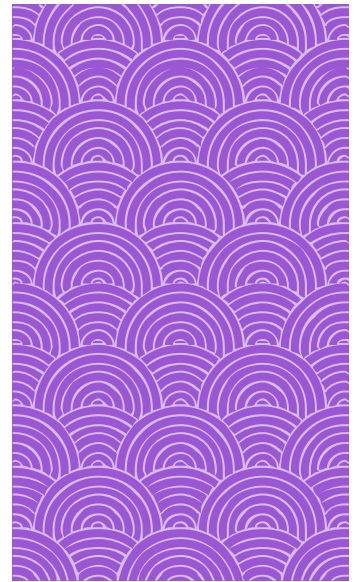


Gender Aspects in Flood Management of North-east and North-west Regions of Bangladesh

SATREPS

Research Project on
Disaster Prevention/Mitigation Measures
against Floods and Storm Surges
in Bangladesh



About this module

This module focuses on the gender aspects of flood management in the North-East and North-West regions of Bangladesh. How gender is addressed in rainfall flood, riverine flood and flash flood management in these areas, are analyzed in this document. Different floods and their relation to gender roles are described in the beginning of the module. Focus of the Sendai framework on disaster risk reduction and gender is mentioned in the following section and present state of gender inclusion in disaster risk reduction planning and policies are described in the later parts. The module then investigates the role of Non-Governmental Organizations (NGOs) in women empowerment of Bangladesh. As case studies, gender focus in flood management of three

districts which were highly affected by 2017 flood, was analyzed. Based on the literature review and primary information from the case studies, this module concludes with some recommendations to improve gender balance in flood management of Bangladesh through advanced local level planning, improvement of institutional approach and policy implementation.

Local stakeholders from different sectors, relevant institutions, policy makers, development workers (Government, Non-Government and private organizations) and academicians who are involved in flood and disaster management related activities would be benefited from this training module.

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1 Introduction

Bangladesh is a tropical delta-shaped country that holds complex geo-physical characteristics. It is blessed with many rivers of varying sizes and shapes. Owing to the downsides of having so many rivers, this country faces frequent flood events and every once in a while, extreme flood disaster causes enormous damages to the vulnerable community. Bangladesh is considered as the sixth most flood-prone country of the world (Azad et al., 2013) The vast Ganges-Brahmaputra-Meghna (GBM) basins at the upstream sides of Bangladesh contribute largely to the yearly riverine floods of the North-West, while intense flashes of water from the hilly regions cause regular flash flood in the *haor* regions. Such distress often turns into major devastations, which was significantly instantiated by the recent flood in 2017. This particular event not only caused untold miseries to the affected community, but also left them in awe due to its untimely nature and destructive impacts.

Flood disaster is as deadly as any other catastrophic event in Bangladesh, and this makes flood management a highly important aspect of disaster risk reduction and management. Proper flood management strategies and planning become even more essential during extreme events. In these times, the disadvantaged and vulnerable communities, otherwise termed as ‘gender’, experience more sufferings than others, as coping ability of a community largely depend on gender relations, their socio-economic conditions and access to relevant allocated resources (Briceno, 2002). However, disaster management plans and implementation activities often lack the gender equity perspective which hampers the success and effectiveness of disaster management.

Therefore, it is important to ensure gender balance during regular flood disaster management, more importantly for the major floods.

Gender mainstreaming and women empowerment in disaster management have been emphasized in many government policies and frameworks since the early 21st century. Gender Action Plan (2013), Sendai Framework (2015-2030) and other revised disaster related policies have documented the importance of gender perspective in disaster risk reduction strategies. But sadly, there are significant gaps in practice when it comes to the implementation of gender sensitive disaster management plans. Moreover, very few studies have been conducted to get a detailed impression on gender mainstreaming of flood management in Bangladesh to point out the flaws and suggest proper coping strategies (Azad et al., 2013; Rahman, 2013).

This training module has considered the extreme flood damage situation of three districts in the North-East and North-West regions of Bangladesh in the year 2017, and gender consideration of presently practiced flood management measures as case studies. Based on the existing gender balance condition in flood management strategies or lack thereof, this module represents the true picture of gender mainstreaming in flood disaster management. Pertinent analyses of primary information, discussions with relevant stakeholders and local Governmental Organizations (GOs) and Non-Governmental Organizations (NGOs) led to some timely recommendations. These findings can assist in establishing the fact, that resilient women or gender can truly play a vital role as ‘agents of change’ in flood risk reduction planning and management.

2 Flood and Gender

Being one of the most disaster-prone countries in the world Bangladesh faces flood disasters very frequently. Among the four types of flood which are, riverine flood, rainfall flood, flash flood and coastal flood (due to cyclonic storm surges), the former three types occur in the northern parts of Bangladesh (MoFDM, 2006). Experiences of devastating flood events in the past years of 1988, 1998, 2004, 2007 and most recently of 2017 bear the evidence of crucial vulnerability of all the floodplain inhabitants living in this country (Fig. 1). For a long period, these people have not only been blessed with the benefits of flood, but also been exposed to the miseries caused due to loss of lives, properties and assets.

The ability of a society to cope with and recover from disasters depends largely on the social, economic and cultural vulnerability, which vary among different groups of people. Gender cuts across these numerous groups and proves that it is a significant aspect from which differentiated distribution of disaster impacts mostly originates (Briceno, 2002; Mehta, 2007). During or after a disaster, major focus is often placed towards the economic losses

posed by it, but the intangible and rather long-term effects are often overlooked. Such devastating experiences from a major flood disaster are magnified manifolds to the marginalized and disadvantaged groups of the society.

Gender relations are highly responsible in times of disasters, be it how the people are impacted, or how they develop their ability to anticipate, prepare for, adapt with, and recover from these. In the context of Bangladesh and its exposure to flood disaster, women are commonly regarded as the most vulnerable groups because of their differences in needs, vulnerabilities and capacities compared to those of men. Women's vulnerability is mostly generated by the prevalent social norms, women's subordinate position in the patriarchal socio-economic structures and conventional gender stereotypes. In addition to these distinct marginalization, women's limited mobility and vast household responsibilities make them doubly disadvantaged during a disaster. Moreover, the elderly, children and disable people remain in crucial disadvantages as well during a disaster, due to their dependency on other people.

Fig. 1 A distressed female respondent who lost her house to the devastations of 2017 flood. Due to long-term inundation of flood water, a lot of household assets which she could not take with her to the shelter, were lost, and lack of economic ability, she could not rehabilitate her house after the disaster.



Usually the women of a family play a significant role in helping families to pull through the disaster period, only to be ignored by the male dominants of the society. Such is the unfortunate yet common truth of the society of Bangladesh. However, this cannot aid in denying the fact that women and other disadvantaged groups become affected in different stages of a disaster. When it comes to a regular flood, or more adversely, a major flood, forecasting and warning system is vital for flood preparedness, during a pre-disaster condition. Due to the existing norms and gender disparity in this society, women do not go out of their houses as much as the men do. Therefore, flood warnings do not reach timely to the women, making them more vulnerable to the eminent disaster. This fact also covers the children, elderly and disable groups, who get very less time to move to the flood shelters or nearby safe places before the disaster strikes.

Women are generally the major caregivers to a family. They have the responsibility to provide food and water, protect livestock and household assets, take care of the children and elderly members, and sometimes work in the agricultural fields. All these duties make them more bound to the houses during a flood disaster, which is the reason that they are reluctant to leave their houses and move to the safer places. Some even try to take assets and livestock with them while also taking care of the children. This along with their lack of strength caused by poor nourishment, difficulties of movement due to their traditional attire and lack of confidence emerged from poor social treatment, brand them as highly vulnerable cluster of the society. Even the death rates are higher among women than men during a flood disaster due to these disparities (Hena, 1992). Poor sanitation system is a regular distress during

a flood disaster which consequently causes water-borne diseases and women and children are the first victims to these. The infants also suffer during a flood as incidents of sudden death often occurs by falling into flood water during the night time. Moreover, women and other distressed groups are often bitterly experienced with robbery, physical assault and violence during a flood disaster (Nasrin, 2010, Azad et al., 2013). Poor and landless people, for whom their only asset is the roof over their heads, become destitute when their houses are damaged from flood inundation and their poverty does not even allow them to rehabilitate timely. Flood inundation causes loss of agricultural land, crop harvest and storage, where loss of fish resources occurs due to flooding of ponds and canals. Livestock and poultry resources often act as a significant part of the family earning by the women group, thus death of livestock hits directly to the minimum economic well-being of women. In this way, the poor and marginalized ones who are already socially disadvantaged, lose their living and assets and become miserable in every way possible during a flood disaster.

The aftermath of a flood pronounces gender inequality more clearly in the rural Bangladesh. Though a flood event affects both men and women, but the female members of a family face the brunt of the calamity much more aggressively than the male (Khondker, 1996). After a major flood, loss of livelihood and alternative income sources bring the curse of unemployment to the affected families. During such distress, women's ailment surges uncountably. The tough responsibility of providing food security to the whole family with the minimum available resources falls on the shoulders of the female members. Moreover, disrupted communication system from the flood event makes it

highly difficult for the women to go out for collection of water from limited and distant safe sources and food supply from the markets (Nasreen, 2010; Azad et al., 2013). Problems of sanitation becomes much worse during a post-disaster period, thus causing more difficulties for women, children and elderly people. The relief operations and aid distributions after a flood disaster are also accused to be unequitable due to gendered socialization and institutional bias against women (Rahman, 2013). Those who are in the most need of assistance, always fail to get attention from the relevant authority, in terms of economic and relief support. Furthermore, among the intensive workload at home, women also have to worry about household debts to NGOs and relatives. Economic vulnerability along with food insecurity and sudden mental shock from a major natural disaster peak the

emotional stress of the affected community, especially the worst affected ones. Such perilous experience becomes very hard to recover and leaves a long-term harmful impression in the minds of the victims.

In every stage of a flood disaster, people living in the vulnerable locations face the dreadful impacts. Poor flood forecasting and warning system, lack of proper knowledge of the inhabitants, poor socio-economic condition, absence of capacity and training to cope with flood and most importantly prevalent gender imbalance have always made the flood disaster a fearful experience for the vulnerable community, which is a clear telltale of the fact that flood is a more devastating phenomenon for the marginalized and socio-economically disadvantaged cluster of the vast affected community in Bangladesh.

