The Role of Local Government in Managing Disaster Induced Risk : A Sociological Study in Munshigonj

M. Phil Dissertation

Sadia Afrin

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This is submitted to the University of Dhaka as partial fulfillment of the requirements for the Degree of Masters of Philosophy in The Institute of Disaster Management and Vulnerability Studies.

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Supervisor

Dr. Khondoker Mokaddem Hossain
Professor
Institute of Disaster Management and Vulnerability Studies (IDMVS)
University of Dhaka

Co-Supervisor

Salma Akhter
Professor
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Declaration

I hereby declare that the entire findings of the research entitled **"**The Role of Local Government in Managing Disaster Induced Risk : A Sociological Study in Munshigonj **"** is completely accumulated by my own sincere effort. So far I presume no research on same topic was held earlier. I have not submitted any part or chapter of my M.Phil thesis to any other university or publishers for degree or publication.

Sadia Afrin
M.Phil Fellow
Reg. No. 244
Session: 2010-2011
Institute of Disaster Management and Vulnerability Studies (IDMVS)
University of Dhaka.

Dedicate to

My Mother

Acknowledgement

First of all I am grateful to Almighty Allah for enabling me to complete my research successfully. I would like to thank my honorable teachers, Institute of Disaster Management and Vulnerability Studies (IDMVS) for giving the opportunity to do such kind of effective research in perspective of Bangladesh.

I acknowledge with deep respect my gratitude to my honorable supervisor Professor Dr. Khondoker Mokaddem Hossain, Institute of Disaster Management and Vulnerability Studies (DMBS) who gave me this golden opportunity to do this wonderful research which also helped me in doing lots of research and I came to know about many things. I would like to thank him again for giving me his valuable guidance, suggestion and his supervisory conference at all my research work. This study might not have been possible without the meticulous support and guidance that I received from him throughout the study.

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I am really thankful to the villagers of Kumarbhogh and Teotia unions whose were very helpful to collect information and find out the association of Local Government with them. They provided me information willingly and in a co-operative manner.

I would like to end my stating that, the limitations of this M.Phil thesis are entirely mine.

SadiaAfrin
M.Phil Fellow
Institute of Disaster Management and Vulnerability Studies (IDMVS)
University of Dhaka.

Abstract

This study examines the role of Local Government in managing induced risk in Munshigonj district. Munshigonj is a low lying alluvial delta located in the down area of Padma and Meghna alluvial. It is one of the country's' most vulnerable area prone to natural hazards and disasters. Its geographical location makes it subject to annual monsoon flood, but there are also a number of other risks that the people of locality face. The study found that disaster risk reduction(DRR) action at the local government level is now becoming an important issue in Bangladesh. It is evidence that local governments (Union *Parishads*) are very well positioned to reduce disaster risk in local areas, since they are familiar with the disaster risk experienced, as well as the resource and opportunities available to identify and manage those risks. The study further indicates that the underlying phenomenon for the limited success of Bangladesh in disaster management is the synergy developed through cooperative and harmonious efforts of different organizations and bodies in the society. Besides, voluntary movements as well as investments have been made in building coping capacity at the local level for disasters but the development planning at the national level is yet to encompass the paradigm of development is disaster reduction.

The study further examined the concept of disaster and its management in the light of sustainable development by Local Government with particular reference to Bangladesh. It was revealed that, while hazard and disasters, anthropogenic origins, pose severe threat on both human and the physical environments. In all cases, the human tolls have been significant. The study discusses the role local government in disaster risk reduction literature review. The findings of the study was based on an extensive survey which identified and discussed the factors of risks underpinning socio-economic vulnerability with a broad range of individuals within the community including local stake holders, such as farmers, fishermen day labors, women and representatives of Union *Parishad* (Union Disaster Management Committee). The research further identified that the effective intervention of development programs taken by the local government reduces the risks of the community to a low extent in the disaster prone areas during flood in last five years in Bangladesh.

The participatory and consultative outcome of this research is its particular strength has enabled perceptions and anecdotal evidence (presented as case studies and focus group discussions throughout the research) was elaborately discussed with community and local government representatives. Problems in the regulatory structure, deficiencies in necessary law and regulations including problems in their implementation and lack of required resources and skills, knowledge gap have been identified as the major hindrance of capacity gap in association with local government and communities in the disaster prone areas in this paper. The study identified that using of high modern technology and indigenous knowledge jointly by the local government and community helped in increasing the coping capacity of local people.

Finally this study reflects the initiatives taken by Bangladesh in this respect and analyzes the policy related issues ahead to achieve an effective streamlining for building capacity through adoption of appropriate disaster risk reduction strategy. Some of the policy implications of this study include addressing and mitigating the challenges facing Bangladesh in mainstreaming disaster risk reduction definitely would help in formulating effective strategies not only relevance to local governments in Bangladesh, other LDCs and some African and Latin American countries.

Keywords: Disaster, Disaster Risks, Vulnerability, Disaster Risk Management, Mitigation , Local Government, Community .

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Lists of Acronyms

CBO	: Community Based Organizations
CDMP	: Comprehensive Disaster Management Plan
CRA	: Community Risk Assessment
CRIPC	: Cooperatives Rural Institutions and Participation Service
CSDDWS	: Committee for Speedy Dissemination of Disaster Related Warning Signals
DC	: The Deputy Commissioner
DDMC	: District Disaster Management Committee
DMB	: Disaster Management Bureau
DMTATF	: Disaster Management Training and Public Awareness Building Task Force
DRM	: Disaster Risk Management
DRR	: Disaster Risk Reduction
FGD	: Focused Group Discussion
FFWC	: Flood Forecasting and Warning Centre
FPOCG	: Focal Point Operational Coordination Group Disaster Management
GDP	: Gross Domestic Product
GIS	: Geographical Information Systems
IATF/DR	: The Inter-Agency Task Force on Disaster Reduction
IDNDR	: The International Decade for Natural Disaster Reduction
IMDMCC	: Inter-Ministerial Disaster Management Coordination Committee
ISDR	: The International Strategy for Disaster Reduction
LCG	: Local Consultative Group
LDC	: Least Developed Country
LG	: Local Government
LGI	: Local Government Institutions
LGED	: Local Government Engineering Department
MDGs	: Millennium Development Goals

MDMR	: Ministry of Disaster Management & Relief
MoEF	: Minister for Environment and Forest
MoFDM	: The Ministry of Food and Disaster Management
MoLGRDC	: Ministry of Local Government and Rural Development
MoWR	: The Ministry of Water Resources
NDMAC	: National Disaster Management Advisory Committee
NDMC	: The National Disaster Management Council
NGOCC	: NGO Coordination Committee on Disaster Management
NGOs	: Nongovernmental Organizations
NRM	: Natural Resource Management
PAR	: The Disaster Pressure and Release Model
RRAP	: Risk Reduction Action plan
SAARC	: South Asian Association for Regional Cooperation
SDAR	: Rural Institutions and Participation Service
SOD	: The Standing Orders on Disaster
UDMC	: The Union Disaster Management Committee
UDMP	: Union Disaster Management Plan
UN	: United Nations
UNFCCC	: United Nations Framework Convention on Climate Change
Union Parishad	: Union Council, Lowest Administrative Level of Bangladesh
Upazila	: Sub District, Third Administrative Level of Bangladesh
UNISD	: United Nations Inter-Agency Secretariat of the International Strategy for Disaster Reduction
WARPO	: Water Resources Planning Organization
Yokohama	: The Yokohama Strategy and Plan of Action for Strategy a Safer World

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CHAPTER ONE

Introduction

Bangladesh is a low lying alluvial delta located between the Himalayas and the Bay of Bengal. It has a population of over 150 million, is growing at an annual rate of 1.2% and has one of the highest population densities in the world[1] placing considerable pressure on the country's natural resources. The most significant feature of the land is the extensive network of large and small rivers that are of primary importance to the socioeconomic life of the nation. Within this network, the Ganges-Padma, Brahmaputra-Jamuna, and Megna are the major rivers.

Bangladesh has special geographical feature. It has the Himalayan range to the north. The Bay of Bengal to the south with its funneling towards Meghna estuary and the vast stretch of Indian land to the west. The combined effects of the role played by this special geographical features have significant bearing on weather system of Bangladesh. The weather system are not always favorable. Due to this weather system, Bangladesh becomes the worst victim of natural calamities causing colossal loss of lives and properties. Most of the people of this country are very poor. It is predominantly an agricultural country. The economy largely depends on weather. Major disasters that occur in Bangladesh are : tropical cyclone, tidal bore, flood, tornado, river bank erosion, earthquake etc.

Flooding is a recurrent event in Bangladesh but the severity of its impact depends not only on the country's geophysical conditions but also on factors like high population density and land scarcity. The majority of its land mass consists of floodplains, and up to 30% of the country experiences annual flooding during the monsoon season, while extreme flood events tend to spread over 60% of the country. Almost 80% of the annual rainfall occurs during the monsoon period (between June and September) across the river basins.

Due to the high dependence on agriculture as a primary source of livelihood, available lands including forests and river slopes are used for cultivation. This results to soil

[1] World Bank (2011) http://data.worldbank.org/data-catalog/country-profiles

erosion that reduces the depth of rivers significantly, making them easily flooded and causing devastation on the settlements along the riverbanks. Moreover, due to the rise in sea level, the water from floods does not quickly flows to the ocean and remains in the land for longer period, thus causing a wider impact of the floods. Evidently, the impact of such event is felt most by vulnerable communities. With scarce resources and little choice of alternate livelihoods, these communities continue to live on the river banks and be heavily affected by local natural hazards like floods and tornadoes year after year, losing their lands, homes and other assets.

The adverse impacts of all the natural hazards affecting socio-economic condition need to be reduced for sustainable development. Realization of this reality, the Government of Bangladesh has undertaken a lot of plans and programs for disaster reduction through disaster management.

Over the years there has been a significant paradigm shift in disaster management and preparedness. The role of Local Government has been recognized since mid 1990s with the significant paradigm shift in the approach to natural disaster prevention and management. The UN guideline for Natural Disaster prevention, preparedness and mitigation in 1994 categorically noted that along with other major institutional actors, active involvement of the vulnerable communities in disaster reduction, prevention and preparedness resulted in improved risk management. The guideline further emphasized the need for "promote community based approaches to vulnerability reduction"[2]

The UN guideline also made a major shift from the traditional emphasis on disaster response to disaster reduction to promote a "culture of prevention" as well as involvement of the local level actors including the local government". Being a government closer to the community by default local government has to play an important and critical role before, during and after disaster. Nevertheless, in general, local government remained to be one of the most understudied institutions in the disaster management literature (Wolensky & Wolensky, 1990). Two important areas are underexplored in terms of the role of local government in managing disasters. First, the issue has been examined mostly

[2]Yokohama Strategy and Plan of Action for a Safer World – Guidelines for Natural Disaster Prevention, Preparedness and Mitigation, World Conference on Natural Disaster Reduction, Yokohama, Japan 23-27 May1994.

in the context of local government in developed countries, and insufficient attention has been paid to local government in developing countries. Second, the role, capabilities and the potential of local government in managing disaster have not been adequately examined. Indeed, in recent years many local government bodies have faced difficulties in dealing with disasters since they have inadequate knowledge and capabilities to manage (Kusumasari, Alam, and Dibben, 2012).

It is at the local level that development planning is expected to first take place, and the integration between DRR and development is supposed to be realized. At the provincial, district and union level, local governments also serve the key function of ensuring a link between local, community-based organizations and central government authorities. Overall, local governments are very well positioned to reduce disaster risk in local areas, since they are familiar with the disaster risks experienced, as well as the resources and opportunities available to identify and manage those risks. (United Nations, 2005)

1.1 Background and Justification

There is evidence to suggest that in many countries there has been an increase in the risk of natural disasters occurring - natural hazard risk - due to environmental degradation (World Bank, 2002). Natural disasters are complex and multifaceted events resulting from mismanaged and unmanaged risks that reflect current conditions and historical factors (Alexander, 2000). Disaster risk is collective in its origin and remains mainly a 'public,' shared risk that makes finding individual, and often community solutions, difficult (Comfort, 1999). A disaster is said to take place precisely because the losses originated by a given event overwhelm the capacity of a population (local, regional or national) to respond and recover from it. Disaster risk emerges from the interaction between a natural hazard - the external risk factor - and vulnerability - the internal risk factor (Cardona, 2001).

International consciousness raising about integrated disaster risk management (of which disaster risk mitigation is a part) was given a boost by the recently concluded United Nations International Decade for Natural Disaster Reduction (IDNDR - 1990-1999). The World Food Summit in 1996 recommended 'support for disaster prevention and

preparedness' as a priority area of intervention. The FAO of the UN, through its Rural Institutions and Participation Service (SDAR) "promotes community based approaches and bottom-up capacity building processes through participatory analysis and the dissemination (and facilitating adaptation) of new concepts and training materials that help strengthening local public institutions and civil society organizations such as farmer organizations, pastoral herder associations, cooperatives, and water user associations" (FAO, n.d.: 4). It is within this context that increases in natural hazard risk are addressed, given that there is growing evidence of the urgent need to involve human resources, local population groups and their organizations, in more vertically and horizontally integrated efforts at DRM. Natural disasters constitute a severe problem, particularly for a number of developing countries like Bangladesh where they repeatedly cause a high number of fatalities, affect a large portion of the population and incur substantial social economic and long –term development losses. This research is an integral component of the Disaster Management. In attempts to explore the extent of the prevailing risk to flood hazards among communities in disaster prone areas, particularly in farmers, fishermen, day labors and women in Bangladesh.

"Knowledge gaps in disaster risk reduction exposed by local stakeholders during the baseline survey serves as the basis for this further research. These knowledge gaps exist on the social economic and geopolitical conditions which underpin the risk of disaster for them. Because awareness and understanding of these risk factors underpins the vulnerability of community to flood hazards, it is important that we are able to identify and evaluate their extent in the community.

Disaster management needs to effective communication, collaboration between different departments; NGO's can reduce and minimize the loss of lives and properties (Shafiq, 2013). The diversity, complexity and the dynamics of disasters management of Bangladesh need an elaborate system giving warning well ahead of time. The complexity of the problems make it very difficult to predict the impending danger and the socio-economic conditions and the logistic support facilities make it more difficult to take appropriate actions (Rahman, 1991). Early warning system is used to minimize the risk of a disaster in the mode of technology advancement (Meadows, 1972). Information technology in the form of internet, GIS, GPS satellite and electronic

communication are beneficial for planning and implementation of hazard reduction in Bangladesh (Islam, 2011).

Hence, this research attempts to identify the role of local government in addressing flood risks which faced the community in the disaster prone areas and their socio-economic vulnerability and evaluate the association between local government and community in reducing vulnerability by integrating Union based disaster risk reduction programs, national risk management and community led risk management system to combat vulnerabilities of the community. The focus of this research is particularly on "Providing elements of DRM strategy that highlights and strengthens the role played by local government, and that leaves local community better equipped to deal with the disaster management cycle; Disaster risk reduction approaches by local government in mitigating community risks among farmers, fishermen, day labors and women to demonstrate the existing risk situation so that the local community can act as change agent to risk control and management by using modern technology and local indigenous knowledge.

1.2 Statement of the Problem

Bangladesh is vulnerable to tropical flood that generate large wave surges due to the shallow continental shelf. Flood maps (see below) of Bangladesh show the extent of the country to flood exposure over a 24-hour period of flooding and under a future climate change scenario. The geographic location and geo-morphological conditions of Bangladesh have made it one of the most vulnerable to climate change and variability. Two thirds of its territory is less than five metres above sea level. The combination of frequent natural disasters, high population density and growth, and low resilience to economic shocks, makes Bangladesh particularly vulnerable to these climatic risks. It is ranked as the 5th country in the World Risk Index[3] and ranked 1st (of 162) for floods[4].
Flood is the most common single hazard and phenomenon in Bangladesh. The country is quoted as 'living with flood'. Every year, nearly 18% of the country gets flooded on an average. The worst flood of *Bangladesh* history is the 1998 flood when nearly 65% of the

[3] United Nations University (2012) World Risk Report
http://www.worldriskreport.com/uploads/media/WRR_2012_en_online.pdf

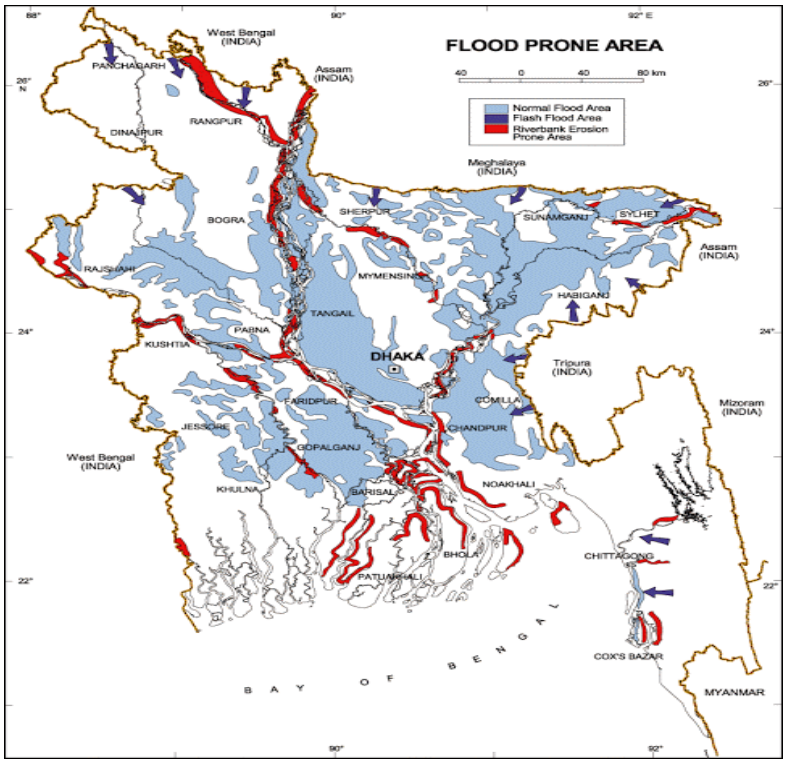
4 GAR (2009) http://www.preventionweb.net/english/countries/statistics/risk

country affected by flood severely. In last in last 25 years, Bangladesh faced four severe flooding which shows that every 5-10 years' time, a severe flooding occur.

Floods are annual phenomena with the most severe occurring during the months of July and August. Regular river floods affect 20% of the country increasing up to 68% in extreme years. The floods of 1988, 1998, 2004 and 2007 were particularly catastrophic, resulting in large-scale destruction and loss of lives (Annual Flood Report, BWDB, 2012). Approximately 37%, 43%, 52% and 68% of the country is inundated with floods of return periods of 10, 20, 50 and 100 years respectively (MPO, 1986).

Bangladesh tries to live with flood and disaster with structural and non-structural measures. Systematic structural measures began by implementing flood control projects in sixties after the colossal flood of 1963. Non-structural measures have introduced in seventies which includes early warning system, capacity building of communities and institutions etc. Flooding is a natural phenomenon, which cannot be prevented.

Figure 1-1: Flood Risks Areas in Bangladesh

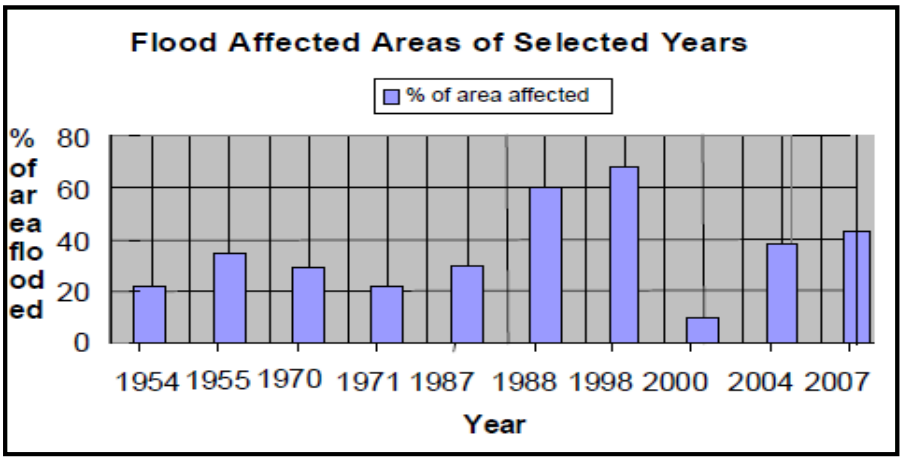


Source: Banglapedia, 2007

Four types of flooding occur in Bangladesh.

• Flash floods caused by overflowing of hilly rivers of eastern and northern Bangladesh (in April-May and September-November).
• Rain floods caused by drainage congestion and heavy rains.
• Monsoon floods caused by major rivers usually in the monsoon (during June-September).
• Coastal floods caused by storm surges and tied. (CEGIS, 2006)

Figure 1-2 : Flood Affected Areas in Different Years



(Source: State of Environment 2010)

Figures-2 show the percentage of total flood affected areas of the country for some selected years. The 1988 flood affected about two-third area of the country. The 1998 flood alone caused 1,100 deaths, rendered 30 million people homeless, damaged 500,000 homes and caused heavy loss to infrastructure. The 1998 flood lasted for 65 days from July 12 to September 14 and affected about 67% area of the country. This devastating flood had an enormous impact on the national economy, in addition to causing hardships for people, and disrupting livelihood systems in urban and rural areas.

Table 1-1 : Year-wise Flood Affected Area in Bangladesh

Year	Flood Affected Areas	
	Sq	Km %
2004	55,000	38
2005	17,850	12
2006	16,175	11
2007	62,300	42
2008	33,655	23
2009	28,593	19
2010	26,530	18
2011	29,800	20
2012	17,700	12

Source : Annual Flood Report 2012, FFWC, BWDB

In the year 2000, Bangladesh faced an unusual flood over its usually flood-free south western plain, which also caused loss of life and massive damage to property. In 2004, floods inundated about 38% of the country (WARPO, 2005). About 747 people lost their lives. About 2500 kilometers of embankment were damaged. About 74 primary school buildings were washed away. This flood caused economic loss of about US$ 2200 Million.

In 2007, the flood inundated about 62,300 sq km including the char areas of 6000 sq km affecting almost 16 million people in around 3 million households. 649 persons lost their lives. Floods continue to be major hazards in Bangladesh. To mitigate the impacts of floods, the government has been developing and implementing various measures to better equip the country to deal with floods. The Ministry of Water Resources (MoWR) is leading the country on flood mitigation initiatives. Important initiatives include Flood Action Plan, Flood Hydrology Study, Flood Management Model Study, National Water Management Plan, National Water Policy, Flood Early Warning System Study, etc.

Table 1-2: Some Notable Rain and Monsoon Induced Flood Events in the Past

Event	Impact
2007 flood	* Total fatalities to date 323 up to 11th August 2007. * More than 9.5 million people have been badly affected by the floods which has damaged their homesteads, livelihoods and impacted on their health. * Floods water are receding fast and flood-affected families are gradually returning to their flood-ravaged homes and land. * 1,000 patients have been admitted to International Centre for Diarrheal Disease Research, Bangladesh (ICDDRB) hospital since Thursday (9th August) midnight till Friday (10th Aug) midnight—the highest number in the 40-year history of the specialized hospital, ICDDRB. * Approximately 1.5 million acres of agricultural crops (seedbeds, transplanted seedlings, vegetables and standing jutes) are partially or fully damaged, the approximate worth over 150 million BDT. * 532 educational institutions completely destroyed and 5608 partially damaged. * 2,817 km roads completely and 17,463 roads partially damaged * Over 89,000 homes completely and over 650,000 homes partially destroyed * Floods waters continue to inundate much of the low-lying eastern part of Dhaka City and many people have taken shelter in government offices and schools. There is a shortage of food, and drinking water. Many people affected by flooding in-city have fallen sick with water-borne diseases. * The water levels of the major rivers are receding significantly though they are still flowing above danger level. It is expected that within the next three days the level of water will fall significantly. * The inundation in eastern part of Dhaka City continues and the outbreak of water borne diseases is predicted to be comparatively worse than the rural areas ***(http://concernbd.blogspot.com/2007/08/bangladesh-flood-response-update-12th.html)***
Flood 2010	*Landslides and floods triggered by heavy rain have killed at least 53 people in south-east Bangladesh on 15 June 2010. Dozens of people were missing and a number of houses were buried under mud. Thousands of people were trapped by the floods and that the toll was likely to go up. *Rescue operations are continuing but rains and mudslides are hampering efforts. There were landslides in at least five places on a 46km-long hill caused by the torrential rain. It had been raining continuously for the past two days in the area. In some places, the road is inundated because of the heavy downpour. *Floodwaters submerge villages and towns, ruin homes, plantation and roads

	become inaccessible. During the flood in June 2010, large areas of land were flooded. More than 12 000 Bangladeshi were homeless when hundreds of houses were destroyed. *Dry food rations and bottles of water were given to thousands of people left homeless in the country's southeastern tip, which borders Myanmar, after the worst rains in decades struck on Tuesday, killing 55 people. ***(https://geography-bangladesh-flood.wikispaces.com/)***
Flood 2012	* Days of rain in Bangladesh, some of the heaviest in years, have set off flash floods and landslides, killing at least 70 people and stranding about 200,000, police and officials said on Wednesday, June 27, 2012. * According to National Geographic, Bangladesh ranks first as the most vulnerable nation to the impacts of climate change in the coming decades. Low-lying and densely populated Bangladesh is battered by torrential downpours during the wet season, which began in the past few weeks. At least 15 people were killed in and around the southeastern port city of Chittagong, while 30 died in Bandarban in an area known as the Chittagong Hill Tracts * Most of the deaths were caused by landslides, others by wall collapses, lightning strikes and surges of water. Army, police and fire brigade personnel were helping in rescue efforts. In Sylhet, a rice and tea growing area in the northeast, houses stood up to three feet (one meter) under water, with residents perched on boats or scrambling to high ground. Three children were reported killed. * Weather officials said more heavy rain was expected in the next few days. Disaster control officials said about 150,000 people had been marooned by the floods in the southeast while 50,000 were stranded in Sylhet. * Hundreds of homes have been washed away, while authorities moved hundreds of families from shanty housing and told others to leave quickly. Agriculture officials said it was too early to estimate crop damage. " ***(https://geography-bangladesh-flood.wikispaces.com/)***

Source: Bangladesh Water Development Board (BWDB), World Bank, Asian Development Bank, DMIC, Department of Disaster Management.

Disaster risk is on the rise throughout the world. Over the past two to three decades, the economic losses and the number of people who have been affected by natural disasters have increased more rapidly than both economic and population growth. The physical, social and economic losses caused by these disasters are particularly harsh for developing countries since they have a long-range effect in the development process. The impacts of

the disasters are deeply related with the socio economic conditions, tradition, culture, and climate of the communities. To minimize the damages caused by disasters, various efforts have been taken by government, international community's including donor agencies. However, in spite of participation of these sectors during the project period, it has been observed that many of the disaster management programmers have failed to be sustainable at local level after the completion of the project.

