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Impacts of Flash Flood on Livelihood and Adaptation Strategies of the *Haor* Inhabitants: A Study in Tanguar *Haor* of Sunamganj, Bangladesh

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Abstract: *The study evaluates the impacts of flash flood (especially 2017 massive flash flood) and explores prevailing adaptation strategies taken by haor inhabitants to subdue the impact. Primary data were collected through field visit, questionnaire survey, FGD and KII. A purposive random sampling method was applied for selecting 350 households from 10 villages located in and around Tanguar Haor. The inhabitants of low-lying haor areas are extremely vulnerable to flash flood. Their coping mechanism has been strictly curved by a number of social, economic, and political factors, leading to vicious circle of debt and poverty to mohajon (money lender) and micro credit institution, perennial marginalization from haor resources by influential groups and subsequent dependency on wealthy neighbors or relatives. The haor indigent community lives with flood, suffers a loss of income and living, confronts it with food shortage and malnutrition, and survives with the circumstances by bearing considerable debt with high interest rates. This vicious circle of debt, resource loss and poverty act as a dynamic force towards their long-lasting paucity and vulnerabilities, which curve their capability to get ready, take action, and recuperate from subsequent floods, as well as any other disasters. Government should formulate combined and effectual haor management and flood management policy and implemented suitably to shield lives and livelihoods of haor inhabitants.*

Keywords: *Flash flood, Tanguar Haor, Adaptation strategies, Livelihood, Women's role*

Introduction

In Bangladesh about two-thirds of the total land is classified as wetlands (Nanda et al., 2015) which have been estimated at 7 to 8 million hectares (Rahman et al., 2001). Wetland includes world heritage sites with paramount values to hydrological, ecological, biological, zoological or limnological settings (Haque and Basak, 2017; Blasco and Aizpuru, 1997). Almost 461 different kinds of wetlands are available in Bangladesh (Chakraborty, 2005). Based on elevation from Mean Sea Level (MSL), lands that are about 7-8 meters below MSL and are flooded for 7-8 months are classified as h*aor* (Salauddin and Islam, 2011). Tanguar *Haor* is one of the largest wetland systems located in the northeast region of Bangladesh (Sobhan et al., 2012) and plays an important role in the economy of the country with its natural richness and biodiversity. Tanguar *Haor* is not an ecologically diverse ecosystem but also is very important from socio-economic perspectives supporting around 70,000 people (Hossain et al., 2017). The *haor* provides numerous functions that not only benefit the local inhabitant but also to those living in downstream. The *haor* dwellers have been living in this fragile location for generations by exploiting natural resources of the *haor* but the local people were readily deprived of resource use immediately after it was declared as country's second Ramsar site (Kabir and Amin, 2007).

Bangladesh is generally regarded as a vulnerable country with respect to climate change, especially in *haor* areas because of its unique geographic location (Rahman et al., 2016). Among the various risks and disasters, flood is the most recurrent and common phenomenon in Bangladesh (Abedin et al., 2018; Zannat, 2016; Rayhan, 2010) and is considered as one of the prime threats of development (Paul and Routray, 2010; Younus et al., 2013). Flood is recognized as one of the distinguished natural calamities that direct to alter lives and livelihood by damaging agricultural production and ecosystems, increasing water pollution, disrupt communication network and neighboring economy (Islam et al., 2014; DeClerk et al., 2006). Each year a flood can inundate between 30% and 70% of the country (Agrawala et al., 2003). *Haor* areas of Bangladesh are affected by subversive flash flood frequently (Rahman, 2019; Sumiya et al., 2019). In the *haor* area the socio-economic and livelihood condition are much different from the other parts of the country (Hossain et al., 2017) and *haor* flood leads to reduce the farmers

economic condition that are totally depend on agriculture (Rahman, 2014). In April 2017, Tanguar *Haor* was affected by subversive flash flood due to heavy rainfall as well as onrush of water from the upstream Meghalaya hills in India and inundated a vast areas of croplands of *haor*s as well as low-lying areas of the Northeast. The flood started on 28th March affecting six districts namely Sylhet, Moulavibazar, Sunamganj, Habiganj, Netrokona and Kisoreganj in the northeast part of the country. Embankment breeched in many places due to rising water spill over and damaged almost ready for harvesting *Boro or IRRI* crops in about 160,170 hectares and the loss was estimated to be about 800,000 tons (DAE, 2017; NRAPAD, 2017).

