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**COPING MECHANISM AT CHAR COMMUNITIES WITH
REFERENCE TO THE PERSONS WITH DISABILITIES: CASE
STUDY OF SIRAJGANJ**



A Dissertation for the Degree of Master in Disaster Management

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Abstract

Sirajganj is one of the northern districts of Bangladesh that is considered to be a highly flood prone district. Most vulnerable areas of this district are mainly *chars*. There are many ideas about how people cope during disasters, but there are fewer resources available as a primary source on specific coping mechanism, especially in case of *char* regions.

This study was done with the intention to get primary information of coping mechanism of char population especially for flood. Moreover, this study also particularly focused on how persons with disabilities (PWDs) cope during flood. Along with data collection on coping, the study also found out how about the implication of flood occurring trends and indigenous knowledge in coping.

One of the objectives was to find out the resources available to strengthen the existing coping of char population. It was important to know how much information is available to the community about government's safety net program, specifically on the Risk Reduction Fund program.

Based on the objective, the study was designed with extensive methodology where several Participatory Rural Appraisal (PRA) tools were used. About 120 people responded to many questions that were asked through PRA tools. A lot of information could be found on coping mechanism and issues related to it directly or indirectly.

Primary information on how people cope was identified through this research in terms of physically, psychologically, compromising with values and dignity, behaviorally and organizationally. Extensive information was collected what day do to housing, agriculture, food consumption, water and sanitation, access to finance, livestock, social

status etc. Interesting information on difference in coping was also found between PWDs and normal community people. There were also several differences were found between male and female.

There were some significant differences between two study areas. One of the reasons behind this is the availability or the access to services. The mainland char population has more access to diversified services (like information, education, entertainment, communication etc.) than the island char. There are differences about believing in indigenous knowledge, sheltering and few other coping mechanisms between these two *chars*.

It was evident from the responses that efficient distribution of external assistance can strengthen their coping during disaster. But this distribution has to be conditional so that it can reduce the risk as well as vulnerability of the char population. As per the objective, it was not possible to find out how much govt.'s RRF can strengthen the coping as none of the respondent knows what this fund is. This has been a major research finding that even after one year of introducing this safety net program by government, target people are still unaware of it.

While finding out about RRF, some issues regarding corruption at Union Parishad (UP) level were revealed. There are evidence found on bribing powerful community people who has influences over UP's name listing for govt.'s other safety net programs.

During the study, many issues came that has scope for further studies. There are issues on other safety net programs, issues on how relief is becoming a business for corrupt people and so on. Few limitations were also there to finish this study. But for meeting the purpose of primary information on coping mechanism at chars, the findings can contribute for understanding.



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My family has been my strength of completing this work as my postgraduate dissertation. It's because of them I am at this stage of pursuing my postgraduate degree. I express my wholehearted gratefulness to my dear family.

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This dissertation would not have been completed without an organization: Handicap International (HI). It is their project from where I got the idea of doing this study. HI also provided logistic support to collect data for this study. At this point I would like to recognize HI's field office staffs for their kind support in data collection for this study.

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Omar Farook
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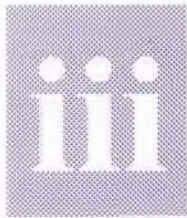
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List of Abbreviations

- CBO : Community Based Organization
EW : Early Warning
FGD : Focus Group Discussion
HH : Household
HI : Handicap International
IDI : In-Depth Interview
IK : Indigenous Knowledge
KII : Key Informant Interview
MMS : Manob Mukti Shangstha
NGO : Non Government Organization
PWD : Persons with Disabilities
RRF : Risk Reduction Fund
UP : Union Parishad
VGD : Vulnerable Group Development
VGF : Vulnerable Group Feeding



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Background

'Flood', a common phenomenon in Bangladesh, has a dynamic effect in the socio-economic situation. Sometimes it brings happiness to the face of farmers, sometimes it brings miserable situation for the whole country. Trade off behind occurring flood is observed for last few decades in the history of Bangladesh.

Flood in 1988, 1998 and 2004 are considered as the major floods that were devastating. It is usually assumed that people learn from previous disasters and be prepared for the following one. However, if the gap between two major incidents is bigger, the probability of taking preparation relatively decreases. Moreover factors like economic investments, population dynamics, international water trade issues and so on adding up each year, this is also increasing the risk and vulnerability due to flood.

Bangladeshi people's resilience power towards battling natural disasters is know widely. People cope up with these disasters with local knowledge, indigenous knowledge, physical and mental strengths, financial strengths, external assistances etc. For flood, though people of Bangladesh suffer a lot; they somehow cope up with it and try to restore their livelihood. These coping differ from urban to rural and also differ from different socio-economic status to another of people.

Most of Bangladesh's populations do not suffer from flood every year directly. Only the major floods ('88, '98, '04) had impact on large number of population. But there are flood prone areas get affected almost every year. Some of these areas are *Char*¹ areas. Chars have different characteristics in terms of livelihood, tradition, health and sanitation,

¹ *Char*: Due to sediment transportation bars and islands form at braided rivers, which are called *Chars*

social norms etc. than the mainland. The coping mechanisms to flood of these areas' population are also different from other rural and urban areas.

There are observations on how people cope during flood in Bangladesh. But it is hard to find any study on what are the actual mechanisms of people to cope up with flood. There is also not enough information about what people sacrifice or gain with their coping practices and what are the socio-economic dimensions around this issue.

This study aims to explore the coping mechanisms at *Chars* of Sirajganj area where people are very much vulnerable to flood, almost every year. Most of the people lives under poverty line and have lower education. These people also have less access to information, market, healthcare and other facilities that a standard society should have.

To improve the situation at *Chars*, development thinks tanks suggesting major interventions in terms of livelihood improvement. One of the cross cutting issues to be focused on is 'risk-reduction' to improve their situation along with other development initiatives. Before preparing any interventions on reducing vulnerability and risk, we need to know the coping mechanism and local knowledge of fighting flood. Most importantly we also need to know what factors influence them to cope up like this.

This study is done as a dissertation for the Masters Program in Disaster Management. There are two broad objectives, these are:

- i) Explore the coping mechanism of people at *Chars* of Sirajganj, with the special observation on the similarities and differences in coping between 'People With Disabilities (PWD)' and other members of the community who are considered to be able.
- ii) To find out the awareness level about governments one of the recent safety-net programs: 'Risk Reduction Fund' for poor people at *Char* area. This particular objective is important to know as this is supposed to be strengthen their coping during flood and other disasters in near future.

3.1 Coping Mechanism

All communities collectively and its members develop their own way to deal with exceptional circumstances caused by disasters, which we generally call coping mechanism/strategy. Community Coping Strategy is used to refer set of actions that community adopt to avoid an anticipated disaster, manage an exceptional circumstances and bring a normalcy in life and livelihoods after a disaster, which is transmitted from one generation to another. Indigenous knowledge system plays the key role in such transmission.

Following are key components of coping strategy, in which community bring permanent or temporary adjustment to deal with an exceptional circumstances:

- **Physical**—changing the physical environment e.g. comfortable shelters, increasing plinth level of house/ tube wells, repairing houses before flood etc.
- **Behavioral and habitual**- change in the food habit and/or food intake, increase in violence at home etc
- **Psychological and emotional**-male taking care of children, women taking role considered as men's, alcoholism etc
- **Livelihoods**-finding new earning sources, distress selling, migration (not all forms of migration is coping), change in the cropping pattern, taking loan etc
- **Values and dignity**-changing affiliation, taking new roles/work considered as less dignified, giving legitimacy to action considered as illegal before (stealing or giving bribe to access a service/relief), begging
- **Organizationally**—associated with groups, be part of mobilization for external assistance.

While there is an increasing awareness about the importance of a comprehensive approach toward disaster reduction in Bangladesh, little research has been done to understand how community cope with flooding within the context of changing policy and physical environment.

3.2 Vulnerability at Chars influencing coping mechanism

In the processes of erosion and accretion of rivers, bars are created. Medial bars emerge in braided rivers, like the Jamuna, as islands within the river channel. Point bars emerge as land attached to the riverbanks in both braided and meandering rivers. These emerging lands are generally known as ‘chars’ in Bangladesh; they create opportunities for establishing human settlement and for pursuing agricultural activities.