3 Gender Roles in Flood Management

The ability to cope with a disaster depend on the socio-economic condition of the affected community. Though the most vulnerable ones are always the first to be in front of the crosshairs, but these people also play crucial roles in managing the same disaster that brings them enormous sufferings. The women and girls in a community play dynamic roles in different stages of a flood disaster. Women's active involvement enhances the effectiveness of disaster prevention and management activities (Rahman, 2013). They are responsible for their household and surroundings, which gives them ability to assess the vulnerabilities and capacities in managing a flood. Women groups in the society have the unique attribute to socialize and communicate with other women during their day-to-day activities. Utilizing this communication and their womanly persuasive skills, they effectively contribute in disseminating flood warning to all the community people and help in pre-flood evacuation processes. Young boys and girls also voluntarily engage in moving people through difficult and inundated roads to shelter areas.

During a disaster, women are responsible for managing the economy of a household as the men tend to lose their livelihood and income sources. The extensive female network allows them to manage resources and economic support by borrowing from relatives, NGOs and local associations (Nasreen and Hossain, 2002). They also try to maintain the food supply and emergency aid to the family by selling the poultry, livestock and sometimes their own valuables. It is the women members of a family who are responsible for preserving emergency food and

important supplies for disaster times. For the whole year women preserve dry food, supplies for cooking, indigenous medical supplies, etc., which they use very efficiently while staying in shelters or other safe places. Their ingenuity and intuitive knowledge help them in finding out ways to cook food and collect water and fuel wood to ease away their time in exile from their home. They tend to eat less food and sacrifice their nutritional requirement to manage the children, elderly and men of the family, without any complaints.

Women are always the most generous and rational inhabitants of a flood shelter. They cook and distribute food to those in need with the minimum supplies at hand. When it comes to treating the injured or the people in need, women always come forward owing to their caring nature (Nasreen and Hossain, 2002). Many women practice rain-water harvesting during flood disaster to ensure safe water supply to everyone. They also help other women, be it maintaining their sanitation and privacy or taking care of the pregnant and ill ones. Some women are even knowledgeable enough to make small associations among themselves, where they discuss the impacts of a flood disaster and coping strategies in the wake of any such event. Their social skills help them engage and train in indigenous ways, which marks their steps towards disaster management. In a nutshell, any social cluster of people have their own part to play in effective flood management, and the marginalized groups, or 'gender', cannot be ignored in any way, for their firsthand experience of facing a disaster makes them the best candidates for efficient disaster management.

4 Sendai Framework on DRR and Gender

The Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted by the member states of the United Nations at the Third United Nations World Conference on Disaster Risk Reduction, held in Sendai, Japan (UNISDR, 2015). Through this framework the countries received an opportunity to take advanced and comprehensive disaster risk reduction measures and build resilience as a successor instrument to the Hyogo Framework for Action 2005-2015 and towards the achievement of Sustainable Development Goals (SDGs) (UNISDR, 2005). Under the eminent threat of climate change and increasing risks of disasters, all the countries of the world, especially the developing ones are facing greater challenges. Sendai Framework acknowledges the significance of a broader and more people-centered preventive approach to disaster risk, where practices need to be multi-hazard, multi-sectoral and integrated at all levels (UNISDR, 2015). This framework addresses climate change as one of the drivers of disaster risk and plans to reduce disaster risk by monitoring, accessing and understanding disaster risk, and sharing of such information. It also focuses on strengthening disaster risk governance and coordination across relevant institutions and sectors. The basic goal of this framework is to prevent new disaster risks and reduce existing risks through the implementation of integrated measures and strengthen resilience by increasing disaster preparedness, and in this way reduce losses of lives, livelihood, assets and health due to disasters (UNISDR, 2015).

Sendai Framework has developed seven global targets to achieve the expected outcome of this plan where each state or country has the primary responsibility of disaster risk reduction through all

sorts of cooperation, especially through sustainable international cooperation for developing countries. This framework has significantly addressed gender in its DRR (disaster risk reduction) approach. To ensure empowerment and non-discriminatory participation in DRR, this framework states that a gender, age, disability and cultural perspective should be integrated in all disaster management policies and practices. It also asserts that special attention needs to be paid to the poorest who are disproportionately affected by disasters. Sendai Framework acknowledges the importance of women in disaster management strategies and declares the need to promote women and youth leadership. In this regard, the framework emphasizes to the improvement of organized voluntary work where women and young members of the society can utilize their communication skills and develop themselves as well, thus contributing to disaster risk reduction measures (UNISDR, 2015).

Sendai Framework has four priorities for action in DRR, among which the fourth one focuses on enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction. Under this priority section, the framework promotes gender-equitable and universally accessible approaches during the response and reconstruction phases. It emphasizes on review and update of disaster preparedness and contingency policies, plans and programs with the involvement of all stakeholders, even the marginalized groups of the society. It is also recognized as an important task to develop local level early warning systems and emergency communication mechanisms according to the needs of the users’ social and cultural

requirements, particularly in a gender balanced approach (UNISDR, 2015).

Sendai Framework proclaims that women and their participation are crucial for effective management of disaster risks and designing, resourcing and implementing gender sensitive DRR policies, plans and programs. It emphasizes that adequate capacity building measures are required for empowering the women groups of the society, not only for disaster preparedness, but also for building their capacity so that they can ensure alternate livelihood opportunities to support their families in post-disaster situations. Moreover, according to the framework, persons with disabilities and their organizations are

critical in assessing disaster risks and implementing plans to cater the specific requirements of these people. The older persons and indigenous people are also considered to be invaluable assets as their knowledge and experience significantly contribute to the early warning, disaster management planning and implementation phases, according to Sendai Framework. Overall, Sendai Framework understands the cruciality of DRR approach in light of the present climate change regime and has developed disaster management planning with significant focus on those in need, to deal with the ordeals of many disasters in the 21st century, in a very comprehensive and gender sensitive manner.

5 Gender Inclusion in DRR Planning and Policies

Sendai Framework has placed considerable emphasis on gender-balanced DRR planning and practices, but reality has not always been such pleasant, when it comes to providing equitable treatment to the marginalized and disadvantaged. In current practices, women are seen to be as helpless victims, having no knowledge or capacity in disaster mitigation, whereas these disregarded groups can significantly act as agents of change in DRR planning (Ginige et al., 2008). If the voices of women, elderly and disable people in the vulnerable community are not taken into account while establishing DRR planning, then

their special requirements can never be addressed, and neither can their capacity be developed. Thus, lack of proper participation of gender is aiding in gender biased DRR practices, and vice versa. However, the Government of Bangladesh has somewhat understood the need for gender sensitive DRR planning. The Ministry of Disaster Management and Relief (MoDMR) has developed a gender sensitive approach and a number of DRR plans and policies in Bangladesh have considered gender inclusion as a crucial aspect (Center for Excellence, 2017).

National Disaster Management Policy, 2008

The National Disaster Management Policy was formulated in 2008 to define the national policy on DRR and emergency response management. It describes the strategic policy framework and national principles on disaster management in Bangladesh. The policy has

seven strategic goals and a number of underlying principles to achieve these goals. The principles clearly state that women, children, elderly, disable and other socially marginalized groups will be primary beneficiaries of all disaster management efforts. (GoB, 2008)

Standing Orders on Disaster (SOD), 2010

The Standing Orders on Disaster was first formulated in 1997 and later revised and published by Disaster Management Bureau in 2010. It describes detailed responsibilities of Committees, Ministries and other relevant organizations in DRR and emergency management. This Order has been prepared with the affirmed objective of making the concerned persons understand their duties regarding disaster management at all levels and accomplishing them. Under this order, DRR activities are to be carried out by the Ministry of Women and Children Affairs (MWCA), which includes capacity building

programs for the *upazila* and *Union Parishad* (UP) level staff on risk reduction focusing on women and children. It also includes undertaking of disaster risk assessment and risk reduction programs for women and children along with devising of relevant strategic plans and implementing them. The Department of Women Affairs is tasked to identify the gender gaps in disaster management and ensure gender balance in implementation of disaster management activities. The Ministry of Social Welfare, in its disaster rehabilitation stage, is tasked to enhance the capacity of concerned line departments and NGOs to

address recovery and rehabilitation issues in a gender sensitive manner (GoB, 2010).

According to the SOD, a District Disaster Risk Management Committee should include two women representatives, to be nominated by the Deputy Commissioner (DC). This committee has the responsibility to ensure safety and security of women, children and disable people during disaster and

participation of women members is expected to make the activities of the committee more gender sensitive (GoB, 2010). Similar structure is observed in case of Upazila Disaster Management Committee, Pourashava Disaster Management Committee and Union Disaster Management Committee, as they should comprise of Upazila Women Affairs Officer and representatives of women to ensure gender parity, as per the SOD.

Disaster Management Act, 2012

Disaster Management Act was enacted to make the disaster management activities coordinated, object oriented and strengthened. Developed and adopted in 2012, this framework created legislative tools and legal basis under which disaster management activities are to be undertaken in Bangladesh. It also creates mandatory obligations on disaster related Ministries, Committees and objectives.

According to this Act, the government may take program to provide necessary assistance for proper rehabilitation or for reducing disaster risks for the affected or vulnerable community. In this process of providing assistance, preference would be given on protecting and reducing disaster risks for the ultra-poor and under privileged community, especially women, elderly and handicapped people (GoB, 2012).

National Plan for Disaster Management, 2010-2015

The National Plan for Disaster Management for 2010-2015 is based on the global and regional commitment of the Government of Bangladesh and its vision on disaster management. The plan basically reflects the principles of the SAARC Framework on Disaster Management. One of the core principles of this plan is its focus on outcomes that will benefit vulnerable communities, especially women, the poor and socially disadvantaged. The Plan aims to ensure gender mainstreaming in disaster and response management.

According to the Disaster Management Model cited in the aforementioned Plan, vulnerability assessment of women, children and the poor is an essential part

of the DRR activities. Distinct disaster management plans for union, pourashava, upazila and a district include DRR, recovery and rehabilitation programs for women, children and elderly people. As a hazard specific multi-sectoral disaster management plan, Cyclone Shelter Plan states that shelters are to be constructed with provision of separate latrine facilities for women, and each shelter will comprise of women representatives in the Cyclone Center Management Committee. Empowerment of the marginalized groups of the society is also a vital aspect in the National Plan for Disaster Management, which included promotion of gender, cultural and religious sensitivity training, training for DRR and climate

change adaptation, implementation of livelihood support programs for women,

elderly people, the disabled and other disadvantaged groups. (GoB, 2010).