However, the present study assesses the impacts of 2017 flash flood and explores existing adaptation strategies in pre, during and post flash flood situations. The study also investigates the effectiveness of the strategy taken by the *haor* inhabitants in different flood periods. This study intends to expose ground-level information of flash flood impact and dynamism of flood and inhabitants of the low-lying *haor* area. It is expected that the outcome of the research will serve as a reference source for researchers, academics, policy maker and planer for sustainable disaster management particularly in *haor* areas.

Methodology

This research includes both primary and secondary data. Primary data were collected through multiple methods, including field observation, transect walks, questionnaire survey on 350 households, five oral history interview, focus group discussion (FGD) from ten different villages, thirty (three from each village) key informant interview (KII). To know the impact of flash flood on socio-economy of the study area detailed exploratory field investigations were done in between October-November 2018. Before starting data collection, transect walks were conducted both within the village and within *haor* area to identify *haor* people's problem with flash flood hazards.

Household data along with loss assessment and adaptation strategies before, during and after the flash flood were collected through semi-structured questionnaire from directly affected ten villages, selected through purposive sampling method under two upazilas (Dharmapasha and Tahirpur) of Sunamganj

District (Table 1). The villages were selected based on physiography, population size, ethnic minority, proximity to market and 2017 flash flood severity. A total of 350 samples were collected based on (equation-1) (Mathers et al., 2007; Perera et al., 2018).

$$n = (z_{\alpha/2} \times \sigma /E)^2 \qquad (1)$$

Where n = sample size, $Z_{\alpha/2}$ = confidence level, σ = standard deviation, and E = error.

For Key Informant Interview (KII), three key informants covering teachers of different educational institutions, religious leaders, local political leaders, farmers, fulltime and seasonal fisherman and elderly people were interviewed from each village to reveal the impacts of recent and retrospective flash floods, its consequences and people's adaptation strategies regarding the situation based on their respective experiences. To find out the detail information of the sectoral impact of flash flood and their respective adaptation strategies five individual occupation classes were selected for focus group discussion (FGD). Total ten FGDs were conducted and the surveyed occupation groups were farmer, fisherman, businessman and day laborer as well as with women and ethnic minority people.

Table 1: Sampling Procedures and Methods Followed in the Study

Step	Sampling Techniques	Description	Outcome
1	Purposive Random Sampling	Villages that are located in and around Tanguar *Haor* and mostly dependent on it and affected by frequent flash flood	Tanguar *Haor*
2	Purposive Random Sampling	For household survey ten villages have been selected based on purposive criteria	Ten Villages
3	Simple Random Sampling	Household selection	Individual Household
4	Purposive Sampling	To extract comprehensive information on flood, consequences and suggestions	Key Informants
5	Purposive Sampling	To extract comprehensive information about issues of particular occupation	Individual Occupation Group

Secondary data for the research were collected through literature survey and data/materials from concerned offices including Bangladesh Bureau of

Statistics (BBS), Bangladesh Institute of Development Studies (BIDS), International Union for the Conservation of Nature (IUCN), *Haor* Development Board(HDB), Bangladesh Water Development Board (BWDB) and District Administration of Sunamganj.

Study Area

Tanguar *Haor* is located in the northeastern part of Bangladesh with coordinates about 25°N latitudes and 91°E longitudes (Figure1). Geographically it is surrounded by Meghalaya State of India to the north, Netrokona District to the west and south and *Patnai* and *Baulai* River to the east. The *haor* is situated at an altitude of 2.5-5.5 meters above sea level. The *haor* consisting of 50-55 beels of various sizes contain water in dry months (Kabir and Amin, 2007).