Bangladesh, with a history of centralized and reactive disaster management approach, suffers from frequent natural disasters such as floods, reversion etc. After the 2007 flood disasters, it was claimed that these events would make a turning point in the history of disaster management in the country. Today a new perspective was introduced with the official recognition of mitigation and risk management with a number of major mitigation and preparedness projects undertaken and a significant progress achieved in emergency management and preparedness work. Local administrations are better equipped today for disaster management than ever. However, Bangladesh has not fully recognized the need for a powerful disaster risk management, and the progress is yet far from being at a satisfactory level. This could be observed in several points:

- low priority is given to risk management at the public agenda;
- there is a lack of effort in clarifying mitigation methods at the different levels of administration;
- there is a lack of a powerful and long-term political commitment to shift the orientation of disaster management toward the reduction of disaster risks; and
- very little research and implementation efforts are observed for mitigation especially at the settlement level.

Despite the international focus on disaster risk management, the conventional disaster management system in Bangladesh still ignores the roles of local administrations and communities in mitigation efforts. Most requirements for disaster risk management however point to the need to empower local administrations and to mainstream risk reduction in the developmental sectors of rural planning. Disaster risk management efforts in Bangladesh have not fully recognized the relevance of planning at the local level and developed the necessary tools for it.

1.3 Rationale and Objectives of the Research

It was assumed that the local government has less contribution to mitigate disaster risks than any other organization but the recent National Disaster Management Planning, April 2010 has given priority to the Union perished to mitigate disaster risks at the local level. That's why the study attempts to justify the role of local government functions in addressing disaster risks by development interventions programs so that the local government can help people to identify the risk direction to control and management by own mechanism in future.

The broad objective of the research was to explore the nature of risks faced by the people and the role of local government in addressing risks in the disaster prone areas. The specific objectives are:

a) To identify, how many local communities in flood-prone areas are socio-economically vulnerable and have usually dealt with disaster risk, rehabilitation and development.

b) To investigate how local government have dealt with actual disaster risk and mitigated their impact on their members.

c) To explore the implications to mitigate disaster risk for local government and their effectiveness.

d) To examine the nature of association between local government and community people in addressing flood risks in the aforementioned area.

e) To provide elements of DRM strategy and policy implications that highlights and strengthens the role played by local government, and that leaves local community better equipped to deal with the disaster management cycle.

1.4 Research Hypotheses

1) The more the occurrences of disasters, more the prevalence of socio-economic vulnerability of the community people.

2) Less the effective intervention by the local government, less the chances of risks reduction.

3) More the use of integrated approach of modern technology and indigenous knowledge taken by the local government, community tends to increase their coping capacity at local level.

1.5 Operational Definitions

1.5.1 Risk Assessment

A process to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability/ capacity that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend. "The process of conducting a risk assessment is based on a review of both technical features of hazards such as their location, intensity and probability, and also the analysis of the physical, social and economic dimensions of vulnerability, while taking particular account of the coping capabilities pertinent to the risk scenarios". (UNISDR, 2002)

1.5.2 Risk Management

The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters (UNISDR, 2002). This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.

1.5.3 Disaster Risk Reduction

The systematic development and application of policies, strategies and practices to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) adverse impact of hazards, within the broad context of sustainable development.

The disaster risk reduction framework is composed of the following fields of action, as described in ISDR's publication 2002 "Living with Risk: a global review of disaster reduction initiatives":

• Risk awareness and assessment including hazard analysis and vulnerability/capacity analysis;
• Knowledge development including education, training, research and information;
• Public commitment and institutional frameworks, including organizational, policy, legislation and community action;
• Application of measures including environmental management, land-use and urban planning, protection of critical facilities, application of science and technology, partnership and networking, and financial instruments;
• Early warning systems including forecasting, dissemination of warnings, preparedness measures and reaction capacities. (UNISDR ,2002)

1.6 Structures of the Study

A thematic approach in followed throughout and this thesis is divided into the following chapters :

i) Chapter one, introduces the introduction, problem statement to the thesis. In this chapter the problem statement, research goals and objectives, research hypothesis, rationale of the research are explained. Furthermore, the key terminology underlying the study and their requirements are discussed.

ii) In chapter two, the review of literatures are highlighted. The flood risks and vulnerabilities, Disaster Management System in Bangladesh are reviewed. Reducing

hazard vulnerability through local government engagement and actions are also reviewed in order to clarify the role of local government in managing disaster induced risks.

iii) In chapter three, theoretical grounding of the study is given and theoretical framework is also created towards an understanding of role of local government in managing disaster induced risks in the disaster prone areas.

iv) In chapter four, United Nations Secretariat of the International Strategy for Disaster Reduction (UNISDR) has identified four major roles of local governments in implementing disaster risk reduction. The role and responsibilities of UPs are also highlighted according to the SOD of Bangladesh.

v) In chapter five, the description of the methodology is given. The research design, general characteristics of the study area, sample design, Sample selection, information collection, validity and reliability of data are highlighted.

vi) Chapter six, provides the presentation and analysis of quantitative data.

vii) Chapter seven, contains the presentation and analysis of qualitative data in order to understand and explore the specific risks faced by the community and the development intervention programs by the local government in reducing vulnerability of the people.

viii) Chapter eight, provides the findings and discussion from the study.

xi) In chapter nine, the recommendations are given for strengthen the capacity of local government. It furthers provides certain recommendations for future research on disaster risk reduction. At the end of the chapter, the conclusion of the study is presented thematically.

CHAPTER TWO

Literature Review and Legal Framework Related to Disaster Management

2.1 Disaster Management and System

Disaster management is concerned with preparing for, ameliorating of the impact and reducing the risk of disasters occurred. It involves both the emergency operation in a disaster as well as the rebuilding the society in aftermath of disaster (Tan, 2009). Disaster management system can be viewed as four interrelated sub-phases. The first is damage assessment, in which loose and their magnitudes are identified. The second is needs assessment, in which initially required response is identified. The third is prioritization of response measures, in which required response matches with available resources. If response demand is greater than the current available resources, decision makers must establish priorities or act for external resources. The fourth is actual response in which crisis resources are deployed, and decisions are disseminated to responders and the population at large. During the four sub-phases, crisis response activities face challenge of reducing the influence of crises cause to society, the economy, and the lives of individuals and communities and they continuously adapt their behaviour and make quick decisions to tackle unpredicted events (Khalil et al., 2010).

The domain of disaster system is characterized as a virtual environment of required distributed control, huge amount of data which are modular, decentralized, changeable, ill-structured, and complex as well as uncertainty, ambiguity with different objectives, and limited resources which continually vary (Field, 2008). Design of disaster management system must be include: filtering and data fusion methods; decision-making and machine learning methods for determining actions in response to states; interaction mechanism to manage the interaction between multiple actors and to model collective behaviour; and system architecture studies of different system organizations (Basak et al., 2011).

In comparison to developed nations, developing countries typically lack education, funding, and equipment to reduce their vulnerability (Mc Entire and Mathis, 2005). Both developed and developing nations are affecting by technology, industry, and culture. Developed countries are facing increased technological disaster as computers become

more integrated into every part of their lives. In contrast, developing countries may lack the familiarity with new forms of technology that could reduce or cause disasters. Each group faces adverse risks associated with hazardous material incidents, even though manufacturing plants are increasingly being moved to the developing world. People and governments in both developed and developing countries continue to make mistake regarding disasters. They can be found guilty of downplaying risk, augmenting social susceptibility, relying too heavily on technical remedies, and failing to strengthen emergency management institutions.

In this paper, therefore, flood is considered as disaster when it turns into hazardous event and affects a given place and the vulnerable people of that area who are not able to cope with it. On the other hand, disaster management is considered as an approach combination of prevention, preparedness, mitigation, emergency response and recovery to cope with hazardous situation created by above-mentioned natural hazards.

2.2 Disaster Management System in Bangladesh

2.2.1 National Policy and Regulatory Framework of Disaster Management

Considering its cost dimensions, human sufferings and overall impact on the economy, Bangladesh, as a matter of policy, has attached special importance to mitigating the impacts of climate change, preservation of environment and disaster management[5]. Over the years Bangladesh has developed a comprehensive policy framework as well implementation system and structure on disaster management.

2.2.2 Policy Context

The geographical location, land characteristics, multiplicity of rivers and the monsoon climate render Bangladesh highly vulnerable to natural hazard .

Human induced disasters caused by deforestation, environmental degradation, exploitation of natural resources and unplanned urban structures have further aggravated

[5] Budget Speech 2013-2014 of the Minister of Finance, Government of Bangladesh, June 28, 2013

the socioeconomic environment. There is a strong need for a harmonized model to strengthen the capacities of those working within the local, district and national institution on disaster

risk reduction and management as well as develop a continual process of capacity building by institutionalizing national Disaster Management systems. The principle objective of this initiative is to increase resilience and establish a culture of disaster risk reduction among communities and institutions vulnerable to hazards in Bangladesh. This model focuses on strengthening the state mechanism for disaster preparedness through Community Based Rural and Urban Disaster Preparedness.

2.2.3 Policy Framework

The Hyogo Framework for Action 2005-2015 adopted by the World Conference on Disaster Reduction in 2005 and its subsequent endorsement by the General Assembly of the United Nations (A/RES/60/195) is the inspiration for knowledge and practice, implementation for disaster risk reduction in Bangladesh while the United Nations Framework Convention on Climate Change (UNFCCC) provides the framework for negotiations and action in climate change. Bangladesh has been progressing significantly in respect of the three pillars of sustainable development being pursued in association with and through the Millennium Development Goals (MDGs).

2.2.4 South Asian Association of Regional Cooperation (SAARC) Declaration

Bangladesh being the founder member of the SAARC played a significant role to develop a comprehensive policy framework and institutional approach to address disaster and climate change in the region. The Heads of State or Governments in the 13th Dhaka Summit called for elaboration of a Comprehensive Framework on Early Warning and Disaster Management.

In view of the December 2004 Asia Tsunami and the 2005 Pakistan Earthquake, the Heads of State or Governments underscored the urgency to put in place a regional response mechanism dedicated to disaster preparedness, emergency relief and rehabilitation to ensure immediate response. They directed the concerned national

authorities to coordinate their activities in the areas of disaster management such as early warning, exchange of information, training and sharing of experiences and best practices in emergency relief efforts (Asian Disaster Reduction Center, 2003: 16-18).

2.2.5 Disaster Management Policies of Government of Bangladesh

The core principles of disaster management plans have been adopted from the Poverty Reduction Strategy Paper of the Government of Bangladesh which noted that all plans should be:

- Country-driven, promoting national ownership of strategies through broad based participation of government, NGOs and civil society.
- Result oriented and focused on outcomes that will benefit vulnerable communities, especially women, the poor and socially disadvantaged.
- Comprehensive in recognizing the multidimensional nature of risk reduction.
- Partnership oriented, involving coordinated participation of development partners(government, domestic stakeholders, and external donors), and
- Based on a long-term perspective for risk reduction (MoFDM, 2007: 32).

2.2.6 Sixth Five Year Plan: Perspectives on Disaster Management and Climate Change

Sixth Five Year Plan has also recognized the need for Government's policy for proper handling of disasters in a coordinated fashion at different stages in the disaster management cycle, like disaster management practice, disaster mitigation, emergency preparedness, emergency response, disaster management mechanism, early recovery and immediate rehabilitation, space technology and disaster management, space technology in disaster prediction, warning, flood monitoring, mapping and use of internet facilities for disaster monitoring, prediction and information dissemination (GOB,SFYP:32).

2.3 National Policy, Regulatory and Institutional Framework of Disaster Management in Bangladesh

2.3.1 Disaster Management Regulatory Framework

The Disaster Management Vision of the Government of Bangladesh is "to reduce the risk of people, especially the poor and the disadvantaged, from the effects of natural, environmental and human induced hazards, to a manageable and acceptable humanitarian level, and to have in place an efficient emergency response system capable of handling large scale disasters"[6]. Subsequently over last two decades Bangladesh has developed an elaborate disaster management regulatory framework and operational structure.

2.3.2 Disaster Management Act

A Disaster Management Act has been enacted by the Parliament on 24th September 2012 with a view to create the legislative tool under which disaster risk and emergency management to be undertaken in Bangladesh, and the legal basis in which activities and actions to be managed. The Act has created mandatory obligations and responsibilities on Ministries, committees and appointments. The objectives of the Act is : a) To help communities to mitigate the potential adverse effects of hazard events, prepare for managing the effects of a disaster event, effectively respond to and recover from a disaster or an emergency situation, and adapt to adverse effects of climate change; b) To provide for effective disaster management for Bangladesh; c) To establish an institutional framework for disaster management; and d) To establish risk reduction as a core element of disaster management.

2.3.3 National Disaster Management Plans

The Bangladesh National Plan 2010 for Disaster Management (NDMP) is a strategic document and an umbrella plan that provides the overall guideline for the relevant sectors and the disaster management committees at all levels to prepare and implement their area of roles specific plans (GOB, 2010). The Disaster Management and Relief (DM&R) being the focal ministry for disaster risk reduction and emergency management take the

[6] http://www.ddm.gov.bd/govvision.php

lead role in undertaking the disaster risk reduction and emergency management planning. Additionally, there are few other hazard specific management plans, such as Flood Management Plan, Cyclone and Storm Surge and Tsunami Management Plan, Earthquake Management Plan, Drought Management Plan, River Erosion Management Plan, etc to supplement the NDMP. Moreover, there are detailed Disaster Management Plan for each *District, Upazila, Union and Pourashava and City Corporation of the country* (National Plan for Disaster Management , 2010: 65-68).

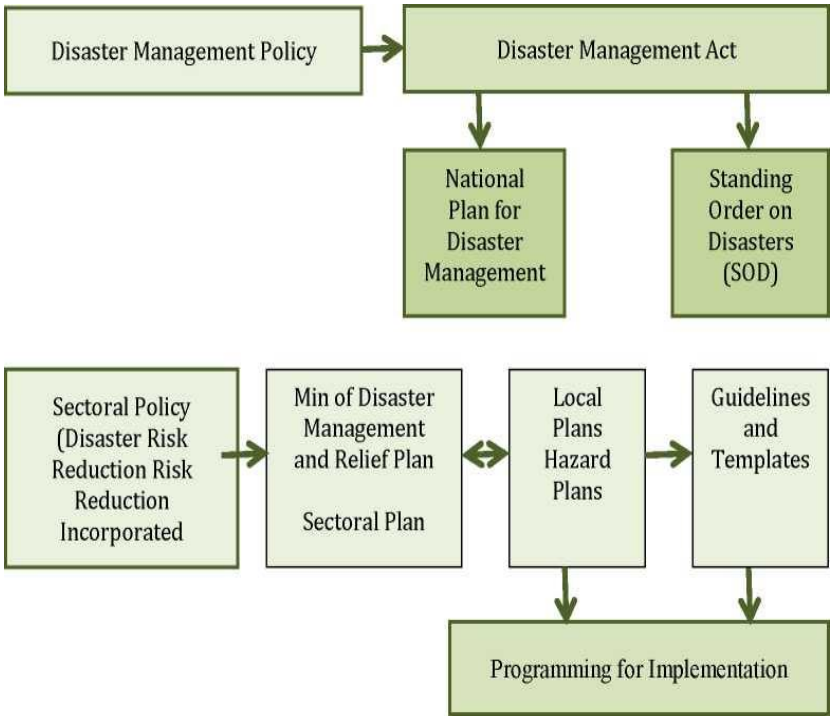
2.3.4 Standing Orders on Disaster (SOD)

The Standing Orders on Disasters (SOD), promulgated by the Government of Bangladesh (GOB) in November, 1985 and updated thereafter, constitute the basic plan for coping with disasters. SOD laid down the guidelines for action at various stages of disaster by all government and non-governmental agencies to cope with situation arising out of cyclone disaster. It has been updated to incorporate all new lessons learnt. The Standing Orders on Disaster describes the detailed roles and responsibilities of committees, Ministries and other organizations in disaster risk reduction and emergency management, and establish the necessary actions required in implementing Bangladesh's Disaster Management Model (Standing Orders on Disaster, 2010).

All Ministries, Divisions/Departments and Agencies have to prepare their own. In addition there are several specific guidelines for disaster management applicable to all levels. The Standing Orders have been prepared with the avowed objective of making the concerned persons understand their duties and responsibilities regarding disaster management at all levels, and accomplishing them. In addition there are several specific guidelines for disaster management applicable to all levels(DMB, 1997).

The Standing Orders have been prepared with the avowed objective of making the concerned persons understand their duties and responsibilities regarding disaster management at all levels, and accomplishing them. All Ministries, Divisions/Departments and Agencies shall prepare their own Action Plans in respect of their responsibilities under the Standing Orders for efficient implementation.

Table 2-1: Disaster Management Regulatory Framework



2.4 Disaster Management Structure

Bangladesh has a fairly well-developed institutional mechanism at the national and field levels for managing particularly the consequences of natural disasters. A series of inter-related institutions, at both national and sub-national levels have been created to ensure effective planning and coordination of disaster risk reduction and emergency response management.

The Ministry of Disaster Management and Relief (MoDMR) of government of Bangladesh has been given the mandate to drive national risk reduction reform programs. Its mission relative to this agenda is: "To achieve a paradigm shift in disaster management from conventional response and relief to a more comprehensive risk reduction culture, and to promote food security as an important factor in ensuring the resilience of communities to hazards"[7]. The MODMP has set the following vision" The disaster management vision of the Government of the People's Republic of Bangladesh is to reduce the risk of people, especially the poor and the disadvantaged, from the effects of natural, environment and human induced hazards to a manageable and acceptable

[7] (*http://www.ddm.gov.bd/govvision.php*).

humanitarian level and to have in place an efficient emergency response management system".

2.4.1 At National Level

i) National Disaster Management Council (NDMC) : headed by the Prime Minister to formulate and review the disaster management policies and issue directives to all concerned.

ii) Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) : headed by the Minister in-charge of the Ministry of Disaster Management & Relief (MDMR) to implement disaster management policies and decisions of NDMC / Government.

iii) National Disaster Management Advisory Committee (NDMAC) : to be headed by an experienced person having been nominated by the Prime Minister. iv) Disaster Management Training and Public Awareness Building Task Force (DMTATF) : headed by the Director General of Disaster Management Bureau (DMB) to coordinate the disaster related training and public awareness activities of the GO, NGO and other organizations.

v) Focal Point Operational Coordination Group on Disaster Management (FPOCG) : headed by the Director General of DMB to review and coordinate the activities of various departments / agencies related to disaster management and also review the Contingency Plan prepared by concerned departments.

vi) NGO Coordination Committee on Disaster Management (NGOCC): headed by the Director General of DMB to review and coordinate the activities of concerned NGOs in the country.

vii) Committee for Speedy Dissemination of Disaster Related Warning Signals (CSDDWS): headed by the Director General of DMB to examine, ensure and find out the ways and means for speedy dissemination of warning / signals among the people (National Plan for Disaster Management 2007-2015, May 2007: 58-59).

2.4.2 Sub-national Levels Committee and Structures

At the district, Upazila and Union level there are different oversight and planning and management committees:

DDMC : *District Disaster Management Committee (DDMC)* headed by the Deputy Commissioner (DC) to coordinate and review the disaster management activities at the District level.

CCDMC : City Corporation Disaster Management Committee (CCDMC) headed by the *Mayor of City Corporations to coordinate, review and implement the disaster management activities within its area of jurisdiction.*

PDMC: *Pourashava Disaster Management Committee (PDMC)* headed by Chairman of Pourashava (municipality) to coordinate, review and implement the disaster management activities within its area of jurisdiction.

UZDMC: *Upazila Disaster Management Committee (UZDMC)* headed by the Upazila Nirbahi Officer (UNO) to coordinate and review the disaster management activities at the Upazila level.

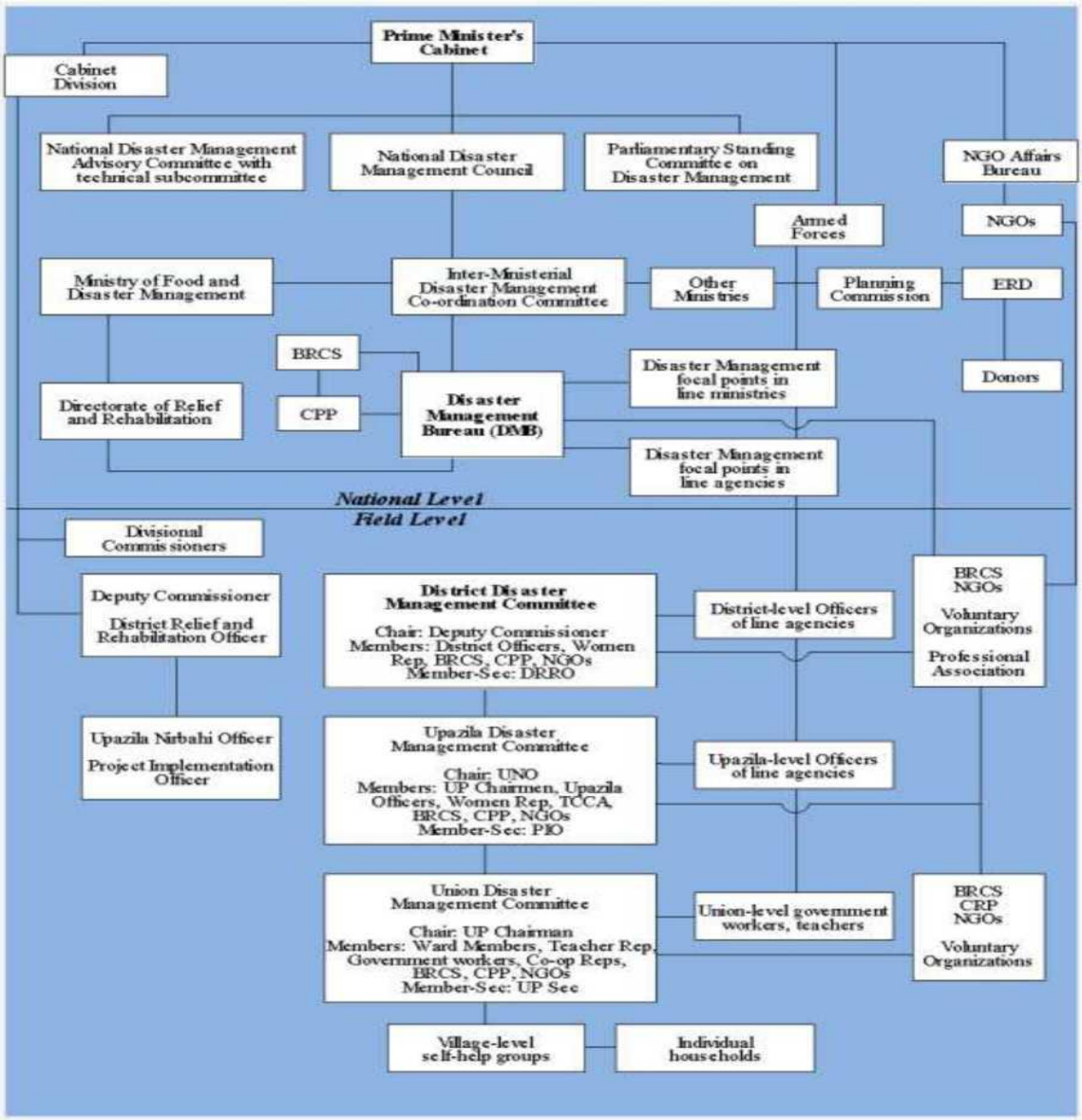
UDM: *Union Disaster Management Committee (UDMC)* headed by the Chairman of the Union *Parishad* to coordinate, review and implement the disaster management activities of the concerned Union.

Plans and Programs

The National Plan for Disaster Management (NPDM) (GOB,2010) is an outcome of national and international commitments made by the Government of Bangladesh to address disaster risks comprehensively. This model is designed with the aim of strengthening national and local government work in DRR. The focus of the model is to enforce implementation of Standing Orders on Disaster (SOD) in addressing disaster risks reduction through (re)activation of Disaster Management Committees (DMCs) at district, upazilla, union, Pourashava and city corporation levels.

NPDM is an umbrella plan that provides the overall guideline for the relevant sectors and the disaster management committees at all levels to prepare and implement their area o roles specific plans. The Ministry of Disaster Management and Relief being the focal ministry for disaster risk reduction and emergency management take the lead role in disaster risk reduction and emergency management planning. One of the goals of the NPDM is to devise "a mechanism for dealing with many convergent issues of climate change and disaster risk reduction, translating the hard science of climate change prediction into tangible, community-level actions that support adaptation".

Table 2-2 : Disaster Management System in Bangladesh



2.4.3 Comprehensive Disaster Management Programme

It is one of the core program of the MoDMR with a strategic focus to lay the foundation for the paradigm shift from a post-disaster relief and response strategy towards a comprehensive risk minimization culture that encourages disaster resilience initiatives. The program aims at reducing Bangladesh's vulnerability to adverse natural and anthropogenic hazards and extreme events, including the devastating potential impacts of climate change. The program targets to institutionalize the adoption of risk reduction approaches, not just in its host Ministry of Disaster Management, but more broadly across other key ministries and agencies. The CDMP has a number of elements with a strong focus on local-level efforts, including a standardized Community Risk Assessment (CRA) process that combines local knowledge with technical and scientific information to facilitate an analysis of hazards and vulnerabilities.

Besides the Cyclone Preparedness Program (CPP) and the standing orders, the government of Bangladesh adopted a Corporate Plan (2005-2009) called "Comprehensive Disaster Management: A Framework for Action." The US $15 million Comprehensive Disaster Management Plan (CDMP, Table 1) was funded by DFID and UNDP. It aimed "to reduce the level of community vulnerability to natural and human-induced hazards and risks to manageable and humanitarian levels." This program was supposed to be implemented through a "program-based approach" that encompassed all aspects of risk management. The approach comprehended a transition from a single agency response and relief system to a holistic strategy involving the entire development planning process of the government. CDMP Phase II was launched in 2010 to institutionalize the adoption of risk reduction approaches, and to channel support through government and development partners, civil society and NGOs into a people-oriented disaster management and risk reduction partnership. The project period will be 2010-20114.

The Corporate Plan (2005-09; 2010-14) acknowledged the need for pre-disaster mitigation and preparedness of the people as opposed to the earlier concepts of responding after a disaster had taken place. Priority was accorded to focus on community-level preparedness, response, recovery and rehabilitation. Programs to train

people living in disaster- prone areas were emphasized to improve their capability to cope with natural disasters.

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The strategic focus of the CDMP was to lay the foundation for the shift in principle from a post-disaster relief and response strategy towards a comprehensive risk minimization culture that encouraged disaster-resilience initiatives. This approach was to be realized through a series of interconnected strategic directives:

- Raising the level of expertise of the disaster management systems,
- Mainstreaming disaster risk management programming,
- Strengthening community institutional mechanisms,
- Expanding preparedness programs across a broad range of hazards, and
- Putting the response systems into operation.

