

IMPACT OF FLASH FLOOD ON WOMEN LIFE: A CASE STUDY IN FATIKCHHARI, CHITTAGONG

ANANYA BISWAS AND SALMA MAMTAZ*

Department of Geography and Environmental Studies, University of Chittagong, Chittagong 4331,
Bangladesh

ABSTRACT

This paper presents the impacts of flash flood on women life with a gender view which has been conducted on Fatikchhari Upazila under Chittagong District. The Halda River is mainly responsible for flash flood in this area. The study was aimed to know the causes of flash flood and to investigate the impact on women life and livelihood. The semi structured questionnaire survey for primary data collection and physical observation method was followed to fulfill the goals. 25-50 years aged women were selected as target group for survey as this group solely has been facing the household damages with the flood water. Therefore, women suffered more than men in terms of resource and emotional trauma. The result showed that most of the women claimed excess rainfall for flash flood and loss of agricultural production by flooding agricultural land. In the study area due to poor income, insufficient shelter, poor building materials, water and sanitation, lack of education, physical strength, child protection, health care facilities, religious cause, awareness, self-causes women are more affected than man. Moreover women's limited access to resource and decision making process increase their vulnerabilities. To solve these problems integration of gender, women issues into disaster research, planning, and organizational practice are needed for development.

Key Words: Flash flood, threat, life, livelihood, women.

INTRODUCTION

Floods are the leading cause of natural disaster deaths worldwide and were responsible for 6.8 million deaths in the 20th century. Asia is the most flood-affected region, accounting for nearly 50% of flood-related fatalities in the last quarter of the 20th century (Doocy, *et. al*, 2013; Jonkman and Kelman 2005; Noji, E. 2000). Also natural disaster is a common phenomenon in Bangladesh. Almost

* Corresponding Author, E-mail- smamtaz@yahoo.com

every year Bangladesh suffers highly from different kinds of disasters like flood, flash flood, tropical cyclones, tornados, tidal surges, droughts and large scale river erosion etc. (Islam 2011). Bangladesh has special geographical feature. Due to this weather system, Bangladesh is the worst victimized country of natural disasters which causes loss of lives and properties (Nizamuddin 2001). 80 percent area of Bangladesh is riverine flood plain (Brammer 1990; Chowdhury 1988). When natural disasters and environmental change occur, women and men are affected differently because of traditional, socially-based roles and responsibilities. Among the oldest and known disasters, floods have been threatening humanities for ages (Ferreira 2011). Every year floods take thousands of lives, leave millions homeless and cause significant loss to properties and infrastructures all over the world. Number of people at risk has been growing each year in developing country like Bangladesh with high poverty levels making them more vulnerable to disasters (UNISDR 2004). Women and children are the most vulnerable during the disasters. They faced in gaining access to basic sanitation as most of the latrines were submerged by the floodwaters. Some of the women admitted walking long distances with female relatives or planned trips together by boat to other less flooded areas to use the latrines. (Rashid, 2000; Rahman, 2014). As women are half of the total population of our country, their risks in disastrous situation is not avoidable. Due to flash flood the women are affected most. They had to bear the major burden of the disruption of normal livelihood in terms of safe water, sanitation, preparing and distributing whatever food they could manage among the family members (Rashid 1991). Women in Bangladesh still experience various types of violence physical, sexual, emotional and domestic (abusive language or exertion of physical force) that increases during and after a disaster (Ali 1999).

The impact of flood and flash flood events at a particular site can reflect key socioeconomic factors and environmental services, like number of people at risk, effect on ecological services and capability of human population for recovery. It is pointed out that women are usually much more affected than men during a disaster period. Women further may become victims of violence and face additional problems due to their gender (Nasreen 2012). The present study is conducted to realize the threat and impact of flash flood as a disaster on women life and the reasons behind it.