National Plan for Disaster Management, 2016-2020

After completion of the term of the National Plan for Disaster Management for 2010-2015, a follow up plan was devised, titled as the National Plan for Disaster Management for 2016-2020. This plan has aligned itself with recent global agreements and drawing lessons from the past five years of this plan, the government intends to incorporate the feedback into the plan for 2016-2020. This plan acknowledges that, the earlier plan and implementing actions were somewhat weak in addressing gendered nature of vulnerability and impacts of disasters. Therefore, the present plan aims to include gender, disability, class, ethnicity, and religious minority in all DRR plans and programs. The plan admits that women and children are disproportionately impacted in Bangladesh by disasters, and as women's

contributions to DRR are often overlooked, therefore present disaster management mechanisms require to emphasize more on gender-responsive risk management.

The plan for 2016-2020 aims to ensure gender mainstreaming in decision making, and also participation of everyone in the society in all priority actions of this plan (GoB, 2017). It can be observed that the National Plan for Disaster Management for 2016-2020 focuses on becoming more gender-balanced in its effort of sustainable DRR planning, implementation and management, with the consideration of the Sendai Framework as underlying principles for a better and more successful disaster management plan.

Other policies and plans

Other than the above-mentioned policies and plans, National Adaptation Program of Action (NAPA) 2005, prepared by the Ministry of Environment and Forest (MOEF) of GoB has developed adaptation projects to deal with climate change and relevant disasters, where gender equality has been taken as a selection criterion (NAPA, 2005). Involvement of women and local people in adaptation measures has been considered to be effective in climate change adaptation by NAPA 2005.

The Coastal Zone Policy 2005 has placed significant importance to the enhancement of safety measures during disasters. They have declared that combined cyclone shelter, multi-purpose

embankments, killas, road system and disaster warning system should include special measures for the women, children, elderly and disabled (MoWR, 2005).

Comprehensive Disaster Management Programme (CDMP) has also focused on developing gender and social inclusion framework in its DRR and climate change adaptation strategies (PPPDU, 2009).

The Cyclone Shelter Construction, Maintenance and Management Policy 2011 has declared the importance of suitable road communication to the shelters during disasters, for proper use by all the communities including

women, children, elderly and disabled. This policy has also stated that cyclone shelter RAMP facilities should be kept to ensure easy access of women, children, elderly, severely ill and people with disabilities. In addition, separate room and toilet facilities should be given for the pregnant and women community (GoB, 2012).

Sixth Five Year Plan of GoB states that with higher incidence of disasters in Bangladesh, gender sensitivity should be introduced in coping mechanisms and strategies. Social protection programs for under-privileged population are highly emphasized. In addition, reforms of existing laws, rules and regulations and institutional strengthening are required for gender sensitive governance (GED,2012).

Seventh Five Year Plan understands gender sensitivity to disasters in a more appreciative manner as this plan included gender sensitivity integration as one of their ten issues. Through this plan, Government of Bangladesh has aimed to support the Ministry of Women and Children Affairs (MoWCA) to integrate gender sensitivity in their respective project designs.

Furthermore, special attention has been paid to improve the current DRR framework through inclusion of women, children and persons with disabilities (GED, 2015).

It can be observed that, numerous policies, plans and frameworks for disaster management in Bangladesh have addressed gender issues in their planning and implementation. However, not all the plans are being enacted properly when it comes to practice. Governance issues, lack of coordination, absence of active participation from all the community people and many more such reasons are becoming barriers to gender sensitive legislations of our country. Gender inclusion needs the strong support of every relevant organizational and institutional leaders to make sure the departments consider gender perspectives in all kinds of disaster risk reduction and disaster management planning and implementation activities. Strong sense of gender-balance is also required from the bottom up, especially from the local level implementing authorities, if DRR practices are to be comprehensive and gender friendly (Roehr, 2007).

6 Role of NGOs in Women Empowerment

Women empowerment and gender mainstreaming have been noteworthy endeavors by a generous number of international, national and local NGOs in Bangladesh in recent years, which is the reason this country has made significant strides in this aspect. While government organizations focus mostly on implementing large scale DRR policies and plans, many of which lack necessary gender perspective, various NGOs have been active in Bangladesh working their way through gender-friendly disaster management measures and empowering the women community in this process. Moreover, the change in funding policies and government's behavior towards NGO involvement in disaster management and the increasing micro-finance activities of NGOs have been vital in the changes of role of NGOs in Bangladesh.

The contributions of NGOs are quite prominent and internationally acclaimed in different sectors of Bangladesh, particularly the DRR sector. During and after any disaster, different NGOs across the country come forward to help the affected people by arranging emergency evacuations, distribution of relief goods and emergency medical aids, arrangement of training and capacity building activities to make people aware of the disaster and necessary steps to be taken, providing support through financial aid, giving livestock to recover from the loss of disaster, helping in rehabilitation of houses, etc. (Islam and Dogra, 2011). Most of these activities are directly linked to the welfare of women members of the affected family, as women or female members are usually the recipient of the reliefs or contact person for the NGOs. For example, women are often engaged with microcredit programs provided by local

NGOs. The credit money allows the female members to improve household assets and provide for children education during the normal period, provide alternative economic support for the family during a disaster, and recover through rehabilitation activities and small-scale income generation measures during a post-disaster period (Islam and Dogra, 2011). In every situation, handling the finance enhances women's power in her family, and consequently in the society.

NGOs also arrange for different capacity building and training activities for women throughout the year on numerous social issues, including disaster preparedness. They create women leaders through improving the leadership abilities and confidence of the women and help them transfer this knowledge to other women of the society through the innate communication and networking skills of this community. Many NGOs help in setting up small-scale associations of women through microcredit system or savings programs, which gives the women a sense of security and strong voice. Women members of the family become more confident, have a different view about everything and be equally involved in the family decision-making processes with men. This in turn helps in adapting during and after a natural disaster in a better way and establishing women empowerment in the society as well. The women community also acknowledge the involvement of NGOs as a strong reason of the improvement of their status in the society and their increased awareness about social and natural issues and aspects (Islam, 2014). They recognize that with the help of different NGO activities their employment opportunities have improved, and they have been engaged

in income-generating activities in the family which greatly help them to deal with a natural disaster and the ordeals brought by it.

While BRAC has extended their disaster management programs at the international level as well, CARE Bangladesh, OXFAM in Bangladesh, VERC, GUK, DUS, People's Oriented Program Implementation (POPI), CARITAS, CCDB, RDRS, FIVDB, SUS, Action-Aid, Christian Aid, Islamic Relief Worldwide (IRW), Proshika, Bangladesh Disaster Preparedness Center (BDPC), Foundation for Disaster Forum, etc., are some big names which have been involved in numerous pre, during and post-disaster activities in Bangladesh for many years (Sarkar, 2009; Islam, 2014). BRAC has been engaged in personnel training programs from national to local level, microcredit systems, emergency relief operations and rehabilitation programs during disaster times throughout the country. They have ensured employment opportunities through numerous alternative livelihood practices, replacement of livestock to disaster affected people and provision of support for small businesses. These measures highly benefit the women members of the disaster affected and vulnerable groups, which results in confident women community having a more resilient financial and social condition.

Oxfam Bangladesh has been working for a few decades in this country and contributed in many sectors including DRR, focusing on gender mainstreaming. They have provided livelihood opportunities to marginalized women to cope with post-disaster situations, helped vulnerable communities for effective response and rapid recovery from a disaster, and improved women's

overall condition in the society by giving them an increased sense of empowerment through stronger participation in decision making. CARE Bangladesh has provided assistance through provision of food, water and sanitary facilities, hygiene education and livelihood activities including cash for work and homestead gardening which benefitted disaster affected communities, especially women, to cope with the aftermath of disasters.

NGOs have been working side by side with concerned departments and ministries of Bangladesh government for years to deal with natural disasters and make the community more resilient and capable against the recurring disasters. The programs arranged by large, medium and small NGOs, be it international or local, have played vital roles in building the capacity of the women community of the vulnerable groups, for women are the responsible ones in the family, when it comes to deal with a disaster in a comprehensive and sustainable way. Over the years, NGOs of Bangladesh have developed in many ways and their programs and strategies have also changed for the better, contributing to gender balanced disaster management. However, there is still room for improvement in the approach and planning of NGOs to make DRR programs more successful, sustainable and gender sensitive, and help the women community to become empowered, confident and well established as equal partner in the family and in the society. In this way, they can be more hands on in ensuring effective disaster management planning and implementation by utilizing their training, communicative skills, common knowledge and socially established respectable and powered position.

7 Case Study: Kurigram, Nilphamari and Netrokona

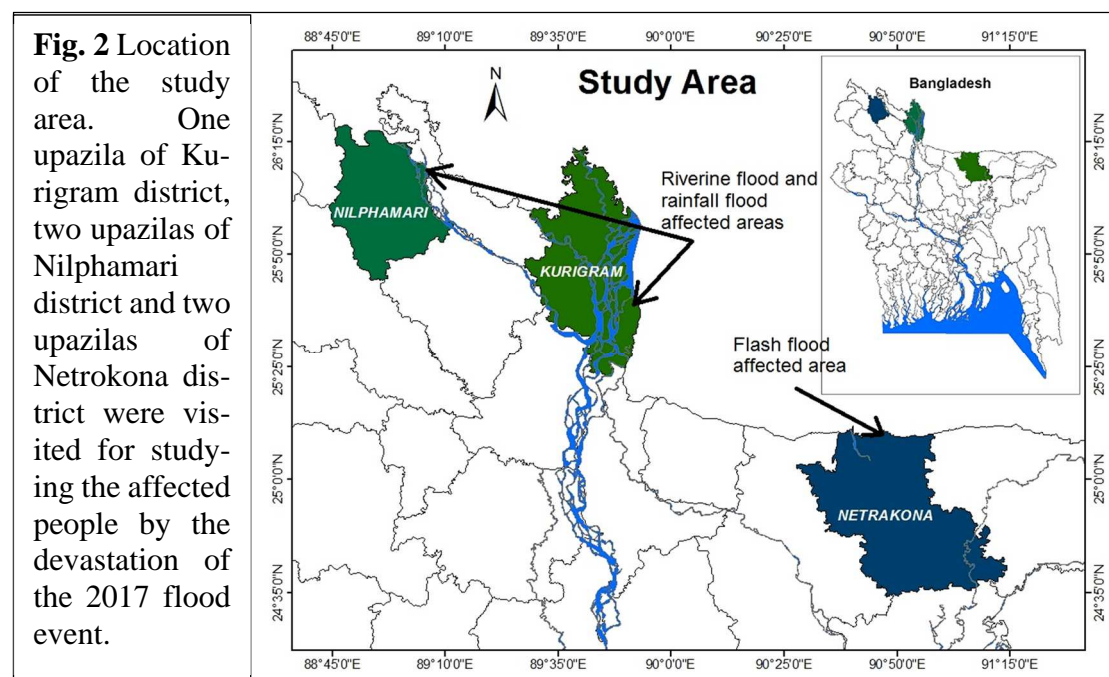
Flood disaster management is planned and implemented according to government policies and frameworks, with the assistance of the government and NGOs throughout the country. Unfortunately, in many cases, gender bias is still present when it comes to establish DRR strategies, despite all the concerns about gender mainstreaming. This module has

focused on three districts in northern parts of Bangladesh, to obtain field level knowledge of the present situation of flood disaster management and its gender aspects, also to find out the existing failings, so that necessary steps can be taken to recover from those and efficient and gender friendly flood management practices can be ensured.