Based on these directives, the major sub-programs of CDMP included: (1) Capacity building, (2) Partnership Development, (3) Community Empowerment, (4) Research and Information Management, and (5) Response Management. Under the sub-program of *Partnership Development*, the government actively sought to achieve a multi-agency approach that encompassed the institutions of the government, NGOs and private sector in a collaborative strategy for the alleviation of disaster-induced poverty. This enhanced co-

ordination and information-sharing among the various actors and thus maximized the efficacy of resource use for effective risk reduction. Under the *Community Empowerment* sub-program, the government planned to further consolidate the empowerment process by expanding the program and by realizing community capacity-building through awareness and skill development and by expanding disaster management studies within the school system and staff training academies.

Besides these, disaster risk reduction was incorporated as a component into the Poverty Reduction Strategy Paper (PRSP) of Bangladesh as Annex-9 of Disaster Vulnerability and Risk Management . The preparation of the PRSP, funded by the World Bank, acknowledged a holistic approach to disaster management. (National Plan for Disaster Management, April 2010: 68).

2.4.4 The Promise of Decentralization

Much has been written about decentralization and the local civil society institutions-local governments interface, although the political character of the process, particularly in developing countries, has often been underestimated. "Decentralization and participation are both means of bringing a broader section of a given population into public decision-making processes - in a role of informing and/or controlling those processes" (Ribot, 1999: 1). The assumption is that greater participation in public decision making is a positive good in itself, and/or that it can improve efficiency, equity, and, especially important in the context of local institutions involved in DRM, development and resource management. By bringing government decision-making closer to the citizenry, decentralization is widely believed to increase public sector accountability and therefore effectiveness, whilst contributing to the strengthening of a genuinely people-centred type of democratic culture.

As Crook and Manor (1998) argue, bringing government closer to people increases efficiency by helping to "...tap the creativity and resources of local communities...". Decentralisation is believed to increase coordination, vertical linkages(discussed in the Section 8 below) and flexibility among administrative agencies and effectiveness in development and conservation planning and implementation. Where it is real, local government bureaucrats and technocrats are in a position to invest in DRM as they have been devolved the power and provided with sufficient funds to do so. It is however often

difficult to use scarce public funds for environmental conservation - which contains elements useful to natural disaster prevention - given the unattractiveness of such activities in political terms; on the other hand, it is the aftermath of catastrophic events that provides opportunities to accumulate political capital through (donor-funded) infrastructure reconstruction.

In sum, if participatory, decentralization can increase managerial and economic efficiency by: allowing local population groups who bear the costs of resource use decisions to make those decisions, rather than leaving them in the hands of outsiders or unaccountable locals, increasing efficiency by internalizing economic, social and ecological costs and benefits; reducing administrative and management transaction costs via the proximity of local participants, access to local skills and local information; and using local knowledge and aspirations in project design, implementation, management and evaluation for better matching of actions to needs (adapted from Ribot 1999).

Given that natural disasters rarely hit whole countries, but, rather hazard risk often varies even from one micro-region to another, it becomes essential to use local knowledge for effective prevention measures and to adapt these to local threats and vulnerabilities. Whereas this tends to happen within the confines of DRM project frameworks, this is far from being institutionalized in the public sector.

National disaster plans may mention mitigation and preparedness, but often lack detail and dedicated resources. Social, political and macroeconomic pressures can undermine the capacity of state authorities to reduce risks. Cash-strapped central governments may simply abdicate their responsibilities, leaving disaster management to local governments and NGOs, even though they (know they) lack the skills and resources to do so. In many parts of the world, fiscal and financial decentralization have in fact not kept up with the pace of politico- administrative decentralization. Local governments can thus often only count on a narrow tax base and are not usually devolved sufficient central funds to be able to afford "luxurious" expenses such as those committed to NRM, let alone ex-ante investments in DRM, which remain difficult to justify vis-a-vis local constituencies often angry at continuing budgetary cuts in the health and education[8] sectors, for example.

[8] Most national Poverty Reduction Strategy Papers (PRSP) call for cuts in government spending; e.g. in Mozambique, the (World Bank-led) prioritisation process has meant that DRM investment and education

Notwithstanding this state of affairs, initiatives have been taken in many regions, although it appears to have happened mostly through externally-financed projects and programmes.

Where these keep on occurring repeatedly, contributing to the creation of a "handout syndrome", government post-disaster relief compensation programmes and international assistance may also act as 'incentives' for people to locate to disaster-prone areas (Charveriat, 2000).

Certain more recently instituted local government arrangements serve, amongst other objectives, to contribute to alleviate the plight befalling the coffers of the local administration: beyond their role in cross-cultural exchange, twinning programmes between municipalities in the South and the North, for example, seek to also bring together all types of resources and experiences to that effect. They are often among the first channels to be appealed to in order to mobilise supplementary external funds to deal with emergencies such as those caused by natural disasters, and, often more importantly, play an important advocacy role vis-a-vis regional and national governments as well as, sometimes, the international community.

In coastal Asia where flood risk is severe, for example in Bangladesh and Cambodia, several projects have been built around the concept of specifically focusing on: people's perception of flood risk; the purpose and tools of community flood risk assessment; the strategies for community organization; and resource mobilization and capacity building. In these cases, the rationale for doing so can be traced back to the sequencing of DRM activities, with an emphasis on local scoping studies and capacity building that are to precede community interventions.

In North-West China, extension mediation groups were to be used in a similar fashion. With the exception of flood-prone Mozambique, most of the relatively few examples of local government involvement in DRM in Sub-Saharan Africa, on the other hand, are not related to rapid onset phenomena such as floods; rather, they can be found in the Sahel, where the recurrent droughts and a strong associational culture coupled with advanced decentralization have led to some degree of success in coping with these slow onset disasters.

2.4.4 Local Government Policy Framework in Bangladesh

Decentralization has long been a recurring policy theme of governments of all persuasions in Bangladesh. All policy documents irrespective of the regime have emphasized the importance of decentralization. Importance of local government in Bangladesh has been recognized by the Constitution and several policy documents, including the National Rural Development Policy (NRDP) and the Poverty Reduction Strategy Paper (PRSP) (GOB, 2009) The National Rural Development Policy provides support for the development of mechanisms and the Sixth Five Year Plan (SFYP) (GOB, 2011:216). Of late the concept paper of the Seventh Five Year Plan has also highlighted the role of Local Government. Noting the importance of the grassroots based local government, the SFYP observed that:

"an important corollary of moving towards a comprehensive approach on social protection programs will be the need to streamline the institutional strategy on implementation. The potential of local government bodies, particularly the Union *Parishad,* to coordinate a streamlined institutional strategy needs to be actively explored"(p.164).

The SFYP strongly emphasized that:

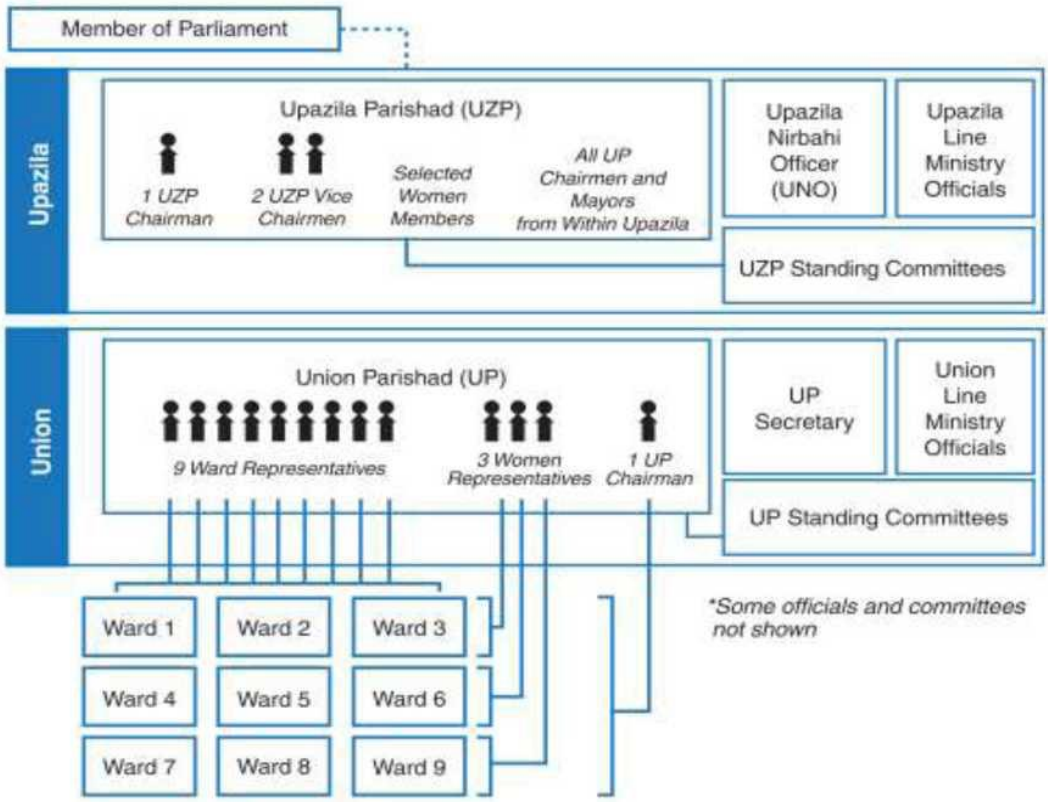
“a strong local government that has well defined responsibilities and accountabilities can play a major positive role in delivering basic public services. Strengthening of local government and decentralization of authority imply delegating powers of the central government to the local level with the aim to addressing major issues like poverty reduction, good governance, infrastructure development and disaster management. Efficient and dedicated local government bodies can deliver services and generate social and economic awareness to achieve the national goals"(p.164)

2.5 Local Governance Structures and Capacity

Local government in Bangladesh has a long historical lineage and a strong constitutional framework. The Constitution of Bangladesh is one of the most progressive ones in the region as far as the emphasis and importance to Local Government are concerned.

Articles 59 and 60 set the prime foundation of the role and structure of Local Government. Local Government system in Bangladesh as far the Constitution is concerned is unique of its kind in this part of the world.

Table 2-3 : Functional Assignments of Local Governments : Role of UP



There are two types of local government institutions (LGI)—rural and urban. Among the elected LGI, there are 7 *City Corporations* and 307 *Pourasabhas* (municipality) in urban areas and 4,502 *Union Parishads (UP)* in rural areas. The UP, the lowest tier local government body in the rural areas, was formed in 1870 and has continued to exist in different names for over 144 years. The local government system is overseen at the central government level by the Ministry of Local Government, Rural Development and Cooperatives (MoLGRDC). Each Union *Parishad* consists of nine wards, and each ward elects one ward representative to serve as a member of the Union *Parishad (UP)*. In addition, three women members are elected to serve in the UP, with each woman member representing three wards. The UP chairman is elected from constituents of the entire union to lead the UP. Thus, in total, a UP consists of 13 elected officials. A UP secretary, appointed by the central government, manages records and accounts. The UP

is also expected to form 13 standing committees to address various important issues for the union, but in reality these committees are often not highly active Although the UP has a long list of role and functional responsibilities, its institutional visibility is yet limited. UPs are broadly responsible for economic, social and community development. (National Democratic Institute for International Affairs, July 2003: 32-41).

2.5.1 Nature of Local Governance in Bangladesh

Local government reforms in Bangladesh evolved very distinctly according to the needs of the ruling elites (Westergaard, 2000; Khan and Hussain, 2001, Majumdar, 2010). With the changes of government, the policy of local government has also been kept changing. Allocation of resources to rural local government during the last ten years has ranged from .25 to .52% of the national budget. During the fiscal year 2010-2011 all central government agencies working at the local level (i.e., at UP and Upazila levels) have spent about 700% higher amount of resources compared to the resources allocated to local elected bodies. There is a conventional allegation that the Local government bodies, especially the UP, has a lower level of capacity to absorb a higher amount of resources. Ironically, empirical evidences suggest that the implementation rate of projects with centrally allocated fund is 100 percent for the UPs compared to around 54 percent for the different line agencies working at the field levels. (Akash, 2012).

2.5.2 Potential of Union *Parishad* as a Service Delivery Agency

Community Participation in the local decision making process*:* UP Act 2009 has ensured expected level of community participation in the operation of UP through *the provision of Ward Shava (Article 4)*. This is an epoch-making step, since People's participation in the operation of UP is recognized as the cornerstone of local level democracy. It is particularly important in ensuring pro-poor service delivery and in playing pivotal role in local development by UPs. Community participation in the functioning of UPs also promotes transparency and accountability in the management of public finances at local level.

Participatory planning*:* Participatory planning as provided by UP Act 2009 (Article 6) allows the community to identify the critical problems, priorities, elaboration and

adoption of socio economic development strategies. Internationally the use of participatory methods and tools has become common practice in the field. The UPs will be able to recognise the felt needs of the people.

Participatory Budgeting*:* Article 57 of UP Act 2009 ensures provision for UPs to prepare budget on the basis of the priority list received from the *Ward Shava.* According to the Act "The Union *Parishad* shall organize an open budget session ensuring presence of concerned standing committees and the local people and present the budget thereof and send the copy of the budget, passed in the following meeting of the *Parishad*, to the *Upazila Nirbahi Officer".*

Transparency in accounting/financial management*:* Article 58 of UP Act 2009 provides that "An annual statement of the receipts and expenditure accounts shall be prepared after the close of every financial year and present such accounts in the open budget session ensuring presence of all standing committees and the local people".

Standing Committees*:* Formation of 13 standing committees and making them functional increases transparency in managing public finance at local level and also ensures accountability of the elected officials to their constituents. This also ensures community participation in the functioning of UP.

Citizen Charter*:* Article 49 of UP Act 2009 provides that *''Every Union Parishad constituted under this act, by pursuing the instructions prepared by the Government, shall publicize a statement, detailing the particulars of various services to be provided to people, conditions of available services, and the stipulated time for ensuring such services, which is to be called "Citizen Charters".*

Provision of citizen charter is a milestone in promoting local level democracy and accountability. The Citizen's Charter marked a significant shift in thinking about public service provision local level. The Citizen Charter put the users of public services at the heart of public service delivery.

Women's empowerment. The UP Act 2009 has at partially addressed the issue of women's empowerment. Some of the articles where women's empowerment through their effective participation has been highlighted include Section 5, 33, 45, and 47.

Use of information technology and promotion of good governance*. Article* 50 of UP Act 2009 provides that (1) Every Union *Parishad*, within a certain period, shall use modern technology in view of ensuring good governance; (3) The *Parishad*, through modern information technology, shall make arrangement to inform the citizen about the particulars of services being provided by the Government including the modern services illustrated in the Citizen Charters. This is recognised as an important step towards building "A Digital Bangladesh" which is one of the major electoral pledges of the current government. The importance of use of modern information technology by local government is internationally recognized.

Right to information*:* Article 78 of the UP Act 2009 ensures the right of all citizens of a UP to obtain information regarding the UP and article 79 describes the procedure and article 80 describes the obligations on the part of UPs to deliver information.

2.5.3 UPs Role in Disaster Management

For the purpose of dismissal of the UP's functions efficiently the Local Government (Union *Parishad*) Act, 2009 has made a provision to constitute 13 different Standing committee. Article 5 (5) - The member of the reserved seat of the respective ward shall be the adviser of ward meeting. Article 33 (1) - The members of a Union *Parishad* shall select a panel of Chairman comprising three members from amongst the members, on priority basis within 30 (thirty) working days from the day of first meeting after the *Parishad* constituted: Provided that, at least one of the three Chairman panels shall be selected from the women members elected from reserved seats. Article 45 (3) - A Standing Committee shall elect one of its members, other than a co-opted member to be its Chairman and minimum one third of the total number of Chairmen of the Standing Committees shall be elected from amongst the members elected in reserved seats for women. Article 47 (3) - one-third of the total development projects of Union *Parishad* (TR, KABIKHA, Block grant & Others) would be chaired by female members related with respective ward level project implementation committees.

The Standing Order on Disaster (SOD) of the Government has also made it obligatory for all Union *Parishad* to constitute a Union *Parishad* Disaster Management Committee (UPDMC) to be chaired by the Union *Parishad* Chairman. The prime function of the

UPDMC is to prepare Union Disaster Management Plan following the community risk assessment procedure provided by MLGRD. The chairperson of the Committee can co-opt a maximum of 3 (three) more members and form groups and sub-groups considering the local situation and special circumstances. A Union Disaster Management Committee is comprised of the following members:

Table 2-4 : Union Disaster Management Committee

2.5.5 Union Disaster Management Plan (UDMP)

Union *Parishad* is the lowest administrative unit of Bangladesh. There is a Disaster Management Committee (UPDMC)at the Union level. The UDMC is chaired by the elected Chairman of the respective Union *Parishad*. The Union Disaster Management Committee consists of the Union *Parishad* Chairman as the Chairperson and members comprising all the Government department head at Union level, members of Union *Parishad*, NGO leaders working in respective union and civil society members. Secretary of the respective Union *Parishad* acts as the member secretary of the committee. The committee is required to meet bimonthly during normal period and as and when necessary during emergency situation.

- Union Disaster Management Plan comprises both disaster risk reduction and emergency response. The plan is prepared by the Union Disaster Management Committee following a proper community risk assessment procedure with the participation of vulnerable groups and the communities. The roles and responsibilities of the UDMP covers the following:
- Defining and redefining community risks to hazards utilizing both traditional and scientific knowledge.
- Estimate total resource requirements and the planned action for the Union Take measures for prevention and mitigation of disasters with the assistance of government agencies, NGOs, CBOs and the private sector within the Union.
- Develop capacity and preparedness measures with assistance and collaboration of the government agencies, NGOs, CBOs and the private sector.
- Strengthen emergency response management system plans and procedures in the event of a disaster.

UPDMP prepares the response plans and procedures in the event of a disaster, providing for: allocation of responsibilities to the departments of the government at UP level; mobilization of resources for prompt response to disaster and relief; procurement of emergency supplies and operation of disaster shelters; restoration of emergency services, such as water supply, gas supply, power, telecommunication, road links, emergency

medical services and burial of dead bodies; provide trauma counselling and dissemination of information.

2.6 Local-level Governance and Disaster Vulnerability

Among other South Asian countries, the geographical setting of flood risk is heavily concentrated in Bangladesh, causing high human and material losses. An average of 844,000 million cubic meter of water flows into the country during the wet season (May–October) through the three key rivers; the Ganges, the Brahmaputra and the Meghna. Most part of the country is low-lying and 80% of the landmass is flood plain thereby leaving the country highly vulnerable to the threat of repeated floods (Ghatak, 2012).

Research shows that the impact of flooding on housing and households can be extensive. Fast flowing flood waters are capable of washing away entire slums while the slow rising water damages buildings. In rural area of Bangladesh houses with "Mud Walls", "Coconut leaf Walls" and "Tin Walls" collapse leaving people and assets exposed and vulnerable. About 32% of total population in Bangladesh lives in slums (Miyan, 2012 and Rahman, 2011) and thus a large number of people is left homeless and stranded for days due to flooding.

Blaikie investigated that a range of studies have recently focused on understanding how different groups of people and communities perceive and respond to flooding risks, especially in flood-prone countries in Asia, including Bangladesh .Since the mid 1990's, the concept of social vulnerability is used to describe and analyze the exposure and coping mechanisms of groups and individuals to environmental risks, primarily in the context of climate change and flooding hazards in developing countries (Blaikie et al.,1994: 82-96).

In developing countries, the flood related problems are far-reaching, affecting the environment and development of the region. Impacts of flood on livelihood have been a major issue, especially in the rural areas, where agriculture, aquaculture are the major livelihoods. Individual vulnerability is determined by other factors than collective (community) vulnerability, but uses similar indicators for both levels of analysis (e.g.

income (GDP) either measured at individual household level or at the level of a region or country (Adger, 1999: 269).

Complicating this is the fact that many in the community have inaccurate perceptions of the actual flood risk and differ in their acceptance of that flood risk, which has implications in terms of increasing community vulnerability. Research has shown that risk perception and acceptance is influenced by a number of factors including: familiarity and experience with a hazard, knowledge about impacts, the way in which information is communicated/ presented, and cognitive or psychological characteristics (Slovic, P. 2000: 124)

In a case study on the effect of tidal and flash floods in urban Bangladesh Nabiul Islam found that people with low-income (living in low-cost houses) were more vulnerable than others, as the percentage of the assets that people lost was the highest in this group. Vulnerability may have a profound influence on the impact of flooding. Another consideration is resilience that is closely related to vulnerability, but looks at it from a different angle (Nabiul Islam, K.M., 2005: 62).

Resilience is the ability to cope with disturbances and to persist without huge irreversible changes. In general, vulnerable people will be less resilient. Whereas vulnerability demands for measures on reduction of flood risk in order preventing floods, resilience aims at measures that prepare people on floods where preparedness includes all precautionary activities that enable society to respond rapidly and effectively to floods. In the LMB local authorities are increasingly implementing behavioral and informational measures as part of their flood mitigation strategy, but much work remains to be done (Weichselgartner, 2005: 124).

Nasreen in her study on "Women's role during floods in Bangladesh: a gender perspective" also found that Decision-making constraints in male dominated households and society in general result in the management of assets, household repairs and purchases often being decided by the male members, reinforcing gender subordination in times of disasters. One of the key survival strategies of households in times of crises is the sale of personal assets, often those belonging to women such as livestock, jewellery, utensils and household goods. While these are important in averting starvation in many

instances, they are undersold during crises and lead to greater impoverishment of women. For instance, land belonging to men is sold after land belonging to women in many cases (Nasreen, 2000: 168).

The need to provide water, food and care during floods and disasters generally remains with women of a household, where gendered divisions of labour and social norms construct the domestic duties to be borne by women and girls in the household. Women have to go through considerable difficulty in the provision of safe drinking water for their families during floods and disasters, and figure out how to ensure that polluted floodwaters do not contaminate any clean drinking water they may have been able to fetch. Treating water (by boiling it) when there is a scarcity of fuel wood poses a severe challenge. Water collection is particularly difficult during times of extreme floods, as tube wells are often submerged, polluting the water. In instances of no nearby safe water options, women may wade through neck-deep water over long distances to fetch water. When this is impossible and water has to be fetched by boat from further away, men will go to fetch water. In this way, while there is not a true reversal of gender roles, men participate in a gendered activity as it is temporary and constrained by the need of transport by boat into public spaces (Crow, B. and Sultana, F., 2002: 709–724).

Local governments has been identified as one of the key stakeholder in disaster risk reduction and response process as they are in charge of critical development functions to reduce and respond disaster risks, such as land use planning, urban development planning, public works, construction safety and licensing, social services and responding to the need of the poor and the under privileged and implementation and strengthening of the decentralization process (UNISDR, 2010). Due to this significant role of the local government in disaster risk reduction and response, the UNISDR has specifically addressed the 2010-2011 campaign to local governments in disaster the theme of "Building resilient cities." Before examining this potential role of the local government in disaster risk reduction and response, it is important to understand the structure and the composition of local government.

Local government is a huge service provider to the local community. Some local governments provide services to the general public directly or may arrange to do so by third parties. Local governments are responsible for providing a vast range of services in

accordance with both the wishes of the community it serves and the requirements of central government either on a statutory or discretionary basis. Usually the powers of the local government are derived from legislation and by Acts of Parliament . Some powers are 'mandatory' while others are 'voluntary' allowing authority to provide services if it desires (Yorke, 2007).

In most countries, the central government retains authority over disaster management programs with centralized decision making and resources, which often focus on developing response capabilities rather than proactive mitigation, and the local government action for disaster management is often given a lower priority (Bendimerad, 2003). Therefore, after a major disaster, decision-making tends to be a centralized process, possibly due to media pressure or the inevitable high political profile of such events (Blaikie, 1994). This has to be viewed as a hindrance for achieving the disaster resilience at community and local levels (APDC, 2007). As a result there is a strong need for decentralization of disaster management with adequate powers to local government in order to facilitate building safer communities and to support sustainable development (Malagoda, 2010).

Local-level governance and disaster vulnerability at community levels are directly connected to national governance and the global economy. Disaster mitigation strategies are embedded in political agendas at all government levels and this makes local-level disaster preparedness even more complex. Regional governments must comply with national demands, must work within a regional budget, and must satisfy their local populace. Disaster responses are often motivated by political rivalries and conflicts of interest, and these can severely impair effective disaster management. Politicians, often at the central state levels, bargain for funding because they have both local and state power groups and interests in protecting certain areas (Winchester,2002: 61-63).

In addition, decisions at local levels reflect national ideologies and global market demands. Since global markets, the agendas of national government, and the power relationships between the central states and local governments all strongly influence disaster responses, the coping strategies and interests of community members are often unheard. However, in order for mitigation efforts to be successful they must include local-level public participation (Pearce,L., 2003: 211-228). Residents should be

encouraged to rebuild their lives and respond to disaster, and local authorities should seek to involve citizens in the disaster management process (Maskrey, 1999: 232).

Renn has developed a model of risk mitigation that is adaptable for complex technologically dependent society. Much of the model is primarily concerned with the emergence of new mainly technological risks in complex urban society. Its value lies in its integrative framework for the analysis of risk. It has a global view, but in placing emphasis on the societal context and extensive risk knowledge. Renn stresses the integrative roles of all stakeholders. He identifies three value-based assumptions: (1) socio-cultural dimensions of risk (2) the governance process requiring extensive stakeholder inclusiveness and (3) good governance is a concept that extends management. "Governance describes structures and processes for collective decision making involving governmental and nongovernmental actors". The extension towards complexity and uncertainty adds dimension. (Renn O, 2005: 50)

2.7 Role of NGOs & Other Civil Society Initiatives at Local Level

During last three decades NGOs have been playing a significant role in development management in Bangladesh (Begum, 2008). Soon after independence NGOs operations were primarily geared to relief and rehabilitation operations, which eventually turned into micro credit, social mobilization, people empowerment, policy advocacy and addressing governance issues. During recent years Civil society and NGOs in Bangladesh are getting deeply engaged in promotion of human rights by mobilizing socially disadvantaged. A number of CSOs/NGOs have been using right based approach in designing social development program and policy advocacy initiatives to make the government responsive and accountable (OHCHR, 2005).

NGOs in Bangladesh have a good track record in responding to the disaster and natural calamities since early 1970s when the NGOs successfully handled major relief operation after flood, cyclone and other natural disasters. In all such operations the NGO/CSOs share the common goal: reducing vulnerability and protecting and supporting affected people (Begum, 2008, Aminuzzaman, 1998).

The Disaster Management Bureau has been assigned the role of coordinating the NGO activities. NGOs make up a vibrant sector in Bangladesh, which has been acclaimed worldwide. NGOs and CBOs are actively involved, among others, in disaster management, micro-credits, family planning, human rights, etc.

NGOs such as CARE-Bangladesh, OXFAM-Bangladesh, Action Aid, Intermediate Technology Development Group-Bangladesh, Bangladesh Disaster Preparedness Canter (BDPC), and Disaster Forum are particularly involved in various activities in pre-, during-, and post disaster activities. The former includes advocacy, public education campaigns, and training programs for personnel involved in disaster management from the national down to the union or community level. NGOs also are active in emergency evacuation and sheltering of the victims. The post-disaster activities include offering new micro-credits or rescheduling their payment programs for rehabilitation.