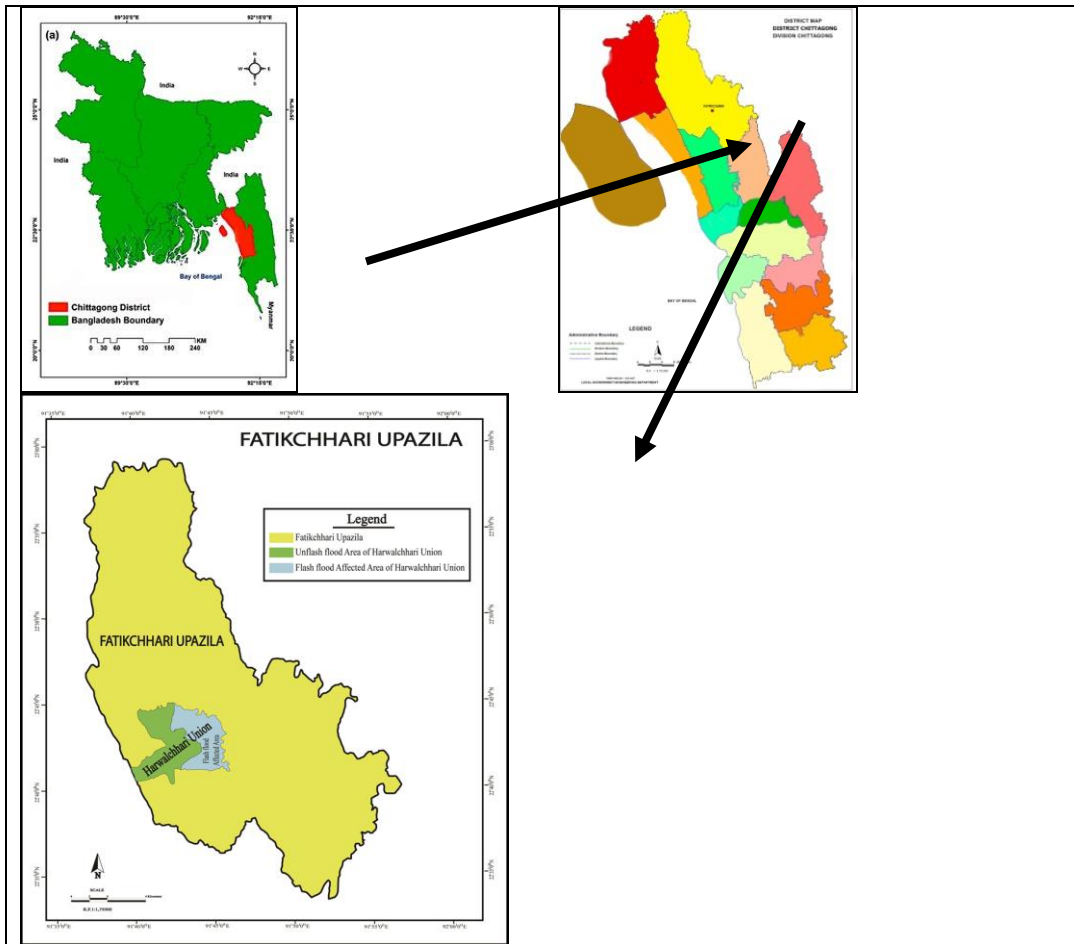
IMPACT OF FLASH FLOOD ON WOMEN LIFE: A CASE STUDY IN FATIKCHHARI, CHITTAGONG

Study Area

Fatikchhari is an Upazila of Chittagong District in the Division of Chittagong, Bangladesh. There are about 20 unions of Fatikchhari. Harwalchhari is one of them. In this research study area was in Harwalchhari union (Fig, 1). Selection of the study area is an important step for fulfilling the purpose set for the study. Area of Harualchhari: 14,772 acres (5,978 ha). Harualchhari is located at 22.7436111° latitude and 91.7086111° longitude. Villages of Harualchhari union are Lomba Bill, Mohansapara, Koratipara, Borbill, and Hazarkill. As of 2011 Bangladesh census, Harualchhari union has a population 34,470. Males constitute 17,407 of the population, and females 17063 (BBS 2013). Main River: Halda. Fatikchhari consists of flat farmland annually affected by flash floods caused by heavy rainfall in the hilly catchment areas and the water being drained by several small rivers and the Halda. Dhurung is its second longest river. There are some small rivers (khals) originating from the hills both on the eastern and western flanks, all being tributaries of the Halda flowing southwards to the sea (Banglapediea 2017). Here, we aimed at investigating the women concept on flash flood to explore the perception of women about causes of flash flood and the threat and impact of flash floods with livelihood activities of women in the study area.

MATERIALS AND METHODS

In this research both primary and secondary data are used. Primary data collected by field observation which helped to visual problematical environmental problems and their severity, and household questionnaire survey in the study area. A simple random sampling has been followed for questionnaire survey. The sample size of household was 200 and it was taken randomly. This was calculated by Raosoft online calculator at 85 percent level of confidence (Raosoft 2004). It was conducted in four villages in Harualchhari union where Mohansapara and Koratipara are highly affected by flash flood than other villages of this union. Total 100 questionnaires were conducted in these villages and in addition 100 questionnaires collected from village Lomba Bill and Borbill which are usually less affected by flash flood. The respondents were women of 25-50 years aged which taken purposively and they were housewife, employee etc. The semi structured questionnaire designed regard to the condition of during and after disaster (flash flood), which increase the threat for women life and livelihood. In-depth interview was conducted from respondent's women who were already suffered from flash flood and present situation of their life.