Although the riverine chars in Bangladesh offer, on a continuous basis, significant areas of new land for settlement and cultivation, living and working conditions on these newly emerging lands are harsh. The chars are poorly connected to the mainland and are prone to acute erosion and flooding which make the inhabitants feel vulnerable. In spite of these physical problems, a significant number of people live there, enduring the difficult and uncertain conditions. It is to be noted that the population density on chars is less than half the national average in Bangladesh. One can therefore surmise that the high demographic pressure in the country forces people to establish their settlements on chars, although the harsh livelihood conditions there makes them less attractive for living than the mainland. The typical patterns of physical development and human use of land and other resources in the chars differ among the different river systems in Bangladesh and also among the different reaches of the same river.

Char-dwellers’ vulnerability to persistent extreme poverty is exacerbated by their social and political exclusion from the public institutions available to deliver services such as welfare relief, health, education, justice, policing and transport. In the chars, entrenched patron-clientism, consistent denial of rights and lack of accountability means the poorest and most vulnerable are least able to take part in decision-making processes in any meaningful way. This view was put succinctly by one char-dweller: ‘Nobody listens to

what poor people have to say – that is why there is no justice [for us]' (Sultan, 2002). High levels of risk and social exclusion are compounded by physical remoteness: chars communities are very poorly connected to mainland services, markets, NGO support and even to one another, due to poor transport and communication links.

3.3 Disability issues in Disaster Management

'Persons With Disability' (PWD) has the same need like any other person in the community. They have to perform the same activities like eating, working, moving etc. like any other members of the society. To do so, PWD may need some specific support related to their disability and environment. Caregivers² of PWDs can primarily provide these specific supports. Assistive devices³ can also help them to enable them to perform daily work in better ways.

In most of the normal situation, these supports are not widely provided all over the country. PWDs suffer a lot sometimes unknowingly due to lack of support. So, when it comes to a situation like 'exceptional circumstances' (due to disasters or emergency situation), they become more vulnerable. From the experiences of many organizations working for Disaster management, it shows clearly PWDs face great barrier in accessing emergency support. A report from handicap International prepared a list of factors that makes them more vulnerable during any exceptional circumstances (emergency situation).

² Caregivers are people who look after the PWDs that usually belong to their family or close neighborhood.

³ Assistive devices are: walking frames, crutches, walking sticks, wheelchairs, low trolleys, artificial limbs, braces, glasses, white canes, hearing aids etc. [Source: Handicap International, Bangladesh Office]

Box 3.1 Factors which may make a PWD more vulnerable during an emergency situation:

- PWDs tend to be invisible in emergency registration procedure
- Lack of awareness results into not to comprehend disaster and its consequences
- Often excluded from response programs and affected by changes in terrain resulting from disaster
- PWDs are often deprived from rescue and evacuation services, relief access, safe location/ adequate shelter, water and sanitation and other critical services because of inadequate physical accessibility
- Emotional distress and trauma caused by disasters have long term consequences
- Misinterpretation of the situation and communication difficulties make PWDs more vulnerable in disaster situation

[Source: 'How to include disability issues in Disaster Management', Handicap International, 2005]

Addressing the need of persons with disabilities is another issue that should be considered in the primary stage of including disability issues in disaster management. There are different types of disabled people. Generally there are four types of disabled people:

- i. Physical Impairment
- ii. Visual Impairment
- iii. Hearing Impairment
- iv. Intellectual Impairment

These all kinds of PWDs have different needs. So, not only during crisis or emergency situation, but also all the time these needs should be addressed. Followings are some suggestions by Handicap International on how to address specific needs for PWDs:

Table 3.1 Suggestion for addressing specific needs

Disability/ impairment	Risk/ Problem	What to do
Physical Impairment	<ul style="list-style-type: none"> - Body temperature decreases - Bedsores⁴ - Difficult in escaping during disasters - Difficulty in accessing relief 	<ul style="list-style-type: none"> - Blanket/ Warm clothing - Mattress, cotton sheet, dry place, hygienic kit etc. - Personnel support - Assistive device - Adapted physical environment (ramps, handrails etc.) - Separate queues for rations/ latrines/ water
Visual Impairment	<ul style="list-style-type: none"> - Difficult in escaping during disasters - Difficulty in accessing relief 	<ul style="list-style-type: none"> - Use landmarks - Install hand rails - Personnel support - Good lighting - Separate queues for rations/ latrines/ water
Hearing Impairment	<ul style="list-style-type: none"> - Difficulty in expressing themselves - Difficulty hearing instructions 	<ul style="list-style-type: none"> - Visual aids - Picture exchange communication - Separate queues for rations/ latrines/ water
Intellectual Impairment	<ul style="list-style-type: none"> - Difficulty in understanding/ following instructions or seriousness situation 	<ul style="list-style-type: none"> - Speak slowly - Use simple language - Personnel support - Separate queues for rations/ latrines/ water

Disability issue has become a cross cutting issue. It is beyond health concern nowadays. The inclusion of this issue has to be considered with cross-sectoral approach. Needs of

⁴ Bed sore is a sore on body that result from staying in one position for too long

PWDs should be considered at all stages of disasters and must be seen through non-discriminating lens.

The representation at all level by PWDs has to be ensured in order to reduce heir vulnerability. Proper representation at different forum, decision-making platform, discussion etc. results into right inclusion of disaster issues.

It is important to consider the specific needs of persons with disabilities in every phase of disaster management and risk reduction. In the Disaster Management, following phases should consider the inclusion of disability issues:

- Preparedness
- Immediate response/ recovery
- Mitigation/ rehabilitation
- Development

The needs that are to be addressed in all the above-mentioned phases are:

- Medical treatment/ therapy/ medications
- Assistive/ mobility aids
- Infrastructure/ relief accessibility
- Community attitude towards PWDs

It is important to understand, giving guidelines on what to do does not finish the job of addressing disability. The above-mentioned ideas for inclusion must need loads of effort, financial support and knowledge. In Bangladesh where char people are considered to be one of the most vulnerable groups, it is surely a difficult task to get all necessary support for PWDs. They largely have to depend on external assistances, either by government or by NGOs. This is certainly true that ensuring these conditions strengthen the coping mechanism of PWDs.

3.4 Implication of External Assistance in Strengthening Coping

In char areas of Sirajganj people living with substandard situation. Poverty is a part of everyday life. When flood becomes very regular, the growth also becomes stagnant as a huge cost incur to response to disasters like flood. There are coping cost that people has to take it from other spending. Flood victims practice of taking loan is very old and still prevailing.

In this circumstance, external assistances are supposed to be helpful to improve the situation. But yet, from previous experiences, it was seen that people are depending more on external assistances and being reluctant to take preparedness measure for potential disasters. This happened because historically most of the external assistances were provided during emergency response. So, it mostly served the purpose of surviving rather than preparing target people for future disasters. Lack of strategic understanding and planning in external assistance providing is the reason that did not ensure risk reduction followed by strong coping preparation.

External assistances can play a great role in coping by developing the followings:

- Provide assistance to make a real effort to mainstream disaster risk reduction into long-term development plans
- Assess the impact of external intervention work on vulnerability to disaster and build safeguards into interventions (projects) to protect the poor
- Develop and adjust aid and lending tools to be more disaster risk reduction friendly
- Link debt relief to disaster risk reduction

Beside non-governmental assistance, government has provisions of having 'safety-net' programs for improving the livelihood of the community. Specifically for disasters, government has introduced Risk Reduction Fund, which is supposed to be distributed among vulnerable people to minimize the vulnerability through reducing risks. This fund is supposed to be used in the activities that directly used for taking risk reduction measures at household level, for example: raising plinth above the flood level.

3.5 Study Areas

The study was done in two prominent chars of Sirajganj. One is a mainland char called 'Koijhuri' and another is an island char named 'Sonatoni'. Both types of chars were taken to have a rationale output of data. Most of Sirajganj's area is the floodplain of Brahmaputra River. Most of the people at this area live by fishing and/ or agricultural works. This area is also widely known for dairy milk production. Some information are given below about the study area:

3.5.1 Profile: Sonatoni

Sonatoni is an island char under Shahzadpur Pouroshova with a population of about 11000 people. It has an area of 6410 acre. About 5977 acre of these lands is cultivable. Sontatoni's literacy rate is very poor. It is about 15%. Among total population, there are 173 people with disability.

Major hazards of Sonatoni are: Northwester, Flood, Drought and River erosion. The people of Sonatoni do not have place to evacuate when disasters occur. However, some people cross the Jamuna River and take shelter some flood protection embankment or other safer places.

3.5.2 Profile: Koijhuri

Koijhuri has an area of about 7114 acre, 4945 acre of that is cultivable. It is a mainland char. As it is attached with mainland, the living standard is better than Sonatoni. The literacy rate of Koijhuri is 22.25%. Koijhuri has a population of about 55000 people. 517 people out of the total population are people with disabilities.

