed countries of the world with an area of 147570 square kilometers. The population is 160 million with growing rate of 1.34 percent per annum (UNDP, 2011) and more than 75 percent of the population lives in the rural areas Bangladesh is also a disaster prone country (Hossain *et al.,* 2004). It is also a developing country discharge with numerous problems of over population, poverty complex socio economic structure, frequent disasters, low level industrial base, resource constraints and lack of appropriate infrastructural and institutional facilities. Major factors responsible for disaster s in Bangladesh are flat topography, rapid run off and drainage congestion, low relief of the flood plains, low river gradients, heavy monsoon rainfall and enormous discharge of sediments, funnel shapes and shallow Bay of Bengal. These problems are complicated and compound with the occurrence of regular and frequent disasters impeding the overall socio-economic development efforts of the country. According to the satellite data the river consumes about 8,700 hectares of arable land every year (Khan *et al.,* 1999).

Flooding is a natural phenomenon, which cannot be prevented. The flood control measures and policies should be directed to mitigation of flood damage, rather than flood prevention. Most of the people of Char land area are facing various problems such as sanitation and health, change of food habit; among them lose their permanent resident and become environmental refugees during flood. The result shows that, due to flood, most of the people lost their job and led to decrease income level. Normally the intensity of flood in July-August that time the severe problem are seen lack of food, damage crop, road infrastructure. Various diseases like waterborne such cholera, dysentery, fever, diarrhea and some other diseases occur.

Floods make an enormous impact on the environment and society. Floods destroy drainage systems in cities, causing raw sewage to spill out into bodies of water. This can lead to catastrophic effects on the environment as many toxic materials such as paint, pesticide and gasoline can be released into the rivers, lakes, bays, and ocean, killing maritime life. Floods may also cause millions of dollars worth of damage to a city, both evicting people from their homes and ruining businesses. Floods cause significant amounts

of erosion to coasts, leading to more frequent flooding if not repaired. However, floods do make a slight positive impact on the environment. Floods spread sediment containing beneficial nutrients to topsoil (Wikipedia, 2009). Keep in the above views in mind the present work was undertake to evaluate the Effects of Flooding on Socio-Economic Status of Two Integrated Char Lands of Jamuna River, Bangladesh.

Materials and Methods

The study was conducted in the two integrated char land such as Afjalpur, and Jalbali, char under Durgapur Union of Khalihati Thana in Tangail District. Kalihati is located 90°20' east to 89°40' North latitude. According to the Bangladesh Census 2001 Khalihti has a total population of 29823; male 50.26%, female 49.74%. The literacy rate among the town people is 28.9%. The density of population is 12478 per sq km. Population 354959; male 51.55%, female 48.45%; Muslim 90.02%, Hindu 9.2%, Buddhist 0.14%, Christian 0.15%, others 0.49%. Average annual temperature: maximum 33.3°C, minimum 12°C; annual rainfall 1467 mm. The location of Afjalpur, and Jalbali, chor under the Durgapur Union parishad of Kalihati Upazilla. The total land area of two char is 600 acres. The total population is 2000 most of them are day laborer and illiterate. The quality of the soil of study area is fertile but low land. Average annual temperature: maximum 33.3°C, minimum 12°C; annual rainfall 1467 mm. The Data was collected based on primary and secondary sources. The Primary data was collected from the field level through intrinsic study during the period from March 2011-September 2011. The secondary data was collected from various sources vz. Bangladesh Water Development Board, Statistical Bureau, Agricultural office, published journal etc. The questionnaire survey was conducted on the char land's people in order to reveal their perception regarding effects of flooding and management and adaptation strategies.

Results and Discussion

Causes of Flooding

There are many causes which are responsible for flooding in Bangladesh. From the (Fig. 1) shows that, 71% respondent said the main cause of flooding is low land in the study area, which was the highest followed by the 27% respondent who said the Farraka Barrage is also responsible for flooding. The only 2% respondent said that, lack of proper management system was also responsible for flooding.

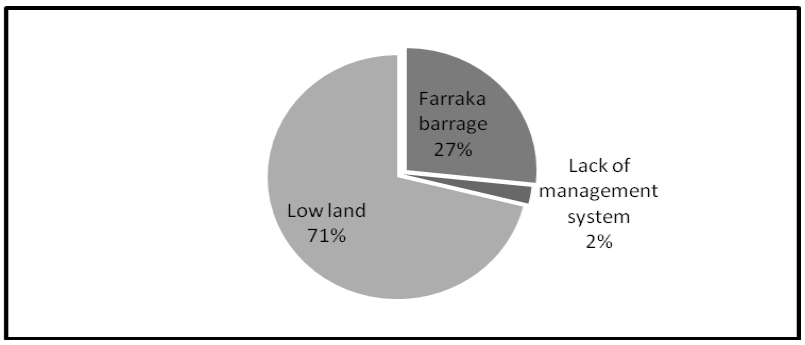

Fig. 1. Causes of Flooding

Problem Faced during Flood

Figure shows that during flood in Bangladesh the human being faces many problems. The study found that, the 60 % of respondent said that the most common problem was the lack of food during flood. The 33.33% of the respondents said that communication problem occurred during flood. The percentage of respondent was health service problem occurred during flood in the study area; the value was 6.66 % (Fig. 2).