The Bangladesh Red Crescent plays a vital role in helping communities respond to and prepare for disasters. In 1997 it established a Disaster Management Division. This division has 42/000 volunteers to draw from and they help communities at high risk of floods, cyclones and earthquakes put in place measures to minimize the effects of disaster. These range from building cyclone shelters to making sure early warning systems are in place" In the terrible floods of 2004/ the Bangladesh Red Crescent provided medical care to 250/000 people (British Red Cross, April 3, 2006, pp.8-10) .Under the legal framework (Disaster Management Law), the Consortium NGOs assist the formation, training and capacity building local Disaster Management Committees (DMCs) (Bannerman, Rashid and Rejve, 2011).

Government and non-governmental organizations in Bangladesh have initiated a number of activities to minimize the adverse effects of floods. According to the National Adaptation Programme of Action (NAPA) report (NAPA, 2005), the Government of Bangladesh (GOB) has established an inter-ministerial committee on climate change headed by Minister for Environment and Forest (MoEF) and with representation from relevant government ministries and department as well as Non-governmental organization (NGOs) and research institutions. The Department of Environment (DoE) under the MoEF has also set up a Climate Change related programme within the government to mitigate the effects of flood and other disasters.

In addition to constructing 5695 km of embankments including 3931 km long coastal embankments to protect coastal land from inundation, GOB has dug 4774 km of drainage channels for proper flow of flood water. They also constructed 200 flood shelters for evacuation of people threatened by floods (NAPA, 2005).

In Bangladesh, people along with their domestic animal usually take shelter in schools, colleges, Union-Council complex, and even on the embankments of the rivers. GOB and different NGOs have taken initiatives to build brick latrine with proper septic tanks to minimize water contamination. In the last decade, Bangladesh Governments and NGOs organized different relief programs e.g. Gratuitous Relief (GR) in Bangladesh, Vulnerable Group Feeding (VGF) to help the flood victims (Ninno et al., 2001).

In Bangladesh, authorities have been constantly building awareness among the farmers to adapt their farming systems to "normal floods" that typically inundate about a quarter of the country every year. For instance, farmers are encouraged to switch to high-yielding rice crops instead of low-yielding deep water rice. The Bangladesh Agriculture Research Institute (BARI) and Bangladesh Rice Research Institute (BRRI) have developed salinity tolerant species to mitigate the flood impact on crops. Recently in Bangladesh, besides government efforts, NGOs have started different programs to build awareness within the community through different activities. Activities include immediate response during flood, training for preparedness, training for flood response activities, providing information on flood shelters and for post rehabilitation through distributing pamphlets, posters and other materials for assisting with emergency relief (monetary and non-monetary) (Mondal, 2010).

Recently in Nepal, besides government efforts, NGOs have started different programs to build awareness within the community through different activities. Activities include immediate response during flood, training for preparedness, training for flood response activities, providing information on flood shelters and for post rehabilitation through distributing pamphlets, posters and other materials for assisting with emergency relief (monetary and non-monetary).

CHAPTER THREE

Conceptual Background and Theoretical Approaches

3.1 Disaster Management: Some Conceptual Clarifications

Disaster management aims at motivating societies at risk to be more involved in the conscious management of risk and reduction of vulnerability in various communities. As a cross cutting issue, it demands substantial commitment from public authorities/ Civil society and a greater inter-sectoral and policy coordination at all levels. This section provides a clarification of some terms used in disaster management.

Conceptual Background

Disaster

The International Strategy for Disaster Reduction (Geneva 2001) defines a 'disaster' as 'a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope using only its own resources'. A disaster consists of the occurrence of a hazard or event that may cause harm, and the inability of a society to manage the consequences of the event. This can be visually represented as follows: EVENT (HAZARD) + INABILITY TO MANAGE = DISASTER. This two-part definition highlights the difference between a disaster and a hazard and the importance of human action.

Typically, sociologists have differentiated *disasters* from *hazards.* Following most, for example, Drabek (2004) defined these terms as follows. A disaster is ". . . an event in which a community undergoes severe such losses to persons and/or property that the resources available within the community are severely taxed" (Drabek 2004, Student Handout 2-1:1).

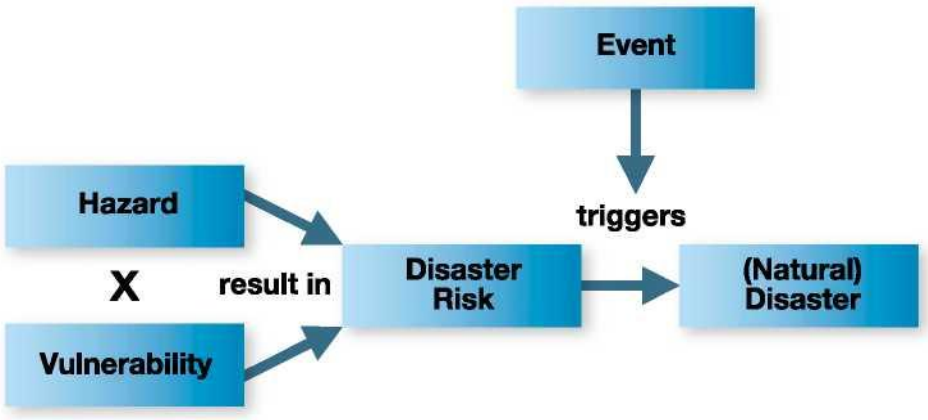
Disaster Risk

UNISDR (2004) defines disaster risk as 'the probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or

environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.' DiMP (2008) defines disaster risk, in an informal settlement context, as 'the chance of hardship or loss resulting from the interaction between natural or other hazards and the vulnerable households and communities that are exposed to them'(2008:17). People in informal settlements are faced with every-day chronic risk such as fire, flooding and health risk. These risks have the potential to turn into emergencies as well as disasters, causing widespread loss of property and prolonged hardship (DiMP, 2008).

As stated above, R = H*V, but in terms of disaster risk, risk is often defined as R = H*(V/C) (Wisner et al 2004), C being the capacity of the community to cope with the hazard. Yodmani (2001:4) describes it as 'in one way or another, in any community, risks are always present. The possibility that a disaster might or might not occur will depend on whether those risks are adequately managed or not.' GZT (2004) stresses that coping strategies are part of reducing vulnerability and describes disaster risk.

Figure 3-1 : Disaster Risk as a Product of Hazard and Vulnerability



Risk is cross-cutting, a product of hazard and vulnerability. Disaster is the result of interaction of both; theoretically, there can't be a disaster unless both exist (Wisner at al 2004). Wisner et al (2004) uses the term risk of disaster to equal vulnerability * disaster, defined as a 'number of people characterized by their varying degree of vulnerability to that specific hazard' (2004:49).

Hazard

A hazard can be a disaster if it affects certain portion of society to such an extent that the people need an extraordinary response from outside the community. Absence of capacity can be termed as *vulnerability,* and similarly, capacity lacks vulnerability. Vulnerability is a political-ecological concept in that it refers to the relationship of people with their environment and political economy of the society and culture that shapes and conditions this relationship (M.J. Zakour ,2007).This conceptualization is consistent with these proposed or implied by the earliest research teams, e.g., Fritz 1961; Dynes 1970. In contrast, a hazard is " . . . a condition with the potential for harm to the community or environment" (Drabek 2004, Student Handout 2-1:1). Thus, they refer to the hurricane hazard or the tornado hazard that reflects the risk, vulnerability, or exposure confronting families, communities or societies.

Vulnerability

Two societies might be facing the same hazard but they could have different vulnerabilities to the potential damages from the hazard. The links between underlying vulnerabilities and disaster risk have been highlighted since the beginning of the 1980's (Cuny 1983; Sen 1981). To understand risk, it is important to understand why some people are affected while others are not, which factors determine their vulnerability and what impact it has on the final risk (Coburn et al, 1994).

ISDR (2004) defines vulnerability as "a set of conditions and processes resulting from physical, social, economical and environmental factors, which increase the susceptibility of a community to the impact of hazards". It is identified a number of structural key vulnerability components, which influence the probability of a community to suffer human and material damages when exposed to a natural event. The extent of such damages can, in turn, be reduced by approaches that were grouped under Capacity & Measures. (ISDR, 2004, p.12)

Coburn (1994) puts a greater emphasis on loss and defines vulnerability as "the degree of loss to a given element at risk (or set of elements) resulting from a given hazard at a given severity level" (p. 41). Klein and Nicholls (1999:184) take a different approach and describe vulnerability as a function of:

- Resistance, the ability to withstand change due to a hazard
- Resilience, the ability to return to the original state following a hazardous event
- And susceptibility, the current physical state, without taking into account temporal changes.

Wisner et al 2004 states that day-to-day activities comprise physical hazards, individual choices and social relations that all become integrated as a pattern of vulnerability. Vulnerability influences individuals, groups, communities, and even a countries' capacity to anticipate, cope with, resist and recover from the impact of a natural hazard. Vulnerabilities can be categorized into physical and socio-economic vulnerability.

♦ Physical Vulnerability

It includes notions of whom and what may be damaged or destroyed by natural hazard such as earthquakes or floods. It is based on the physical condition of people and elements at risk, such as buildings, infrastructure etc; and their proximity, location and nature of the hazard. It also relates to the technical capability of building and structures to resist the forces acting upon them during a hazard event.

♦ Socio-economic Vulnerability

The degree to which a population is affected by a hazard will not merely lie in the physical components of vulnerability but also on the socioeconomic conditions. The socioeconomic conditions of the people also determine the intensity of the impact. For example, people who are poor and living in the sea coast don't have the money to construct strong concrete houses. They are generally at risk and lose their shelters whenever there is strong wind or cyclone. Because of their poverty they too are not able to rebuild their houses. "(UN/ISDR, 2006: 11)

Resistance, Resilience and Extended Alternative Adjustments Pelling (2003), building on the work of Blaikie et al (1994), in his framework divided vulnerability into three components: exposure, resistance and resilience. These three components each are further made up by two products. In this respect, "exposure becomes the product of the physical location and the character of the surrounding built and natural environment. ... Resistance reflects economic, psychological and physical health and their system of

maintenance, and represents the capacity of an individual or group of people to withstand the impact of a hazard. ... Resilience to [a] hazard is the ability of an actor to cope with or adapt to hazard stress. It is a product of the degree of planned preparation undertaken in the light of potential hazard, and of spontaneous or premeditated adjustments made in response to felt hazard, including relief and rescue" (ibid: 48).

Capacity

Capacity can be defined as "resources, means and strengths which exist in households and communities and which enable them to cope with, withstand, prepare for, prevent, mitigate or quickly recover from a disaster". People's capacity can also be taken into account. Capacities could be classified into physical and socio-economic capacities.

Physical Capacity: People whose houses have been destroyed by the cyclone or crops have been destroyed by the flood can salvage things from their homes and from their farms. Some family members have skills, which enable them to find employment if they migrate, either temporarily or permanently.

Socio-economic Capacity: In most of the disasters, people suffer their greatest losses in the physical and material realm. Rich people have the capacity to recover soon because of their wealth. In fact, they are seldom hit by disasters because they live in safe areas and their houses are built with stronger materials. However, even when everything is destroyed they have the capacity to cope up with it.

Disaster Risk Management

The concept of Disaster risk management implies a notion of household vulnerability, which is often said to contain a 'risk chain': the risk itself, the options for managing risk and the outcome - in terms of welfare loss, in the case of households, and of financial loss and adverse consequences for sustainability in the case of local institutions (Alwang et al., 2001).

Disaster Area

Disaster Area: means a District, City Corporation, Upazila, and Municipality, Union or any part of Bangladesh declared to be a Disaster Area under the Act of National Plan for Disaster 2010. (National Plan for Disaster Management, April:11)

Local Government

Robson (1937) defines local Government from a legal point of view as follows- "In general local Government may be said to involve the conception of a territorial, non-sovereign community to regulate its own affairs. This in turn presuppose the existence of a local authority with power to act independent of external control as well as the participation of the local community in the administration of its own affairs." (Robson, 1936: 574)

Gomme (1987) defines "Local Government is part that of the whale government of a nation or state which is administrated by authorities subordinates to the state authority, by qualified persons resident of having property in certain localities, which localities have been formed by communities having common interests and common history."(Gomme, 1987: 1-2)

Community Participation

Community participation, generally, refers to the involvement of people in any project to solve their own problems or to develop their socio-economic conditions. They participate in setting goals, and preparing, implementing and evaluating plans and programs. The United Nations (1970) defines participation as the collective action by the various strata of people or interest groups. Basically, it is a dynamic group process in which all members of a group contribute, share or are influenced by the interchange of ideas and activities toward problem-solving or decision-making (Banki, 1981:533 cited in Samad, 2002:53). The crux of community participation is the exercise of 'voices and choices' of the community and the development of human, organizational and management capacity to solve problems as they arise in order to sustain the improvements made over the time (Sastry, 2001: 2). Community participation motivates people to work together where people feel a sense of community and recognize the benefits of their involvement.

3.2 Theoretical Approaches

The focus of this chapter is on the development of an appropriate disaster management model for local government in Bangladesh. In addition, a thorough analysis of the legislative guidelines facilitating disaster risk assessment and disaster risk reduction practices are defined. The principles and concepts that have helped shape the framework of this study are mainly drawn from the structural functionalist theory, the Disaster Management Cycle and the Disaster Pressure and Release Model.

In achieving the afore-mentioned research objectives and the overall purpose of this chapter, the discussion is confined to three critical areas, that is: the socio-economic vulnerability of the local community in flood-prone areas and having dealt with disaster risk, rehabilitation and development, local government dealing with actual disaster risk and mitigated their impact on their members and the association between local government and community people in addressing flood risks in the aforementioned area.
All two aspects justify the essence of the study thus providing an appropriate point of departure for disclosing the issues of connectivity within the research and leading to informed recommendations and conclusions in Chapter eight of the thesis. In this respect, the research overview traces the main aspects of the study linking the theory with the research findings. Also explicit are the contextualisation of the various chapters and the operationalisation of the respective research objectives. This chapter attempts to provide a corresponding account of theories and model of disaster risk management.

3.2.1 The Structural Functionalism Theory

The Structural Functionalism Theory by Talcott Parsons assumes that societies are made up of differentiated and interrelated structures. It postulates that to ensure survival, social systems must satisfy the functional requisites or needs of adaptation, goal attainment, integration and latency. Through the interconnecting structures or social institutions, these functional needs are satisfied; and that social institutions reorganize and bring the social systems can be brought back to the ideal state of harmony or equilibrium, all through the process of reorganization of social institutions (Trevino, 2001).

Supplementing the Structural Functionalist Theory is the Social Contract Theory which assumes that a world in a state of nature makes people's lives poor, nasty, brutish and short because of the four features of the human condition: equality of need, scarcity, the essential equality of human power and limited altruism. In a state of nature there are no social goods such as farming, industry, education, housing and technology since social cooperation is needed for these things or contributing to exist. So, in order to avoid this kind of life there should be guarantees that people must not harm each other and people must be able to rely on one another to keep their agreements. And so people have established governments by means of social contract where they give up some of their personal freedom and give the government the authority to enforce laws and agreements for everyone to follow. Through this they are relatively safe from each other and can benefit from the other social goods that will result. Based on this theory, it is part of the government's responsibilities to guarantee the safety of its people (Rachel, 2008).

In support of the responsibility of the government to ensure people's safety, the UN humanitarian Resolution 46/182 of 1991 has declared that, "Each State has the responsibility first and foremost to take care of the victims of natural disasters and other emergencies occurring on its territory. Hence, the affected State has the primary role in the initiation, organization, coordination, and implementation of humanitarian assistance within its territory." Basically, protection of its people is a mandated role that the state is bound to perform. In relation to providing humanitarian aid during disaster events, the states are responsible for "calling" a crisis and inviting international aid; they provide assistance and protection themselves; they are responsible for monitoring and coordinating external assistance; and they set the regulatory and legal frameworks governing assistance.

In this light, two international frameworks or protocols provide useful theoretical foundations for the analysis of LGUs disaster management courses of actions: they are the UN Humanitarian Charter and the Minimum Standards. The former has been carried out through the Sphere Project (2004) while the latter has been through the Hyogo Project. The Humanitarian Charter and Minimum Standards, is a project established by the United Nations (UN) which aims to improve the quality of disaster response in terms of its effectiveness and accountability of the humanitarian system to the people who are affected by disasters through the Sphere Project. Humanitarian actions are based on the

following set of protection principles; 1. All humanitarian agencies should ensure that their actions will not bring harm to affected people. 2. Activities should particularly benefit those who are most affected and vulnerable. 3. They should be able to contribute in helping affected people from violence and other human right abuses. 4. They help affected people recover from abuses.(The Sphere Project, 2011; p. 7) This Charter is concerned with the fundamental requirements on sustaining people's lives and dignity that are affected by the calamity, the minimum standards cover activities especially those that meet urgent survival needs of disaster-affected population which respond to the people's need for water, sanitation, nutrition, food, shelter, and health care (Sphere Handbook 2004).

The Humanitarian Charter provides the strategies and their linkages account in trying disaster impacts. These are; 1.) Ensuring that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation, a country that was able to develop a policy with legislative and institutional framework for disaster risk reduction have greater capacity of managing risks and achieve a widespread consensus for engaging and complying with disaster risk reduction among all sectors of the society; 2.)Identify, assess and monitor disaster risks and enhance early warning. Having knowledge of the incoming hazard and the vulnerability of the community is the starting point for reducing disaster and promoting disaster resilience; 3.) The use of knowledge innovation and education to build a culture of safety and resilience at all levels. Collection, compilation and dissemination of relevant knowledge and information on hazards, vulnerabilities and capabilities are needed to keep the people informed and motivated into becoming a culture that gives importance to disaster prevention and resilience. With this disasters can be substantially reduced; 4.) Reduce the underlying risk factors. Factors like social, economic, physical, environment and land use as well as hazards such as geological events, weather, water climate variability and change are also considered and given attention by different sectors of development planning and programs since these factors can also be changed by a disaster; and 5.) Strengthen disaster preparedness for effective response at all levels. Being well prepared and ready to act, also equipped with proper knowledge and capabilities, the affected community can substantially reduce the impacts and losses at the time of the disaster (http://www.unisdr.org/we/coordinate/hfa).

One of the most important international documents on disaster reduction and capacity building of affected communities is The United Nations Hyogo (UN) Framework for Action (HFA). This was formulated in response to the increasing losses and damages to lives, properties, livelihood and environment brought about by the natural hazards like typhoons, floods, droughts, tsunami, cyclones, earthquakes, wildfires, and other forms of calamities.

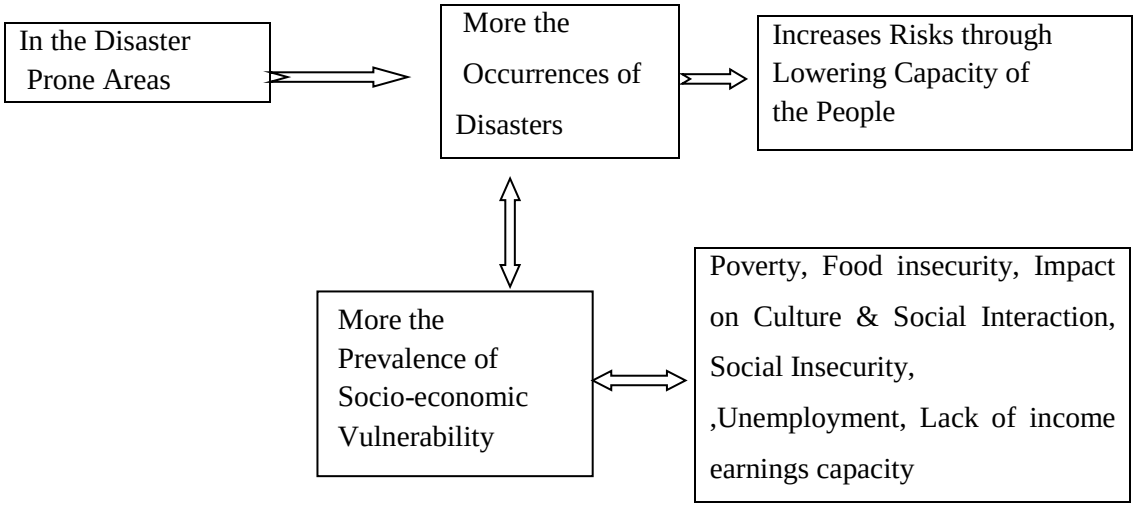
The HFA constitutes the UN members' commitment to take steps to reduce disaster risks through adoption of a set of guidelines to reduce vulnerabilities to natural hazards. Adopted in January 2005 in Kobe, Hyogo, Japan, this framework aims to build resilience to disasters of nations and communities through substantively reducing by 2015 losses in lives and in the social, economic, and environmental assets of the communities and nations (International Strategy for Disaster Reduction (www.unisdr.org/hfa).

In the context of sustainable development, the HFA focuses on four priority areas for action, including principles and techniques to guide vulnerable communities toward achieving disaster resilience, namely: 1. Make Disaster Risk Reduction a Priority. Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation. 2. Know the Risk and Take Action. Identify, assess, and monitor disaster risk and enhance early warning. On the basis of this knowledge, effective early warning system should be developed, one that is appropriately adapted to the peculiar situation of the people at risk. 3. Build Understanding and Awareness. Use knowledge, innovation, and education to build a culture of safety and resilience at all levels. Knowledge and understanding of appropriate vulnerability measures combined with commitment to act is the key to disaster reduction. 4. Reduce Risk. Cut down underlying risk factors. Communities and countries can be resilient to disasters by investing in double, well-known ways of reducing vulnerability and risk. 5. Be prepared and Ready to Act. Strengthen disaster preparedness for effective response at all levels. Preparedness through conducting risk assessments, among others, prior to investing in development programs and projects at all levels of society can make people more resilient to natural hazards.

3.2.2 The Disaster Pressure and Release Model

The basis for the PAR idea is that a disaster is the intersection of two opposing forces: those processes generating vulnerability on one side, and the natural hazard event(or sometimes a slowly unfolding natural process) on the other. The image resembles a nutcracker, with increasing pressure on people arising from either side-from their vulnerability and from the impact(and severity) of the hazard for those people. The Pressure Model indicates that there are certain underlying causes, dynamics, pressures, and unsafe condition which contribute to vulnerability. Linking the above to a hazardous trigger event, increase the risk in communities. This model used to relate with the hypotheses as the more experiences of disasters lead to increase socio-economic vulnerability of the community people.

Figure 3-2: The Relationship between More Occurrences of Disasters and the Prevalence of Socio-Economic Vulnerability



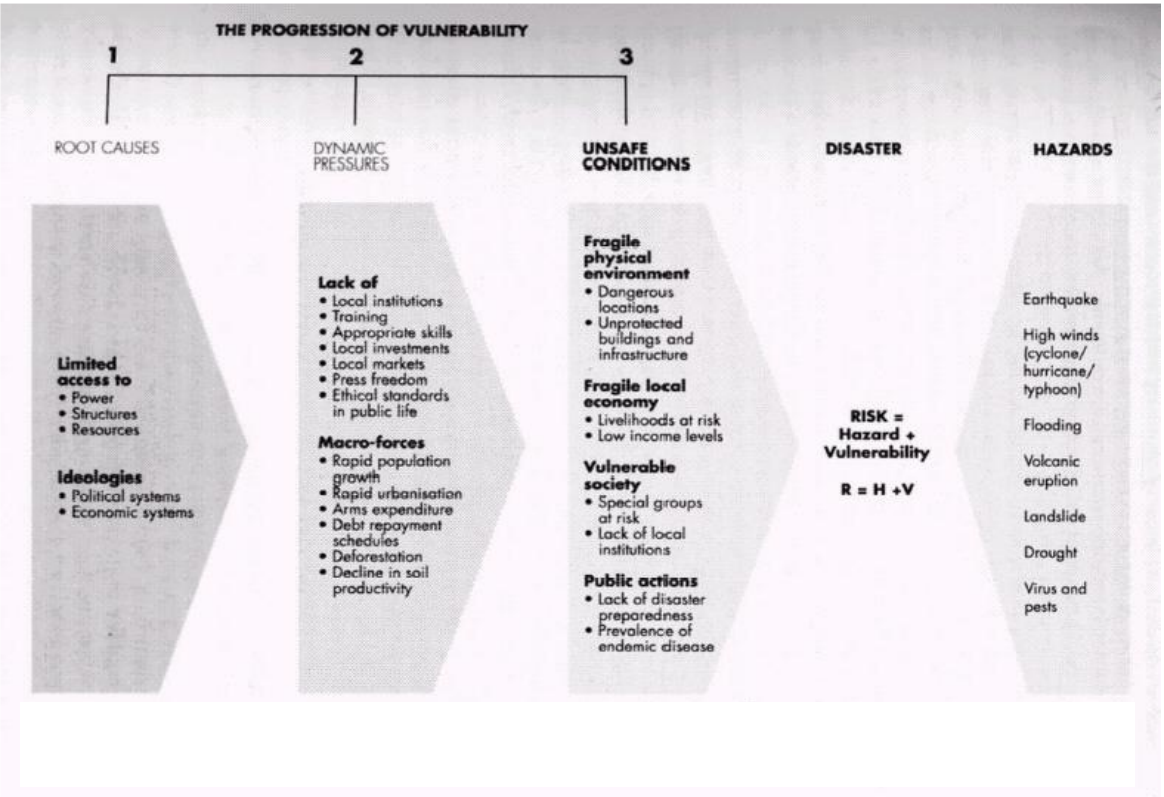
Source: Author

Based on the above discussion and figure, the following hypothesis can be drawn.

Hypothesis 1: The more the occurrences of disasters, more the prevalence of socio-economic vulnerability of the community people.

The Pressure Release Model explains reversing the risk pressure created by the aspects mentioned above in order to create safe communities. These assessments involve the 'mapping' of vulnerable areas and populations and the goal is to assess existing conditions "of a given area and its ability to cope and withstand to specific natural hazard events and their impacts" (Blaikie et al, 1994: 23).

Figure 3-3: Pressure and Release Model



In order to reduce the risk of communities as per the Pressure Model one needs to engage in certain risk reduction activities.