Northwester, Flood, Drought, Cool Wind and River erosion are the major hazards from Koijhuri. Water Development Board has established a flood protection embankment here. So, people take shelter on the embankment during any disaster. People also take shelter at schools during flood.

4

Assumptions

From the background and previous relevant studies on the study area, several ideas came up while approaching to the topic of this study. Considering the socio-economic and geographical situation, some assumptions were made. Throughout the study information was gathered around these assumptions.

One of the assumptions specifically focused on external assistances, as it was seen that the study area has been receiving external assistances after every major disasters. This assumption was identified to find out the reality.

All three assumptions are as followed:

1. Vulnerable population take preparedness measures, as a part of their coping strategy before flooding
2. Poor vulnerable can not implement these coping strategies because of lack of resources
3. External assistances, such as Risk Reduction Fund can improve coping strategies of PWDs and community, if provided appropriately

This is a social study that requires qualitative analysis to find the actual scenario. As no other study related to the assumptions was found on the study, the findings have to depend on primary data only.

The data collection was done with a parallel study team of an International NGO who were working on the Indigenous Knowledge aspects during early warning and Coping Mechanism of Disabled People from Community Perspective.

Following tools are used to find the experiences and information that supports/ conflicts the assumptions:

The study used the following tools:

1. **Focus group discussion.** Analysis of the changes in the pattern of impact of such flooding (exceptional circumstances) and identification collective and household level coping strategy (for in-depth interview).
2. **Key Informant Interview** to understand broad collective coping strategies and idea about external assistances' relevance.
3. **In-depth interview** of community members, family members of PWDs and PWDs about experience of dealing with the most recent flood to understand their coping strategy and status in terms of getting benefits from External Assistance.

5.1 Focus Group Discussion-Checklist (for community and PWDs)

Objective is to understand:

- a) Collective experiences of the exceptional circumstances that flood create in their lives
- b) How do they cope with such situation (collective coping), to map all the coping mechanism before, during and after a flood?

Overall guidelines followed:

- Purpose of the FGD is not to collect in-depth analysis of each of the coping mechanisms; rather it will help to map various collective and Household (HH) level strategies. These helped to plan for in-depth case studies.
- FGD tried to identify which are collective strategies and which are not. Few in-depth case studies on collective strategy in the key informant interview were done.

Process of FGD and Checklist

- It was asked how flood generally affects their life (impact), income, housing-how do they repair/relocate, livestock, cropping pattern, education, communication, business, comfort, politics/power, access to services (health care, credit, water, relief etc). [See annex 12.1]
- All the impact was put in a big sheet (in column in the middle, write top to bottom leaving enough space in both sides).
- In the left column (see annex 12.1), each of the circumstances/impact was taken and the following questions were asked:
 - What do you do to avoid (activities undertake before flood) such circumstances taking place (preparedness and mitigation)? Specifically ask about house plinth level, livestock vaccination, crop protection, and business plan.
 - What do you do together with your community? Who decide? How do you decides?
 - What do you do at your HH level? Do you take such preparation every year? Who in their community can take preparation and who cannot? Why? What

helped them (market price, availability of job), good savings etc. to take such preparation and what does not?

- While deciding on what to do, how do you consider need of PWDs (this question was asked in local way, with several questions).
- Once it was finished, in the right column (see annex), it was tried to understand what people do when they have the impact (during a flood)
 - Each of the impact/circumstance was taken and asked how they deal with them. Why do you do these?
 - What do you do to rescue people? How do you organize yourselves? How do you plan for PWDs?
 - Where do they go for shelter, why?
 - How do you know who would give you assistance? What do they do so that they are not left out from relief distribution? Can everyone do such things? Why can and who cannot?
 - How do they deal with water, health and security of girls in the flood shelter? Who do form committee, if there is any? Try to understand rationale why do the pick one action not other? What are the factors affect them
 - Have you heard about RRF? If yes, have you got the fund yet? Have anyone got RRF in your community so far?

5.2 Key Informant Interview

Objective: to understand broad collective coping strategies and idea about external assistances' relevance

Key informants: local CBO staff, outsider living in this area (teacher, imam, business people, government officials), caregiver, relief volunteer, selected PWD leaders.

Checklist of Questions Asked

- Would there be a flood this year? How do you understand it? What is the indicator? Note. Your purpose is to document how they understand it, not whether there would be a flood. So go deeper discussion, ask for examples on 'How'.
- Would there be more floods in coming year (to understand long term early warning)? What are the reasons for it? How do they understand it?
- Did you predict a flood this year? Was there a flood? Why did your prediction go wrong? Does your prediction work these days?
- What did they do when they predicted a flood this year? What and why? If they did not do anything why?
- Was there a flood they experienced came without any warning? What happened?
- How do they share that to other people, especially family members? How does PWDs know it? Do they inform them?
- Where did they learn the prediction? Do they think it is important for them to teach children about their knowledge on flood prediction? Do they do it?

5.3 In-depth Interview of Individual

- **Objective:** to understand individual and household level experience in dealing with most recent flood and to understand their coping mechanism
- Materials needed: note book and pen
- Sample size: 10-12 men and women individual interview for the whole study
- Approximate time for each case study taken: 1.5 hours

Selection Criteria of Individual:

- Individual have experience dealing with the most recent flood in the selected location
- Individual who is available and willing to share their experience
- Individual from various backgrounds, gender, generation, religious background, occupational group and ability Local CBO and/or key information can suggest the individuals for interview.

Guidelines Followed:

- Documenting coping mechanism is more important than life stories.
- Collecting at least 2 in-depth and detail coping mechanism from different category of people, including PWDs and their family members
- Statements and quotations should also be documented
- Checking the data sheets in the methodology to check if that covered all categories of coping. At least 10 in-depth and detailed case studies on organizational/political coping was supposed to be collected
- Trying to link PWDs involvement, inclusion and consideration in your questions

Checklist:

- Do they see a change in the flooding pattern? Was previous disaster different from last? Does he/she think changing nature of flooding? What is the impact of changes change in his/her life?

- What was the impact of such flood on your life? Why? Is the impact same like other families? Any particular reason why he/she was less or more affected?
- What did he or she do when water started coming in? Why? Carefully ask reasons for each of the actions he/she adopted?

Preparedness/ Mitigation

- What do you do to avoid (activities undertake before flood) such circumstances taking place (preparedness and mitigation)? Specifically queries were about house plinth level, livestock vaccination, crop protection, and business plan.
- What do you do together with your community? Who decide? How do you decide?
- What do you do at your HH level? Do you take such preparation every year? Who in their community can take preparation and who cannot? Why? What helped them (market price, availability of job, good savings etc) to take such preparation and what does not?
- While deciding on what to do, how do you consider need of PWDs?

Managing A Circumstance

- What was the impact of last flood in their life? Take each of the impact/circumstance and ask how do they deal with them? Why do you do these?
- Who did rescue you and your family? How did you organize yourselves? How did you plan for PWDs?
- Where did you for shelter, why?
- How do they deal with water, health and security of girls in the flood shelter? Try to understand rationale why do the pick one action not other? What are the factors affect them?
- Where did they go for help? Why? Ask particularly role of local government, neighbor, CBOs, NGOs etc? Try to understand his/her access to each of the institutions?
- What did not help them at all? Why?
- How do you know who would give you assistance? What do they do so that they are not left out from relief distribution? Can everyone do such things? Why can and who cannot?
- What preparation they are taking to deal with future flooding? WHY?

5.4 Analysis Framework

Following key questions were answered for analysis:

- Is there a difference in the experience of change in flood pattern by male and female?
- Is there a difference in coping mechanism by male and female; PWDs and other members; families with PWDs and their neighbors?
- Does community consider PWDs special need when do they decide and implement coping mechanism?
- Are there specific coping mechanisms for PWDs?
- Can external assistances help strengthening coping mechanism?
- Have they heard about the Risk Reduction Fund (RRF)?
- What can be the possible implication of Risk Reduction Fund for strengthening coping mechanism?

6.1 Coping Mechanism at Island Char: Data from Sonatoni

A total of 4 Focus Group Discussions (FGD) was done to get the detailed list of coping mechanism. FGDs focused Men, Women, Male PWD and Female PWDs separately. All data capturing sheets are given below.

These data capturing sheets also contain information got from Key Informant Interview and In-depth Interview. Following table shows the number, profession and village name of Key Informant Interviewee (KII) and In-Depth Interviewee (IDI) persons from Sonatoni Union:



Figure 6.1: FGD with PWDs, Sonatoni

A total of 8 people were identified as Key Informant.