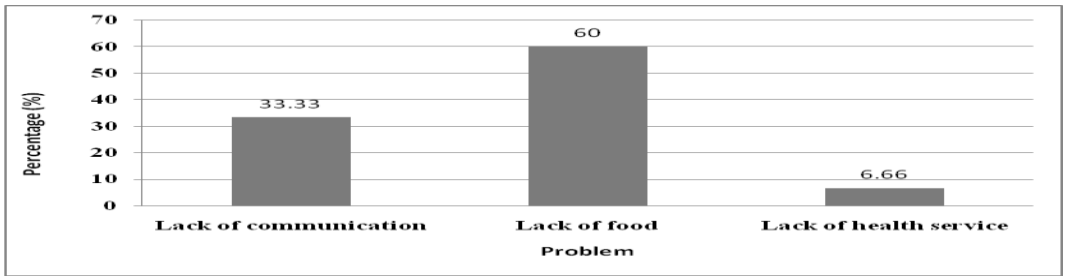

Fig. 2. Problem Faced during Flood

Sectors Affected by Flood

Fig. 3. Shows that during flood, different sector have been damaged and loss of property happened. The study revealed that, 53.33 % of respondent said that Agriculture was the most common sector which is affected by during flood, followed by the 26.66% respondents said the properties were affected during flood. A signicicant percentage of respondents said the health and live stock were also affected by the flood, the value were 17.77% and 2.22% respectively.

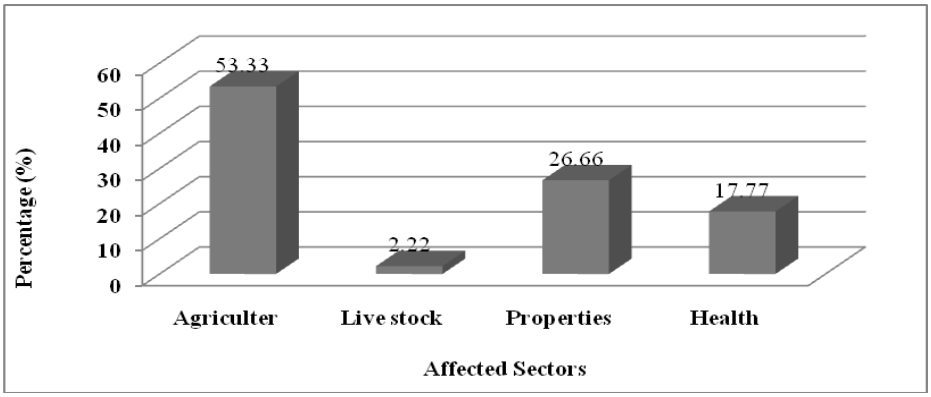

Fig. 3. Sectors Affected by Flood

Diseases occur during/after flood

Fig. 4. Shows that, Flood has many impacts on human being and environment. The person of the flood affected has seen suffered many contagious diseases like waterborne diseases such as typhoid, dysentery, cholera, hepatitis B, and diarrhea.

The study showed that, the 77.77 % of respondent said that Diarrhea was the most common diseases during/after flood, followed by Typhoid and unpredicted diseases occur during/after flood in the study area.

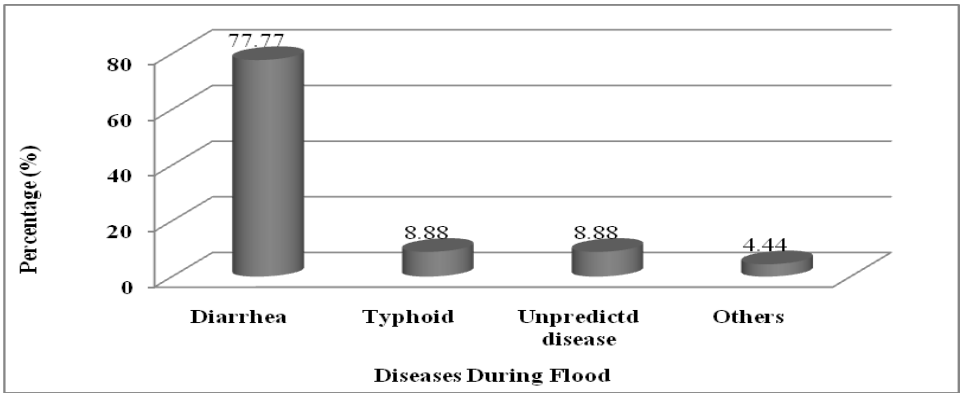

Fig. 4. Diseases occur during/after flood.