Study Area

The study was conducted in two districts of North-West Bangladesh, which are Kurigram and Nilphamari and one flash flood affected district, Netrokona in the North-East region (Fig 2). Kurigram and Nilphamari districts are in the floodplain areas of Brahmaputra-Jamuna and experience regular riverine flood and rainfall flood events. On the other hand, districts in the haor regions of Bangladesh are affected by regular flash floods during the month of May-June, Netrokona being one of them. During 2017, intensity of both riverine and rainfall floods was higher than ever,

causing untold miseries to the vulnerable community of the riverbank and floodplain areas. Netrokona also suffered massive damages due to early flash flood of 2017 from heavy rainfall in the North-Eastern hilly region which made the affected community realize the inefficiency of the present flood disaster management practices. So, these districts were selected as case study areas for analyzing the gender aspects of present flood management in highly affected regions during a major flood event and 2017 flood was taken as a case study event.



Research Methodology

Bangladesh experienced a number of major flood events, 2017 being the latest and most devastating in the recent history. Secondary data about this flood event were collected to determine the extent of damages during the flood in the study area. Previous literature, journal articles and reports provided the information about other historical major floods while many newspaper articles, working papers and recent reports were reviewed to collect information about the 2017 flood.

Validation of the collected secondary data was performed in the field. Two field surveys were conducted during November-December 2017 in five upazilas (sub-district) of three districts. Participatory Rural Appraisal (PRA) tools were used in the field to collect primary information. In total 12 Focus Group Discussions (FGDs) were performed with mostly flood affected women group while some were with local landless and marginal farmers, fishermen, etc. Key Informant Interviews (KIIs) included Local Union Parishad

(UP) chairman, Upazila Nirbahi Officer (UNO), local elderly people, one parliament member who is a Professor of a local college, founder of the local Non-Governmental Organization (NGO) 'Shabolombi', mid-level officials of other local NGOs namely Gono Unnayan Kendro (GUK) and Unnoyon Shahojogi Team (UST). Semi-qualitative analysis of the collected data was performed to find out the level of devastation brought by the 2017 flood and the comparative impacts on local community in terms of their dwelling places. Existing flood management practices based on the capacity, livelihood options and access to information of different vulnerable groups of the study area were also reviewed to determine the gender parity or lack thereof. Prevailing gaps in policy-practice were identified based on the locally available information and some plausible recommendations were made to bring out gender balanced flood management strategies by utilizing the potential awareness of local communities and present opportunities.



Fig. 3 Photos of FGDs with flood affected women in the case study locations and KIIs with a UNO, one female member of the upazila disaster management committee and a local elderly person

Major Findings

Semi-qualitative analysis based on the collected information about the 2017 flood and other previous flood events in the study area pointed out that this particular flood brought the most devastating and unexpected impacts in the three districts under observation compared to

almost all the historical floods. The impacts affected different group of people in different ways depending on the present flood management strategies and local practices, and the effects also presented varied scenarios from the gender perspective.

Flood losses and damages

Different informants in all the upazilas of the study area stated that while 2016 flood previously seemed as a major event to them, 2017 flood was the worst. From the analysis of the field information and according to the respondents, in a number rating scale of 1 to 5, when 2016 flood was a 3, 2017 was 5. 2016 flood afflicted about 1.5 times more damages than the previous events while 2017 flood caused 3 times more

damages than any other major flood in history in terms of duration, inundation depth, loss of assets and livelihood. However, extent of flood damages varied according to dwelling places of the vulnerable community and their coping capacity. Table 1 represents a comparison of loss and damage occurred during the 2017 flood in the three districts of interest. Fig. 4 shows some evidences of devastations in the field.

Table 1. Flood losses and damages in three districts

	Kurigram		Nilphamari	Netrokona
	Riverbank area	Floodplain area		
Depth of flood water	3-4 ft on the road	3 ft on the road	2-3 ft on the road, up to 10 ft in some other places	2-3 ft on the road
Duration of inundation	15-20 days	7-8 days	7-8 days	2-3 months
Impacts of flood	Sudden water on-rush, damaged crop land, heavily damaged housing and sanitary facilities, loss of livestock and assets	Damaged crop land, damaged housing and sanitary facilities, damaged groundwater sources, loss of livestock and assets	Damaged crop land, loss of livestock and assets to some extent	Damaged crop land and fish resources, loss of livestock and assets to some extent
Place of stay during the flood	Left houses and stayed in shelters, embankments and roads	Left houses and stayed in shelters, nearby schools	Some left houses and stayed in shelters	Some left houses and stayed in shelters or relatives' houses



Fig. 4 Damaged house at the riverbank area in Kurigram and destroyed homestead ponds and trees due to flood inundation in Nilphamari

The damages caused by the 2017 flood affected the people in the riverbank and char areas more than those of the flood-plains. The reason behind this fact is that the people living in the riverbank areas and char lands are more exposed to the flood and are also very poor and socially vulnerable. Their houses are weaker, living standard is lower, and their capacity to withstand and adapt with disasters is very poor. Therefore, this marginalized and disadvantaged group suffered much more than the other inhabitants of the flood affected areas.

It was reported by the flood affected women community that, they have suffered 2 times more than the men during and after the 2017 flood. While most of the men were sitting idle losing their livelihood, the responsibilities of the

Local livelihood pattern

The inhabitants of flood affected areas in Kurigram and Nilphamari have been associated with crop agriculture as their only livelihood for a few decades. During the monsoon, these people cultivate *aman* rice and during the dry season they mostly practice *boro* rice cultivation and sometimes grow other crops like wheat, mustard, potato, etc. Some people, both men and women work in

female members of the families grew manifolds. Damaged house and water supply system made it highly difficult for the women to manage cooking and provision of drinking water for everyone. Women, pregnant ladies and elderly people faced severe discomfort due to damaged sanitary facilities. Sadly, some people reported death of a few infants and elderly persons during the flood. Though the number was very small, but the price of life is never less. All these sorrows caused severe mental trauma to the women and the poorest cluster of the affected community, which they reported as mostly a result of weak, gender biased flood management planning and practices in these areas. The losses due to the devastating flood were so acute that most of the people could not recover from it, after almost half a year.

road and embankment construction projects, some are small businessmen and wage earners while in some families, male members work part-time in other districts. In Netrokona, apart from crop agriculture during the monsoon and the dry season, people practice fish culture during the winter in household ponds, canals and nearby water bodies. However, none of these livelihood activities

could survive in the wake of the 2017 flood event. Boro harvest was completely damaged, fish resources washed away with the flood water and rest of them died due to long-term inundation. Even the aman crops suffered in the following year as crop fields were heavily damaged due to flood water and deposited sand layer. Though flood water receded from the inundated areas by September, but livelihood opportunity was very scarce, and this made the male members of the affected families migrate to nearby upazilas, other districts and even to Dhaka city in search of work. As a result, the female members were more burdened with the responsibility of maintaining daily household expenses.

The women members in the flood affected families of Kurigram and Nilphamari districts used to do be associated with some minor livelihood activities like homestead gardening, mostly for household consumption and sometimes for business purposes. They were engaged in livestock rearing, poultry farming and sold the obtained products in the market for some additional income. With the help and training from some NGOs, a few women in Kurigram were engaged in sewing, cigarette rolling and small-scale business activities for additional income to support their children's education. However, the women in Netrokona district were less

educated and skilled than those of in Kurigram and Nilphamari. They were only engaged in livestock rearing. Sadly, most of the livestock resources and poultry animals washed away during the 2017 flood, disrupting the income opportunity for the women. This fact proves that the women community, who were more vulnerable than men, suffered so much, losing their minimum chances of financially supporting the family during and after a disaster, due to lack of necessary capacity, knowledge and most importantly, social inspiration.

After the 2017 flood, local women in Kurigram district found an alternative income opportunity (Fig. 5). 2017 flood water inundation caused deposition of thick sand layer on agricultural land areas which required quick removal for starting aman crop cultivation. However, gender disparity was highly manifested in there, as female workers were found to be paid with 150-200 BDT/day for longer working hours than male workers while men were paid with 250-300 BDT/day. Most of the women working in this sector were found to be widow, single mother or elderly person with no other income source, who were constantly facing gender-biased wage system. This was another evidence of lack of gender sensitivity in the provision of alternative livelihood opportunities to the flood affected community.