Table 6.1: List of Key Informants, Sonatoni

Person	By Profession	Village
1	Farmer	Chhoto Chan Tara
2	Teacher	Boro Chan Tara
3	Imam	Boro Chan Tara
4	Homemaker	Chhoto Chan Tara
5	Homemaker*	Chhoto Chan Tara
6	N/A*	Chhoto Chan Tara
7	Loom Worker	Chhoto Chan Tara
8	Homemaker*	Chhoto Chan Tara

** people with disability*

A total of 12 people were selected for in-depth interview.

Table 6.2: List of in-Depth Interviewees, Sonatoni

Person	By Profession	Village
1	Loom Worker	Boro Chan Tara
2	Imam	Chhoto Chan Tara
3	Village Para Vet	Boro Chan Tara
4	Beggar*	Chhoto Chan Tara
5	N/A*	Bantiar
6	Health Assistant	Bantiar
7	Farmer*	Tengrabari
8	Farmer	Boro Chan Tara
9	UP Member	Boro Chan Tara
10	Village Leader	Boro Chan Tara
11	Boatman	Gopinathpur
12	Homemaker	Chhoto Chan Tara

** people with disability*

Table 6.3: FGD (M), Sonatoni

Broad Category	<i>Different stages of coping</i>					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>	Schools created to be used as shelter; Make 'shako' and 'hanging toilet' with bamboo; keep extra pipe for raising tube well; Buy/ repair boat; Buy wood/rope/bamboo; raise the base level of the place of keeping fodder					
<i>Behavioral and Habitual</i>	Preserve seeds; Cut the embankment of irrigation channel for drainage together to drain out flood water; keep boats at home; Savings			Send children to relative's place	Borrow water form neighbor's place	
<i>Psychological</i>					Taking good care of pregnant; Bribing concerned people to get relief/ VGF cards	
<i>Livelihood</i>	Sell livestock; Harvesting alternative crop that are flood resistant; Cut crop before season; keep livestock at higher land			Take loans with interest from rich people; Relocating and changing profession; tailor used to run business by keeping machine on the boat.	Got some govt. support and NGO aid for livestock	
<i>Values & Dignity</i>						
<i>Organizationally</i>	Changing school holiday timing at Sonatoni High School					
<i>Survival</i>	Keep Alum, Dry food, Candle, Kerosene					

Table 6.4: FGD (F), Sonatoni

Broad Category	Different stages of coping					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>	Raise plinth level, family members does; dhol kolmi-banana tree plantation, raising the base where they keep livestock; Raise latrine and tube well level and cooking place above flood level; raising school ground				Raising tube well for water	
<i>Behavioral and Habitual</i>	In case of aged PWD, family members relocate them to their relative's place; Family members/ neighbor takes special care towards PWDs;			Family members/ neighbors/ care giver helps PWDs to know what is where, direction of path etc. family members/ neighbors/ care giver helps Hearing Disabled person to move during flood	Bribing concerned people for VGF card	
<i>Psychological</i>				Some start savings and take loans to keep their assets,	Neighbors sometime give advice on how they can get assistance like: where to get food, loan, and relief. Sometimes they help PWDs to get that; Only 1 out of 9 got single assistance card after 2004 flood	
<i>Livelihood</i>	Preserve fodder; Sell livestock; Vaccination for livestock	Move livestock to relative's place; use raft made of banana tree to keep them		Take loans with high interest; alternate diet for livestock; accept the loss; start spending from business capital		
<i>Values & Dignity</i>						
<i>Organizationally</i>					Union members are corrupted, they give privilege to people they have good terms with, PWD complained. Even non-PWD gets more assistance;	
<i>Survival</i>					Migration	Relatively solvent people can afford to go to hospital; Use alum to purify water;

Table 6.5: FGD (PWD-M), Sonatoni

Broad Category	Different stages of coping					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>	Raise plinth level. family members does; dhol kolmi-banana tree plantation; raising the base where they keep livestock; Few of them raise latrine level and cooking place above flood level					
<i>Behavioral and Habitual</i>	In case of aged PWD, family members relocate them to their relative's place; Family members/ neighbor takes special care towards PWDs;			Family members/ neighbors/ care giver helps PWDs to know what is where, direction of path etc. family members/ neighbors/ care giver helps Hearing Disabled person to move during flood	Use banana-tree made raft for mobility; Take family member's help to access latrine;	
<i>Psychological</i>				Some start savings and take loans to keep their assets,	Neighbors sometime give advice on how they can get assistance like: where to get food, loan, and relief. Sometimes they help PWDs to get that; Only 1 out of 9 got single assistance card after 2004 flood	In case of Intellectual Disabled person (male), caregiver is be with him; PWD becomes emotional due to the loss of assets; One child PWD said often her classmates call her "blind" and misbehave
<i>Livelihood</i>	Some of their family members save fuel stock for flood; They sow 'dhoincha' around their crop to protect them from waves; Preserve seeds (mashkalai, shorisha, badam, rice, wheat) as flood may destroy crop, they save it by putting it inside clay pot and hang it on 'macha'; sell extra storage of crop if they think that flood is coming;			Take loans with interest from rich people; Sell livestock;		
<i>Values & Dignity</i>						
<i>Organizationally</i>					Union members are corrupted, they give privilege to people they have good terms with, PWD complained. Even non-PWD gets more assistance;	
<i>Survival</i>					Some directly release excreta on water; Get support from local NGO in terms of health and watsan (doctor, saline, fitkiri); Neighbors and family members help PWDs to get drinking water from different available tub-wells	

Table 6.6: FGD (PWD-F), Sonatoni

Broad Category	<i>Different stages of coping</i>					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>	Raise plinth level, family members does, sometimes neighbor helps; dhol kolmi-banana tree plantation; raising the base where they keep livestock; Some have assisting device provided by NGO and accessible house for mobility					
<i>Behavioral and Habitual</i>	Knowing risk, they continue harvesting; sometimes they plant flood resilient crop; Plantation of Banana tree			Family members/ neighbors/ care giver helps PWDs to know what is where, direction of path etc. family members/ neighbors/ care giver helps Hearing Disabled person to move in case of hearing warning, sound of storm etc.	Use banana-tree made raft for mobility; Take family member's/ neighbor's help to access latrine;	
<i>Psychological</i>						In case of Intellectual Disabled person (female), mother/ caregiver is worried about the security during flood, so she never leaves her alone; PWD becomes emotional due to the quarrel among their parents/ family members, also they feel sad about their incapability; One child PWD said often her classmates call her "blind" and misbehave
<i>Livelihood</i>	Some save fuel stock for flood, but mostly can't as they are poor; cut/ harvest half-ripe paddy			Take loans with interest from rich people; Sell livestock;		
<i>Values & Dignity</i>						
<i>Organizationally</i>					Union members are corrupted, they give privilege to people they have good terms with, PWD people complained. Even non-PWD gets more assistance; Some PWD intentionally refuse to disclose about getting assistance of losing it for next time;	
<i>Survival</i>					Some people consume flood water directly; Some directly release excreta on water; Get support from local NGO in terms of health and watsan (doctor, saline, fitiri); Neighbors and family members help PWDs to get drinking water from different available tub-wells	

6.2 Coping Mechanism at Island Char: Data from Koijhuri

Similar to Sonatoni, A total of 4 Focus Group Discussions (FGD) was done to get the detailed list of coping mechanism. FGDs focused Men, Women, Male PWD and Female PWDs separately. All data capturing sheets are also given below.

These data capturing sheets also contain information got from Key Informant Interview and In-depth Interview from Koijhuri union. Following table shows the number, profession and village name of Key Informant Interviewee (KII) and In-Depth Interviewee (IDI) persons from Koijhuri Union:

A total of 8 people were identified as Key Informant.

Table 6.7: List of Key Informants, Koijhuri

Person	By Profession	Village
1	Imam	Pathalia Para
2	Service Holder	Thutia
3	Business man	Joytura
4	Volunteer	Haat Pachil
5	Service Holder	Gudibari
6	Teacher	Joytura
7	UP Member	Monakosha
8	Homemaker*	Pathalia Para

** people with disability*

A total of 12 people were selected for in-depth interview.