Damage caused by flood

The study revealed that, majority of the respondent said crop was damaged by the flood, the value was 57.77% followed by the 26.66% respondents who said that house was damaged by the flood. The percentages of respondent said the domestic animal and land were damaged by the flood and the values were 2.22% and 13.33% (Fig. 5.) respectively.

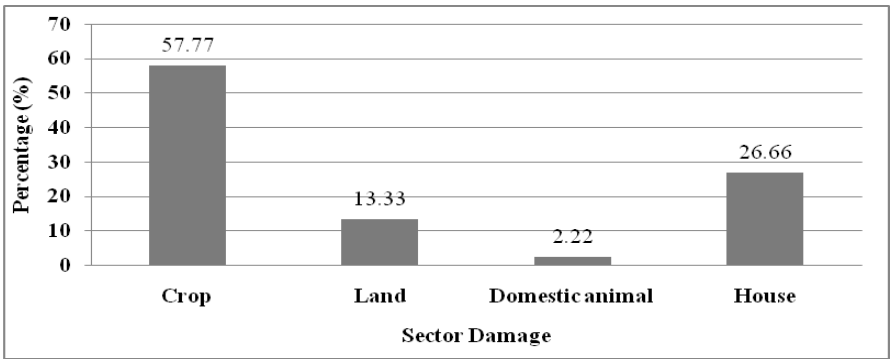

Fig.5. Damage caused by flood

Table 1. Type of Adaptation during flooding

Type of Adaptation	Percentage (%)
Migration and storage food	24.44
Vulnerable feeding and storage food	68.88
Both	6.66

The Table 1 shows that, the percentage of the respondent take adaptation during flood of Vulnerable feeding and storage, the value was 68.88%, which was the highest, followed by the 24.44% respondents who said they took have migration and stored food type of adaptation during flood. Only the 6.66% respondent said they take both type of adaptation during flood.

Opinion to manage flood

There are various methods of managing flood. The study revealed that, the 82.22% of respondent said that road construction and loan from bank is the most common managements system to manage flood, followed by the 11.11% of respondents who said the long term loan from bank and river dredging. The respondents said the dam making and planting trees were the management systems 6.66% (Fig. 6).

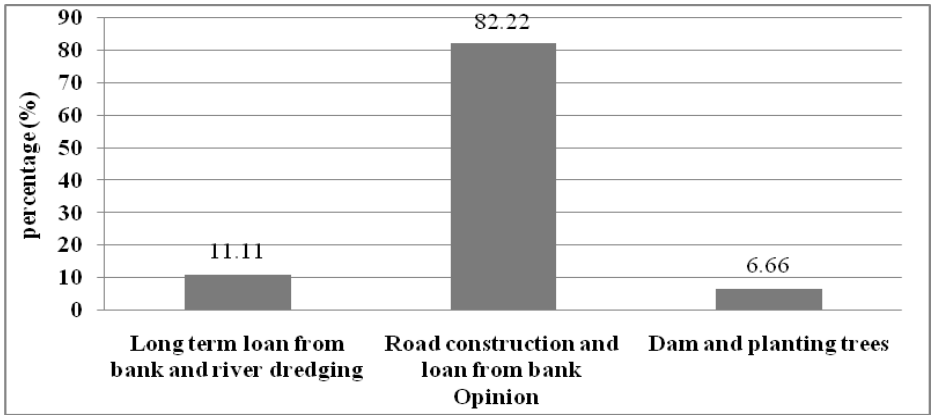

Fig. 6. Opinion to manage flood

Conclusion

Flooding is a natural phenomenon, which cannot be prevented. The flood control measures and policies should be directed to mitigation of flood damage, rather than flood prevention. Most of the people of Char land area are facing various problems such as sanitation and health, change of food habit; among them loss of permanent resident and becoming environmental refugees during flood. The result shows that, due to flood, most of the people lost their job and led to decrease income level. Normally the intensity of increases flood in July-August and people face severe problems for food, damage of crop and road infrastructure is among others. Various diseases like waterborne such cholera, dysentery, fever, diarrhea and some other diseases occur. Moreover,

good governance, appropriate environmental laws, acts and ordinances will be necessary to achieve sustainable economic development and to reduce any environmental degradation. In addition, implementation of an improved real-time flood and drought control warning system can reduce damage caused by floods. A greater understanding of the processes that contribute to increased flooding susceptibility, however, can help us mitigate the adverse effects on human lives, environment, and economy.

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