Fig. 5 Female workers removing sand from the crop field

Infrastructure

In the study areas, most of the people live in earthen or semi-earthen houses which are highly vulnerable to natural disasters, especially long-term flood inundation. During the 2017 flood, most of these houses were heavily damaged. Houses in the riverbank areas in Kurigram lost roofs and earthen walls were damaged from the flood water. Almost all the people had to leave their houses and take shelter elsewhere. In Netrokona houses were less damaged and flood inundation depth was less than those of in Kurigram and Nilphamari, but in both the cases people had to suffer tremendously as there was no designated flood shelter in the vicinity. While some of the school buildings were damaged and inundated, some were in the higher platform and many people went there to take shelter during the flood. As a result, classes were closed for one or two months in the primary schools, while some secondary schools resumed after a week or two of the flood. However, it was really difficult to accommodate so many people in such small spaces of the few schools in those areas and also because people tried to safely keep the livestock they brought from their houses in those places. Absence of proper flood shelter and lack of space in the temporary shelter areas were responsible for the death of livestock and poultry animals. Some people had to sell those animals at negligible price, just because they could not keep those

Flood forecasting and warning

According to the respondents from the study areas, losses and damages from the 2017 flood had escalated too much because of the poor flood forecasting and warning system. While a few people reported to have received some vague warning through television about the possibility of a flood in the area,

with them, thus losing their livelihood sources. Moreover, most of the school buildings did not have separate toilet facilities for men and women, which made it extremely distressful for the women to stay in those areas. There was no cooking place, no facility for the children and elderly, just a place for the flood affected people to save their lives and count the days of utter sorrow and despair.

In some areas of Netrokona, people reported that during the flood they went to live in their relatives' houses which were in highland areas. Conversely, in all the three districts under study, the unlucky ones who lost all assets and could not reach the temporary shelters in time, had to stay on the roads and embankments for a long time even after the flood event. However, even roads were not in a good shape during the 2017 flood event. Along with the houses and agricultural fields, roads were heavily damaged and were under 2/3 ft flood water for some time, while boats had to be used on these roads for communication. Embankments were breached in many places due to sudden onrush of flood water from the riverside, thus causing most of the damages from sudden shock. Only a few elevated roads and some major embankments were free from flood inundation, which served as the last resort for many people.

most of the people did not receive any information about the eminent flood. No personnel from the local government or the Union Parishad arranged for any information dissemination about the flood and its expected damages, while some people reported that the minimum amount of information which

came from the local government, did not do any good to them because of poor dissemination.

The affected community of the three districts shared one common observation that, when they heard about the upcoming flood from their relatives or people from nearby districts, they could not respond to the warnings properly even then. The reason behind this fact was that flood water rose too quickly, within one or two days, that the people went into apparent shock. They observed hopelessly their agricultural fields descending under flood water with their unharvested boro crops. Roads were flooded, embankments were breached and they only could take so many assets with them and rushed towards the nearby shelter areas. Some people from the riverbank areas in Kurigram reported that even if they were warned timely about the flood, they would not have been able to protect

their houses or any other assets. However, most of the flood affected community feel that earlier warning about the intensity of the flood could have helped them move to safer places during the flood, save their assets and livestock and the devastation would have been a lot less.

Local UP chairmen from Kurigram and Nilphamari claimed that they have provided some warning about the flood before two days, but they themselves were the victims of poor information sharing and dissemination. During a KII, the UNO from Joldhaka upazila of Nilphamari district reported that, due to poor administration from the top and lack of proper coordination, flood warning information did not reach to the local government timely. This was another major reason apart from weak local flood warning system, that brought heavy damages to the affected areas during the 2017 flood event.

Relief operation

During the 2017 flood, affected communities reported to have received very few relief goods. Lack of NGO activities in the areas compared to other natural disaster affected areas (e.g., the coastal region) and indifference from local government were found to be the reasons of less relief activities. While local NGOs gave a hand to the affected in their time of distress, local government did not have any significant role in relief operation during or after the flood. Table 2 represents a comparative analysis of the relief operation in the study areas.

Different scenarios can be observed in the riverbank areas and floodplain areas of Kurigram district in terms of relief activities. While in the riverbank area, GUK was reported to be active in relief operation, only minimum support was

provided in the floodplain area. There were some other NGOs found to be working in those areas for other purposes like microcredit system and women association, but during the 2017 flood, these NGOs did not support the people much. Role of local government and UP chairman also varied in these two regions. In Nilphamari, UST was found to be an active organization in terms of training and capacity building of women and relief activities as well. Local UP chairmen were also kind enough to help the flood victims by providing food and monetary support. During a KII with the UP chairman of Nilphamari, he gave importance to making the vulnerable community self-dependent in some ways, as according to him, relief operation is not an effective way of flood management.

Table 2. Relief activities in the study areas

	Kurigram		Nilphamari	Netrokona
	Riverbank area	Floodplain area		
Relief operation	Moderate	Not satisfactory	Moderate	Not satisfactory
Relief products	Food, toiletries, Clothes, medicines, 4000 BDT/person	1500 BDT/person	Rice, pulses, oil, monetary support	500-4000 BDT/person, 30 kg rice/person, wheat, oil
Active NGOs	Gono Unnayan Kendro (GUK)	Islamic Relief	Unnoyon Shahojogi Team (UST)	BRAC, POPI, CARE
Role of UP chairman	Active	Very minimum	Active	Moderate but biased
Role of local government	Very minimum	None	Very minimum	Active

A different situation was observed in Netrokona district, as people reported to experience very negligible, yet biased relief operation. According to their response, those who were more affected by the flood, received much less relief products compared to those who were not much affected. Also, the local UP chairman in Shoair union of Mohanganj upazila was reported to be highly gender-biased, as he did not heed any sufferings of the women community who went to him for help. No NGO activity was reported in this upazila by the local people. However, in Khaliaghuri upazila of Netrokona, local people reported that they received some financial support from BRAC and POPI. CARE provided some help to pregnant women and children in the locality after the flood.

Rehabilitation

After the 2017 flood, most of the devastated houses in the riverbank and floodplain areas of the three districts remained unrehabilitated. The flood affected community reported that, some of them could repair their houses and

In all the three districts, some common features about flood relief operation were observed. The local primary schools supported many of their students by providing food during and after the flood as relief. Well off families who were less affected helped the victims by providing food and sometimes medicines. One commendable aspect of the flood relief provision in the study area was found to be its gender sensitivity. All the relief products provided by the GOs, local UP chairmen and NGOs were only given to the female members of the affected families, and the relief providers utterly followed this rule. This measure proved that flood relief operation in the study areas are focusing on becoming more efficient in terms of gender balance.

sanitary facilities with the money received as relief, while some others did not have the financial ability to do so, after losing almost all the assets and livelihood during the flood event. After flood water receded from the inundated

areas in Kurigram, some people returned to their houses only to find those heavily damaged and badly in need of proper repair and reconstruction. Some respondents in Nilphamari reported that they returned after a week or two of the flood, removed the mud and sand deposited inside their houses, made some small repairs and started living there again. However, people in Netrokona district did not suffer from heavy damages in terms of housing or sanitary facilities, therefore they could recover from their ordeals earlier than the people affected by riverine and rainfall floods.

Some heavily affected families in the riverbank areas of Kurigram were found to be so poor and disadvantaged that they couldn't rehabilitate their

Health and sanitation

During and after the 2017 flood, people suffered from health issues and lack of proper sanitation facilities. In most of the areas of Kurigram and Nilphamari, tubewells went under water and there was acute deficiency of suitable drinking water. Some people collected water from houses in highland areas, where flood damage was lower, while some collected water from nearby school buildings. However, the quality of water was not suitable for drinking and cooking purposes as flood water inundation contaminated both groundwater and surface water sources. In Nilphamari, some people tried to use the flood water for drinking and cooking through boiling, but it was still not safe. UST provided halogen tablets to flood victims in Joldhaka upazila of Nilphamari for water purification purposes. In Netrokona, groundwater sources suffered less damage. In cases of severe damage, people collected water from school buildings or went to other places by boat to collect drinking water. Local

houses as of this study and were still living on the embankment. Even the highly damaged roads and embankments were not properly repaired because local government did not take necessary measures. The flood victims reported that their sufferings from the flood were amplified during the post-flood duration, as they could not rehabilitate their living places and had to live in a distressed manner along with lack of food and income opportunities. Unrepaired roads caused disrupted communication system in the area while damaged embankments are still increasing the risk of large scale devastation from any future disaster event. This fact indicates to poor post-disaster management planning and practices from the government and locally engaged institutions.

people reported that, male members of the community helped a great deal in this regard and usually they were the ones going to places far away, while women and female children went to places nearby.

During and post-flood situations were worsened by outbreak of many water-borne diseases in the study areas. Diarrhea, skin diseases, cold and fever, vomiting, etc., were common syndromes. Long term stagnant water, especially in Netrokona, triggered these diseases and women and children were the major sufferers. Many children were sick for 1-2 months and missed their school. As people could not recover from these diseases, their daily activities were disrupted, and it took longer for them to cope with the devastations of the flood event. NGOs in Kurigram and Nilphamari provided some medicines to the victims while some clinics in Nilphamari provided free doctor's service and medical support. Sadly, the

people in Netrokona did not receive any medical support and they had to buy medicines themselves.

During the flood, most of the toilets and sanitary facilities were heavily damaged. People had to use bathrooms in the nearby school buildings and there were a few places for so many people. After the flood, most of the people could not repair the bathrooms and sanitary facilities. Women and elderly

Institutional activities

In the three districts under the purview of this study, government organizations and local non-governmental institutions have had different roles, but none of those were found to be actively engaged in flood disaster preparedness, response or rehabilitation. Absence of proper flood risk reduction and flood management activities was one major reason found to be behind the desolations caused by the heavy flood of 2017.

There was no functional disaster management committee found to be in Kurigram, Nilphamari and Netrokona districts. Even if there is a committee on paper in one or two unions, it is not functional in the way it should be, that is, no meetings, disaster preparedness trainings or capacity building activities have been arranged for the vulnerable communities. Broadcasting of disaster warnings was also very poor. Some female respondents in one union of Kurigram Sadar upazila reported that, though there is a mostly dormant disaster management committee in their union, but the female member in the committee is not responsive to the issues of local women. This fact indicates acute gender disparity in the presently minimal activities of local disaster management committees. However, in Nilphamari, more severe situation was found as female members were reported to be

people had to suffer a great deal due to this, as there was lack of privacy and they had to manage in the damaged toilets and washing areas, which was much more difficult for them compared to the men. Some women made some temporary adjustments with cloth covers with the help of other women of the locality, but it wasn't sufficient. Lack of proper sanitary amenities and inability to repair and rehabilitate made life more difficult for these flood victims.

restricted from the upazila disaster management committee. Along with lack of proper flood preparedness measures, gender imbalance was another complaint about these government activities in flood risk reduction and management.