Table 6.8: List of in-Depth Interviewees, Koijhuri

Person	By Profession	Village
1	N/A*	Joypura
2	Service Holder	Koijhuri
3	UP Chairman	Koijhuri
4	Teacher	Pathalia Para
5	Student	Joypura
6	Homemaker	Koijhuri
7	Loom Worker	Joypura
8	Service Holder	Pathalia Para
9	Homemaker	Koijhuri
10	Businessman	Koijhuri
11	Fisherman	Koijhuri
12	Imam	Gopalpur

* *People with Disability*

Table 6.9: FGD (M), Koijhuri

Broad Category	Different stages of coping					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>	Raise plinth level, family members does; 'dhoicha' plantation around homestead; raising cattle-shed; Few of them raise latrine level and cooking place above flood level; keep extra pipe to raise tube well			Take shelter at Embankment with livestock; Make temporary shed at embankment with polythene		
<i>Behavioral and Habitual</i>	Keep dry food; arrange mobile cooker;			Keep livestock on the tin-roof of home	Use banana-tree made raft for mobility; Take family member's help to access latrine;	
<i>Psychological</i>					Neighbors sometime give advice on how they can get assistance like: where to get food, loan, and relief. Sometimes they help PWDs to get that; Only 1 out of 9 got single assistance card after 2004 flood	Guard young girls at night; send them to trustworthy relative's places
<i>Livelihood</i>	Sell livestock; Harvesting alternative crop that are flood resistant; Cut crop before season; keep livestock at higher land; Preserve seeds (mashkalai, shorisha, badam, rice, wheat); sell extra storage of crop if they think that flood is coming;		Relocate livestock to high land area	Take loan with high interest; Sells advance labor; Change profession	Mortgage assets;	
<i>Values & Dignity</i>	Keep mobile toilet for PWDs					
<i>Organizationally</i>	Teacher tell about preparedness at school; Fill up the channel by soil with community initiative, also repair roads;					
<i>Survival</i>			Take shelter at embankment to survive only	Alternate diet; Reduce food intake		

Table 6.10: FGD (F), Koijhuri

Broad Category	<i>Different stages of coping</i>					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>	Keep extra pipe for tube well; Raise plinth level sometimes steal soil from others to do so; dhol kolmi, kaisha, grass plantation along the plinth; Few of them raise latrine level and cooking place above flood level; Raise the base of cattle shed			Put brick below the bed to raise it; Put brick into the water and use them as walkways;		
<i>Behavioral and Habitual</i>				Use banana-tree made raft for keeping livestock; Use banana-tree made raft for mobility; provide alternative feed like banana tree leaf to cattle; Take risk in harvesting; Reduce food consumption	Take family member's help to access latrine;	Share Indigenous knowledge with family members; NGO people aware community about flood
<i>Psychological</i>						
<i>Livelihood</i>	Preserve seeds (mashkalai, shorisha, badam, rice, wheat), livestock feed			Buy grocery on credit	NGOs provide tube well and latrine facilities	
<i>Values & Dignity</i>			Send young female to relatives places; Rarely go outside houses because of shyness		Some openly release excreta on water; Refrain from going to toilet during day time;	
<i>Organizationally</i>	Make people aware through Disaster Mgt Committee					
<i>Survival</i>	Preserve oral saline					

Table 6.11: FGD (PWD-M), Koijhuri

Broad Category	<i>Different stages of coping</i>					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>	As per ability: raise the base where they keep livestock/ cattle shed; Preserve dry fuel, muri, mobile cooker; Build boats, keep rope, bamboo etc.; keep extra pipe for tube well; raise plinth level and toilet's base	Other people rescue PWDs by boat	There is a option of taking shelter at WAPDA specially for PWDs	Make bridge with bamboo, they make tall base with 'kaisha'		Those who doesn't have any ability, they mostly can not cope like others
<i>Behavioral and Habitual</i>	Harvest such paddy that can grow with water			They commute through banana tree raft and rented boat; Keep 'Gamchha' over head while moving through water; change diet to save rice; reduce food consumption	Use banana-tree made raft for mobility; Take family member's help to access latrine	
<i>Psychological</i>						
<i>Livelihood</i>	Sell livestock as there is no high place to keep them during flood			Take shelter at WAPDA embankment and cook there; Take shelter at neighbors' place in high land areas with livestock	Take loans; PWDs take assistance from other people	1 or 2 person got union parishad's assistance in last flood; NGO provided external assistance
<i>Values & Dignity</i>					Live by begging; Female try to keep cover by outing katha, jute bag, clothes around 'macha' and around toilet.	
<i>Organizationally</i>	Early warning from Mosque			Protect assets and young females the community at WAPDA embankment with united effort		
<i>Survival</i>					Some directly consumed river water; Get support from local NGO in terms of health and watsan (doctor, saline, fitkiri); Family members got water for PWDs from neighbor's place even by swimming	

Table 6.12: FGD (PWD-F), Koijhuri

Broad Category	Different stages of coping					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>	Raise plinth level; raise latrine level above flood level			Make bamboo made 'shako'		
<i>Behavioral and Habitual</i>	Preserve grain; arrange mobile cooker and fuel					
<i>Psychological</i>						
<i>Livelihood</i>				Keep livestock on the tree by making 'macha'; Lake loan with high interest rate; cut paddy at early stage		
<i>Values & Dignity</i>			Do not go to relative's places, thinking that they may become burden			
<i>Organizationally</i>			With the help of neighbors and community, PWDs move into the embankment and to relatives' place			
<i>Survival</i>			Move into relative's place for survival issues		Drink river water; Purify water with Alum; Goes to rural paramedics for health services	

Figure 6.2: Snapshots from field





Data Analysis and Findings

For data analysis extensive session were done where the analysis framework was followed.



Figure 7.1: Review session after daily data collection at HI office, Enayetpur (Sirajganj)

Besides using the key questions' responses, much discrete information was found that were used for analysis. This analysis was done by organizing a synthesis workshop after all data collection. Everyday 'day wrap-up' was also done for data validation after data collection.

7.1 Changes in Flood Pattern

Flood used to come in the month of Ashar-Srabon (April-May) regular basis, but in course of time this regularity is not there. Sometimes Flood comes early, sometimes later than Ashar-Srabon (April-May). It is no more regular nowadays. Sometimes flood comes twice a year. Water flow used to come slowly before and used to increase flood level

gradually, nowadays water comes suddenly and rapidly, as a result 'flood level' rises quickly.

After establishing embankment at Koijhuri, secured area is safer for the time being, but there is a risk of more damage if somehow embankment fails (due to damage, overflow etc.). The area that are not within embankment are having more severe flood (e.g. Sonatoni).

'If the water somehow gets inside the embankment, the damage is more. - Chairman, Koihuri UP

Damage to asset, crops, livestock etc. is higher than before due to flood now. However, death incidents reduced from before due to increased level of awareness.

Few Ideas Shared by Villagers Why These are Happening

Many local people think 'Farakka Barrage' is the reason for irregular occurrence of floods; they also think sedimentation is increasing and depth decreasing because of the barrage too. Some said embankment is having significant influences in occurring the flood in different time of year.

'During the month of Chaitra-Boishakh (April) rivers get outrageous and find which beel to go!'-Shorbanu, Sonatoni

At chars, Protection to asset has not improved much as people are still living under poverty line. But consciousness about water and sanitation has increased among people as few NGO programs are working with these issues.

People's Experiences and Description of Flood Change Pattern

After establishing embankment, there has been a difference in the pattern of flooding between mainland char and island char. Island Char's flood comes in natural rule and occurs almost each year in small and large scale. One the other hand, during normal

flooding, mainland char remains protected and flood occurs only if the embankment fails. Damages and sufferings are higher at Island Chars than Mainland Chars.

Impact of Changing Pattern of Flood

Due to the changes and uncertainty about flooding pattern, crop-harvesting pattern has also been changed. To have at least some harvest than nothing, farmers try to go for diversification in cropping. For example they harvest kaun rice, nut, dhaincha etc. non-traditional crop which are either flood proof or can be harvest at lean season after flood.

There is also an issue about choosing land for harvesting. Due to unpredictability of flooding, farmers are not encouraged using low land for harvesting. So, those who has land/ opportunity to sow at high land, they prefer not to take risk by sowing seeds at low lands (which are more vulnerable to flood).

For the same reason of unpredictability of flooding and non-forecasted loss, gradually the occupations of farmers are changing/ shifting into non-farm activities. Seasonal migration from Chars is predominantly high and increasing day by day. It is becoming more and more difficult to say how the future flooding would be in term of time and severity and how it would impact the chars.