Demography

Administratively Tanguar H*aor* is located in two upazilas of Sunamganj District namely Dharmapasha and Tahirpur. Two thirds of Tanguar *Haor* is located in Dharmapasha and the rest in Tahirpur Upazila (BBS, 1996). However, the Tahirpur Upazila administration looks after the Tanguar H*aor* management. It is one of the major *haor*s of the *haor* basin with an area of 10,000 hectares including surrounded 46 villages (Banglapedia, 2014). In the villages of Tanguar *Haor* about 60% of the inhabitants are Muslims, 30% Hindus and remainder belongs to ethnic minority such as Garo and Hajong under mostly 11 villages located in the northern part of the *haor* system, close to Indian border.
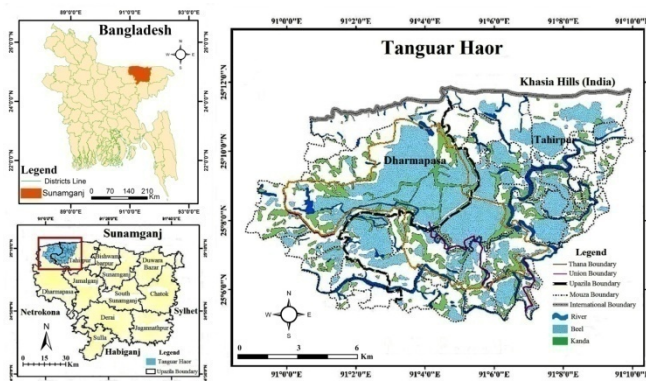

Figure 1: Location of the Study Area
Source: Modified from Haque and Basak, 2017

Seasonal Calendar of Resource Extraction

All types of resources are not available all the year round and they vary from season to season. Some are available and extracted during summer, some are in winter and some are in monsoon. Seasonal calendar of various resources that extracted most are shown in Table 2.

Recurrent Flood Events

More than thirty years data were analyzed and it is found that the devastating flood hits mostly in May (Table 3). However, a little fluctuation is observed in recent years. Now a days, flood hits mostly in the middle of April.

Table 2: Seasonal Calendar of Resources Collection in Tanguar *Haor*

Months → Resources ↓	B	J	A	S	V	As	K	Ag	P	M	F	C
Fish	×	×	√	√	√	√	√	√				×
Paddy	√	√	×	×	×	×	×	×	×	×	×	√
Vegetables		×	×	×	×		√	√	√	√	√	
Fuel	√	×	×	×	×	×			√	√	√	√
Aquatic weed	√	×	×	×	×						√	√
Migratory bird	×	×	×	×	×	×	√	√	√	√	√	√

Source: Field Study, 2018

* B= Baisakh (Apr-May); J= Jaista (May-Jun); A=Ashar (Jun-Jul); S= Shraban (Jul-Aug); V= Vadra (Aug-Sep); As=Ashwin (Sep-Oct); K= Kartik (Oct-Nov); Ag= Agrahan (Nov-Dec); P=Pous (Dec-Jan); M= Magh (Jan-Feb); F=Falgun (Feb-Mar); C= Chaitra (Mar-Apr).

** ('√' shows availability of resource and '×' shows scarcity of resource)

Table 3: Recurrent Flash Flood Occurrence in Sunamganj District

Year	Flood water entered the District	Inundation occurred till	Year	Flood water entered the District	Inundation occurred till
1990	18 March	21 March	2002	14 April	18 April
1991	22 May	25 May	2003	27 May	30 May
1992	8 May	10 May	2004	13 April	15 April
1993	27 April	30 April	2005	22 May	25 May
1994	30 May	02 June	2006	17 April	19 April
1995	25 May	27 May	2007	25 April	28 April
1996	16 March	18 March	2008	02 May	05 May
1997	22 May	24 May	2009	16 April	18 April
1998	20 May	23 May	2010	17 April	19 April
1999	03 May	06 May	2014	May	April
2000	28 April	30 April	2017	28 March	05 April

Source: Bhattacharjee, 2011 and Sumiya et al., 2019

Results
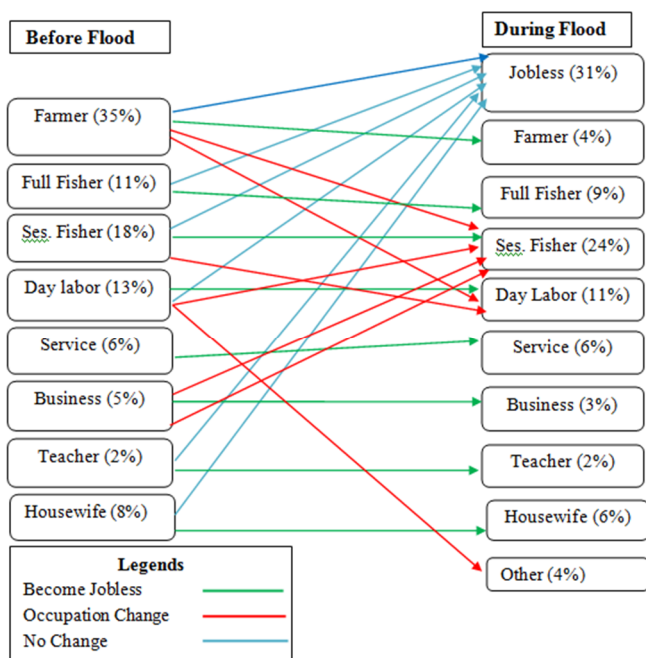
Impact on Occupation and Livelihoods