During a KII with one UP chairman in Soulhari upazila and UNO of Joldhaka upazila, Nilphamari, some major governance issues were found about the disaster management committees. It was reported that one-third of the members of this committee do not feel interested to attend the regular meetings due to poor accountability and selfish nature. Moreover, women participation is very poor in these meetings due to lack of social support. Sometimes higher officials who receive training on disaster risk reduction and management, share their knowledge and experience in the upazila level meetings, but unfortunately due to dysfunctional union level disaster management committee and lack of proper communication and information dissemination features, the people do not receive any information that can protect them from the disasters. Lack of coordination between upazila and union level administration is another reason of slothful and ineffective disaster management committee activities. Moreover, the government funds

During his interview as a key informant, Md. Rashedul Huq Prodhan, UNO of Joldhaka upazila, Nilphamari district reported about the internal weaknesses of local government institutions regarding flood disaster management. Conflict of interest between UP chairman and UNO is a major reason of ineffective disaster management activities and improper fund allocation in this sector. According to him, proper regulatory structures are required to be implemented to ensure functional disaster management committees and active participation of relevant members. He said that participation of NGO officials in disaster management committees may improve the activities and involvement of public representatives in regulatory framework may ensure appropriate accountability. Local Government Support Projects (LGSP) can assist in disaster risk reduction and management practices as per his belief. All in all, he thinks that women participation is needed to be ensured and disaster management measures are to be planned in a more gender sensitive way, to make those more comprehensive and effective.

allocated to local level disaster management do not properly reach to the relevant authorities due to lack of governance and corruption in different institutional levels. Even local political members do not have significant power to bring about disaster management and development projects regarding this, which makes it more difficult for the local government to perform any flood disaster management and risk reduction activities.

During the 2017 flood, higher officials from the government visited the affected areas and kept up their appearances, but not much responsive activities were reported from the side of local government. Apart from some relief operations, some of which came from the personal finances of local UP chairmen or UNO while some were questionable due to complaints of gender bias and bribery, not much activity from the government institutions during the flood was reported. Again, in case of flood rehabilitation, role of local government was mostly sedentary. Government officials reported lack of proper funding and absence of any repair or rehabilitation project from the government as the reasons behind this. Even development organizations like Bangladesh Water Development Board (BWDB), whose purview is the rehabilitation of

embankments or Roads and Highways (RHD) who are responsible for reconstruction of damaged roads, did not play any active role in rehabilitation activities after the 2017 flood.

Along with the local government institutions, the NGOs in the study areas were not much dynamic as well in disaster risk reduction or preparedness activities. One reason for this fact can be the vulnerable location of people living in the riverbanks which is sometimes inaccessible for the NGO workers. However, local people have experienced some training and capacity building sessions on livestock rearing, health and sanitation and different social issues, which somewhat contributed to women empowerment and improved standard of living, especially in Nilphamari district, but none of those were on flood management or post-flood rehabilitation. Most of the local NGOs in the study areas provide micro credit to the dwellers of these three districts, which is given to the female members of the family with the consent of their husbands. GUK, Islamic Relief, UST, BRAC and ASA are some NGOs that provide credit from 1000 BDT up to 50000 BDT per person for various time duration. This money is mostly utilized for supporting children education, maintaining additional household costs,

livestock rearing, small business activities, and sometimes during or after a disaster. However, disaster affected grantees of these credits were unable to pay back the loan installments after their sufferings from the 2017 flood, due to which they could not get further loans when they needed the most. Also, male dominance and gender disparity in handling the credit money were reported by some of the local women in Netrokona. In Jatrapur union of Kurigram Sadar upazila, an association of about 200 members, 75% of which are women, are receiving livestock as lease

and are acquiring profit from rearing these animals and selling their products. While half the money goes to this association, the rest of it is utilized in maintaining additional expenses of the families and more importantly, managing during disaster times. Such associations are fruitful, especially for the women community, but this vulnerable cluster and other marginalized people among the inhabitants of the study areas are not experiencing sufficient appropriate responsive measures from the relevant institutions.

Community based approaches to flood management

Apart from the roles of government organizations and local NGOs, community based approaches are also very significant in combating natural disasters. Unfortunately, the inhabitants of Kurigram, Nilphamari and Netrokona districts did not have any formal training on flood risk reduction and impact management, and the intensity of 2017 flood was too great that they could not even comprehend the gravity of the situation before the disaster manifested. Due to lack of capacity and necessary knowledge about such major disaster events and absence of proper incentives from the government and NGOs, local people could not take any measure for flood management.

There was no associations or groups among the people who could disseminate the information of flood disaster to the vulnerable groups timely. Farmers could not harvest their crops and lost their yearly food sources and income opportunities. People did not even have any emergency food storage which could help feed the family members during the flood. Some people reported that women members of the families

usually keep some additional food supply by saving a handful of rice (*Mushtichal*) during cooking everyday meals. This indigenous way of maintaining stock of food has supported them to some extent during the 2017 flood. However, this source of food was very scarce compared to the duration for which these people had to stay in the shelter areas. Moreover, this flood was such a major event that many people have never experienced any occurrence like this, due to which they could not understand the necessity of preparing for it beforehand. Many respondents of the affected areas reported that, if they had received any prior warning of the intensity of this flood, they could have taken dry food supply and necessary medicines with them during their evacuation. Lack of proper cooking facilities was another big problem during their time in the shelter, which they could have managed if they had built and taken temporary portable cooking stove with them. Nonetheless, people tried to cope with all the obliterations of this flood, with the minimum assets and resources left afterwards.

8 Recommendations

Analyses of the collected information from the three districts under this study gave a picture of present flood disaster management practices and gender approach of those. There were some barriers observed in the DRR planning and implementation activities, which caused difficulties in effective flood management. The 2017 flood event gave some learnings to everyone as to how such major disaster can be adapted

with, and these learnings are expected to serve in regular flood disaster management practices as well. The mission of ensuring gender balanced flood management is not an easy task but based on the prevailing concepts and findings from the study, some recommendations are made in different sectors to make the flood management strategies more effective, sustainable and gender sensitive.

Local level planning for flood management

Community based planning and practices for flood management always come at first in dealing with the impacts of regular or major flood disaster. The dwellers of Kurigram, Nilphamari and Netrokona districts were found to be aware of the fact that an event like the 2017 flood can occur in future and their preparedness is highly necessary in this regard. They have reported that this flood event made them realize the steps to be taken for flood management, which include storage of major food and dry food items in elevated spaces of their houses, preparation of portable cooking stove and storage of cooking fuel, raising of house plinth level to protect it from flood inundation, etc. They have also stated that, earlier evacuation to shelter areas with first sighting of increasing water level may save more household assets and livestock, and ease the movement of women, children and elderly people. Such self-management plans need proper encouragement from the society, especially due to the fact that women community are the major contributors to these local level flood management measures. People need to come out of the social taboo and age-old gender bias and help the women to plan and implement effective disaster management strategies.

The women respondents of the study areas stated that formation of women groups or associations can immensely help in flood management planning. Through these groups women can plan and train themselves to practice small-scale livelihood activities for additional income so that they can have emergency financial support during disaster times. Good social business model can be formulated among the women groups with these livelihood opportunities. They can also disseminate any timely information or warning of flood disaster and immediate coping strategies among themselves and with their innate capability of social communication, they can warn others about the imminent danger.

During a flood event, local toilets and sanitary facilities suffer a great deal causing problems especially for the women and children. This occurs mostly due to the fact that these toilets are constructed with earthen materials which are easily destructible. Instead of that, people can use low cost materials for constructing toilets and sanitary facilities. This measure can be easily taken by the local people, which is expected to serve better during flood events.

Women these days understand the importance of education in improving standard of living and effectively responding to natural disasters, therefore they send their female children to school along with the male. It is evident that awareness has raised among the people and with enough support and proper planning, the vulnerable community can be resilient with time.

From this study a very interesting finding came out that during the 2017 flood local men were much concerned about the safety and security of the women

Institutional approach

Effective and gender sensitive flood management require proper institutional support, both from GOs and NGOs. Local government needs to dynamically participate in flood management activities through effective flood forecasting and warning, unbiased relief operation and functional disaster management committee. Flood warning systems need to be upgraded through intervention of the government's higher tier officials and system improvement. Sharing of flood warning and information with the local government institutions requires to be transparent so that they can further disseminate the information to the local people through relevant officials and social representatives. Translation of scientific information in locally conceivable manner, using the ways and techniques that local people can easily understand, is also a matter of significance for effective response from the local people. Access of the women group to flood warning and relevant information before the disaster can immensely increase the efficiency of flood management and make it gender balanced. A local initiative of flood warning dissemination through mobile SMS services can be proved effective in this digital age.

community, and they helped the women wholeheartedly during this distressed time. No social violence was reported in any shelter area or other places, and men showed supportive and friendly behavior to the women. This feature of the flood affected and vulnerable society showed that the conventional way of thinking is changing, and people are becoming more aware of gender sensitivity. With proper guidelines and incentives local flood management approaches can thus be made more gender balanced.

Disaster management committee activities in the flood risk areas are extremely important for efficient flood risk reduction and management. Local government should come forward and include monitoring mechanisms to ensure participation of women and representatives of socially disadvantaged groups, and also to ensure accountability of relevant officials. Disaster management committee meetings must be arranged regularly to share knowledge and information about any flood or other natural disaster. Training and capacity building activities through meetings and programs need to be arranged to prepare the local people against the impacts of flood disasters. With necessary knowledge and capacity, people can improve their resilience against natural disasters, and can engage in alternative livelihood activities for additional income and better living standard. The locally active NGOs should come forward and work with the local government in this regard. The women of the study areas stated that they are willing to take part in small business activities, handicraft or any other income generating actions if given appropriate training. Alternative livelihood opportunities and additional income sources

can help in making the women community self-financed. Moreover, improved capacity can assist in building leadership qualities among people, especially among the women community, which leads to empowerment, better decision-making abilities and social recognition. During the flood event, relief operation should be performed with the support of local UP chairman and more importantly in a conscientious and just way. It is a matter of great significance that NGOs these days are highly aware of the special needs of women and aged people during disasters and therefore they provide gender friendly relief products. Local government should also be engaged in such socially acclaimed relief operation.