7.2 Community Indigenous Knowledge and Its Use in Early Warning

Traditionally, people of island *char* predict flood by using indigenous knowledge. They share indigenous knowledge mostly by informal mechanism such as story telling by seniors, experience sharing, long-term observation etc. In this way, they have been passing this tradition from fore fathers till now. But it seems to be different among the relatively educated and exposed people, especially people having access to information at mainland char. However, from both chars following list of indigenous knowledge has been found:

List of Indigenous Knowledge:

During data collection, the following list of indigenous knowledge has been found from the villagers:

- i. If there is rise in temperature at summer and rainfall increases, then it seems that flood is coming
- ii. If the wave comes from north, then it is more likely to occur flood
- iii. When insects start coming out from the earth, it seems that flood is coming
- iv. If thunder can be seen in south, then flood occurs
- v. Just before flood, the weather turns into a loof
- vi. If rainbow is observed around the sun in the month of Jashthya (May-June), then flood comes
- vii. People write down the names of 6 months of rainy season in 6 leaves of 'kotchu pata'. Then on the following day they watch which month's leaf has the most dewdrops. Depending on the maximum dew drop they assume that the leaf having most is the month to expect flood.
- viii. When wind blows from South-West corner to South, then it seems to occur flood
- ix. Water level rises till the level where the living snails climb up to during Baishakh-Jashthya (April-June)
- x. If the cattle starts yawning too much before rainy season, flood seems most likely to occur
- xi. When wind blows from east to west, then flood does not occur
- xii. If wind blows from South to North, then flood does not happen
- xiii. Year having tough winter may expect flood in the following year
- xiv. Year having bumper production of tamarind and mango is most likely to have flood
- xv. Water level decreases when thunder can be seen in the east
- xvi. If the cattle stops having grass/ grazing, it seems that flood is coming
- xvii. If the vulture barks after 13th day of Bhadro (5th month of Bangla calendar), then flood goes away
- xviii. If Muharram's moon can be seen in Monday, the flood occurs

There was not much difference about believing or depending on indigenous knowledge. But most of the knowledge came from the discussions with women.

Ways to Get Early Warning Information

Based on indigenous knowledge, char dwellers predict by following ways:

- Informal mechanism: senior villagers tell stories to juniors. They share their experiences and stories and long-term observation with them at informal gatherings.
- People get EW information from newspapers, radio and other available sources. The dependency on these sources are higher in Mainland Char than Island Chars

Implication of Indigenous Knowledge Nowadays

Char dwellers at Sonatoni thinks, prediction based on Indigenous Knowledge (IK) used be more accurate in past, but nowadays many of the prediction based on IK do not reflect in reality. Indirect dependency on technology and scientific system has increased countrywide. Television, newspapers, radio etc. has become the tools about having weather forecast. So, the indicators of IK do not seem to work nowadays.

Besides this declining trend on dependency, few villagers (especially at Sonatoni, still thinks that it is important to teach children about their indigenous knowledge. That is why they still share these during different informal gatherings, whether it works or not.

One villager says, 'days are not like before; winter doesn't come at winter season, heat is also not likely at summer. There is no guarantee that these follow seasons.' This remark can give a hint that how climate is changing at char areas.

Sharing Indigenous Knowledge Among Family Members

One of the study focuses was on how PWDs are informed about such knowledge. It seems they are also not left out about having lessons or listening interesting stories about indigenous knowledge (except for the cases of hearing and some intellectual disabilities). The seniors, caregivers, peers etc. also has been informing them traditionally about indigenous knowledge and its application in predicting disasters from time to time.

7.3 Coping Mechanisms

Different Coping Mechanisms People Undertake at *Chars*

The study tried to find out all sorts of coping mechanism that exist at these two chars. It does not imply that all of them cope with every way. Depending on need, strength and ability coping of people differs. Generally following are the ways of coping to flood at Sonatoni and Koijhuri:

Homestead

Raising plinth level of homestead is a very common coping usually done in pre-disaster phase. It is common in both Sonatoni and Koijhuri. There are also some common copings at household level like: planting 'dhol-kolmi' to protect plinth from flood. Dhol-kolmi helps to unite the soil granule and make bond stronger. Char dwellers also use kaisha and bamboo to provide support to the homestead wall from outside. With the protection of plinth, many cautious and solvent people buy extra pipe to raise the tube-well base above flood level to ensure the fresh source of water. During flood, many neighbors depend on these raised or safe tube-wells.

In case of PWDs, most of them stay with families. So, they do not have to take charge for raising plinth level or providing support. However, PWDs having capabilities of do so, tries to help the other family members. One of the PWDs added that, she needed help to collect soil for raising plinth. She managed to do so with the help of a neighbor.

Livestock

To protect livestock, depending on well-being community people raise the fodder base and raise the base of cattle shed. People from Koijhuri have moved out before with livestock and took shelter at the water development board embankment. But it was not possible at Sonatoni as the sheltering facility is unavailable. Before flood, some try to sell out livestock. In this way they get some security money and also avoid the risk of losing livestock.

Shelter

Many people try to keep or arrange rope, bamboo, and wood etc. before flood. These materials are needed to build a traditional structure that works as an elevated shelter called 'macha'. People keep assets, furniture and try to stay on this macha when their house is flooded. Poor people those who can't afford buying these materials, usually try to borrow or lend from other community people.

For sheltering, some families decide to move into relative's places before or during flood. Some send only few members to other places. There is an issue about security of female family members about sending them to relative's place. So, few families prefer to keep them for a very short period of time. Sending pregnant women and children to relatives'/ neighbors' becomes a necessity during flood if the house is badly inundated.

People from Koijhuri have flood shelters (embankment and school), so most of them move there. But till 2004, Sonatoni did not have any place to take shelter. Recently HI and MMS developed a Raised land where they can take shelter in the next flood if necessary. People having boats also use them for taking shelter sometimes.

There are no such facilities specifically for PWDs in the shelters. Families also do not consider much about building macha and hanging toilets. For sheltering they have to accept whatever their caregiver does for them. They also avoid telling all the problems to the caregivers as sometimes they feel as burden to others.

Communication

Few people also plant Banana tree as it has some utility during flood. People use these trees for making raft and make them the means of communication and sheltering. For communication purpose, people also built locally developed bridges called 'shako'. Those who has ability; they buy boats beforehand or start repairing before flood. PWDs have to depend on their caregivers those who need assistance for mobility.

Diet

One of the interesting copings during flood is change in food habit. People at both Sonatoni and Kojihuri, those who cannot afford buying food, reduces the consumption from 3 times a day to once a day. They also significantly change the items. Instead of having rice, people cook alternate diet such as kaisha, kolmi etc. It was observed that female respondent could say more on this issue of managing food consumption rather male respondents. It was also noticeable that, female members (usually mothers) consume the least in the family during flood.

Fuel and Cooker

Fuel is a very important component during flood. People may have food to cook, but if they do not have fuel, they cannot eat anything. There are practices of collecting and storing fuel wood or dry leaves for cooking during flood. Mostly, people cook on the 'macha' by arranging mobile cooker that is locally known as 'tola chula'.

Harvest

There are some coping strategies for harvesting at both the chars. A few farmers prefer to harvest flood resistant crop even if the production is less. This is a coping that shows people are ready to accept some loss to avoid bigger loss. Farmers also use some techniques to harvest the maximum production like sowing seed that can be harvested earlier at lower land, and regular harvesting crop at high land. Few farmers also preserve seeds from beforehand, so that even if the flood spoils the expected production, if there is time remaining, they get a scope for re-sowing seeds.

To protect crops, farmers collectively take actions. They try to make embankment in front of 'khal' to stop the water flow. Sometimes they also work together to cut drainage channel to drain out floodwater from crop fields.

Selling the produces beforehand is also a mean of coping before flood. People do sell surplus crop and use that money during flood.

Food Storage

People try to keep dry food before flooding. They keep dry food like 'chira'. 'muri', 'Gur' as non-cooking food. For cooking purpose they preserve rice, peas etc as back up. Usually at most of the household jute-made hangers: locally known as 'shika' can be found where they store these.

Sanitation and Healthcare

After 2004 flood, few organizations (Handicap International, Manob Mukti Shangstha) have done extensive response oriented activities. Through them, the char people learnt the importance of keeping oral saline and water purifiers (e.g. Fitkiri or Alum). Some of them still kept the left out portion of 'Alum' given by MMS after 2004 flood.

People were found at both chars who keep oral saline and 'Alum' before flood. Some keep extra pipe to raise the level of tube well to save it from flooding. It ensures the safe drinking water. However, during flood, villagers build hanging toilet with bamboo and rug. It serves the purpose of toilet but eventually pollutes the water.

Some PWDs said that they had difficulties about using hanging toilet. Usually some of the take help from caregivers, but during flood it gets really difficult to use hanging toilet even with the help of caregiver. At this circumstance, many of PWDs used plastic bags for toilet purpose. Some of the PWDs also mentioned that they were bound to drink floodwater, as they did not have access to safe drinking water. Usually PWDs take helps from caregiver and neighbor to get water.