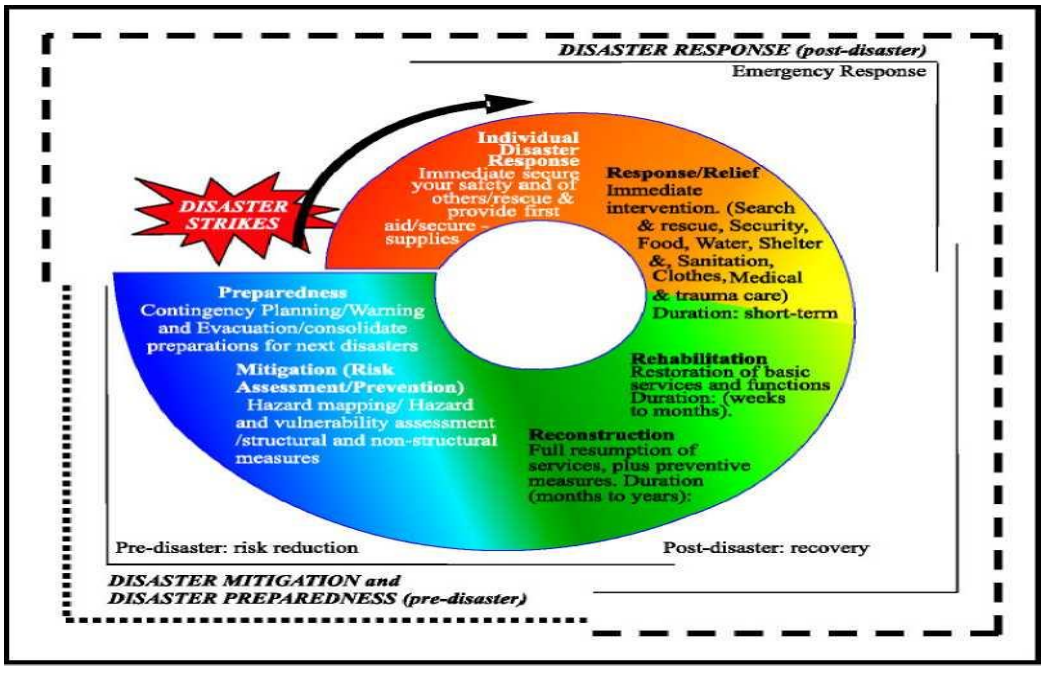
i. C =Communicate understanding vulnerability
ii. A = Analysis vulnerability
iii. F = Focus on reverse PAR model
iv. E = Emphasis on sustainable development
v. I = Improve livelihood
vi. A = Add recovery
vii. C = Extent to culture

3.2.3 The Disaster Management Cycle

A community/locality is said to be at 'risk' when it is exposed to hazards and is likely to be adversely affected by its impact. Whenever we discuss 'disaster management' it is basically 'disaster risk management'. Disaster risk management includes all measures which reduce disaster related losses of life, property or assets by either reducing the hazard or vulnerability of the elements at risk.

The Disaster Management Cycle is illustrated in the below diagram. It consists of a number of phases, each requiring a different range of response activities. The different phases, however, are often grouped together under three main categories: the pre-emergency phase, the emergency phase and the post-emergency phase. In the course of this thesis, the activities of UPs entities in the disaster management cycle will be examined under these three broad categories.

Figure 3-4 : Disaster Management Cycle



i. *Before a Disaster (*Pre-Emergency Phase)

Pre-disaster activities those which are taken to reduce human and property losses caused by a potential hazard. For example, carrying out awareness campaigns, strengthening the existing weak structures, preparation of the disaster management plans at household and

community level, etc. Measures to achieve this objective include risk mapping, application of building codes, land zoning as well as structural measures such as the construction of dams against flooding. They are grouped under the heading risk reduction, comprising prevention, mitigation and preparedness.

♦ Disaster Preparedness

Disaster readiness refers to the effective readiness measures to expedite emergency actions, rehabilitation and recovery. It includes emergency warning, emergency shelter, emergency evacuation plans, and maintenance of resources and training of personnel. Following are some of the stages of disaster preparedness:

a) Creating more awareness and providing information about what to do at the time of disaster;
b) Regularly update the existing forecasting systems
c) Preserve foods at regional stocks to serve the affected people effectively.
d) Providing adequate training to the community based organizations and NGOs, field level officials of the government about search and rescue, evacuation, first aid and other logistic.

♦ Prevention

Prevention Includes all measures aimed at avoiding that natural phenomena turn into disasters for settlements, economies and the infrastructures of communities.

♦ Mitigation

Mitigation Involves measures taken to limit the adverse impact of natural hazards and related environmental and technological disasters. Examples of mitigation are the retrofitting of buildings or the installation of flood-control dams, and specific legislation.

ii. *During a Disaster (Disaster Occurrence)*

The transition from relief to rehabilitation is rarely clear-cut. On the one hand, the foundations of recovery and reconstruction are usually laid in the immediate aftermath of a major disaster, while emergency response activities are still ongoing. On the other hand, there is often, in the after mat of a natural disaster, a phase when basic needs must still be met as the long-term benefits of rehabilitation and reconstruction projects have not yet been fully realized. As a result, the phasing-out of relief assistance must be managed carefully.

♦ Disaster Response

The response phase includes the mobilization of the necessary emergency services and first responders in the disaster affected area. Here, necessary emergency services include search and rescue, evacuation, demand analysis, resource analysis, emergency relief (food, water, sanitation, first aid) and logistic supply (tent, alternative shelters). First responders generally include local government leaders, police, fire brigade, volunteers, social workers, NGO/ CBO workers.

iii. After a Disaster (*Post-Emergency Phase*)

There are initiatives taken in response to a disaster with a purpose to achieve early recovery and rehabilitation of affected communities, immediately after a disaster strikes. These are called as response and recovery activities.

♦ Disaster Recovery

The aim of disaster recovery is to restore the affected area to its previous or close to previous state. It includes the following: *Rehabilitation*- cleaning up the debris, rebuilding destroyed houses and properties, reemployment and so on; *Reconstruction:* Rebuilding or repairing essential infrastructure (roads, schools, canal, irrigational facilities etc.

♦ Disasters and Development

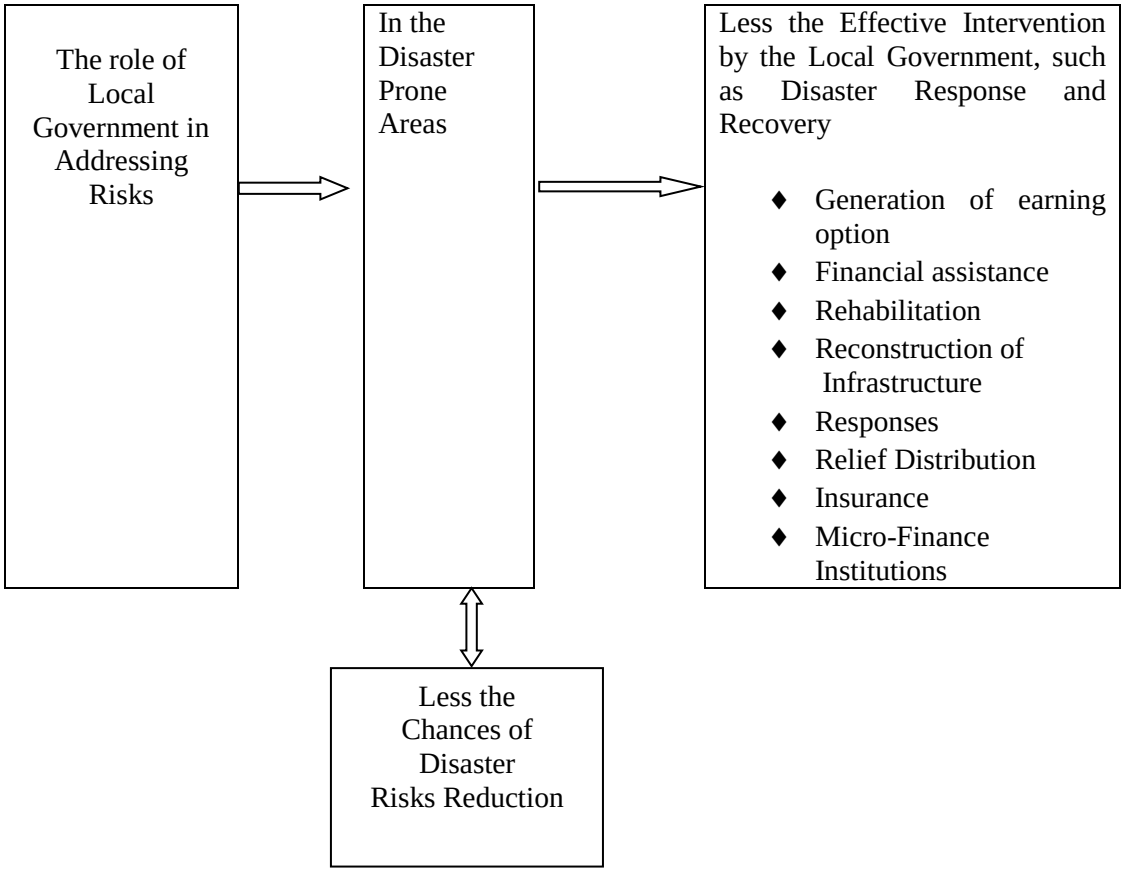
For much of the world's population, hazards are part of everyday life. Each time a person lights a fire to cook, there is the risk of injury to children or of the house catching fire. Where communities live on flood plains or volcanic slopes to benefit from fertile soils, there are risks associated with flooding or volcanic eruption. Risks become a part of life.

Disasters sometimes reveal inappropriate development, because it becomes clear that a known hazard was not taken into account. Lessons can be learned. Why were people vulnerable? What can be done to reduce that vulnerability? These questions often point to issues of wealth, power and the underlying values of the society - the issues considered in this publication as underlying causes of disaster.

Any community that has successfully lived in a location for some time has already found ways of surviving the most common hazards. People often cope well with frequent hazards, but are less likely to plan well for hazards that happen less frequently. A developmental approach to disasters should seek to make maximum use of local knowledge, and to build on capacities developed over many generations (Das, 1997).

The Disaster risk management cycle diagram (DRMC) highlights the range of initiatives which normally occur during both the Emergency response and Recovery stages of a disaster. Some of these cut across both stages (such things as coordination and the provision of ongoing assistance); whilst other activities are unique to each stage (e.g. Early Warning and Evacuation during Emergency Response; and Reconstruction and Economic and Social Recovery as part of Recovery). The DRMC also highlights the role of the media, where there is a strong relationship between this and funding opportunities. This diagram works best for relatively sudden-onset disasters, such as floods, where there is no obviously recognizable single event which triggers the movement into the Emergency Response stage. As my hypothesis is the less the effective intervention of development programs taken by the local government, less the chances of risks reduction.

Figure 3-5: Less the Effective Intervention by the Local Government and Less the Chances of Risks Reduction



Source: Author

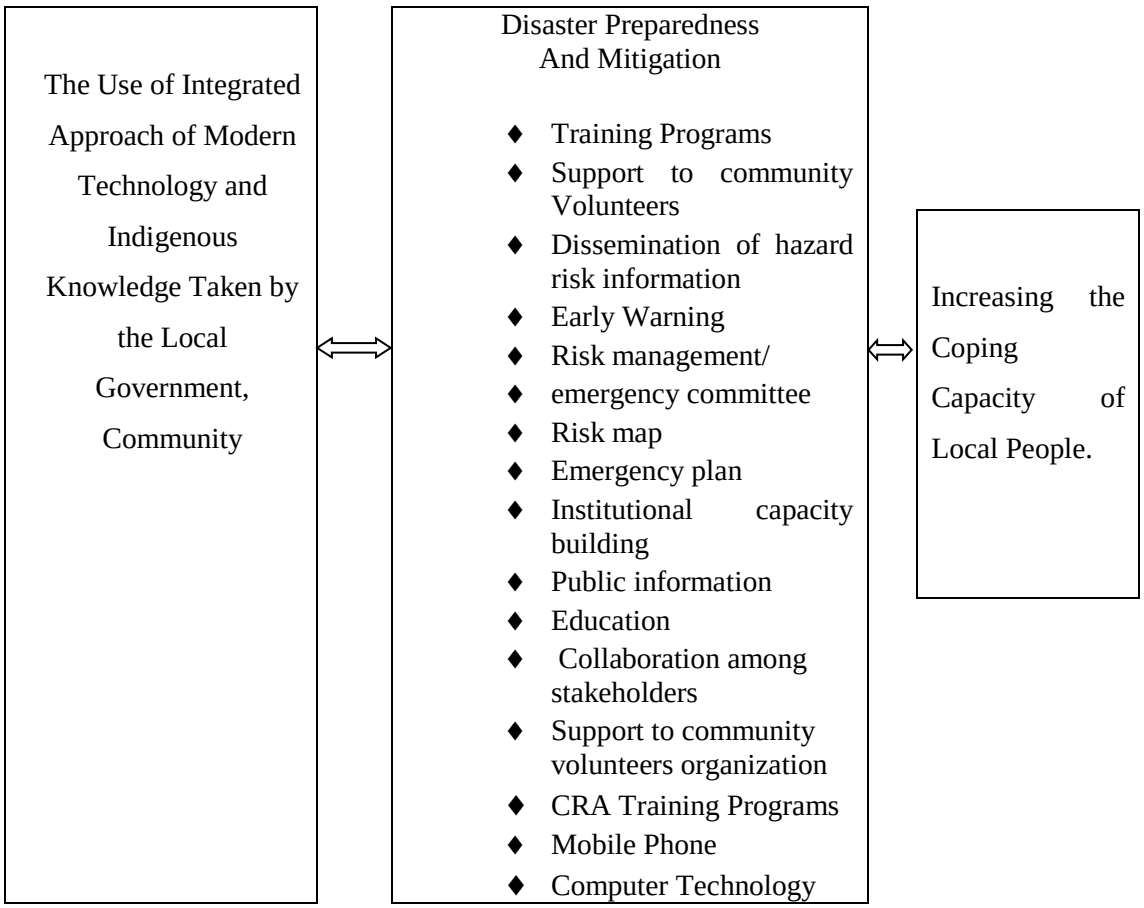
Based on the above discussion and figure, the following hypothesis can be drawn.

Hypothesis 2: Less the effective intervention by the local government, less the chances of risks reduction.

According to Warfield (2008) disaster management aims to reduce, or avoid the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster, and achieve rapid and effective recovery. The disaster management cycle illustrates the ongoing process by which governments, businesses, and civil society plan for and reduce the impact of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred. Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability or the prevention of

disasters during the next iteration of the cycle. The complete disaster management cycle includes the shaping of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property, and infrastructure. As my hypothesis is the using of high modern technology and indigenous knowledge jointly by the local government & community leads to increase the coping capacity of local people.

Figure 3-6 : The Use of Integrated Approach of Modern Technology and Indigenous Knowledge and the Coping Capacity at Local Level



Source: Author

Based on the above discussion and figure, the following hypothesis can be drawn.

Hypothesis 3: More the use of integrated approach of modern technology and indigenous knowledge taken by the local government, community tends to increase their coping capacity at local level.

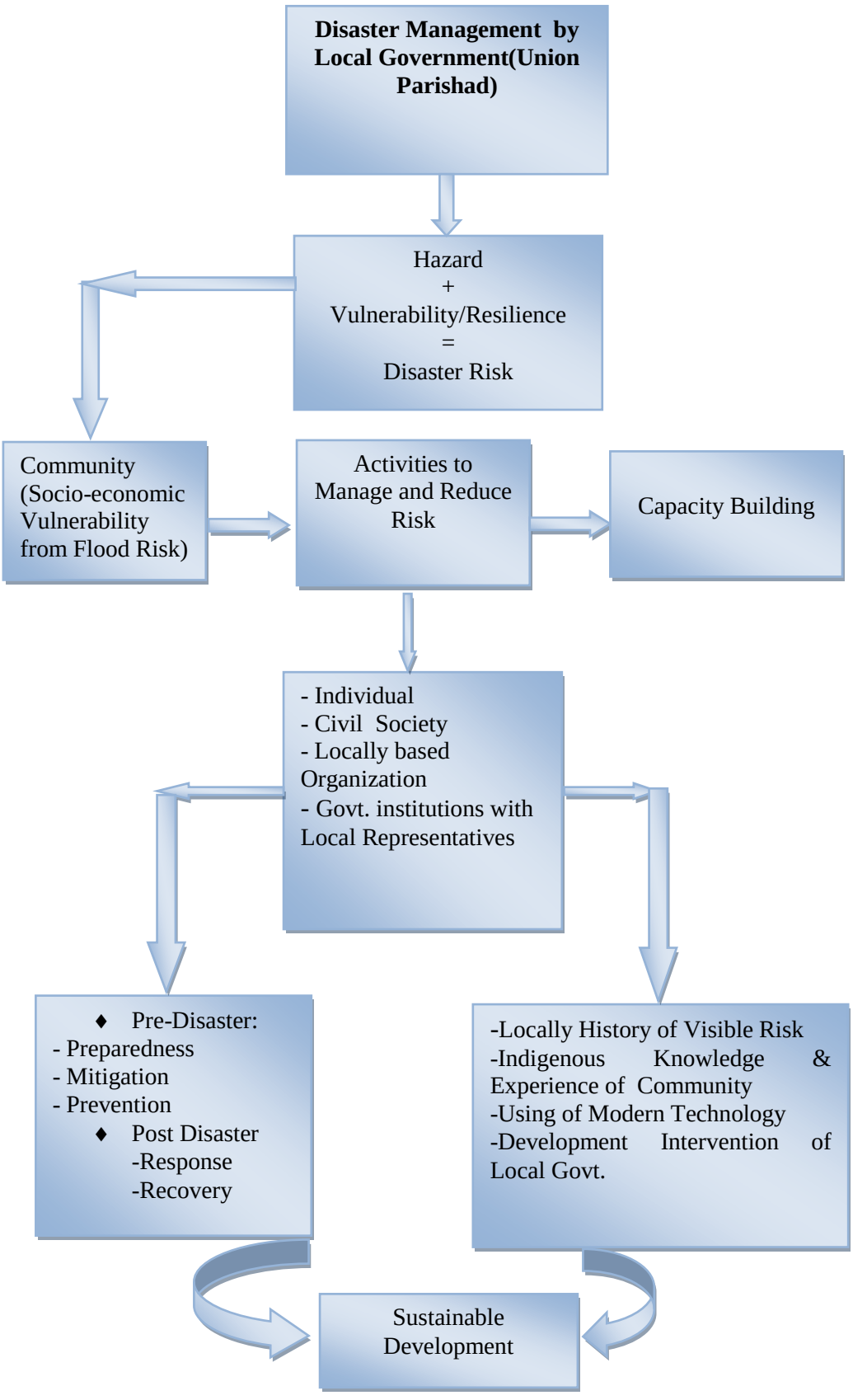
The mitigation and preparedness phases occur as disaster management improvements are made in anticipation of a disaster event. Developmental considerations play a key role in contributing to the mitigation and preparation of a community to effectively confront a disaster. As a disaster occurs, disaster management actors, in particular humanitarian organizations become involved in the immediate response and long-term recovery phases. The four disaster management phases illustrated here do not always, or even generally, occur in isolation or in this precise order. Often phases of the cycle overlap and the length of each phase greatly depends on the severity of the disaster.

The rationale behind the use of the expression 'disaster management cycle' is that disaster and its management is a continuum of inter-linked activities. Yet, the expression is slightly deceiving in that it suggests that the periodic occurrence of natural disasters is something inevitable, always requiring the same response. On the contrary, if effective prevention and preparedness measures are implemented, natural disasters may be avoided by limiting the adverse impact of inevitable natural phenomena.

3.3 Theoretical Point of Departure

The local government's disaster management is viewed as a measure of their functionality and effectiveness in strengthening the adaptive capacity and resilience of their communities to disaster occurrences as contemplated under the structural-functionalist theory, disaster pressure and release model and disaster management cycle . It is likewise assumed as a fulfillment of their mandated role in protecting their communities' safety and security from whatever hazards. In order to develop a theoretical framework for describing and analyzing issues on the role of local government in addressing risks in the disaster prone areas, attempts have been made to establish a relationship between dependent variable (e.g., Disaster Risk) and independent variables (e.g., management by Local Government) capacity, in the following figure 3-7.

Figure 3 -7 : Analytical Framework of the Study



CHAPTER FOUR

Understanding the Role of Local Government in Managing Disaster Induced Risk

Based on a comprehensive review of the experiences of different continents, United Nations Secretariat of the International Strategy for Disaster Reduction (UNISDR) has identified four major roles of local governments in implementing disaster risk reduction. (UNISDR,2010).

- To play a central role in coordinating and sustaining a multi-level, multi-stakeholder platform to promote disaster risk reduction in the region or for a specific hazard: The active commitment and leadership of a local government is important for the implementation of any local disaster risk reduction measures to deal with different stakeholders and multiple layers of government. In many cases, a comprehensive disaster risk reduction measure takes long time to fully implement, and the leadership of the local government is particularly crucial to ensure the political momentum and support among external stakeholders throughout the process.

- To effectively engage local communities and citizens with disaster risk reduction activities and link their concerns with government priorities: As the most immediate public service provider and interface with citizens, local governments are naturally situated in the best position to raise citizens' awareness of disaster risks and to listen to their concerns. Even the most sophisticated national disaster risk reduction measures (such as early warning systems) may fail, if communities are not properly informed and engaged. Likewise, community preparedness measures are sometimes as effective as costly public investments in reducing casualties from disasters, and local governments should play a central role in community education and training.

- To strengthen their own institutional capacities and implement practical disaster risk reduction actions by themselves: As the governmental body responsible for the long-term development and viability of its area, a local government is

required to consider and institutionalize disaster risk reduction in its day-to-day operations, including development planning, land use control and the provision of public facilities and services.

- To devise and implement innovative tools and techniques for disaster risk reduction, which can be replicated elsewhere or scaled up nationwide: Because of its smaller scale and flexibility, a local government is better positioned than a national government to develop and experiment with various new tools and techniques, applying them to unique settings and policy priorities.

4.1 Responsibilities of Union *Parishad* As Part of Local Government

Risk Reduction

- Ensure that local people are kept informed and capable of taking practical measures for the reduction of risk at household and community level and also disseminate the success stories of reducing disaster risks at household and community level widely among the local people.
- Arrange training and workshops on regular basis on disaster issues and update the progress of implementation of action plan and other activities and report to the Upazila DMC
- Hold a hazard, vulnerability and risk analysis at Union level and prepare risk reduction action plan (RRAP) and contingency plan for Earthquake and other hazards.
- Identify the most vulnerable or people at high risk by sex, age, physical ability, social status, occupation and economic status.
- Prepare a short, medium and long term vulnerability reduction and capacity building action plan for the identified high-risk people with active participation of the people at risk.
- Facilitate coordination among the development agencies and service providers through quarterly coordination meeting and take decision about implementation of the action plan for risk reduction as well as review the progress of the risk reduction action plan.
- Raise fund at local level to implement the risk reduction action plan.

- Prepare a Comprehensive Disaster Management Action Plan with a view to enabling local people, Union authority and local organizations to increase the capacity of poor and vulnerable people to enhance their income and other assets for risk reduction and also to take up security arrangement in the perspective of imminent danger related warnings or occurrence of disaster including the issues already mentioned under this paragraph.
- Take steps for capacity building of relevant persons and institutions, union authority, volunteers and people in a way that they can forecast and publicize warnings relating to hazards (cyclones, storms, floods, droughts, tidal surge, tsunami, over-rainfall under-rainfall, water logging, high tide, cold wave etc.) in the quickest possible manner and also inform people about their responsibilities of saving their lives and properties from disaster.
- Build the capacity of local institutions, volunteers and people in a way that they can help and motivate people to adopt disaster (Cyclone/Tidal surge/Tsunami/ Earthquake/ Tornado/ Flood/ Water Logging/ Salinity/ High Tide/ Cold Wave) resistant housing features. Build the capacity of local institutions, volunteers and people in a way that they can help and motivate people to adapt with disaster resistant agriculture and other livelihood options.
- Determine specific safe centre/shelter where the population of certain areas will go at the time of need and assign responsibilities to different persons for various services and securities at the shelter/centre.
- Ensure supply of safe water and if necessary other services from specific points near the shelter/centre with the help of Upazila authority.
- Train the students, youths, local club members and volunteers on community based water purification technology. So that during disaster, they can supply water-purifying technology during emergencies in their community until external support reaches the high-risk people. Plan for preparing some community Based High land, which can be used as play ground in normal time and can be used as shelter place during disaster period and where livestock, poultry, emergency food, kerosene, lamp,

candle, matches, fuel wood, radio and other important resources could be shifted along with the people.

- Stock emergency life-saving medicines at union level (Union Health and Family Welfare Centre) for use during disaster.
- Prepare relevant plans for rescue, primary relief operation, and restoration of communication with Upazila Headquarters and local arrangement for rehabilitation of severely affected families.
- Arrange for rehearsals or drills on the dissemination of warning signals/forecasts, evacuation, rescue and primary relief operations (if necessary committee can seek assistance from Upazila Authority).

Emergency Response

Warning Period

- Disseminate warning and security messages, evacuate the vulnerable people as per evacuation plan, cast an eye on the last moment check of rescue team and its preparation and take effective measure to minimize gap as a high priority.
- Engage trained institutions, volunteers and people in field for effective and rapid dissemination of early warning messages to the vulnerable community and monitor the whole security and warning message dissemination activities. Visit the pre-determined emergency shelter centre and be sure that for essential services and security different organizations and volunteers are alert and ready to provide services.
- Review the practicality of water supply sources nearby the shelter/centre and if necessary, fill the gaps that people can get safe water supply during disaster from these water sources.
- Conduct a mock or drill to ensure that the trained students, youths, clubs and volunteers can prepare water-purification technology at their locality and can supply to the victims during emergencies and to monitor that adequate materials are ready to prepare such water- purification technology.
- Review the stock of life saving medicines at union level and evaluate its adequacy for supply among the victims during disaster.

- Prepare a checklist of emergency works to-do during disaster and be sure that appropriate materials and people are available for use.

During Disaster

- Organize emergency rescue work by using locally available facilities in times of need and if directed assist others in rescue work.
- Prepare water purification technology (tablet) at local level with the help of trained students, youths, clubs and volunteers; and distribute those products at emergency among the people at risk before being caught by diarrhoea or other water borne diseases.
- Coordinate all relief activities (GO-NGO) in the union in a manner that social justice (on the basis of who needs, what is needed and how much is needed) is ensured in relief distribution;
- Protect people from upset creating rumour during hazard period by providing them correct and timely information.
- During hazard ensure security of the local and outside relief workers.
- Ensure the security of women, children and person with disability during hazard.
- Take necessary actions to protect environmental degradation by quick funeral of corpses and burying the animal dead bodies.
- Help people to transfer their essential resources (livestock, poultry, essential food, kerosene, candle, matches, fuel, radio, etc.) to safe places.

Post-Disaster Period

- Collect statistics of loss incurred in disaster in the light of guidelines of DMB and Upazila DMC and send the same to Upazila DMC.
- Take steps for distribution of articles for rehabilitation received locally or from Relief and Rehabilitation Directorate and from any other source following the guidelines from DMB and Upazila DMC.
- Send accounts of materials received to UzDMC and donor agency (if the donor provided relief fund).
- Ensure that due to hazard the people who were displaced can come back to their previous place; in this case, dispute (if any) regarding the land of the displaced people should not be an obstacle to come back to the place after disaster.

- Counsel the psycho traumatic people due to hazard with the support of community and experts.
- Ensure that the injured people are getting fair and just treatment from health service providers, if necessary; committee can recommend for Upazila and District level assistance.
- Arrange a lesson learning session with the participation of concern institutions and individuals on learning from during hazard and after hazard.

In addition to normal duties, Union *Parishad* Members will perform the following responsibilities related to disaster issues:

Risk Reduction

- Attend regularly in the UDMC meetings and workshops
- Participate in the community vulnerability and risk assessment process, prioritize the risks and prepare the risk reduction action plans of their respective union
- Ensure participation of different vulnerable groups in the vulnerability and risk assessment process
- Assist the union chairman to mobilize resources for the implementation of risk reduction action plan prepared through community risk assessment
- Facilitate work of NGOs to ensure coordination and synergies among different programs and activities undertaken locally.