Source: Base map collected from LGED, 2017

FIGURE 1: MAP OF THE STUDY AREA

Secondary data has been collected from relevant published and unpublished books, journals, thesis, newspaper, Bangladesh Bureau of Statistics (BBS), LGED, Fatikchhari upazila, Haraulchhari union parishad, Water Development Board, different web site, etc. Collected data from different sources were compiled, tabulated and analyzed by Microsoft excel, and expressed as different statistical diagrams such as pie chart, bar diagram etc.

RESULTS AND DISCUSSION

Causes of flash flood

From the perception of women respondents there are several causes of flash flood occurring in the study area which has been ranked by highest frequency of numbers. Table 1 represents that most of the time excess rainfall results flash flood i.e. 61.5 percent respondents optioned that excess rainfall is the main causes of flash flood followed by due to sudden increase of water level at river or khal (21.5 percent) and sudden water insurgence from nearby upstream hilly areas (3.5 percent). Siltation in river is a most important case of flash flood. Due to the siltation the river cannot store heavy rainfall water. Besides the lack of embankment, the over flow of water causes flash flood and water logging is another cause of flash flood. If the drainage facilities are not easy then this type of flood occurs.

TABLE 1: CAUSES OF FLASH FLOOD

Causes	Frequency	Percentage	Rank
Excess rainfall	123	61.5	1
Increase water level at river/khal	43	21.5	2
Lack of embankment	12	6.0	3
Siltation of river	8	4.0	4
Water from hilly area	7	3.5	5
Water logging	5	2.5	6
Human activities	2	1.0	7
Total	200	100	

Impacts of flash flood

The impacts of flash flood on lives and livelihoods depend on the combination of different types of individual sector (Table 2). From the study area it is understood that the life style and livelihood of women mostly depend on the several sectors mentioned in Table 2. Agriculture is the main sector of the study area's economy. Almost 85 percent people directly depend on agriculture for their livelihood. During flash flood the most impacted sector is agriculture. The level of food sufficiency is miserable. Agricultural land was flooded by flood water and flood

water enter into the crop land. 23.5 percent women said that they loss their all agricultural production by flooding. On the other hand a flat topography area a moderate flood called “Bonna” is perceived to be beneficial for rejuvenation of crop land with clay, silt and minerals (Rahman, 1994). Four major crops paddy, maize, wheat and vegetable are reported to be damaged by the flood. The highest damage is seen in paddy and the lowest in vegetable (23.5 percent). The land productivity has been reduced for almost all types’ of crops at the study area. During flash flood, the cattle and other household animals suffer a lot. Damage of the animal house one of the major problems for the flood. People suffer a lot to save their cattle from flood water (Table 2).

TABLE 2: IMPACT OF FLASH FLOOD ON DIFFERENT SECTORS

Category	Frequency	Percentage (%)	Rank
Agriculture	47	23.5	1
Livestock	40	20.0	2
Housing	33	16.5	3
Health	32	16.0	4
Education	15	7.5	5
Employment	13	6.5	6
Water and Sanitation	10	5.0	7
Social service	10	5.0	8
Total	200	100	

Sometimes they sent their cattle to the embankment. People don’t go to the flood shelter because they are concentrated about the safety of their cattle of home. People also loss their animals due to flash flood. The poultry farms are also affected during the flood. Different types of diseases of the hen also seen after flash flood. The percentage of impacts on animals is shown in Fig 2.

More than 95 percent respondents indicated that their houses collapsed due to excessive impacts of floods while the rest had their houses intact. Mainly the people whose houses collapsed due to floods, said that the flood water enter their houses every year. Table 2 shown that 16.5 percent women whose houses collapsed due to floods, said that the flood water enter their houses every year. Preparing meal and make fire was the most difficult task at flood”. Most of the furniture (80 percent) of their houses was destroyed due to flash flood. Furniture’s, cloths and other necessary things go under water due to flood. In that time they live in dark for lack of fuel.