For healthcare during flood, most of the villagers have to bear additional cost, as there are not much sufficient physicians to treat the patients. So, they have to depend on hospitals that are far away. To do so, sometimes they take neighbors' support or the support from boatmen. Sometimes boatmen do not take fare from patients. A sense of responsibility works among this people in case of this issue.

Female tends to refrain from going to toilet during daytime. In this way they suffers from severe intestinal diseases.

Employment

Migration for employment increases during flood and after flood situation. People move out for work in different districts. For earning, they sometimes compromise with their values and dignity and earn even by begging at cities.

Some people who do not migrate find alternatives for living. Those who have boats, they start commuting people and earn through it. Few businessmen transfer their business unit on boat. For example, a tailor from Sonatoni used his boat as a floating tailoring shop during flood. Grocers also do so sometimes during flood.

Selling advance labor for money is also a practice. In this way farmer ensures their future employment also. But it gives hardship afterwards. Those who has to move everyday for work at different places, usually uses boats to commute. Some follows innovative techniques like wearing 'gamchha' while commuting through water and at the same time keeping shirt/ trouser in the hand and change it afterwards when they reach at dry place.

Security

Security issue is related to shelter mostly. When people take shelters, usually villager collectively ensures their security by guarding on shift basis. People also use mosque as an information dissemination center. They once used it when robbers attacked in the village.

Education

An interesting coping was observed at Koijhuri. When different policy level organizations are talking about promoting flood time vacation/ rainy season vacation instead of summer vacation at school, Koijhuri high school have already adopted this practice from long ago. In this school, there is no summer vacation, but rainy season vacation.

Normally, a huge loss is observed in terms of education for students. Most of them do not get any scope for studying during flood, as water is everywhere, as they relocate temporarily and other flood time hassles. Though the literacy level is very low (14% at Sonatoni and 22% at Koijhuri) at these chars, some families those have educated members try to guide their children at least to keep the continuation of studies. They usually accept the fact that students' education is hampering.

Access to Finance

This is a very important issue in coping of char people. Almost in every flood, people do depend on borrowing or loans. Poor people take loans with high interest rates and eventually get into economic hardship. Repayment of borrowing and loan becomes burden for their economic solvency.

Many villagers start pending from their business capital. Some of them also spend from their earlier savings. To support this access to finance not enough organizations are working at Sonatoni and Koijhuri. Even if they are working, strategically distribution (e.g. conditional loan for risk reduction) is very poor. Conditional loans can improve the situation a lot for tackling following disasters.

To get financial, people also mortgage valuable resources, ornaments, land and various assets. This also sometimes led into economic hardship of villagers. Villagers also tend to sell their assets, livestock etc. to get money for surviving.

7.4 Difference in Coping Between Male and Female Including PWDs

There are few interesting differences within the same flood coping between male and female. Female are very much conscious about their dignity, and traditionally they have developed sacrificing tendency in many respect. Most of the time they sacrifice or show their devotion unknowingly.

During flood, male usually become unemployed, so most of the time they remain idle. On the other hand, the job for female members, especially workload of a mother or wife increases significantly. She has to look after everyone in terms of resource management, feeding the family, looking after elderly. In most of the cases, caregivers for PWDs are also female.

Female members consume less food during flood than male to balance the feeding of the family. Thinking of dignity, they refrain mostly from going to toilet during daytime and suffer a lot from diseases. Although their husbands or male members stop working, usual daily work of women never stops.

On the other hand, male tends to find work. They start looking for alternative job or migrate for employment. Men take decisions about sending family members to relatives' places for shelter or any other coping decisions. Male participates in the collective coping mechanism in the community but female do not. Male are more involves in the coping that includes mobility.

Among PWDs, there weren't such differences between male and female. They mostly depend on their caregiver according to their level of disability. Besides special coping, according to their ability, PWDs do cope similar to other community people. In that case the general differences among male PWDs and female PWDs are applicable.

7.5 Collective Coping Mechanism

In the community villagers do take some collective initiatives. These coping include:

- Taking shelter at schools/ madrasas
- Building embankment
- Mobilize community by miking using mosque in terms of taking preparation before flood
- Repair roads and embankments collectively
- Raise school ground by taking flood risks into account
- Voluntarily collect relief materials and disseminate goods to affected people, this initiative is mainly seen among youth community
- Guard community shelters collectively

Usually male members of the community are seen to implement these initiatives.

Decision Making in Collective Coping

To undertake collective coping activities, not all of the stakeholders are involved in decision making. Usually local leaders/ opinion leaders/ influential people, UP members, youth community, students and natural leaders take proactive approaches. There are rarely any chances for inclusion of female and PWDs in decision-making.

PWDs Participation in Deciding the Ways to Cope

As PWDs generally are not involved in the decision making of collective initiatives, not much of the specific needs are addressed in these activities. There is a stereotype mindset among community that PWDs may not be able to contribute and participate in collective approaches. Most of the PWDs are poor and marginal in the community, so they also cannot make any influences over other community leaders.

Most of the time the community does not consider the special need of PWDs, however as few organization has started working on disability issues, there is an increased level of sensitization nowadays. Recently, after the intervention of Handicap International, newly developed flood shelters were built with the careful consideration of PWD's accessibility.

More consideration on PWDs should be taken into account, as they need many assistive services both physically and mentally. The easy way to find out how to mainstream disability issues is to include communicable PWDs at decision-making level of the community.

7.6 Limiting Factors for Coping

Not everyone can cope up with flood situation efficiently. It basically depends on ability of a family that determines how much prepared they are for anticipated flood. Few factors actually determines about how strongly a family or person can cope. These factors were identified based on the responses from interviewee and FGD participants:

Poor Financial Ability

This is the key factor that limits almost every coping mechanism to undertake. Raising plinth level, storing dry food, storing fuel wood, storing oral saline, keeping backup tube for tube well and so on needs money to avail.

To do so, people start taking loans, spends from their savings or business capital. But those are not enough for reducing the risk as on top of unplanned spending the price hike is non stoppable. It becomes like a cycle of covering up the previous disasters financial loss and being recovered. Again, during recovery stage another flood comes, so the economic growth is either stagnant or negative at chars.

Poor financial ability to undertake appropriate coping leads to serious changes in families. Sometimes it forces people to change livelihood, which has to compromise with the values and dignity.

External Assistance

External assistance can influence coping both in positive and negative ways. Usually abundant assistance increases the beneficiaries' expectation, which does not encourage them to take proactive measure for improving their coping mechanism.

To ensure proper implementation of risk reduction, which is important to strengthen coping. So, for that char dwellers need external assistances. But these assistances have to be distributed efficiently. Some techniques can be adopted for conditional financing, which leads to undertake risk reduction activities at household level.

External assistance is very much important for PWDs. As we know PWDs require loads of technical support, there has to be some support initially to provide them facilities. Some of the facilities (e.g. assistive devices, ramp etc.) are very much expensive and people cannot bear the cost by themselves. So, external assistances can play a big role to improve PWDs coping.

Assistances should be distributed with holistic plan that includes extensive planning that addresses the issues related to strengthening coping.

Community Perception

It was felt during information collection that many of the community people do not even understand the importance about preparedness. The perception about disaster management in the community is still response oriented. So there is less effort in taking preparedness measures. Other limiting factors are also influencing perceptions.

PWDs' issue consideration is important for taking effective measure to strengthen coping. For that, PWDs strong representation has to be ensured in the decision-making platforms in the community. But the community perception is still not supportive. They are by default pessimistic about PWDs ability of contributing in decision-making. Changing this mindset can improve PWDs situation significantly as only they can identify their need better.

Less Access to Information

There is a saying that *Information is power*. This is in deed a true statement for people at chars. There are some significant differences between mainland char's coping and island char's coping. Char attached to mainland has better access to information than island char. Evidently Koijhuri's (mainland char) coping is much stronger than Sonatoni's.

People of Koijhuri have access to newspaper, high school, TV, radio, mobile phones. Through these accesses they can easily meet up their demand for information, which helps them in every way decision making. But Sonatoni population is lagging behind. This is the reason that Koijhuri community has less dependency on indigenous knowledge than Sonatoni community.

Proper information on risk reduction can also influence in changing mindset of the people. Beside mindset, information can improve their livelihood by providing various tips on farming, non-farming activities, employment, health, education etc. within a very short time and with a little money.

Rural information access points can serve this purpose of ensuring access to information. These points can be information kiosks, cell phone based information center, mobile individual with cell phone that connects to information providers etc.