Figure 2: Shifting of Occupations due to Flash Floods
Source: Field Study, 2018

Flash flood frequently poses severe threat, particularly for indigent households in Bangladesh. Occupation and income of the poor are the two most crucial sectors on which flood have significant impacts (Table 4). Flash floods not only force people to change their occupations but also negatively affect people's income. Earlier majority of the respondents were involved with farming and day laboring, about 46% and 17% respectively based on *haor* resources but during flash flood most of them turned into seasonal fisher. 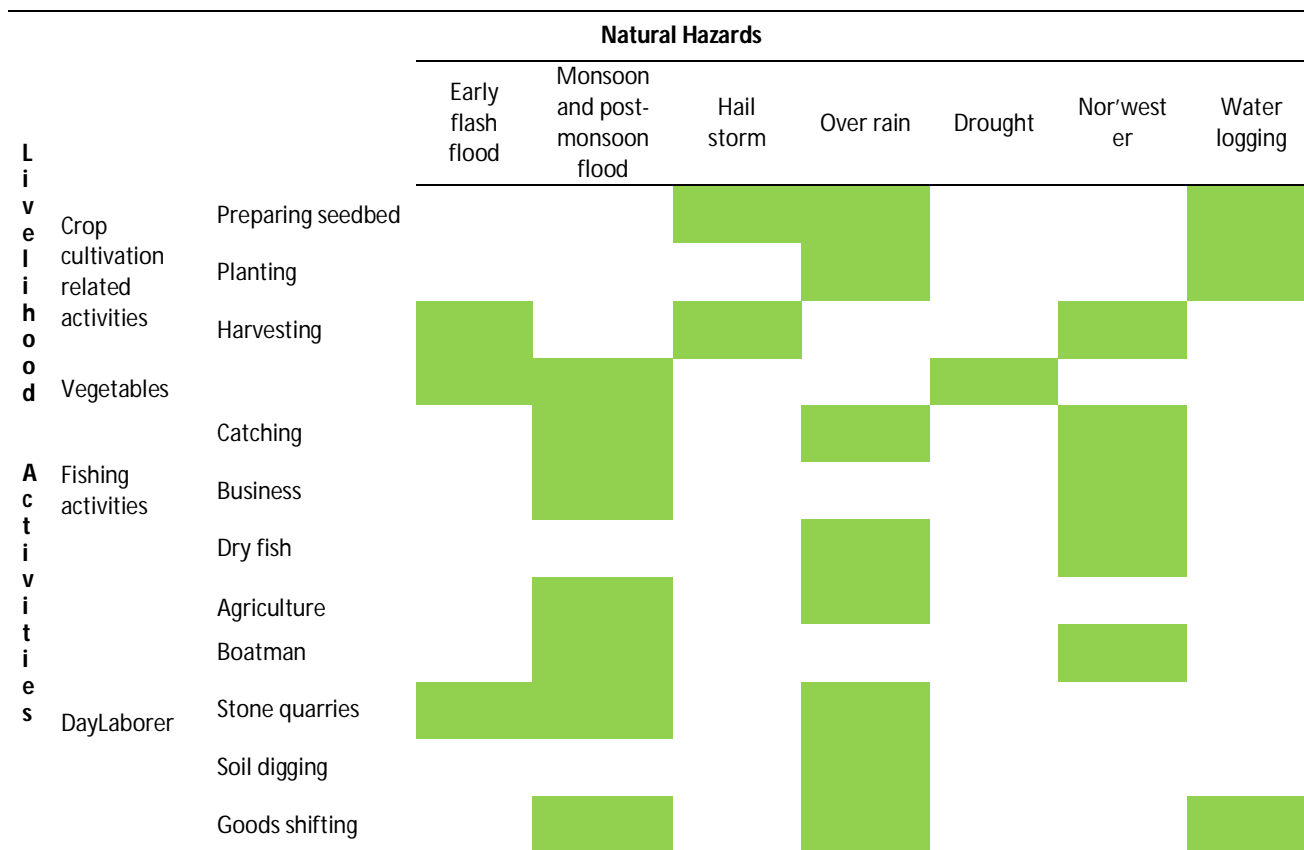Almost all of the day laborers remain during flood. Due to the submergence of the local educational institutions, the students also turned as seasonal fisher (Figure 2).