IMPACT OF FLASH FLOOD ON WOMEN LIFE: A CASE STUDY IN FATIKCHHARI, CHITTAGONG

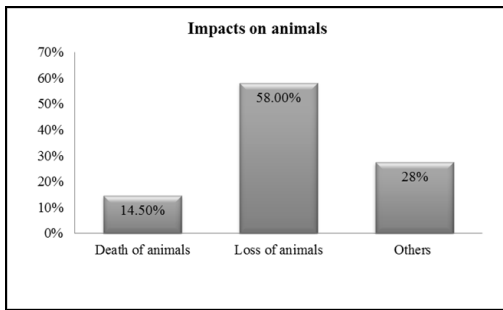


FIGURE 2: IMPACT ON ANIMALS

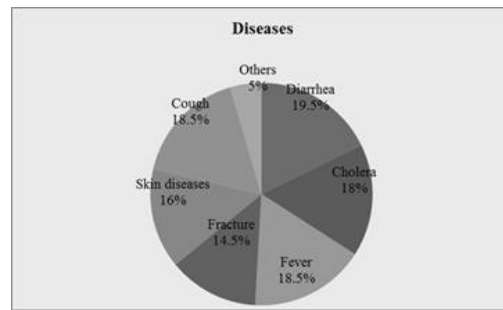


FIGURE 3: OCCURRING DISEASES

When flash flood occurs in this area, the suffering of the affected people knows no bound. From figure 3 it is known that lack of pure drinking water several water borne diseases arise (85 percent) such as diarrhea, viral infection, fever, malaria and other infectious diseases like cough, cholera, skin diseases, fracture etc. which are the common problems of the respondents during and after flood. All types of health center remain closed as flood water go inside those center. Especially, children and aged people are most commonly suffered from these types of health related problems. Primary treatment sometime might not be possible due to lack of accessibility of basic health facilities. Medicine facilities become a difficult service during flash flood. The percentage of several diseases is shown in Fig 3.

Women (90 percent) are more likely to suffer from malnutrition. On the other hand, the pregnant mother could not get any types of health facilities during the flood time. Women and girls also face barriers to have healthcare services due to a lack of economic assets.

The educational sector was the seriously affected during flood. 7.5 percent respondent delivered their opinion that, in the study area flood water entered all educational institutes. Therefore, all educational institutes were closed down during flood period. School infrastructure (95 percent) damages due to flash floods which have huge economic losses. Schools balcony's was damaged due to flash floods (Fig: 4). The disruption was attributed to various reasons such as road being impassable and school being submerged. All types of exams and classes were stopped as well the maximum educational institutes used as a flood shelter. Flash flood impact itself can also be an obstacle to gaining more education particularly for girls and women. During flash flood or other stressful impacts,

many girls are forced to drop out of school to help with domestic chores or to save money. It hampers children's education.



FIGURE 4: FLASH FLOOD AFFECTED SCHOOL (LEFT) and AFFECTED ROADS (RIGHT).

The major activities (75 percent) that employee women in study areas include serving as domestic helps, brick breaking, day laborers etc. The flood has damaged the existing canal for water pass. During the flood period all of the roads were overflow by the flood water (Fig: 4).

Boat was the only vehicle to maintain social communication as well as to go to any place from house. For this regions transport and social communication were much more difficult. Due to flash flood working sectors (88 percent) are affected because of reducing income opportunity, disparity and others. Flooding distorted the fishing business, destroyed fishing implements and impacted negatively on their social life, fishes of ponds and beels are death because of flash flood. When the water level of pond is increased due to flash flood, fishes are run away through flood water.

Water and sanitation facilities (99 percent) are mostly affected sector. Stakeholder of the study area said that their common water sources for drinking were affected by floods. Due to this unsafe flood water, most of the respondents complained that their family members, especially children suffered from different water born skin diseases. Due to damage of the sanitation facilities or infrastructures during flood, people are bound to complete their sanitation work under the open sky or unhygienic ways.

Most of the male members (90 percent) of this region are day laborer or farmers. During flood they loss their employment opportunities and thus social crisis and

IMPACT OF FLASH FLOOD ON WOMEN LIFE: A CASE STUDY IN FATIKCHHARI, CHITTAGONG

social vulnerability increases. People of the community are very poor and this poverty induces and instigates robbery. But this number is very few (5 percent) in the study area. From the survey, it is observed that some of the female respondents face various kinds of unexpected events at the time of flash flood. Disaster has its devastating impact on all areas of life-physical, psychological, social and emotional and all these reactions are interlinked. In any disaster the magnitude of mental health problems is enormous.

CONCLUSION

Men and women both are affected by flash flood. Flood water affect everybody, men, women and children, but differently. There are different types of impact on women which are remarkable in the study area. Due to flash flood they lost their homes, basic facilities like clean drinking water, hospitals, schools, occupation and livestock. That made it difficult for them to cope with the situation.

Women are more affected because they faced the household damage of things like utensils, cattle, which was swept away with the flood water. Household stuff and assets belong to women and they are responsible to take care of that. Ultimately, when everything got destroyed by the flood they got hurt and weakened because they spent lot of time and energy to build everything. Therefore, women and children are suffered more than men in terms of resource and emotional trauma, and they are also suffering from fatal and infectious diseases. For Geographical characteristics Harulchari union is naturally affected by flash flood and the impact is getting worse day by day. Flash flood has adverse impact on socio-economic condition. As a major part of society, women are affected by flash flood in every phase of livelihood pattern. So, reduction of misery and development of women life, necessary steps should be taken by local people, Government, NGOs and other public sectors.

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