During a flood event, the flood victims become compelled to sell their live-stock in negligible price just because they cannot protect those animals or take those to the shelter areas. A committee can be announced by the local government, involving local people, social representatives and NGO officials who will be responsible to buy the live-stock products and animals from the flood victims for reasonable price and then use those in community kitchen facilities to feed the people living in shelters. In this way the loss of the flood victims may be less and also the resources may be properly utilized. Women groups can be engaged in overseeing the process with the help of the responsible committee. Furthermore, local food affected people can be offered with alternative livelihood opportunities, which can help them to manage daily expenses and rehabilitation works after the disaster has passed. 'Food for work' programs can be initiated for (a) helping in evacuation process, (b) management of flood shelters, (c) cooking in community kitchen for people residing in the shelters, (d) relief distribution, (e) helping in repair and rehabilitation,

(f) roads and embankment rehabilitation, etc. There are a lot of avenues which can help people financially during and after a flood disaster and with initiatives from local institutions such strategies can be effectively materialized. Involvement of international NGOs and donor agencies is necessary in this regard to arrange financial support, and cooperation from the local government is a must. External help network is necessary to support people during business interruption due to a disaster, and to help in improving business schemes, so that the flood victims can have the opportunity to get back to their old lives.

The districts under this study suffer from lack of designated flood shelter. With necessary improvement, local markets and school buildings can be used as temporary shelter areas during emergency times. However, comprehensive flood shelter is a timely need for these areas given the future threat of major flood event like the one in 2017. Women community emphasizes on essential and gender equitable sanitary facilities in the shelters along with separate rooms for women and children. Central government needs to take development projects for construction of comprehensive flood shelters and local government should monitor to ensure proper operation and maintenance of these facilities. Improvement of roads and embankments are also a matter of significance that needs attention from the government. During a KII, a member of Parliament from Nilphamari district, Professor Golam Mostafa stated that infrastructural development is the only significant way of combating with major flood disaster. Rehabilitation of embankments, effective operation and maintenance of local infrastructure and dredging of silted river beds are the strategies that can effectively help in flood risk reduction and management.

Policy formulation

Gender equilibrium is emphasized in several disaster related policy documents but there is no proper follow-up to ensure it in the field level, so the gap between policy and practice is a big obstruction and poor governance in the local government amplifies this problem to manifolds. The existing policies and frameworks that still lack gender perspective in some sectors should be modified for better and effective implementation. Crucial monitoring mechanisms are required to be employed to ensure that gender friendly strategies mentioned in the policies are effectively implemented in the field level, and local

governance issues are improved. Moreover, fund allocation for gender sensitive flood disaster management needs to be ensured in a more efficient way, preferably in a bottom-up approach. In this way, government's generously disbursed funds can reach to the proper recipients for productive and sustainable implementation of flood management plans and strategies. Support of local government institutions is paramount in this regard. Coordination among different tiers of government and also with NGOs is highly important, in both top-bottom and bottom-up approaches.

Importance of research activities

To conclude, an important aspect of effective and gender balanced flood management is worth mentioning. Significant research activities on disaster management are very important to find out the flaws of DRR planning and implementation measures. For years, flood risk reduction and management practices have been modified and improved from the success stories and failed approaches. Continuous research in this

field based on the evaluation of flood management practices can ensure that the existing flaws are amended, and flood management practices are made effective, sustainable and gender sensitive in a proper manner. Relevant research institutions and academicians need to come forward in this regard to ensure comprehensive research activities, and suitable funds need to be allocated for disaster research as well.

9 Concluding Remarks

Bangladesh has envisioned some promising strategies for disaster management, learning from the developed countries over the years. Under the threat of climate change and with global focus on Sustainable Development Goals (SDGs), it is high time for Bangladesh to plan and implement effective and gender sensitive disaster management measures. As a recurring disaster, flood risk reduction and management are matters of great significance. The devastation of 2017 flood brought untold miseries to the local community of North-East and North-West regions of Bangladesh, also stating the fact that disaster management is yet to go a long way for becoming properly gender balanced. Lack of timely warning and effective communication, absence of capacity to cope with flood and gaps in

disaster management policy and practice bear the evidence of gender-biasness in flood management. However, active disaster management committee, proper capacity building and training, introduction of alternative livelihood opportunities to socially vulnerable group and improvement in existing policies and frameworks can assist in ensuring gender equity in flood disaster management approaches. As it can be said that, the concept of gender balanced disaster management should be to make the vulnerable groups of the society more empowered and resilient, not to give them short-term means of living their day-to-day lives, so taking effective gender balanced flood management measures can ensure capable and strong society that are long dreamed-off in this developing country.

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Gender Aspects in Flood Management of North-East and North-West Regions of Bangladesh

Training Module



Research on

Disaster Prevention/Mitigation Measures against Floods and Storm Surges in Bangladesh



Outline of the Presentation

- Background of the study
- Flood and Gender
- Gender Roles in Flood Management
- Sendai Framework on DRR and Gender
- Gender Inclusion in DRR Policies and Planning
- Role of NGOs in Women Empowerment
- Case Study: Kurigram, Nilphamari and Netrokona
- Recommendations
- Concluding Remarks

Background of the study

- ❖ Bangladesh is a flood prone country, and very frequently, *extreme flood* causes enormous damages to the vulnerable community
- ❖ *The flood in 2017* was a significant demonstration of an extreme flood event, which caused severe devastation due to its *high intensity and untimely nature*
- ❖ Proper *flood management planning and implementation* is necessary, specially for the *disadvantaged and marginal groups* of the society
- ❖ Despite government's promise of *gender mainstreaming*, significant *gaps are present in practice of flood management plans*

Background of the study

- ❖ A *training module* has been prepared based on a *case study in North-East and North-West regions of Bangladesh*
- ❖ *Gender consideration* of presently practiced flood management measures has been witnessed and analyzed
- ❖ *The flood of 2017* was taken as a recent case study event



4

Flood and Gender

- The inhabitants of **riverbanks and flood plain areas** have experienced both the **blessings and devastations** of flood for a long period
- Extreme flood events in history: 1988, 1998, 2004, 2007, 2017
- Devastating experiences of a flood magnify manifolds for the **marginalized and disadvantaged groups** of the society, known as **'Gender'**
- The ability to cope with a disaster depends on **socio-economic and cultural vulnerability**
- Women are the most vulnerable group, due to
 - prevalent social norms
 - their subordinate position in the patriarchal socio-economic structures
 - gender stereotypes

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Flood and Gender

- Women's **limited mobility, vast household responsibility, lack of access to disaster warnings and lack of necessary training** increase their vulnerability
- **The elderly, children and disable people** also remain in crucial disadvantages during a flood
- Women's responsibility to **cook, collect water, manage children and take care of livestock** become difficult jobs during a flood
- **Poor sanitation system and water-borne diseases** affect the marginalized groups more adversely than others
- Poor and landless people **become destitute after a flood, losing every asset**
- **Pre, during and post-flood situations** thus prove that prevalent **gender imbalance** brings dreadful experience for the marginal groups

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Gender Roles in Flood Management

- Women members can **assess the vulnerabilities and capacities** in managing a flood
- They can effectively **disseminate flood information** to everyone
- Young boys and girls help in pre-flood **evacuation process**
- Women **manage the finances** during disasters from NGOs, relatives or from their own savings
- They maintain **food supply** for the family during a flood by selling livestock or their own valuables
- **Cooking food and collecting water** depend on the women and girls
- Women also **distribute food and take care** of the elderly, injured or ill, in a flood shelter
- Women help other women for maintaining **privacy and sanitation**
- Some knowledgeable women create **associations** to share their capacity to manage a disaster

Sendai Framework on DRR and Gender

- The Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted at the Third United Nations World Conference on Disaster Risk Reduction, held in Sendai, Japan
- As a successor instrument to Hyogo Framework for Action 2005-2015, this framework looks for comprehensive disaster risk reduction measures and build resilience

Its basic goal is to prevent new disaster risk and reduce existing risks through implementation of integrated measures and strengthen resilience by increasing disaster preparedness, and reduce loss of lives, livelihood and assets

Sendai Framework on DRR and Gender

- It states that a gender, age, disability and cultural perspective should be integrated in disaster management policies and practices
- It promotes women and youth leadership through voluntary work in DRR measures
- **Plans under the fourth priority for action in DRR: gender equitable rehabilitation and reconstruction, gender balanced decision making on DRR, gender friendly early warning system, capacity building of women**

Gender Inclusion in DRR Planning and Policies

- **National Disaster Management Policy, 2008:** women, children, elderly, disable and other socially marginalized groups are to be primary beneficiaries of all disaster management efforts
- **Standing Order on Disaster (SOD), 2010:** risk assessment and capacity building programs focusing on women and children, gender balanced implementation of disaster management activities, inclusion of women representatives in district, upazila, pourashava and union disaster management committees
- **Disaster Management Act, 2012:** provision of assistance for rehabilitation to ultra-poor and under privileged community, especially women, elderly and handicapped

Gender Inclusion in DRR Planning and Policies

- **National Plan for Disaster Management, 2010-2015:** vulnerability assessment of and rehabilitation program for women, children and the poor, gender balanced shelters, livelihood support program
- **National Plan for Disaster Management, 2016-2020:** inclusion of gender, disability, class, ethnicity and religious minority in all DRR plans and programs, strategies for gender mainstreaming in decision making

Other Policies and Plans addressing gender:

- Napa (2005)
- Coastal Zone Policy (2005)
- Comprehensive Disaster Management Programmes
- The Cyclone Shelter Construction, Maintenance and Management Policy
- Sixth-Five Year Plan
- Seventh-Five Year Plan, etc.