Power Play and Corruption

Corruption at UP level has some influences over coping. People bribe UP members to get the name enlisted in safety-net support (VGF). To have external assistances, some start supporting powerful political parties and getting involved with their activities. Villagers also tend to develop good terms with powerful people (e.g. UP members, NGO) to get assistance in future. There are evidences of paying bribing at the rate of Tk.700 to Tk. 1500 for VGF Card.

In case of vulnerable people's name listing, there is an unwritten rule of validating the names through representatives from powerful political parties. Unless that UP's list do not get direct approval on that list.

On the other side, people give warm reception to NGO representatives as they regularly provide assistance in many ways. It is one kind of preparedness from them to develop a good relationship.

7.7 Special Need of PWDs for Coping

Sirajganj's *chars* are usually less educated area. Poverty is persisting here for a long time. So, the total social structure is not enough supportive for cross cutting issues. As a result PWDs issues are not really looked after separately.

Community's perception to the PWDs is not positive. So by trend, PWDs has less voice in the community. There scope for flourishing in potential ways was not enough. So, during sharing information, it was difficult to get all the special needs of PWDs during and before flood. Data collection was dependent also a lot on the caregiver of PWD.

It was clearly seen that most of the PWDs' primary need is a caregiver, who understands and communicate with PWD. Because they are they people who facilitates all necessary secondary needs. PWDs those who have difficulties in mobility, hugely depend on others. They need assistive devices and continuous treatment.

To strengthen the coping, first it seems that proper treatment should be done as vulnerability reduction step. Because these char PWDs never had proper treatment unless HI started working 2 years back. All different types of PWDs need different facilities and support. Once they are having treatment properly, other issues will be gradually easy to solve on coping.

7.8 Risk Reduction Fund to Strengthen Coping

One of the objectives of the study was to find out how the recent safety net programs by government that is Risk Reduction Fund (RRF) is helping the target people at char areas. It was seen from the coping mechanism data collection that although people were mentioning loads of preparedness measures, the situation did not improve since the first flood. Ideally, if everyone used to take those preparedness measures (coping by avoiding), afterwards the effect could have been less. So not all the people can cope with what we got so far. There is always a phrase behind it, which is 'as per ability'. So, people at char areas cope as per ability.

As per responses from villagers, it was clear that poverty and economic hardship is one of the reasons that do not help them to take proper preparedness. To target this issue, government takes some initiatives to design safety-net program from vulnerable people, for example: Vulnerable Group Development Program, KABIKHA, Vulnerable Group Feeding Program etc. One of the recent programs is Risk Reduction Fund, where vulnerable people get fund for undertaking risk reduction activities at household level.

Char's coping has huge possibility of strengthening if the focus can be given into preparedness activities. RRF can play a big role in strengthening. From this point, a question was asked to respondent that whether this fund is helpful or not. Interestingly none of the respondent could say anything, as they haven't even heard about RRF yet. So this was one of the major findings that the govt. Still couldn't disseminate this information of RRF to target population. So it was difficult to find out how much useful RRF can be for strengthening coping.

This was an intensive study done with another comprehensive social study conducted by Handicap International. Few data are used in both of the study as primary data. Though the study focus is different, some similar data can be found in Handicap International's study that was used for different findings.

Apart from that, time was a limiting factor for collecting detailed data. Each of the focus group discussion took more than 90 minutes. For PWDs it took more than 120 minutes. But yet, it was felt that more information could be gathered if there were more time. Total field data collection from two *chars* was only 8 days. Within these days, doing 8 FGDs and more than 30 interviews were not enough to get detailed issues behind coping. The satisfaction of this sort of study increases more if more time could be taken to do the study.

People at *chars* are also busy with their life. So, even if the data collectors are there, not all the people can stay longer to respond to the questions. Moreover, many of these people are less literate, thus having low understanding on disaster management. Even if they know the answers to the questions asked, it was difficult to have proper response from them.

PWDs are by default having less importance at society. Lack of access to information is the reason why their situation is not improving. It was very much difficult to understand their specific need, as they seem to be unaware of what could make them feel better, what are the difficulties they face. Since we also had some very old women and kids at two FGDs, the respondents were less. Only 2/3 people were responding to the questions.

One of the limitations of this study was, it was designed to ask many questions. But not all of them could be asked or not all answers came from the people. So the study only has to depend on the answers that were given by the people.

The major limitation of the study was it could not go into further analysis on how risk reduction fund can strengthen the coping of the community. This is evident that they need external assistances, and if the vulnerable community including PWDs can receive funds like RRF that will certainly improve their condition in terms of risk reduction. But none of the interviewed person knows about RRF yet. So further question on how it may help in strengthening could not be asked or assessed. This issue has become as a major finding of the study.

This study has seen coping mechanism of people with an in depth view. By going into depth, many social, political, economical and psychological issues came up. Those issues can bring food for thought of doing separate researches.

As mentioned at limitation, it was not possible to have further analysis on how Risk Reduction Fund can strengthen the coping as no available information was in the field. One possible reason can be that it is a very new safety program introduced by government. The further study on these safety net programs can be done at char areas based on the coping mechanism findings of this study. Detailed household survey can be conducted to find out how much to be spent to reduce risk at each household unit. From that a comparative study can be done between the 'investment on risk reduction' and 'spending at disaster responses'.

During asking about the trends, there were some responses that clearly show that the climate is not behaving like it used to do 10 or 15 years ago. There have been changes in seasonal characteristics and other climatic components. This shows that there is a big scope for working with the issue of climate change and do further study on how it is creating impact at char regions.

One of the interesting issues that came up during study is corruption at union level. There were many complaints about the corruption about getting vulnerable people's name listed in the VGF/ VGD card list. A separate scope of study can be done on how corruption is creating a bar in improving the coping and also the recovery of vulnerable people.

Qualitative study on flood has huge scope for finding out many issues. While doing this study, not only the findings on objectives were revealed but also relevant social issues came up. This study found out the general coping practices at Sonatoni and Koijhuri chars of Sirajganj. A big list of coping mechanism was found out. These coping have few different dimensions in terms of gender and persons with disabilities.

This chars were developed not more than two decades. Most of the dwellers also migrated from other places at same time and they have almost similar economic condition. Their problems regarding flood coping are also very much similar except for few well off families.

This study could cover its first objective thoroughly. The study has identified all possible ways of coping by char dwellers. Some in depth reason for coping was also identified. Most interestingly, while identifying coping different indigenous knowledge was found and its influence in adopting coping was also identified in some cases.

Trend analysis of flood was done. It helped to find out whether there have been some changes in coping by char community. Interestingly some scope for working with climate change was found. Trend analysis also shows that coping has not been changed significantly.

Major problems behind weak coping were identified clearly. Lack of finance, information, dimensions of external assistances, corruption etc. becoming limiting factors to take proper risk reduction approaches for the community. As education is also low,

there should be some interventions by govt. and NGOs to improve literacy situation. This will help char population to change positively in the long run.

PWDs are by default suppressed in char community. They have less voice in decision-making. As they are mostly treated like burden, their potential of using special abilities also became numb. So, it was difficult to understand their psychological need on coping. But it was evident that, their primary in is a caregiver who can communicate in their daily life. Assistive device and treatment can also improve their situation a lot.

In case of second objective on the effectiveness of RRF, it was found out that none of the respondent knows about it. So rather fulfilling the study objectives, one major finding is: even after introducing a fund under safety net program, government still couldn't disseminate the information to target people.

From the literature review and the coping mechanism of people those have ability, this can be said that conditional distribution of RRF will positively help dwellers in taking risk reduction approaches and preparedness measures. This will eventually strengthen the coping of the community.

Finally, this can be ensured that this study can be used as a reference of primary information on char dwellers coping mechanism during flood including PWDs for further studies. There were some limitations of fulfilling assumptions, but as it is a first kind of study on the issue, a lot of scope for further work was discovered. Hopefully this will contribute in further studies that will eventually turn into actions, to make life better at chars.

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12. 1 Cause Effect Analysis Exercise Sheet Sample:

This exercise sheet was used in the FGD to get information on preparedness and during stage coping.

<i>What do you do to avoid impact?</i>	<i>IMPACT due to flood</i>	<i>What do you do during flood to manage impact?</i>

12.2 Data Capturing Sheet:

Broad Category	<i>Different stages of coping</i>					
	Preparedness	Rescue	Sheltering	Maintaining Livelihood	Access to Critical Services	Others
<i>Physical</i>						
<i>Behavioral and Habitual</i>						
<i>Psychological</i>						
<i>Livelihood</i>						
<i>Values & Dignity</i>						
<i>Organizationally</i>						
<i>Survival</i>						