Emergency Response

- Maintain detailed particulars of trained volunteers for the purpose of instant necessity.

- Earmark trained volunteers for various responsibilities for operation of emergency relief work.
- Combat disaster situations in their own areas better and keep the people aware and ready for rehabilitation work.

Precautionary Stage

- Announce in advance the warning/danger/great danger signals by megaphone, siren, warning notice, drums / beating empty kerosene cans. On receipt of instructions from Union *Parishad* Chairman or higher authority, announce danger signals without creating any panic.
- Listen to weather forecasts from radio regularly.
- Take quick steps after receipt of warning signals from the radio/Union *Parishad* Chairman or higher authority.
- Keep the emergency volunteer team ready for performing specific responsibilities like evacuation, first aid, health care, food, repair of damaged room/house, security etc.
- Cooperate and coordinate with CPP.
- Ensure hoisting of warning signals in risky areas.

Disaster Stage

- Perform any responsibility entrusted by the Union *Parishad* Chairman or higher authority and also other responsibilities related to rescue, relief and rehabilitation operations.

Rehabilitation Stage

- Help the Union *Parishad* Chairman in relief and rehabilitation work.

General Instructions

Members of Union *Parishad* are assigned with the following functions:

- Advise people to listen Special Weather Bulletins broadcast by Bangladesh Betar after formation of low pressure.
- After hoisting of warning signals, advise all boats and trawlers to anchor near the coasts and to take shelter in safer places.
- Exchange weather related information with others.

- Advise packing of flattened rice, parched rice, treacle and drinking water, green coconut, utensils, safety match etc in their polyethylene bag and keep them under the earth three feet deep so that these could be used in times of need. Also advise for covering the mouth of tube-well with plastic cover so that saline/polluted water cannot enter into them.

- Immediately after the announcement of evacuation advise people to take shelter in nearby cyclone shelter, fortified earthen mound, brick built building, community centre or any other safer place. Advise for special attention to children, old and infirm people. Also advise for evacuation of livestock and other domestic animals, to high and safe lands.

- Advise people not to propagate rumours and also not to listen to such rumours.
- Advise for rescuing the affected people during and after disaster. If danger is apprehended for the loss of life of any human being or of property due to cyclone/flood or any other disaster, immediately advise for informing Union *Parishad* Chairman and Members.
- Advise for assisting Union *Parishad* and voluntary organisation in all matters.
- Advise for primary medical care to injured/drowned people.
- Advise for removal of dead bodies and burial of the dead and for interment of carcasses. Advise for house construction, after disaster, on cooperative basis.
- Advise for complying with the instructions or request by the UDMC/Union *Parishad* Chairman and Member or any other higher authority regarding relief operations.
- Advise for recovering the source of drinking water.

Ideally both UP Standing Committees and the Disaster Management can play a significant role in the overall planning and management of development projects and disaster management at the UP level. Because of poor resource base, lack of technical knowhow and management skills of the UP, the both the Standing Committees and the Disaster Management Committee are generally not fund to be functional. In many cases such committees have not been formed at all. However in order to meet the legal provision, UPs generally constitute the Standing Committees and Disaster Management Committee as a ritual but in reality in almost all the cases the Committee does not meet

nor does prepares a realistic and doable disaster management plan. Field observations do not provide any evidences that that the UP Members and even the UP chair us fully aware of the role and responsibilities of the UPDMC.

The UDMCs have numerous designated responsibilities related to risk reduction, emergency response, and post-disaster recovery. A case study of CDMP's efforts at the local level explains, that "the key lesson learned is that the decentralization of authority to local governments is vital to ensure local ownership of disaster risk reduction. The local planning process under the CDMP has clear benefits, in particular its focus on community-level approaches to risk reduction and disaster management. Nonetheless, the process could be improved upon as the process does not deeply and effectively involve the UP as the driver seat is driven primarily by an outside facilitator (Christensen, 2012).

CHAPTER FIVE

Methodology

5.1 Research Design

A research design is the logic that links the data to be collected (and the conclusion to be drawn) to the initial questions of a study [and] every empirical study has an implicit, if not explicit, research design'(Yin,1994,p.19). For doing social science research, there are three types of research designs: qualitative, quantitative, and mixed approach. This study is a very relevant research methodology [both Quantitative (survey method) and Qualitative (case study and FGDs) Approaches].

5.2 Rationale behind Using the Mixed Methods Approach

One of the aims of this study was to explore the role of local government in addressing disaster risks and vulnerability and providing elements of DRM strategy that highlights and strengthens the role played by local government, and that leaves local community better equipped to deal with the disaster management cycle; and this was done primarily through a mixed methods Approach.

As in most qualitative research, the researcher was immersed in the site of the participants. This approach was beneficial because cultural immersion helps the researcher develop a personal understanding of the culture, traditions and practices of the participants, and enables familiarity with participants' daily lives and behaviors (Neuman, 1997, p.79). The qualitative portion of this research was conducted with the intent to develop assumptions, theories and understandings of social situations and life. The questions were largely open-ended and allowed the participants to give detailed and descriptive responses, as opposed to highly structured closed-end questions with pre-categorized responses into categories that may not be fully understood by participants. When participants are able speak freely through open ended questions, the interview itself becomes more personal and interactive.

Secondly, before visiting the study area, there was no preconceived idea regarding the research problem. For example, one of the variables was disaster risk and under this variable, one of the sub-variables was intensity of disaster risk and socio-economic vulnerability of the community. Before conducting interview, no preliminary background research was done as to whether they have similar or different of the vulnerability. Thirdly, the present study was concerned with the process rather than outcomes; for example, it can be assumed that the association between local government and community may be problematic as lack of communication. But what were the reasons of the lack communication between local government and community and consequently how it affected on local level disaster risk reduction programs? The answer of the question could be known through only qualitative research.

A content analysis was conducted based on interview notes and transcripts, allowing lengthy responses to be categorized into both preset and emergent categories. After the responses were coded according to theme, they were analyzed and interpreted through statistical analysis. The limited number of respondent interviews provided a simple statistical analysis, which focused on the frequency of responses in order to identify particular trends or possible relationships.

In line with qualitative research the interpretation of data was the responsibility of the researcher. Data was categorized, filtered and expressed by the researcher and is therefore prone to personal interpretations and is inescapably influenced by the researcher. Since qualitative research can be subject to the interpretation, a good qualitative researcher reflects on the characteristics that shape him/her as a person and acknowledges how his/her values could influence the research (Creswell, 2003). Since a qualitative approach was taken in regard to data collection, the following paragraph outlines the researcher's personal characteristics and suggests how these may have influenced this study.

5.3 General Characteristics of the Study Area

For empirical assessment of the role of grass roots based local government this study picked up two Union *Parishads* (UP) namely: **Kumarbhogh and Teutia** Union located

in Lohagonj Upazila of Munshigonj District. All these two Union *Parishads* were drawn from the disaster-prone areas having distinct features of disaster.

5.3.1 Profile of the Union *Parishads*

Following Section provides a narrative of the demographic, social, structural and climate profile of the surveyed Union *Parishads*:

Kumarbhogh Union is located in Lohagonj Upazila of Munshigonj District, with an area of 1824 acres. The Union is surrounded by Haldia, Kanaksar, Lohagonj Toetia Union and Padma River.

Elevation : The elevation of the Union varies from 5.5-7.1 m above the Mean Sea Level.

Demography : The Total population of the Union is 9333. Out of this total,4432 are men and 4401 are women with 12.42% in the age group of 0-4 yr, 13.23% in the age group of 5-9yr, 12.54%in the age group of 10- 14yr, 5.50% in the age group of 15-17yr, 28.55% In the age group of 18-34yr, 21.13% in the age group of 35-59yr and 6.62% in the age group of 60+ yr.

Religion : The Union population is distributed among Muslims (94.25%), Hindus(5.73%), Buddhists (0.01%)and others(0.01%).

Literacy rate : The literacy rate in this Union is 35.7%. Male literacy is 38.6% and female literacy is 33.3%.

Poverty incidence: The population living below poverty line is 34. 02%.

Major livelihood groups: Out of the total households 27.08% are laborers, 19.50% are farmers, 12.75% are Businessmen and 7.56% are service holders,

Households : There are households in the Union.

Housing pattern: In terms of structure 11.80% of the houses are *jhupri*, 79.94% are kutcha, 7.19% are semi-pucka and 10.8% is pucka

Teotia Union is located in *Louhagonj* Upazila of Munshigonj District, with an area of 2436 acres. The Union is surrounded by Haldia, Kanaksar, Kumarbhogh Unions and Padma River.

Elevation : The elevation of the Union varies from 5.5-7.1 m above the Mean Sea Level.

Demography : The Total population of the Union is 14804. Out of this total, 7168 are men and 7636 are women with 12.42% in the age group of 0-4 yr, 13.23% in the age group of 5-9yr, 12.54%in the age group of 10- 14yr, 5.50% in the age group of 15-17yr, 28.55% In the age group of 18-34yr, 21.13% in the age group of 35-59yr and 6.62% in the age group of 60+ yr.

Religion : The Union population is distributed among Muslims (94.25%), Hindus(5.73%), Buddhists (0.01%)and others(0.01%).

Literacy rate : The literacy rate in this Union is 45.9%. Male literacy is 48.8% and female literacy is 43.4%.

Poverty incidence: The population living below poverty line is 34. 02%.

Major livelihood groups: Out of the total households 27.08% are laborers, 19.50% are farmers, 12.75% are Businessmen and 7.56% are service holders,

Households `: There are 5091 households in the Union.

Housing pattern: In terms of structure 11.80% of the houses are *jhupri,* 79.94% are kutcha, 7.19% are semi-pucka and 10.8% is pucka. *Households with electricity*: 22.80% households are connected with electricity (Source: BBS, District Statistics,2013).

Figure 4-1 : The Study Area of Munshigonj in Bangladesh

Source: Banglapedia, 2007

5.4 Sample Design

For household data, the study covered 156 units from the sampled UPs. The Household heads either male of female have been chosen as respondents.

Group A

For this study 120 households was selected (15% of total) based upon a stratified sampling procedure. Sample surveys have been conducted in 60 households in Khoria, 60 households in Manda villages. A predetermined representative number of people from different professional categories were interviewed mainly out of 120 household about 73% were headed by male members while about 27% were female headed household. Of the total respondent overwhelmingly male respondents were more forthcoming in making

answers for the questionnaires. Apart from such observation, women folk in rural Bangladesh do bar themselves from the outsider, especially if the person is out of their known periphery. In such case the eldest son is nominated by the female household heads.

Every 60 house along two sides of main village road and 60 households were selected based upon their distance from river Padma. In each of these villages the desired numbers of sample were selected from each category by using a statistical random number table.

Group B

Group B was smaller in sample size because there were fewer agencies (and thus fewer Institutional representations) in the study area dealing with flood related issues than there are local residents. Accordingly the 36 respondent in group B were further stratified into categories based on their level of institutional representation;

Table: Respondent Group

Group Of Respondents	Type Of Respondents	No. Of Respondents
Respondents of Group A	Farmer	30
	Fishermen	30
	Day labor	30
	Women	30
Respondents of Group B	Union Disaster Management Committee	36
Total		=156

5.5 Information Collection

The relevant information was collected from both primary and secondary sources. Diverse Qualitative methods were applied to gather primary information in order to explore the role of local government in addressing disaster risks in the study areas. This also included searching for risks control mechanisms of Union *Parished* to be used to mitigate vulnerabilities.

For policy analysis, the study relied chiefly on secondary data, which were supplemented by primary data. Because Bangladesh has experienced numerous devastating cyclones, as well as long- lasting floods that have caused immense suffering to people and damage to properties in recent decades, we relied on secondary data on the relevant disaster response and management policies. Official documents from the government and donors, study reports from NGOs and other organizations, journal articles, newspaper clippings, TV reports and documentaries, and internet resources from reliable and responsible sources provided additional information for our analysis. To ensure openness in discussing sensitive issues, we used informal discussions with stakeholders at different levels. Regarding this, the following methods were systematically applied to collect information in this study:

5.5.1 Methods for primary information

- Structured Interview
- Participatory Rural Appraisal (PRA) tools, such as focus group discussions (FGDs**)**
- Case Studies

Interviewing and Time Schedule

The study was conducted in two village of Kumarbhogh and Teutia Union two times. A total of 156 people were interviewed face to face from the last week of June until and including the second week of July 2014 by the researcher along with research assistants. Two field assistant helped me to run this study smoothly. A record was kept of the time

taken up for every household in interviewing that was in average half an hour. But for the case studies the time was in average one and half an hour.

The questionnaire consists of three sections. One general section for all and two sections designed for different occupational activities. A general introductory section, including questions about respondents' demographic and socio-economic characteristics, flood induced risks , socio-economic vulnerability due to flood of the local people, in addition with extend and magnitude of flood and it's impacts on the livelihood of the people including job loss, loss of food, clothes, building materials, agricultural raw materials, monitory loss etc and also collected on injury, death and health problem. In another part, the role and association between local government local people in addressing vulnerability is presented. The same interviewers were also used for the pre-testing of the questionnaire.

Focus Group Discussions

A number of Focus Group Discussions (FGD) was carried out to reduce the stake holder perceptions on social economic risks and vulnerability by flood and the role of local government in addressing the risks and vulnerability of the community. The facilitator during each session followed a check list of open ended, rights focused questions. The FGD sessions were held separately, with community farmers, fishermen, day labours, women and local Governments representatives groups segregated, to allow for the most honest and candid discussions. The size of the FGDs was restricted to maximum 10 an environment conducive to the effective participation of the local community in open discussion and brainstorming.

With a view to understand to specific risks and socio-economic vulnerabilities, one FGD sessions were conducted in two villages and two FGD sessions was conducted with Union Disaster management committee and community leaders and other representatives. On the other hand, one FGD sessions was conducted with Upazila Disaster management committee Total 30 men and 15 women participated in the session.

Case Studies

An in-depth interviews were conducted with 5 different occupational respondents to prepare case studies on experience of recent flood, socio-economic vulnerability of the respondents, coping strategies and in that , Union *parished'* Preparedness and recovery performance before and after flood for the local people and also the implications to mitigate disaster risk for local government and their effectiveness. They were interviewed separately.

5.5.2 Secondary Information

For policy analysis, we relied chiefly on secondary data, which were supplemented by primary data. Because Bangladesh has experienced numerous devastating and long-lasting floods that have caused immense suffering to people and damage to properties in recent decades, we relied on secondary data on the relevant disaster response and management policies. Official documents from the government and donors, study reports from NGOs and other organizations, journal articles, newspaper clippings, TV reports and documentaries, and internet resources from reliable and responsible sources provided additional information for our analysis. To ensure openness in discussing sensitive issues, we used informal discussions with stakeholders at different levels. Through personal contacts and over the internet we collected reports and documents from government agencies, NGOs, and donors in Bangladesh, such as the Bangladesh Disaster Preparedness Centre (BDPC), the Disaster Forum, the Disaster Management Bureau, the Sustainable Development Resource Centre, and the United Nations Development Program (UNDP).

The review process revealed some linkage and comparative features of disaster management perspectives from a variety of secondary information and helped to define a set of contributory issues associated with local government in managing disaster induced flood risks and their limitations. The literature reviewed made a substantial contribution to the quality of the analysis.

5.6 Data Processing and Analysis

Data processing included editing, coding computerization of data and cleaning of data. All open-ended responses were categorized. The responses were written out and multiple responses were separated and categories based on frequency of responses. Data collected by structured interviews were first ended into the EPI Info software, cleaned and then analyzed by using by SPSS /PC+. Frequency tables were generated to have a preliminary sense of the variation of responses as well as in planning the final tables.

A qualitative analysis was also conducted in order to identify the concerns, opinions, experiences and feelings of the participants. Finally, the data was organized by theme and was summarized in paragraph fruitful outcomes of the study.

5.6.1. Reliability of Data

The primary data for this study was collected from various types of respondents (e.g., Uinon *Parished* Disaster Management Committee, and Various professional groups). The five types of respondents were selected because the selected respondents were more vulnerable during last flood and the *Parished* played a an important role during and after flood at two union in Lohagonj Upazila, while the last was selected in order to have a better understanding. In order to check the consistency of data, the similar questions were asked to various types of respondents, and even the similar questions were asked to the same respondents at different times during interview session. In addition, quite a number of respondents were interviewed in order to ensure the reliability of data.

5.6.2. Validity of Data

According to Creswell and Miller (2000), one of the strengths of qualitative research is validity, determined based on whether the findings are accurate from the standpoint of the researchers, the participants or readers of an account (cited in Creswell, 2009: 191). Validity refers to the trustworthiness of data, which is subject to the measurement of phenomena (e.g., research problem); therefore, it depends largely on the degree to which how accurately phenomena are measured. Focusing on accurate measurement of phenomena, various types of respondents were interviewed and on the other side, a good

number of respondents within each type were selected and interviewed with the view to cross check the trustworthiness of data. Moreover, in order to enhance the trustworthiness of data, various documents were collected to substantiate the data collected from the respondents. Thus, the data collected from this source helped measure the phenomena more accurately, thereby enhancing data reliability.

5.7 Limitations of this Study

Any social research dealing with the dynamics of societal living is confronted with a variety of obstacles. During the study the researcher encountered many limitations that are:

- The major difficulties were the time constraint. Time for this study was very limited.

- It is not a macro study, so overall generalization is not possible. The holistic features about the union disaster management system could not give this study. Because the incidence of local government role managing disaster in Bangladesh vary from area to area.

- Some respondents were hesitant and some were reluctant to answer certain issues like, Union *Parished* disaster management committee. After persuasion of the discussion and explanation they personated me to carry out the conversation.

- The author assumed that all information were properly recorded and archived in government offices, even though government officials in developing countries such as Bangladesh hardly reveal public documents in the pretext of secrecy.

- The survey method has certain defects because it is highly individualistic.

5.8 Ethical Issues

Before commencing interviews, verbal informed consents were obtained from the participants. The verbal informed consent form was read out to the participants in Bangla

by the interviewer. Participants were informed about the general objective of the study. They were also informed that their participation was entirely voluntary and they had the right to withdraw from the study at any time without any compensation. Furthermore, it was also told that they were free to refuse answers to any questions they felt uncomfortable. Confidentiality was maintained; survey questionnaire were kept secure with the researcher and were not shared with anybody other than for research purpose.

CHAPTR SIX

Presentation and Analysis of Quantitative Data

6.1 Presentation of Quantitative Data

Section A: Socio-demographic Information

Age of the respondent

The Table 6-1 shows those 35.1% respondents are between (31-40) yr old. 24.3% respondent are between (20-30) yr old.19.6% respondent are about (41-50) yr old. About 21 % respondents are about 51 years old and more than 51.

Table 6-1: Age of the Respondents

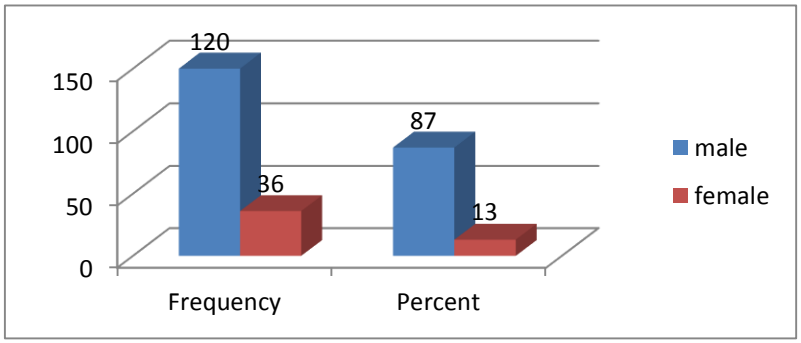
Age Group	No. Of Respondents	Percentage
20-30yr	38	24.3
31-40yr	55	35.1
41-50yr	30	19.6
51 above	33	21.0
Total	156	100.0

Source: Field Survey, 2015

Sex of the respondents

The below mentioned figure has showed that 87% respondents are male and 13% respondents are female in this study.

Figure 6-1 : Sex of the Respondents



Marital status of the respondents

Table 6-2 represents that 84.8% respondent in this study are married and only 9.4% respondent are unmarried and 5.8% are widowed.

Table 6-2 : Marital Status of the Respondents

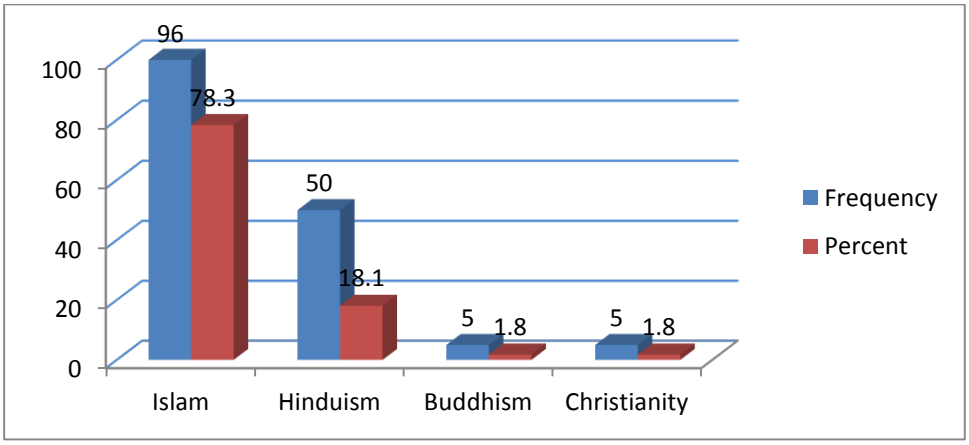
Marital Status	No. Of Respondents	Percentage
Married	132	84.8
Unmarried	15	9.4
Widowed	9	5.8
Total	156	100.0

Source: Field Survey, 2015

Religion of the Respondents

The figure 6-2 shows that 78.3% respondents in this study are Muslim and 18.1% respondents are Hindu, 1.8% of the respondents are Buddha and rest of the respondent are Christian.

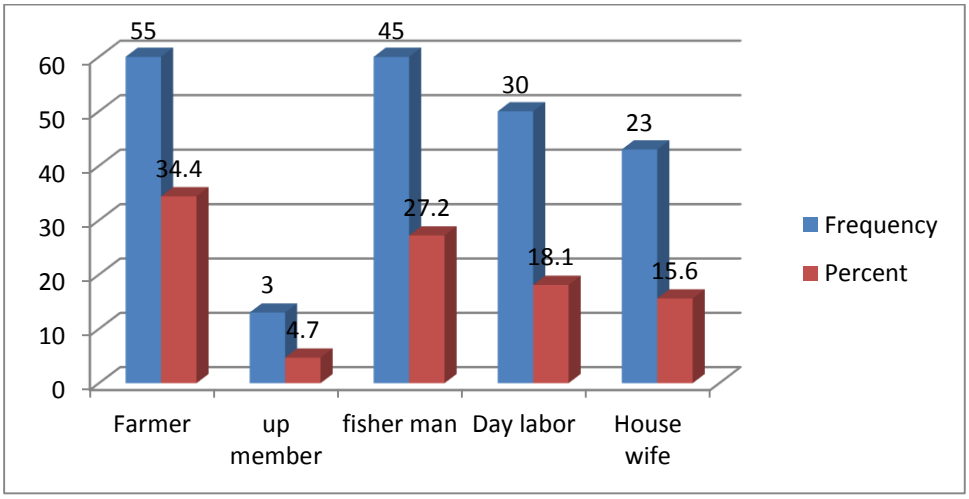
Figure 6-2 : Religion of the Respondents



Main occupation of the respondents

The figure 6-3 has showed that 34.4% respondents are farmer, 27.2% respondents are fisherman, 18.1% are day labor, 15.6% are house wife and rest of the respondent are UP member.

Figure 6-3 : Main Occupation of the Respondents



Literacy Status of Household Members

Table 6-3 has shown that 34.8% respondent have attended in primary school, 15.6% respondent have attended in high school. And 49.6% respondent never attends any school or Madrasa.

Table 6-3 : Literacy Status of Household Members

Literacy Status	No. Of Respondents	Percentage
Attended in primary school	54	34.8
Attended in high school	25	15.6
Cannot read or write	77	49.6
Total	156	100.0

Source: Field Survey, 2015

Monthly family income

Table 6-4 shows that 46.4% respondents' monthly family income range is (4000-6000), 26.1% respondents' family income is (6001-10000) and 3.3% respondents' family income is above 10000Tk.

Table 6-4 : Monthly Family Income

Monthly Family Income	Frequency	Percent
1000-3000	67	24.3
4000-6000	128	46.4
6001-10000	72	26.1
above 10000	9	3.3
Total	276	100.0

Source: Field Survey, 2015

Ownership of land

The table 6-5 has showed that 68.5% respondent has their own land and 31.5% respondent have no land.

Table 6-5: Ownership of Land

Ownership of Land	Frequency	Percent
yes	189	68.5
no	87	31.5
Total	276	100.0

Source: Field Survey, 2015

Section B: Nature of Community Risks

Flood caused in last five years

Table 6-6 indicates that 79% mentioned that flood occurred more than thrice in last five years. 19.2% referred that flood occurred thrice in last five years.

Table 6-6 : Flood Caused in Last Five Years

Flood Caused In Last Five Years	No. Of Respondents	Percentage
Twice	3	1.8
Thrice	30	19.2
More than thrice	123	79.0
Total	156	100.0

Source: Field Survey, 2015

Duration of last flood

Table 6-7 presents the information on the duration and intensity of flood and is found that the last flood water prolonged long time instead of short time.

Table 6-7 : Duration of Last Flood

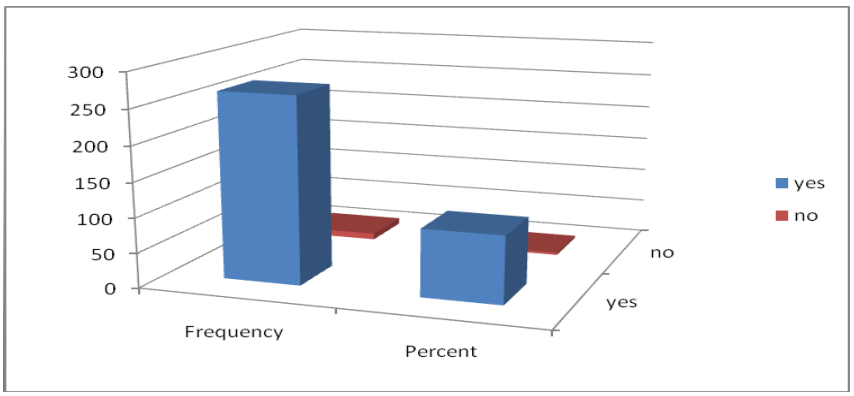
Duration of Last Flood	No. Of Respondents	Percentage
Short term(days)	0	0
Long term(days)	156	100.0
Total	156	100.0

Source: Field Survey, 2015

Damage of property/crops due to flood

The figure 6-4 has showed that 96.7% respondents referred that some infra-structure of their locality damaged due to flood.

Figure 6-4 : Damage of Property/Crops Due to Flood



Leave of home due to flood

It is found from the study that about 55% respondents leaved home due to flood. 44.6% respondent stayed in their home.