Flash floods play both positive and negative role in forming livelihood and affecting people's economy and asset as a whole. Early monsoon and post-monsoon flash floods frequently shape positive impacts in terms of fish production. For example, early flash floods increases fish production as water comes early and inundates the whole area and stays longer period. On the other hand, early flash flood causes damage to paddy production and post-monsoon flash flood is a hazard for vegetable production.

Impacts of Flash Flood on Housing Infrastructure

In the study area, the direct effects of flash flood include submerging of houses, loss and damage of physical assets and the dangers associated with the rise in water level. About 53% respondent's houses were collapsed in various flash flood events while the rest (47%) houses did not collapse but experienced substantial damages and incur high amount for repairing. About 34% respondents who were affected by recurrent flash flood and lying in low land had relocated their house into new places mostly to adjacent high land. The rest (66%) either cope with the flood or made the settlement raise where usual flash flood water could not reach except some massive event (i.e. 1988, 1998 flood and 2017 flash flood).

Table 4: Cross-Sectional Calendar on Livelihood Activities and Hazards of Tanguar *Haor*

Livelihood Activities			Natural Hazards						
			Early flash flood	Monsoon and post-monsoon flood	Hail storm	Over rain	Drought	Nor'wester	Water logging
Crop cultivation related activities		Preparing seedbed			■				■
		Planting				■			■
		Harvesting	■		■			■	
Vegetables			■	■			■	■	
Fishing activities		Catching				■		■	
		Business		■					
		Dry fish				■			
DayLaborer		Agriculture		■					
		Boatman						■	
		Stone quarries	■			■			
		Soil digging							
		Goods shifting		■		■			■

Source: Field Study, 2018

Table 5: Measures Taken at Household Level during Flash Flood

Measures during Flash Flood	Percent (%)	Effectiveness			
		VE	E	SE	NE
Use medicine to avoid snake and venomous insects	61	•••••	••••	••	
High platform for bedding and household belongings	54	••	•••••	••••	•
Use boat for cooking platform	73	•••••	•••	•	
Stay relative's house which are not affected by flood	31	••••	••	•	
Eating *Shingra*, selling household utensils	14	•••	••••	••	•
Making protection structure by stone & water hyacinth	36	••••	•••••	•••	•
Building false roofs above the flood water level	19	••	•••	•	
Use house building materials (i.e. bamboo) for cooking	59	•••	••••	••	•
Use of fodder as fuel	32	•••	••	•	
No measures taken	24				

Source: Field Study, 2018.

* Number of "•" indicates the effectiveness of strategy.   ** Multiple answers were considered. ***VE= Very Effective, E= Effective, SE= Somewhat Effective, NE= Not Effective.

Due to loss of assets households adopt strategies differently (Table 5), like household head alone adopt some strategies and household members collectively take some coping mechanisms. Usually household head migrate to other areas as day laborer and work extra hour or do temporary fish business as the later one is cost intensive. On the contrary, the household members collectively try to reduce expenditure of the household, eat less, sometime change food habit (i.e. instead of three meals they take two or one meal per day) and maintain social network and relationships with neighbor and kin members. To rebuild the

damaged houses people usually sell other assets like farming or non-farming land, bulls, woody tress, household utensils etc. which create a vicious poverty circle as they lose one type of asset to recover from other types of asset loss or damage. In most cases they are unable to get back the lost or sold property because of subsequent effect of disasters.After 2017 massive flash flood disaster, to save the housing and physical assets from subsequent flooding people took some immediate strategies (Table6). As after disaster strategy people raised the housing and settlement area (63%), planted tree around the house to prevent soil erosion and wind action (74%), built stone wall around the house (31%) to prevent wind and wave action etc. for subsequent disaster and impact.