Role of NGOs in Women Empowerment

Activities of NGOs during disasters:

- Arrangement of pre-disaster evacuations
- Distribution of relief goods and emergency medical aids
- Arrangement of training and capacity building activities
- Financial aid
- Provision of livestock and poultry animals
- Support for rehabilitation of house

Roles of NGOs that contribute to women empowerment

- Microcredit or loan support round the year to women
- Support for small-scale livelihood activities of women
- Women's capacity building programs

Role of NGOs in Women Empowerment

Active NGOs in DRR sector of Bangladesh

- BRAC
- CARE Bangladesh
- OXFAM
- VERC
- GUK
- DUS
- CARITAS
- CCDB
- People's Oriented Program Implementation (POPI)
- RDRS
- FIVDB
- SUS
- ActionAid
- Christian Aid
- Islamic Relief
- Proshika
- Bangladesh Disaster Preparedness Center (BDPC)
- Foundation for Disaster Forum

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Case Study: Kurigram, Nilphamari and Netrokona

Study Area

- North-West region: Rainfall flood and riverine flood affected areas
- North-East region: Flash flood affected areas
- First survey: 8 November-9 November 2017
 - Kurigram district: Kurigram Sadar upazila; Jatrapur union
 - Nilphamari district: Nilphamari Sadar upazila; Kachukata union
Jaldhaka upazila; Shoulmari union
- Second survey: 14 December 2017
 - Netrokona district: Mohanganj upazila; Shoair union
Khaliyahuri upazila; Mehendipur union

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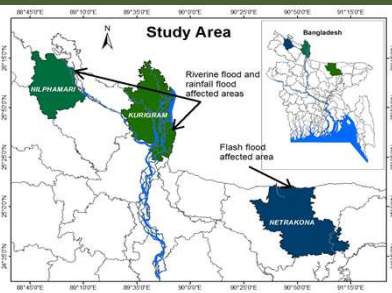


Fig. Map of the study area

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Research Methodology

- **Secondary literature** on previous floods and 2017 flood event from reviewing journal articles, reports, newspaper articles, working papers
- **Validation of secondary data** and **collection of primary data** was performed by **two field surveys, semi-qualitative analyses** of collected information were performed
- **Participatory Rural Appraisal (PRA)** tools like Focus Group Discussions (FGDs), Key Informant Interviews (KIIs), Individual Interviews, etc., were used
- No. of FGDs: 12, target people were **the flood affected community, mostly women**
- **Key informants in the field:**
 - Local elderly people
 - Local Union Parishad chairmen
 - Upazila Nirbahi Officer (UNO)
 - Parliament member (Golam Mostafa, College professor, Joldhaka upazila)
 - NGO officials, etc.





Major Findings: Local livelihood pattern

- **Kurigram and Nilphamari:** crop agriculture, aman cultivation during monsoon and boro, wheat, mustard, potato during the dry season
- Day labor in road and embankment construction projects, small business, part-time work in other districts
- **Livelihood of women:** homestead gardening, livestock and poultry rearing, sewing, cigarette rolling, small-scale business activities
- **Netrokona:** crop agriculture in monsoon and dry season, fish culture
- **Livelihood of women:** only small scale livestock rearing, they are not much educated or skilled
- **During the 2017 flood:** Loss of boro harvest, damaged fish resources, death of livestock, loss of homestead gardens and fruit trees (*severe loss of livelihood, for both men and women*)

Major Findings: Local livelihood pattern

In Kurigram, women in the area worked in removing deposited sand layers from the field as the male members of the family were outside in search of alternative work and earning. But **gender disparity** was observed in the wage system

- Male worker: 250-300 BDT/day
- Female worker: 150-200 BDT/day (longer working hours)



Fig. Women wage earners working in sand removal

Major Findings: Infrastructure

- Devasted earthen and semi-earthen houses, poor people became completely homeless
- No designated flood shelter in the vicinity
- People took shelter in nearby school buildings, classes were closed for some time
- Difficulties to accommodate so many people in small places
- Lack of cooking places and suitable toilet facilities in shelter areas
- Gender disbalanced toilet and sanitary systems brought immense sufferings
- Damaged roads and disrupted communication systems

Major Findings: Flood forecasting and warning

- Most of the people did not receive any warning about the 2017 flood
- No support from the local government for information dissemination
- Some people heard about the flood from others, but could not respond timely as flood water rose too quickly (*people went to apparent shock*)
- Early warning could have saved a lot of assets and helped in evacuation, according to the flood victims
- Local UP chairmen reported of poor information dissemination from the top level of government, UNO reported of poor administration from the top and lack of proper coordination

Major Findings: Relief operation

	Kurigram		Nilphamari	Netrokona
	Riverbank area	Floodplain area		
Relief operation	Moderate	Not satisfactory	Moderate	Not satisfactory
Relief products	Food, toiletries, Clothes, medicines, 4000 BDT/person	1500 BDT/person	Rice, pulses, oil, monetary support	500-4000 BDT/person, 30 kg rice/person, wheat, oil
Active NGOs	Gono Unnayan Kendro (GUK)	Islamic Relief	Unnoyon Shahojogi Team (UST)	BRAC, POPI, CARE
Role of UP chairman	Active	Very minimum	Active	Moderate but biased
Role of local government	Very minimum	None	Very minimum	Active

Major Findings: Relief operation

- **Very few relief goods** received by the local people
- **No significant involvement** from local government
- **Gender-biased** relief operation from an UP chairman in Netrokona, also accusation of **bribery and corruption**
- **Support was given to pregnant women and children** in Netrokona by CARE Bangladesh (Evidence of gender balance approach)
- Support from local primary schools and better-off families
- *Significant gender equitable approach was observed in relief operation from NGOs as they provided gender-sensitive relief goods*

Major Findings: Rehabilitation

- Most of the damaged houses remained unrehabilitated
- Some people could rehabilitate their houses and toilets, while some could not, due to lack of capital
- Unrepaired sanitary facilities caused distress for women, children and elderly people
- Heavily damaged roads and embankments were not repaired
- Unrepaired roads caused distress for people, specially women, who tried to move to collect water or buy products from the market

Major Findings: Health and sanitation

- In Kurigram and Nilphamari, most of the tubewells went under water (*acute deficiency of suitable drinking water*)
- Quality degradation of surface and groundwater sources, even boiling could not help
- UST provided halogen tablets for water purification in Nilphamari
- **Local men helped women during water collection from other places**
- Outbreak of water borne diseases like diarrhea, cold and fever, skin diseases, etc.
- Women and children suffered the most due to diseases
- Some local clinics provided medical services in Kurigram and Nilphamari, no medical services in Netrokona

Major Findings: Health and sanitation

- Women suffered due to lack of suitable sanitary facilities and lack of privacy
- Some women made temporary adjustments
- Prolonged sufferings due to absence of gender balanced health and sanitation facilities

Major Findings: Institutional activities

- No functional disaster management committee in upazila or Union Parishad level
- Some committee activities on paper, but in practice **no meetings or no capacity building activities**
- Unresponsive behavior of the female member in disaster management committee
- Restriction of women participation in committees in Nilphamari
- *Problems reported by the UNO of Nilphamari, Joldhaka upazila: Lack of governance, poor accountability of committee members and relevant officials, insufficient knowledge sharing about disaster management strategies, lack of coordination between upazila and union level administration*

Major Findings: Institutional activities

- Problems in fund allocation for respective disaster management activities
- Local political members are not powerful enough to bring development projects
- No incentives from government organizations for repair and rehabilitation

Major Findings: Institutional activities

- Not much dynamic roles played by NGOs (*inaccessibility to some vulnerable locations for the NGO workers*)
 - Some training activities for women by NGOs on livestock rearing, health and sanitation, social issues (*helped in women capacity building and empowerment*)
 - Microcredit programs by local NGOs: 1000 BDT to 50000 BDT per person
- Flood management practices require institutional support, from GOs and NGOs, but no significant functions by any of those, also not gender equitable*

Major Findings: Community based approaches to flood management

- Local people could not take necessary flood management approach during or after the 2017 flood (*lack of capacity*)
- No group formation or association for information dissemination
- Local indigenous practice of keeping handful of rice (*Mushiti chah*) during cooking meal helped to some extent during flood
- *Flood victims reported that they could have taken necessary precautions if they had known about the extent of flood. Such measures were: making portable cooking stove, keeping emergency food storage and medicines, etc.*

Recommendations

Local level planning for flood management

- **Steps to be taken before flood:** storage of dry food items and emergency medicines, raising of house plinth level, making portable cooking stoves
- **Formation of women groups:** flood warning dissemination, discussion about disaster preparedness, alternative livelihood opportunities among the group members
- Preparation of sanitary toilets with low cost non-earthen materials

Recommendations

Local level planning for flood management

- Educating female children along with men, for proper understanding about disaster management
- **Support of local men were evident in the study areas, no social violence**
- **Similar support and encouragement are required for women, so that they can focus more on effective disaster management planning and practices**

Recommendations

Institutional approach

- Effective flood forecasting and warning, proper information dissemination to every group of people
- Local initiative can be taken to disseminate flood warning to women group through mobile SMS services
- Functional disaster management committee, regular meetings, training activities, proper monitoring mechanisms to ensure gender-balanced participation and accountability of committee members

Recommendations

Institutional approach

- Support from GOs and NGOs for capacity development of women, to ensure alternative livelihood opportunities during and after a flood disaster, women empowerment and leadership skills
- Effective, gender-sensitive and transparent relief operation
- Committee formation for buying livestock and poultry (in reasonable price) sold by the flood victims, and later using these animals in community kitchen to provide food to flood shelter inhabitants

Recommendations

Institutional approach

- Arrangement of 'food for work programs' as alternative livelihood opportunities to flood victims such as:
 - helping in evacuation process
 - management of flood shelters
 - cooking in community kitchen for people residing in the shelters
 - relief distribution
 - helping in house repair and rehabilitation
 - Day labor in roads and embankment rehabilitation projects, etc.

Recommendations

Institutional approach

- Construction of comprehensive flood shelters with separate rooms for men and women, gender friendly sanitary facilities, spaces for livestock
- Improvement of roads and embankments

Recommendations

Policy formulation

- Follow up and monitoring for addressing policy-practice gaps and ensuring implementation of gender sensitive strategies as per the policies
- Improvement of policies and frameworks to make them gender balanced
- Effective management of government allocated funds, through bottom-up approach

Recommendations

Importance of research activities

- Significant research activities are necessary to find out the flaws in flood disaster management practices
- Evaluation of the field level measures is required for effective and sustainable implementation of policies
- Relevant research institutions and academicians need to come forward in this regard

Concluding Remarks

- Flood risk reduction and management are matter of great significance
- Devastation of 2017 flood reminded of **inefficiency and gender disparity** of present flood management practices
- **Lack of timely warning and effective communication, absence of capacity to cope with flood and gaps in disaster management policy and practice** bear the evidence of gender-biasness in flood management
- However, **active disaster management committee, proper capacity building and training, introduction of alternative livelihood opportunities** to socially vulnerable groups and **improvement in existing policies** and frameworks can assist in ensuring gender equity in flood disaster management approaches

The concept of gender balance should be to make the vulnerable groups more empowered and resilient, so taking effective gender sensitive flood management measures can ensure capable and strong society, that are long dreamed-off in this developing country

Thank
you