Table 6-8 : Left Dwelling House Due to Flood

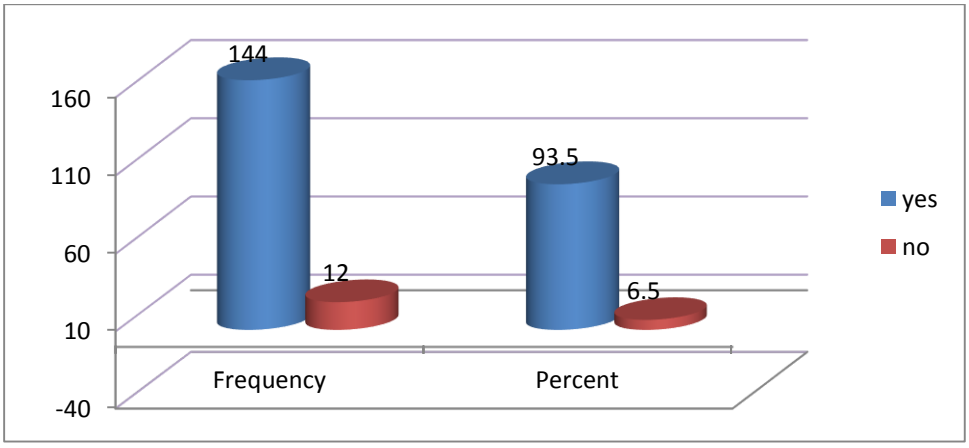
Whether Left Dwelling Houses	No. Of Respondents	Percentage
Yes	86	55.4
No	70	44.6
Total	156	100.0

Source: Field Survey, 2015

Problem faced due to flood

It is found from the figure 6-5 that about 93% respondents or their family members of the study population suffered from various diseases.

Figure 6-5: Respondents Suffered from Various Diseases Due to Flood



Facilities of female members during flood

Table 6-9 highlights that about 66% respondents' female family members did not get proper facilities (like food, healthcare, security) during the flood. Only 33.7% got some kind of facilities (like food, healthcare, security) during the flood.

Table 6.9 : Support Got by Female Members during Flood

Support Got	No. Of Respondents	Percentage
Yes	53	33.7
No	103	66.3
Total	156	100.0

Source: Field Survey, 2015

Problem in collecting pure drinking water

The Table 6-10 shows that about 78% respondents faced problem in collecting pure drinking water during flood.

Table 6-10 : Problem in Collecting Pure Drinking Water

Problem Faced In Collecting Water	No. Of Respondents	Percentage
Yes	122	78.3
No	34	21.7
Total	156	100.0

Source: Field Survey, 2015

Status of Toilet before flood

The Table 6-11 shows that about 35% respondents used pit toilet/latrine(with slab) before flood, whereas about 27% used open/hanging latrine before flood.

Table 6-11 : Status of Toilet before Flood

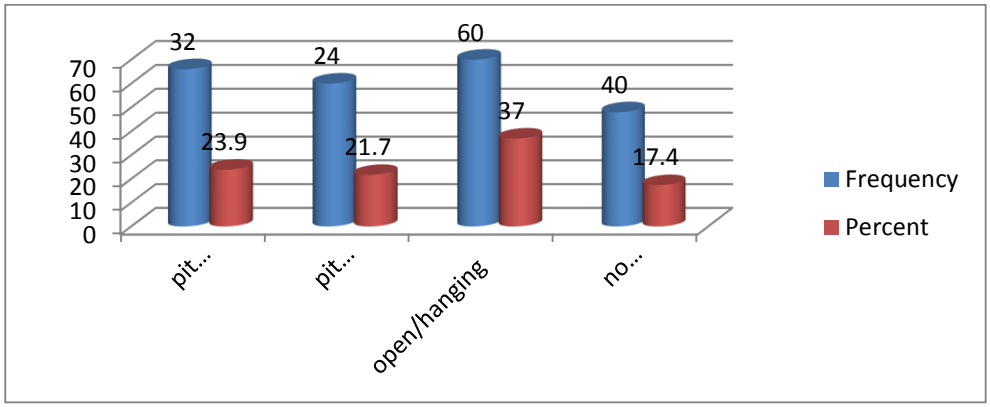
Status of Toilet	No. Of Respondents	Percentage
Pit toilet/latrine(with slab)	55	35.5
Pit toilet/latrine(without slab)	55	35.5
Open/hanging	44	27.5
No facility/bush/field	2	1.4
Total	156	100.0

Source: Field Survey, 2015

Use of toilet after flood

The Figure 6-6 shows that after flood situation about 24% respondents used had pit toilet/latrine (with slab), and another had pit toilet/latrine (without slab) and a huge number of respondent (37%) used open/hanging latrine.

Figure 6-6 : Use of Toilet after Flood



Getting relief

From the Table 6-12 it is found that about 60% respondent did not get any relief during flood whereas only 40.2% respondent got relief from NGOs and from government.

Table 6-12 : Getting Relief

Got Relief	No. Of Respondents	Percentage
Yes	94	59.8
No	62	40.2
Total	156	100.0

Source: Field Survey, 2015

Lending money after flood

From the Table 6-13 it is found that about 56% respondent lend money from some financial institution after flood in that crisis but 44.5% respondent did not take any source to borrow money to meet their crises.

Table 6-13 : Lending of Money after Flood

Borrowed Money	No. Of Respondents	Percentage
Yes	88	56.5
No	68	43.5
Total	156	100.0

Source: Field Survey, 2015

Use of Communication media

From the Table 6-14 it is found that about 56% respondent knew about disaster from public announcement but only about 6% respondent knew from television to meet their crises.

Table 6-14 : Use of Communication Media

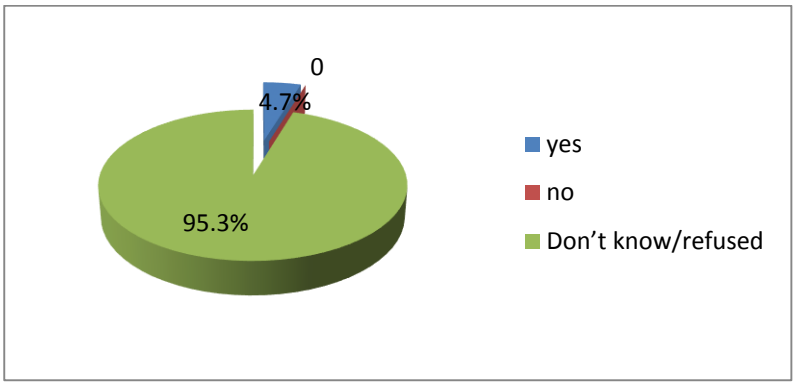
Type Of Communication Media	Use No. Of Respondents	Percentage
Public announcement	88	56.5
Radio	28	17.5
Television	10	6.8
Red Crescent	11	7.1
Others	19	12.1
Total	156	100.0

Source: Field Survey, 2015

Particular strategy in addressing flood risks

From the Figure 6-7 it is found that about 5% (36) respondent mentioned that the flood affected households and members including the local NGOs and local government had took some particular strategies in addressing the flood risks. This feedback was taken from 36 UDMC members of the locality.

Figure 6-7: Particular Strategy in Addressing Flood Risks



Fund from organization

Table shows that the entire UDMC member told that only govt. provide the fund for the security of vulnerable people. And rests of the respondents were not asked this question.

Table 6-15 : Fund from Organization

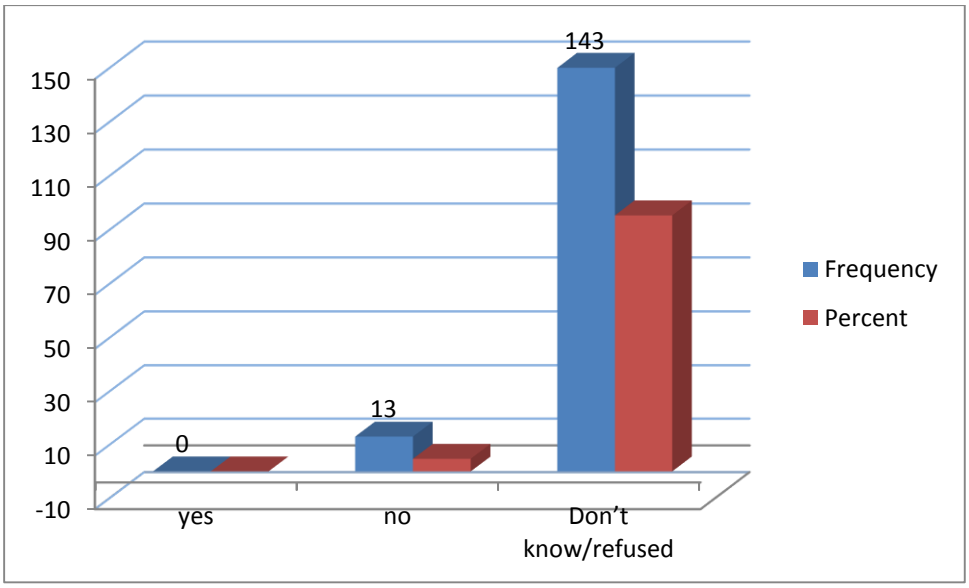
Source of Fund	No. Of Respondents	Percentage
Govt. organization	8	4.7
Non-govt. organization	0	0
Foreign donors	0	0
Don't know/refused	148	95.3
Total	156	100.0

Source: Field Survey, 2015

Arrangement of CRA Training

The Figure 6-8 shows that all UDMC members referred that Union committee did not arrange any CRA training for the community volunteers. And 36 respondents were not asked this question.

Figure 6-8 : Arrangement of CRA training



Union Disaster Management Committee

The below mentioned table shows that only 36.2% respondent told that they know about Union Disaster Management Committee in their area and 59.1% respondent told that they do not know about Union Disaster Management Committee in their area. And rests of the respondents were not asked this question.

Table 6-16: Union Disaster Management Committee

Knowing About UDMC	No. Of Respondents	Percentage
Yes	56	36.2
No	92	59.1
Don't know/refused	8	4.7
Total	156	100.0

Source: Field Survey, 2015

Visit of UDMC in the Affected Area

Following table shows that 50.7% respondent referred that the Union Disaster Management Committee visited the affected area. And 44.6% mentioned that the Committee did not visit the affected area

Table 6-17 : Visit of UDMC in the Affected Area

Visit of UPC in the affected area	No. Of Respondents	Percentage
Yes	79	50.7
No	70	44.6
Don't know/refused	7	4.7
Total	156	100.0

Source: Field Survey, 2015

6.2 Test of Hypothesis

Hypotheses 1: The more the occurrences of disasters, more the prevalence of socio-economic vulnerability of the community people.

H_0: More the occurrences of disasters is not related to the prevalence of socio-economic vulnerability of the community people.

H_1: More the occurrences of disasters is highly related to the prevalence of socio-economic vulnerability of the community people.

Table 6-18 : The Occurrences of Disasters and Risks through Vulnerability Faced by the People

Experiences of Flood	Vulnerability		Total
	Yes	No	
Low	2	0	2
Medium	20	4	24
High	130	0	130
Total	152	4	156

Chi-Square Tests of Table 6-18

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.205(a)	2	.017
Likelihood Ratio	9.412	2	.009
Linear-by-Linear Association	5.040	1	.025
N of Valid Cases	156		

In above table 6-18 at 2 degree of freedom and 5% level of significance our calculated value is 8.205 and table value is 5.99**.** So here calculated value is greater than the table value. From the calculation we can reject our null hypothesis and accept our alternative hypothesis. That is, more experience of disaster has a strong relation with increase of socio-economic vulnerability of the community people.

Hypotheses 2: Less the effective intervention by the local government, less the chances of risks reduction.

H_0: There is no relation between effective intervention by the local government and risks reduction of the community people.

H_1: There is a strong relation between effective intervention by the local government and risks reduction of the community people.

Table 6-19 : Effective Intervention by the Local Government and Risk Reduction of the Community People

Development Programs	Risk Reduction		Total
	Yes	No	
Rare	0	0	0
Sometimes	30	0	30
Often	124	2	126
Total	154	2	156

Chi-Square Tests of Table 6-19

Chi-Square Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.171(a)	6	.000
Likelihood Ratio	17.634	6	.000
Linear-by-Linear Association	14.232	1	000
N of Valid Cases	156		

In above table 6-19 at 1 degree of freedom and 5% level of significance our calculated value is 15.171 and table value is 12.6**.** So here calculated value is greater than the table value. From the calculation we can reject our null hypothesis and accept our alternative hypothesis. That is, less the effective intervention of development programs taken by the local government, less the chances of risks reduction.

Hypotheses 3: More the use of integrated approach of modern technology and indigenous knowledge taken by the local government, community tends to increase their coping capacity at local level.

H_0: Using of integrated approach of modern technology and indigenous knowledge has no relation with coping capacity of local people.

H_1: Using of integrated approach of modern technology and indigenous knowledge has strong relation with coping capacity of local people.

Table 6-20 : Relationship between Using of High Modern Technology and Coping Capacity

Coping Capacity	Using of High Modern Technology and indigenous knowledge jointly		Total
	Yes	No	
low	**1**	**1**	**2**
medium	**21**	**3**	**51**
high	**116**	**14**	**223**
Total	**138**	**18**	**156**

Chi-Square Tests of Table 6-20

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.205(a)	**2**	**.017**
Likelihood Ratio	9.412	**2**	**.009**
Linear-by-Linear Association	5.040	**1**	**.025**
N of Valid Cases	156		

In above table 6.20 at 2 degree of freedom and 5% level of significance our calculated value is 8.205 and table value is 5.99**.** So here calculated value is greater than the table value. From the calculation we can reject our null hypothesis and accept our alternative hypothesis. That is, Using of high modern technology and indigenous knowledge jointly has relationship with coping capacity of local people.

CHAPTR SEVEN

Presentation and Analysis of Qualitative Data

7.1 Local Government and Disaster Management: Case Studies and FGDs of Two Union *Parishads* in Disaster Prone Areas

This chapter explores the socio-economic, physical and geopolitical factors which are functional for local community in the disaster prone areas. To ascertain the driving forces in the disaster prone communities to disaster risks, all forms of feedback and opinion of the community participants and Union Disaster Management Committee are systematically analyzed in the light of specific disaster risk induced programs taken by the local government bodies.

Presentation and Analysis of Qualitative Data

Due to geo-political and territorial location, Bangladesh is prone to natural hazard like flood at regular interval. Accordingly, floods of varying degrees of frequency, extent, intensity and severity had been a devastating feature in the history of Bangladesh. Therefore floods make the rural folks more vulnerable and it is the farmers, fishermen, day labors and women who are the prime victims of such disaster.

The FGD participants expressed the similar opinions to those of the respondents of the household emphasizing flood as the most devastating type of hazard but the more elaborate analysis came from the FGD participants. This was also echoed by the members of Local Community and Union Disaster Management Committee members who said that floods and river erosion were most devastating hazards in their areas.

The FGD findings with LC and UDMC members revealed the similar findings of the household survey and confirmed that the impacts of flood was most devastating in terms of vulnerability and loss's of resources of the affected communities.

Similarly, in case of identification of hazard, there was a clear convergence of responses from both household survey and FGD regarding the vulnerability of communities to

different hazards. Details about the reasons for this perceived vulnerability have been identified by the members of different FGD groups. Moreover it has also been revealed high levels of awareness and understanding of the negative impacts of disasters on livelihoods including loss of assets and other resources. This result showed that the perception of vulnerability and the awareness regarding the negative impact of disasters was widely shared by FGD groups.

When the communities were asked to define the reasons of poverty, they pointed out eleven linking and relating issues, which are functional to generate risk situation among the community people during disasters especially in the disaster prone areas. Further the discussions explored by the community people particularly farmers, fishermen, day labors and women members of FGD groups who have limited control over any resources for maintaining their livelihoods, narrated about the risks they have experienced during and after disasters and hazards.

Interestingly, even though limitation of movement from one place to another place was perceived by respondents as one of the main causes of vulnerability, this was primarily associated with children, women and elderly people, pregnant women and the persons with disability. This indicated that amongst community respondents, the level of vulnerability amongst these disadvantaged groups are relatively high especially during and after disasters.

In convergence with the findings in the FGD session that people living on the river banks particularly outside of the embankment, fishermen, children, elderly, people with disability and the poor people were the most at risk prone.

A woman of FGD group observed, ***"The women, children and aged people are more vulnerable in terms of food insecurity during disaster".***

Overall, the perceptions of all respondents of FGD and household survey alike- accurately reflected patterns of vulnerability to hazards in the area and awareness levels on the negative impacts of disasters on lives, assets and livelihoods were high. The experience was that some groups within the community were particularly at high risk with regards to the different hazards and disasters, was also widely shared, and so were the reasons for this increased vulnerability. The explanations provided in both the

household survey and the FGD as to why certain groups are particularly at high risk when disasters strike and that covered a wide range of structural and non structural elements including not taking shelter, lack of getting early warning signals, lack of infrastructure, lack of knowledge and/or capacity. However the household survey in particular revealed a knowledge gap with regards to the issues of disability which was not systematically considered as a vulnerability factor in the context of disaster risk by community members.

Poverty situation is a great force that drives the community to vulnerable situation during and after flood. Poverty is both an important determinant of disaster risk and hence (in) directly of socio economic vulnerability and an important constraint of adaptive capacity. Poorer people tended to be more (often) exposed to disaster risk than wealthy people.

Case -1:

Shamsul Ali, 45 years old works as a day labor, live at Khoria village of Munshigonj district. He had 3 sons and two daughters. Before 2007 flood, he worked as a labor in others ownership's land by profession. But during flood the agricultural land were under water day after day. As a result, he had compelled to change his own profession. At present, sometimes he gets work or not. He stated that the frequency of flood and intensity of last flood in this locality was severe because the Upazila is situated at Vahgyakul flood point near river Padma. After inundation by flood water, he became unemployed. He and his family member had to lead a miserable life. He further stated that he did receive very small amount of relief assistance from the Union *Parishad* and it could not meet up the demand of his family. His house was also badly damaged due to last flood and it further devastated him to more vulnerable situation. Due to economic hardship, he could not sent his children to school and he compelled to arrange the wedding of her first daughter at the age of 13 years. Till now he lead a miserable life. Poverty reduces local people's capacity to cope with floods.

During discussions the communities were asked to define the economic risk; they faced during and after flood. The farmers stated that they faced risks due to loss of crop production , death of livestock and damage of agricultural crops. On the other hand the fishermen stated that they faced scarcity of fishing nets and boats, and the consequence

was low come from their profession. Besides, the day labors pointed out that they faced risk for unemployment, low income, and lack of savings and absence of insurance security. During flood all most all of them had no alternative income source and had to lead a miserable life. A fisherman named Abdulla explored:

*"**Limited economic opportunity for most of of the main bread winner of the family is also one of the reasons while the community fishermen and farmers are in pressure to get work to aid the needs of the family"**.*

Case study -2

Mokarom Mian, age 41, farmer by profession stated that he had taken loan from the local NGOs with highest interest rate. He lost five acres of Aman crops due to 2007 devastating flood and he has already taken loan to cultivate his lands. As he was not lucky to participate in any training programs relating to be self reliance and self sustained by getting institutional assistance against livelihood, he did not in a position to prepare to response such devastating floods. He did not even get any early warning from anyone and all of his cultivated crops were inundated by flood water. Therefore, he had to sell some part of his cultivated land for pay back borrowed loan to Grameen Bank. After flood he faced a number of economic hardships. He could not arrange wedding of his elder daughter due to constraints of adequate resources. He was also unable to send his two sons to the school. Sometimes his family members had to face deficit scarcity. He got some relief assistance from Union *Parished* and local community organization but was not enough to subsist and survive. During and after flood, he was not granted any relief assistance from UP as the Union Disaster Management Committee was not kind enough to co-operative with him. He and other villagers had to address the risks by their own limited resources and experiences.

There is a social perception that the regular experiences of disaster increases limited scope of work for community in the disaster prone areas, as such they are mostly underemployed and excluded from economic development opportunity. The local government initiatives to address unemployment are less accessible to community such as farmers, fishermen, day labors and women, failing to take opportunities that investment in communities men and women skills has been shown to yield. In terms of

skills development, community men and women are impeded by their low literacy, training, and prejudiced attitude to words community that extend their economic dependency on local resources.

Institutional Knowledge on DRR

The main sources of institutional knowledge on DRR include training from various governmental and nongovernmental organizations for different community stakeholders on disaster-related issues, the community risk assessment process which should result in each Union having accurate profiles of their risk and vulnerabilities as well as corresponding action plan.

Training on DRR

The respondents emphasized that they gained some knowledge on disaster issues through the media, namely newspaper, radio and television. Some FGD participants were relatively been involved in more training opportunities even though that varied significantly from one institution to the other. UDMC members had never received any training on DRR as an institution and only few members had receive never participated in training on disaster-related topics. Only few UP members declared having been involved in training courses facilitated by various NGOs on disaster management, in sharing knowledge like CRA, and SODs. All the participants in the FGD, including UP representatives, expressed a strong interest in receiving related training on disaster issues. Risk Assessment Process.

FGD with UP members and Community participants declared having never been involved with risk mapping exercises and not being aware of the existence of a union profile. Under the leadership of two local NGOs (BRAC and UJMS), UP members declared having been involved with Community Risk Assessment (CRA) exercises but they neither shared the outcomes with community members. Also and according to UP members, no risk reduction strategy or action plan was developed or initiated by the UP as a result of the CRA. In fact, none of the UP members interviewed was preserving a copy of the CRA profile and plan at their office.

Practices and Behaviours Related to DRR

The previous sections explored the state of knowledge levels on DRR, whereas this section focuses on community practices and behaviors before, during and after disasters. It also looks at how knowledge on these practices was acquired and what mechanisms are in place to share and disseminate good practices. FGD findings confirmed the practice of a range of preparedness measures by community members whilst also highlighting the absence of organized mechanism to systematically adopt these measures or of information-sharing mechanisms.

During the FGD, the youth of the area (FGD with women) highlighted the importance of keeping houses ordered and well organized and of preserving important things in safe places. Based on experience from previous disasters, adolescent respondents of FGD mentioned taking preparedness measures such as keeping dry food, clothes, beddings, kitchen utensils etc. tightly in a high place. Most were also aware of the need to keep some money and important documents underground after covering them in polythene.

Case study -3

Nurunnahar stays on a *char,* a temporary raised embankment, along the River Padma. Somehow she has managed to stay in her submerged home for weeks. "We should have left to a safer place, but this home is all we have. I saw snakes in the water right outside, but mostly I was scared, thinking what I would do if human bodies floated in here. My family and I decided to leave when our skin swelled in the water and the smell of dead cows became unbearable." According to the country's Disaster Management Information Centre, there has been a spike in cases of diarrhoea, skin and eye infections due to the contaminated floodwaters".

From the discussions with community farmers, fishermen, day labors, and women, it was learnt that people living in the disaster prone areas of Bangladesh employ an array of measures to safe guard their lives and property against disasters. The majority of the people do have a clear understanding about the effectiveness of each of the preparedness measures, as well as their limitations. Often these measures do not help them because of the magnitude of disasters. A woman named Kulsum explored;

"We have managed to minimize our own risks by our own experiences and knowledge. During the emergency period the Union Parishad was not cooperative in addressing our risks".

Identified a Range of Assets that Form Isolative Layers to Protect against Disasters

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Natural capital – land, vegetation and any natural resources

Financial capital – saving, income, credit, pension

Human capital – knowledge, skills

In the flood prone areas, vulnerable people have used their own indigenous knowledge and wisdom to predict floods. This traditional tool in becoming of little help, however, due to the changing nature of nature of disasters. In order to meet household financial needs, assets such as livestock, poultry and boats are often sold for managing finance. Selling other valuables, mortgaging or borrowing against assets or borrowing from neighbors are other common strategies for survival. People who have alternative livelihood options prefer not to migrate; households that have boats, for example, earn incomes by ferrying people. Selling advance labors for many is another common proactive; farmer often view this as ensuring future employment, although it also makes for financial constraints in the future since they have already been paid.

The LC/Union Disaster Management Committee members declared using the same techniques also based on their previous experience mentioned people of the area to go to the shelters. All participants of the FGD were taking those measures on an individual basis.

The LC/Union Disaster Management Committee (UDMC) members sometimes encouraged their relatives and neighbors to follow their example; awareness-raising and information-sharing on these measures and sharing remained an individual initiative. The UP had DMC but did not have any preparedness plan or any activity to encourage the adoption of preparedness measures by the community.

7.1.1 Practices during Impending Disaster

The following findings are mainly based on results from FGD conducted with different stakeholders in the study area.

Announcing warning signals

All other LC/UDMC members expressed that they did not have any assigned person or any instrument for dissemination such as megaphones or microphones. However, they declared that as soon as they got warning signals through radio or television, they informed their close relatives and neighbors. There was no mechanism or tool to disseminate early warning messages within or around them. A woman named Ambia Khatun explored;

"Lack of emergency and urgent dissemination of hazard risk information and Early warning system, they had to face severe risks during flood".

Even though CPP was supposed to be active in the Teotia union, the role of CPP volunteers was only found to be significant for early warning dissemination and evacuation in one out of the two sampled Unions of the Upazila. In the other sampled Unions, CPP volunteers were no longer playing their crucial and effective role as identified due to lack of sophisticated equipments: CPP volunteers interviewed shared that most of the megaphones and radios provided to them during the set-up were out of order.

Moving to safe shelter

According to FGD participants, in spite of the awareness on the importance of taking shelter in safe place, the participants in the FGD mentioned that the number of shelters in the area was inadequate to accommodate for the entire population and that some shelters were not properly equipped, especially in terms of water and sanitation facilities.

All FGD participants highlighted the key role played by the youth Community based organization and NGOs of the area during impending disaster in helping vulnerable

groups to move to safe shelters. Most UP representatives declared lacking basic equipment to help with evacuation and relying on groups of adolescents to provide targeted support to children, women, people with disability and elderly.

Even though the crucial role of young people and Community based organization and NGOs during impending disaster was emphasized by all the participants in the FGD, it was not always clear from the discussions who these young people were and how they became mobilized. Some participants mentioned that youth clubs and other CBOs composed of young people would immediately assume an emergency role during impending disaster and come forward to support the community.

7.1.2 Practice during Disaster

FGD with LC/UDMC, and UP representatives highlighted two main priority areas for intervention during disaster: shelter management and search and rescue of victims.

Shelter Management

When describing shelter management participants of the FGD disaggregated roles and responsibilities amongst different groups and institutions and the following table summarizes the respective roles attributed to each and every stakeholder.

Table 7-1: Roles of Various Respondents in Shelter Management

Respondent Group	Roles
Community	♦ Maintain discipline and peace in the shelter ♦ Supply dry food and drinking water to children ♦ Provide first aid (treatment) for the victims
Union *Parishad*	♦ Regular visit to all the shelters ♦ Assign chowkidar to keep security ♦ Arrange food and drinking water ♦ Request physician of Upazila health complex to visit the shelters

One of the main challenges raised by FGD participants on the issue of shelter management was that due to lack of adequate spaces in the shelters it was sometimes difficult to keep them tidy and comfortable and to provide special arrangements for children, elderly, people with disability and pregnant women. Other participants also mentioned duplication of roles or absence of organized structure to effectively manage the shelters.