Table 6: Strategies Adopted by the Peoples after Flash Flood

Strategy after Flash Flood	Percent (%)	Effectiveness (%)			
		Very Effective	Effective	Somewhat Effective	Not Effective
Raise the housing and settlement area	63	51	26	13	10
Protect house through plinth raising	38	19	31	38	12
Tree plantation to prevent soil erosion	74	67	23	7	3
Stone wall around house	31	13	21	38	28
Erecting wall/fence	43	19	34	41	6
Changing roof materials	28	31	27	33	9
Preservation of cow dung as fuel	35	22	18	44	16
No measures	19				

* Multiple answers were considered
Source: Field Study, 2018

Impacts of Flash Flood on Agriculture and Peoples' Adaptation

The *haor* inhabitants start cultivation of *haor* lands with *Boro* rice as soon as the water recedes to the adjoining Baulai and Patnai Rivers. Usually early flash flooding (typically early April) causes *Boro* or *IRRI* crop loss, because the *haor* becomes inundated; monsoon flash flood (typically June to August) causes loss of homestead garden, and damage of seasonal vegetables; and post-monsoon flash flood (typically August to September) causes damage of winter vegetables (Table7). About 87% respondents opine that they experienced crop damage due to early and unusual flash flood. During the flooding time, the respondents totally depend on stored food and fodder for animals while about 64% respondents experienced food stock loss due to flash flood.

To save the crops and cultivating assets people adopted some immediate strategies shown in Figure3. The respondents stated that, they use indigenous knowledge during the flooding season and harvest the near to rip crop as much as possible (87%). For harvested crops they build high platform (*machang*) beyond the normal flood level. Despite these many respondents (43%) opined that, majority of the harvested crops also damaged in 2017 massive flash flood because the water level was relatively high than the other events. To sow the crops for coming season majority of the respondents (53%) keep the seeds in safe place.
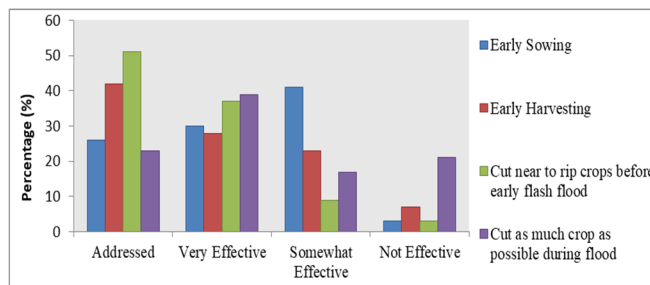

Figure 3: Measures Taken during Flash Flood
Source: Field Study, 2018

Table 7: Seasonal Variability of Flash Flood and Crop Failure

Crops	April-May (Early Flash flood)	May-June	June-July	July-Aug	Aug-Sep	Sep-Oct	Oct-Nov	Nov-Dec	Dec-Jan	Jan-Feb	Feb-Mar	Mar-April
		Monsoon Flash Flood			Post-monsoon FF							
Boro	■	■										
Vegetable		■	■	■	■	■	■					
SF		■	■	■	■	■						

* 'FF' = Flash Flood; SF = Social Forestry

Source: Field Study, 2018

Flash Flood and Vulnerable Community

As the flash flood occurred, it grasped all the crops in the *haor* basin at first glance and the ultimate victim is the farmer and his household. Apart from farmer there are other vulnerable groups such as pregnant women (82%), children (54%), women (44%), and aged citizens (32%) and so on (multiple answers were considered). The respondents also stated some causes regarding vulnerability which make them prone to flash flood (Figure4).While conducting FGD with the ethnic minority and women about their vulnerability towards flash flood most of the respondents (77%) opined that, they relied on neighbor and relatives who were not affected by the flood. In most cases pregnant women stayed in relative's house who were not affected by flash flood (81%) if possible mostly the father's home of the women.
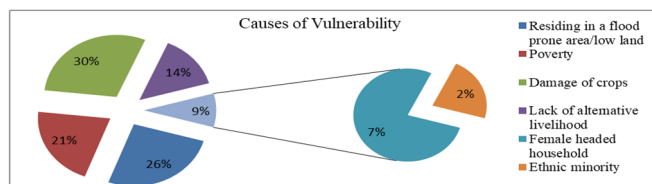

Figure 4: Causes of Flash Flood Vulnerability for Particular Group

Source: Field Study, 2018

The pregnant women are mostly vulnerable because of difficulties of transportation, unhealthy surroundings, lack of pure drinking water, lack of health care facility etc. These women experience from increased risk of physical and mental issues including pregnancy related problems. As the pregnant women of *haor* areas already had several flash flood experiences, they underrated the terrible nature of flash flood. They suffered from hunger, food shortage, and poor sanitation. Various strategies are taken by the household head and/or women's husband before and during flash flood events such as advanced immunization, contact with expert and experienced women (*Dai*) or skilled birth attendant in advance, saving the money for treatment if needed and coming child's healthcare, make special sanitation (mainly high hanging latrine surrounded by betel nut leaf or sacks) and make the transportation ready mostly boat etc. (Figure 5).

Women's Role in Various Phases of Flash Flood

The flash flood related problems affect bucolic women more harshly than men because they are tied up more firmly by households and wider responsibilities. Those responsibilities including food processing and cooking,

cleaning, collecting water and fuel, bearing and rearing children, looking after livestock and income generation, become much more difficult to perform under flash flood conditions (Table 8). Despite from common strategies taken by the women, they also maintain strong social networks with kith and kin's and neighbors. Relatives and neighbors provide asylum, lent food, give loans with little or no interest, provide provisional employment and helped with money, labor or resources to reconstruct houses after floods. They borrowed little amount of food, money and other basics such as rice, wheat flour, salt, oil, pulses, spices, vegetables, drinking water, fuel, stoves, materials to build platforms or to raise their beds, water purifiers, medical herbs, money and many other things from relatives and neighboring women. Women stated that borrowing small things or food is not a man's responsibility and asking for aid from other lowers their self-esteem.
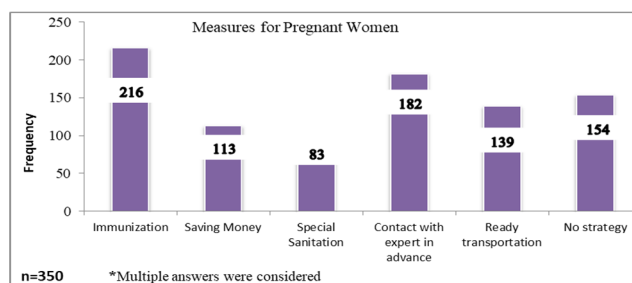

Figure 5: Measures Taken for Pregnant Women during Flash Flood

Source: Field Study, 2018

Discussion

The impact of flash floods on the poor is greater, particularly those living in low-lying flood-prone *haor* areas. The research demonstrates that flash flood of 2017 had severe impact on the low income people of Tanguar *Haor* by cutting down the income and turned most of the farmers to seasonal fishers and almost all the day laborers became jobless during the flood. This supports the findings of Shaw (2006), Johnson (2006) and CIRDAP (1991) that flash floods make people vulnerable; by taking away their property and livelihoods at first instances and leaves them with inadequate resources to subjugate from the circumstances. Being impecunious, most of the respondents of Tanguar *Haor* do not have expensive assets to use as emergency resource to survive. To cope with this situation, with the submergence of the local educational institutions, the students from the poor families also turned to seasonal fisher.

Table 8: Women's Role during Flash Flood in Tanguar *Haor* Area

Women's Role	Percent (%)	Effectiveness (%)			
		VE	E	SE	NE
Making Platforms (*Matcha*)	63	34	41	22	3
Cutting bamboo for house support	31	17	31	42	10
Making bamboo bridges	17	8	13	31	48
Protecting crops, poultry, livestock, food storage & dry food	87	53	29	16	8
Collecting and preserving drinking water	91	84	11	3	2
Milking cows and goats	75	67	21	7	5
Food preparation	94	82	14	3	1
Sale of women asset (i.e. poultry, kitchen utensils)	39	19	27	36	18
Provide family healthcare	53	18	47	26	9
Maintain social network	61	44	32	16	8
Collection and preservation of cow dung and dry weeds	59	16	29	42	13
Collection of straw as fuel for instance	34	53	22	17	8
Planting *Hijal, Karach* & *Haor bon* to protect house	51	14	54	25	7
Preserving seed for crops and vegetable cultivation	56	67	23	8	2
Elevation and repair of houses	48	20	28	31	21
Making portable stove	62	42	18	24	16
Saving money	38	15	37	29	19
Safeguarding food for livestock	77	46	35	14	5
Collecting relief provided by GOs and NGOs	53	12	31	28	29
Homestead gardening	33	19	14	36	31
House cleaning, cloth cleaning of family members	83	46	27	24	3
Bearing and rearing children	51	33	27	31	9
No Role	17				

* Multiple answers were considered. ** VE= Very Effective, E= Effective, SE= Somewhat Effective, NE= Not Effective

Source: Field Study, 2018

The respondents identified flash flood as most detrimental to agricultural resources followed by infrastructures and other resources. With the early flash flood on 28th March in 2017 almost all standing B*oro* or *IRRI* crop were lost, which is the principal crop of the *hoar* area. Agricultural loss continued with the damage of following seasonal vegetables and homestead garden as farmers could not get prepared for exhaustion of emergency resources to survive the flash flood losses. Due to assets and agricultural loss household head and household members collectively took strategies differently, mainly by adopting alternative livelihood, making short term move to other areas, utilizing reserve or accumulated resources, taking credit from NGOs, relatives as well as local money lenders by utilizing the benefit of social networking and others. These coping strategies have similarities to strategies taken by the poor in Dhaka City during the devastating flood in 1998 (Jahan, 2000) as well as to face other disasters by the dwellers of Dhaka North City Corporation (Kabir and Maknun 2018). Natural disaster research streams highlight the role of social networks and relationships as post-disaster recovery (Chen et al., 2006; Brouwer et al., 2007; Adger, 2003; Ahamed, 2013). Gaillard et al. (2008) flagged that the countryside poor affected by flood experience increased difficulties with food that create considerable health and sustenance problems. The study area has echoed the same notion of having not sufficient health facilities and almost half of the respondents (41%) stated that they did not get any health facility in nearby. The role of women during and after flash flood is immense. Women of the study area, especially female household heads like other flood affected areas of Bangladesh, as identified by Khatun (2005) and Nasreen (2004) are the most vulnerable when disaster has stricken them. Despite the heavy burden which they always bear in extremely difficult circumstances, they demonstrated considerable fortitude and ingenuity in their attempts to maintain the livelihoods of their households during and after the flash flood in the study area.

Based on flash flood severity, condition, and people's liaison with neighbors and relatives, they decide whether to go to a relative's house which is not affected by floods or to a flood shelter. The *haor* inhabitants live with the flood which gives them practical knowledge and ultimately help to reduce the overall losses by adopting indigenous coping mechanisms. To recover from asset loss and income instability, or pay the installments people often struggle to have three or two meals per day, and they reduce nutritious food intake so that they can save money to pay installments or other purposes. This is even twice as stressful for female headed households and vulnerable groups.

Conclusion

The present research explores direct and indirect impacts of flash flood and reveals existing adaptation strategies adopted by low-lying *haor* inhabitants to reduce the effects. It is found that flooding especially flash flooding has complex and multiple impacts on socio-economic structure of *haor* inhabitants and bucolic indigent. Most vulnerable groups are poor peasants, pregnant women, aged citizens, children etc. and during flash flood their most effective strategy is to practice indigenous knowledge and experience of retrospective floods and ultimately reliance on *mohajans*, neighbor and relatives. Flash flood recovery mostly depends on strength of income, as the poor inhabitants lost their housing, crops, and valuable assets at the first instances of flash flood which ultimately limited their coping strategy. Due to occupation loss, resource damage and income instability, *haor* inhabitant's endeavor to improve from direct economic loss frequently results in additional indirect property losses which eventually poses a vicious circle of debt and poverty. Farmers' recovery from flash flood disasters is largely constrained by limited resources or inputs and poverty. This cycle of debt and poverty consequently make the indigent community vulnerable for successive disaster recovery. Constraints for poor permanent and seasonal fishers are existing leasing policy and unparalleled power structure, which restrict their extraction of *haor* resources at multiple stages. The role of the women's are always invisible but this study found that, women's role during and after flash flood are diversified (i.e. healthcare, food processing, cleaning, rearing and bearing of children, aged, and livestock) and their endeavor to protect and reduce the damage of the household are very effective. As flash flood is a sudden and catastrophic phenomenon that's why flash flood related problems affects rural women more acutely than men. Rural poor women have wider responsibilities which ultimately remain them busy with their family more rigorously and more efficiently than those of their male counterparts. In order to achieve the Sustainable Development Goal (SDG) and vision 2041 announced by the Bangladesh government, it is imperative to provide additional focus on *haor* community and its resources.

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