During emergency period Union *Parishad* used the primary school ground as a shelter home. When asked the condition of the shelter home, the community men and women explored a number of problems faced those who took shelter in the shelter home. The accommodation capacity of the flood shelter was not adequate for the vulnerable people. As a result the shelter place became congested and overcrowded and unhealthy. Moreover, he facilities of sanitation, pure drinking water were not sufficient for the overcrowded people in the shelter place. Some of the respondents said that they felt lacking of household' security, as a consequence, most of the people were reluctant to go to the designated shelter places. Some women with disabilities were facing some form of violence in shelters place including physical and psychological abuse. It was also reducing their social dignity. Opinion of a woman as presented:

"When I took shelter in the shelter home with my family members, I'd faced teasing of stranger male person in the flood shelter. Some males mistreated with me but I could not share with anyone because it was shameful and humiliation for me".

Search and Rescue

All participants in FGD declared that only two groups of stakeholders would intervene for rescue activities during disasters: the youth and the CBOs. The FGD that took place in the Union of Kumarbhogh .

According to the FGD participants, the following activities in the area of rescue:

- Security for life and assets of the victims;
- Assistance to move the assets of victims to a safe place
- Referral of injured persons to health centers for treatment

Responsibilities of the UP were described as follows:

- Maintaining security through chowkidar;
- Requesting support from the police;
- Arranging rescue and treatment for the victims;
- Manage transport and human resources to shift assets of the victims to safe places
- Organizing visits to the shelters of government physician
- Coordinating with NGOs for extra support when needed

7.1.3 Practice after Disaster

Findings of the FGD highlighted two particular priority areas following a disaster: rehabilitation of key infrastructures and relief.

Rehabilitation of Roads, Transport and Social Infrastructures

With regards to rehabilitation, the roles of two groups were once again highlighted: the community and the UP. FGD participants mentioned that the youth of the community took initiative immediately after a disaster to clear roads from garbage and dead trees, and to temporarily repair the damaged bridges. UDMC did not take any initiative as an organization, but individual members provided support to the youth.

The UP representatives declared encouraging the work of community youth as well as performing the following:

- Reconstruction and maintenance of roads and bridges through the 100 days' program of the government;
- Communication with the deputy commissioner regarding emergency reconstruction and maintenance of embankment, culverts, bridges and roads by the Water Development Board (WDB) and the Local Government Engineering Department (LGED);Communication with relevant authority for re-establishment of electrical and telecommunications lines.

In none of the FGD were NGOs mentioned as playing a role in the immediate rehabilitation phase.

Relief operations

According to the FGD, the people of the study areas received relief assistance from both government and NGOs and support to distributions was provided by volunteers and youths of the respective communities.

As expressed the victims of different community generally received food and cloths, fishing gears, agricultural implements, tents, and interest- free loans for house reconstruction and repair and self employment. Though UDMC did not have any role in relief operations as an Govt. organization, they individually participated with the community and volunteers in relief related activities. All of them complained that the UP did not involve them in relief activities.

Problems in Relief Distribution

⇓

⇒ **give priority to the political supporters**

⇒ **Enlisted the name of the Union perished representative's relatives.**

⇒ **Amount of relief is very little according to the number of household.**

⇒ **Lack of volunteers support and proper distribution.**

The women participants mentioned that they faced additional physical insecurity and loss of dignity while collective relief during or after flood. In many cases, they have to walk along distances through water, their wet clothes clinging to their bodies to collect relief. During collection they have to stand in long quests with male strangers. Sexual harassment is after reported.

According to a farmer respondent:

"Union Parishad Chairman and members enlisted only their relatives and known people. They also give relief assistance to the political supporters of their own group who supported them during election. General people get a little amount from Union Parishedl."

Findings of FGD with UP, indicated that the victims of the areas generally received fishing tools and gears, cash, and food. The UP said that they prepared a list of affected populations based on which the donors and NGOs distributed relief items. The UP claimed that they followed government policies and rules on DRR to prepare the list of victims and relief distributions. They also declared providing all possible support to different agencies for distribution, that they arranged security during and after disaster and that they maintained regular communication with all government and other relevant agencies.

According to the findings of FGD, post disaster activities mainly focused on infrastructure rehabilitation and relief and were led by local authorities in coordination with NGOs. Coordination was seen as restrictive with a dominant role of UP and no involvement of community stakeholders or other institutions. A farmer explored;

"Union Disaster Management committee is composed of as a showcase by the National government. They do not play any effective role during and post flood period"

As part of this study the two focused Group discussion sessions in two sampled Unions. Following are the broad observations drawn by the participants:

- The members of the UP in general grossly lack technical knowhow and preparation to address and manage pre and post disaster situation.
- The UPs have a very limited degree of decentralized authority, power, responsibilities and resources. The local level resource mobilization of local government is limited and the potential resource bases are not exploited by the Upon political grounds and considerations. As a result UP cannot take

innovative and proactive programs. A number of workshops and field based training and orientation have been organized by the District Administration, local and international NGOs, Disaster Management Programs of the Government. However there appears to be a limited impact of such training and orientation due to lack of appropriate follow up action. Most UP officials noted that due to poor resources and lack of management skill and manpower, it was almost impossible for them to respond to the pre and post disaster management interventions.

- Lack of resources, extremely politicized allocation of resources, poor planning and implementation capacity, lack of adequate staff and weak physical infrastructure are the main institutional and structural limitations of the UP to get engaged in any development management activities.
- There is hardly any formal institutional interaction with UP work with CSOs/ NGOs. However the CSOs/ NGOs do provide immediate and emergency relief after the disaster, especially after flood.
- There is no institutional mechanism in practice which allows the community to get engaged in disaster management activities (before and after the disaster). In fact there is no difference between the role of the elite member and the marginalized members of the community in disaster management. In other words effective community engagement in disaster management is largely missing.
- There are two parallel committees on disaster management at the UP level. One is the UP Disaster Management Committee constituted by the MoDMR field functionaries and the other one is the UP Standing Committee on Social Welfare & Disaster Management constituted under the UP Act 2009.
- The UP Standing Committee on Social Welfare and Disaster Management is symbolically constituted. None of the members of the Committee is aware of the role and function of the Committee. A number of members of such committees are not even aware that they are members of those Committees.
- Similarly UP Disaster Management Committee is also constituted as ritual and upon the instruction of the Upazila Nirbahi Officer. In reality UP Disaster Management Committee is not visible in action at least at the UP level.
- The Local Governance Support Program (LGSP) - a fiscal transfer program of

the central government has given sufficient amount of flexibility in the use of UP fund but in reality, in all two UPs there was hardly any evidence that LGSP funds have been used for disaster related / focused interventions and or initiatives.

- The overall regulatory frameworks of the UPs as regards budgeting, community based planning, and social monitoring, are to a great extent, elaborate but not found to be in practice.
- UPs seem to be reluctant to engage the community members in disaster mitigation, mobilization of resources, people's participation at local level program design and implementation.

The government has made such a committee in papers but they have no responsibility and activity in reality. From the above discussion it was learnt that a major weakness of local government was the lack of interested and capacities for disaster risk reduction in this areas.

UP officials, members of the local civil society and opinion leaders have observed that UP should not have an over ambitious disaster management plan. Given its institutional and capacity limits UP should adopt pragmatic and achievable disaster management plans with community engagement. The community members emphasized more on committed leadership, community mobilization and engagement with government machinery and NGOs for an effective disaster management strategy of the UP.

Community members suggested that UP should develop its technical skill to prepare a community based plan for disaster management and mitigation strategy and mobilize external resources specially from the line agencies of the government for disaster preparedness planning, food and water security, and immediate relief during and after disaster. In order to involve the community in disaster management activities, UP needs to encourage and create public awareness on disaster mitigation, intervention and management. This can be done in collaboration with local NGOs and the line agencies of the government.

A section of local experts and senior citizens opined that UP might also consider utilizing indigenous knowledge to address pre and post disaster preparations and adaptation and

encourage local innovations.

Some UP officials also emphasized the need for ***horizontal and vertical learning from the best practices of disaster management*** in the country and some regional countries. Ministry of Disaster Management and Ministry of Local Government should organize visits to get the first hand experiences of best practices of disaster management. They also suggested developing a resource pool of local leaders, school teachers, religious leaders to support the mobilization work of the UP during the disaster period and aftermath.

Local NGO officials strongly opined that LG should have dedicated resource allocation and ***access to different disaster mitigation and climate change funds*** of the central government. UPs needs to ***develop a formal and meaningful partnership with NGOs*** for developing a project proposal to apply for such funds. UP should also use the expertise and institutional support of local NGOs in designing and implementing disaster management projects.

NGO leaders and Upazila based Government Officials strongly suggested that UP Disaster Management Committee (UPDMS) had to be activated. The members of the UPDMC should be given adequate training, orientation and incentive to work as a member of the committee. The UP with the help of the UPDMC should occasionally organize mock disaster management exercise for the community members.

CHAPTER EIGHT

Findings and Discussion

The present study identities the nature of vulnerability and the problems community people face during and after floods from the findings of sample survey and FGDs with community representatives, i.e., farmer, day labor, fishermen and women, representatives of Union *Parishad*, including Union Disaster Management Committee, NGOs, and civil society**.** The followings are the findings on community's vulnerabilities and problems along with experiences of people living in flood prone areas in Bangladesh over the last five years. Thereafter the role of Local Government in managing disaster and the challenges to disaster risk reduction from the stakeholders' perspective are analyzed.

8.1 Socio-Demographic Characteristics of Flood affected Community

Among the 156 respondents, about 34 percent respondents are farmer, 27.2 percent fisherman, 18.1percent are day labourer, 15.6 percent are house wives and rest of the respondents are members of UP and UDMC. About 35 percent of them have completed primary education and 15.6 percent have completed secondary education, and 49.6 percent respondents never attended any school or Madrasa those are referred to illiterate. About 46 percent respondents' monthly family income range is BDT 4000 and BDT 6000), followed by 26 percent respondents' whose family income is between 6001and 10000) and only 3.3 percent respondents' family income is above BDT 10000.

The study has showed that about 68 respondent has their own land and about 31 percent respondents have no land. Most of the households have own homestead land (ranging in area from 1 to 10 decimal) whereas the rest of them live on government land and occupy pawned land and pay a rent for farming the land. Few of the respondents live on neighbours' land.

8.2 Socio-Economic Vulnerability of Local Community in Flood-prone Areas and Having Usually dealt with Disaster Risk, Rehabilitation and Development

Flooding in Bangladesh is a regular feature and has enormous adverse effects, including loss of life through drowning, food insecurity, and increased prevalence of disease and destruction of property, destruction of social network and social capital. In 2007, the flood situation was very divesting. The duration of flood was long term and it affected on the food security of the study area. On the other hand, the inhabitants of the study area have to face the intensity of flood every year and they are in more vulnerable situation.
In this study, flood-induced vulnerability is defined as the degree of loss to a given element or set of elements at risk resulting from the occurrence of a disaster of a given magnitude. Flood as a natural disaster creates various types of vulnerabilities for men and women in the study area.

Bangladesh experiences flood almost every year and the present study indicates that, over the last five years, 79 percent of the respondents who were surveyed experienced more than thrice in last five years and about 19 percent were hit by three floods in last five years.

For 100 percent of the respondents, the duration of floods was longer. It was found from the qualitative survey that because of the more frequent and longer floods the affected population suffered from more severe disease situations, both physical and mental and livelihood challenges such as forced migration to cities or elsewhere for a permanent settlement. The study also reveals that about 96 percent of the respondents gave opinion that infra-structure of their locality damaged due to flood.

The impact of the flood on the economy has been enormous. Frequent occurred disasters adversely affect the livelihood of communities by damaging their means of earning and tools. Families, who lost their means of livelihood during a disaster, unable to recover from the adverse effects and become economically vulnerable, thereby unable cope and response the effect of future disasters. There exists a direct link between natural disasters and the prevalence of poverty in the study area and hazards like flood are noted for

aggravating poverty in two ways: through destruction of food stocks and major assets of the poorer households; and, through making employment opportunities scarce.

The results confirm the positive relationship between disaster affected community people's risk and their socio-economic vulnerability. The findings indicated that the poorer segments of society live closer to the river, therefore face a higher risk of flooding and are thus prone to more vulnerable, and it was found that actual inundation levels of locality are indeed significantly higher for poorer households. More than 55 percent of the flood-affected respondents in this study reported that they leaved home due to flood and about 44 percent of the respondents stayed in their home.

At the same time, the result further indicates that community people suffer from acute economic vulnerability during and after flood due to high intensity and severity of flood hazards and disasters.

The study findings indicates that more than 70 percent local people suffer from acute economic vulnerability because of high intensity of flood. On the other hand less than half of the local people faced vulnerability out of medium intensity of flood. Besides, about 30 percent of local people suffer from less economic vulnerability. On the other hand, the farmers and day labourer suffer most damage, both in absolute and relative terms. Approximately one third of their annual household income is lost due to flooding. From the survey it is found that about 56 percent respondent lend money from some financial institution after flood in that crisis but about 44 percent respondent did not take any source to borrow money to meet their crises. This findings correspond with the research findings of Chambers, 1995.

From the case study and FGDs, it is found that It is the members of their own community, who provide the first emergency assistance to one another when a disaster strikes, such as sharing information with neighbors relating to warnings and taking the children, the sick and the elderly people to the nearest safety places. The affected community people help each other to save their moveable assets; seed and livestock, and other household belongings. Women, along with men play a crucially important role during emergencies. However, there is significant gender-based differences in the capacity to deal with a situation, as well as in the in the way coping mechanisms are employed.

Women are the first to provide nursing care to the most affected family members during the flood before any official relief work begins. Along with the task of providing immediate care, women also take the necessary steps to find food, water, and fuel to prepare the next meal for their families.

The result shows that about 78 percent respondents faced problem in collecting pure drinking water during flood. The findings of this study was supported by another study on floods in Jolpur, Faridpur, Bangladesh which notes that, with floods, most of the drinking water sources go under water. Women take considerable risks to procure drinking water from great distances, walking through chest-high water or swimming to collect fresh and clean water. The study also noted that women use various techniques to take water out of the tube wells so as not to mix it with flood water, and to purify the water, in the absence of fuel wood.

Due to the gender division in labor in daily life, men and women possess specialized skills and strengths to cope with crisis. Yet, women's roles in mitigating and preparing for disasters, in managing emergencies, go unheralded and unrecognized, even though their skills and contributions both at the household and community levels, are crucial. The findings of case studies illustrate how this contribution is made in real life situations.

The study finding reveals that about 66 percent respondents' female family members did not get proper facilities (like food, healthcare, security) during the flood from the Union *Parishad*. Only about 33 percent got some kind of facilities (like food, healthcare, security) during the flood.

Having faced multiple disasters of floods in the recent years, which are considered the worst of its kind, in the last 45 years, Bangladesh has faced with the challenge of coming up with rehabilitation and disaster management plans, which are sound, and cost effective. This challenge offers an opportunity to look deeper in to the vital role communities play with and without external support in managing disaster risk.

At present, disaster management plans suffer from severe gaps in terms of preparedness action and community involvement. Communities are largely seen as victims who need help, thus overlooking the contribution they are capable of making in disaster

preparedness and emergency management. Women are particularly disadvantaged in this regard, and are often kept away from the planning process.

The study findings indicate that disaster risk reduction is best attained implementing a diverse series of activities that combines more formal development activities with more traditional risk reduction activities at the household level.

Usually when the former are undertaken in disaster-prone areas they are however not specifically linked to preventing disasters or improving the capacity of households to cope with shocks. From the survey, it is found that only about 36 percent respondent told that they know about Union Disaster Management Committee in their area and 59 respondent told that they do not know about Union Disaster Management Committee in their area.

It is found from the case study that some development projects(such as VGD, VGF and Food for Work programs) were taken by the Union *Parishad* in the study areas have generic poverty alleviation objectives, which was not effective in helping the affected households to cope with repeated disasters. More often than not, each time a shock or disaster occurs, affected households are wiped out and households or even whole communities find themselves starting all over again.

The poorer population groups of the survey community cannot participate in local organizations as much as other groups, and must assume risk management mostly on their own, whilst at the same time their limited participation at the community level results in diminished risk managing possibilities such as those acquired through participation in reciprocity mechanisms, voluntary transfers, etc. Under such circumstances it has been tried to introduce programmes containing risk management funds; frequently, NGOs support comparable coping strategies in post-conflict situations.

Regarding the availability of ex post disaster relief, it is used information from semi-structured key informant interviews to assess the existence of social networks and institutional arrangements to support flood victims. The survey data reveals that about 60 percent of the respondents did not get any relief during flood whereas only about 40 percent respondents got relief from NGOs and from government. It appears that the

availability of such community level support is generally rather low, although some degree of flood relief exists in the form of loans to flood victims from family members, neighbours, rich members of the community and credit for food from local shops. The study shows that about 56 percent of the respondents lend money from some financial institution after flood in that crisis but about 44 percent of them did not take any source to borrow money to meet their crises

As a final methodological note it is wanted to emphasize that the analysis presented in this study is primarily based on observed associations and relationships, using linear correlations and chi-square testing procedures. An important question remains how much the observed relationships actually tell us about underlying (non-linear) causal relationships as suggested for example by Adger (1999), and in which direction these causal relationships act. It is believed that a more extended deterministic model is needed to further test these underlying causal relationships and their direction in future research in this domain.

The main source of knowledge on hazard, risk and vulnerability is empirical: "gathered through numerous experiences of disasters in the area" as emphasized by the respondents of the survey with complementary information coming from the media like radio, television and newspapers. From the study, it is found that about 56 percent of the respondents knew about disaster from public announcement, about 17 percent from radio and only about 6 percent of the respondents knew from television to meet their crises.

8.3 The Present Situation of Local Government with Actual Disaster Risk and Mitigated Their Impact on Their Members

LGs of Bangladesh are called union councils and Bangladesh has 4451 such unions. Union Councils are local authorities primarily responsible for agricultural, industrial and community development within the local limits of the union. Union councils handle the DRM activities at the local level under the Standing Orders on Disasters (SOD) of 1997 which was updated in 2010. Lack of resources and inadequate capacity of local representatives are obvious deficits of union councils of Bangladesh. For managing

disasters, Disaster Management Committees (DMCs) have been formed in Bangladesh at union level and these committees are chaired by the Union *Parishads* – the LGs.

In Bangladesh, DMCs (Disaster Management Committees) at the Union *Parishad* level often do not function unless an NGO or a donor sponsored government project finances the activities of the union. In consequence, Union P*arishads* in Bangladesh have become wish list producers for development rather than problem solvers or objective achievers. This situation has further damaged the image of LGs and deteriorated the community trust in them too.

The study shows very low effective role of local union committee in implementation of development programs. From the survey, it is revealed that about 36 respondent told that they know about Union Disaster Management Committee in their area. On the other hand , about 59 respondents told that they do not know about Union Disaster Management Committee in their area.

From FGDs discussion which was conducted in the study area, revealed that more than two third of the respondents gave opinion that ineffective role of local union committee in implementations of development programs was to a low extent in addressing disaster risks. Some of the respondents expressed about the effective role of local government during flood. On the other hand some respondents stated about the role of union committee in implementation of development programs to a medium extent in reducing vulnerability from risks.

The respondents were asked whether the limitations of local government in playing role in implementation of development programmes, most of the respondent replaced that lack of adequate of dissemination of flood risks, early working system, flood information centre, relief assistance, income generation activities, budget, training programs, there was to a low extent the chance of risk reduction of local community by the union Disaster Management committee.

Local governance institutions are widely recognized as the best grounds in which people can learn the art of governance through their own experiences and the reality that exists around them. Local government in also, in all circumstances, considered as the important

vehicle and only the regularly the means to provide state benefits and services to the local inhabitants. From FGD and Case study ,the results has shown that lack of proper preparedness and recovery programmes of local government before and after flood made the less chance of disaster risk reduction of the community.

There are significant potential space for Local government to play effective role in managing pre-post disasters and subsequent adaptation process (Raihan et.al., 2010). It is therefore important and imperative to understand the role of local government and public service institutions in linking individual choices with collective choices, and in providing the framework for local adaptation strategies with particular focus to the management of fresh water resources, protection from floods, cyclones and erosion, and distribution government services, post disaster rehabilitation and settlement process.

8.4 The Implications to Mitigate Disaster Risk for Local Government and their Effectiveness

The governance context and the overall political environment and dynamics of rural Bangladesh do not appear to be thoroughly supportive or conducive for institutional development of Union *Parishad* which could ensure effective delivery of services and development management at the grass roots level. The practices of local governance and decentralization therefore are very difficult to establish under the above political and administrative milieu.

From FGDs and Case Studies , it is revealed that critical service areas like education, health, nutrition, family planning, irrigation, agricultural services, and the feeder / secondary roads are all managed directly by the central government officials and their field functionaries without any involvement of the UPs either in design or implementation process. Thus institutional "isolation' and 'incapacity' has made UP a non-responsive body to provide critical services to the rural poor, more so to the marginalized ones.

It is no doubt that considering the work load and responsibilities, the UPs are understaffed. UP also lacks logistic supports like computer, transport support like

motorbike etc. Although the UP has a relatively large tax base, political reality and overall socio-cultural and economic conditions do not permit the UP to collect tax up to the potential target. UPs therefore become more dependent on central government grant. UPs in general lack managerial capability and resources to design and run innovative service delivery in areas like employment generation, health and education and disaster management. Delayed release of Government development grants also hampers the timely completion and quality of UP projects. There are reports that such delays also open the window of opportunity for corruption and leakages of public resources and subsequently hamper the quality of the service delivery projects.

There is a lack of coordination between UP and extension service delivery workers of the government at the field level. In fact there is no formal links even between the Standing Committees of the UP with the extension workers of the corresponding line agencies of the Government. Such isolation makes lots of the UP services dysfunctional and ineffective.

Most of the UPs tend to practice a 'pseudo participatory' planning system where only handpicked persons are involved and even that is done without the knowledge of the community members at large. Such practices keep the members of community specially the marginal poor, women and destitute in complete dark about the projects undertaken by the UP. During the field observation it was noted that there was no formal mechanism for the UP to work closely with NGOs. Ups are not aware what activities are being carried out by number of NGOs in their respective areas. The NGOs also being a service provider to the rural communities tend to work in isolation. These result in a lack of coordination and thus the actual needs of the community are not appropriately served and accountability and transparency to the community as well as to the UP is absent. Such lack of transparency and accountability has some bearing on the service delivery especially to the poor and disadvantaged community.

Local political elite especially of the ruling party play a critical role in manipulating the service delivery process of the UP. Field evidence suggests that UP projects are determined not by 'development need of the area but on the political priority of the influencing political elite'. An emerging nexus between the Upazila based GOB officials and MPs dictate the UP in determining and prioritizing the projects.

Lack of cooperation and coordination from central govt. functionaries is also a critical factor that affects the quality and process of disaster management and other service delivery of the UP. There appears to be a low trust relations between UP and Upazila Administration. A section of UP Chairmen complains that, on various occasions, they are treated as subordinate institutions by the Upazila administration/ or a section of Upazila officials.

In brief *institutional image, credibility, capacity, management and technical skill are the critical factors* that make the UP weak and non-responsive. During the field observation visits the Local UP leaders acknowledged that UP *needed technical support, resources and adequate training and skill* to deliver the critical services that are demanded by the resident of the UP.

8.5 The Association between Local Government and Community People in Addressing Flood Risks in the Aforementioned Area

Government documents and the NGO literature indicate that there is a wide recognition that effective disaster response at the local level is not possible by government agencies alone and that the cost of management needs to be shared by all stakeholders. Still, the major lacuna in the institutional framework continues to be a lack of functioning partnerships among the stakeholders. In the study area, the massive floods in recent years showed that there were no partnerships functioning and there was little coordination. The Local Consultative Group (LCG) concluded that massive shortcomings existed in the forecasting, preparedness and coordinated response to the crisis As a result, the NGOs conducted relief and rehabilitation efforts largely without government directives and coordination. Initially, the government appeared confident to deal with the post-disaster recovery singlehandedly.

UPs in general are not capable. Though UPs have a clear structure, role, and responsibilities for Disaster Management but the elected officials are not fully conversant with basic information as well as lack skill and preparation. Moreover managing disaster is not one of its major performance indicators in getting block grant from the Central

government. There are no institutional indicators for assessing its capacity. Structure as well as manpower of UP are simply not adequate to carry out its roles and responsibilities and UP's relationship with extension agencies of the government is also unclear. Overall the financial capacity of the UP is very weak. Central government grant is also limited and unpredictable. There is no dedicated financial resources to support disaster management interventions.

Communities in Bangladesh are widely acknowledged for their innovative coring strategies and resilience in the face of frequent flood risk. A commendable base has been created at the local levels to ensure community participation in disaster programs. The local government would benefit much from having a close rapport with various community actors. Such co-operation can be institutionalized by a sort of open coordinating body comprised of community leaders, Union Disaster Management committee and NGOs. In the present study, The results also confirm the positive relationship between using of high modern technology and indigenous knowledge jointly to enhance the coping capacity of local people.

Communication and information dissemination technology are key for ensuring that households respond adequately to disaster risk by being able to take informed decisions; it is even more crucial for co-ordination. Thus, the reduction of vulnerability, as well as the capacity to respond to disasters is directly related to the degree of decentralized access to information, communication and decision-making and the control of resources (Habitat 1996). In addition to being expensive, the distribution of important risk avoidance information to village level by means of official documents is however often hindered by low levels of literacy in rural areas. A generally more viable alternative for conveying DRM information may be using the rural radio, which in certain countries is well developed as coverage and ownership of or access to radio sets have been increasing.

However, given low levels of internet connectivity particularly in the more remote rural areas elsewhere in the world, it is in most cases not yet possible to reach disaster-affected households resident there through this highly cost-effective communication and information dissemination technology. Modern communications may also, unfortunately,

play a negative role in that mass media coverage of natural disasters is frequently sensationalist, disinformative and biased by political vested interests seeking to downplay the role of human agency in catalyzing such events. As a crucial means for fundraising and mobilizing donor support, media coverage is also of strategic significance and susceptible to interference.

This is also true because of the different coping mechanisms within a particular community. From the FGD and case study, it is revealed that in general, poorer communities are at greater risk (and less resilient) than communities in possession of 'coping capacities' (be it social, economic, physical, political or environmental). Rather than merely responding to their consequences, communities, governments, civil society and professionals from various fields are increasingly recognizing the value of sustained efforts to reduce the social, economic and environmental costs associated with disasters by addressing disaster risk.

According to the Union disaster management plan 2010, the Union *Parishad* have to rehabilitee the more vulnerable community such as women, children and disabled people. So the collaboration between local government, local Community and NGOs is only the solution to rehabilitate the vulnerable people.

8.6 Gap between Role of Local Government in national Policy and Actual Situation

Bangladesh is one of the world's most vulnerable countries to natural hazards and disasters. But there are still many gaps and weaknesses in disaster risk reduction in Bangladesh. Although the Government has made considerable progress in establishing a legal and institutional framework for DRR, many of the plans and policies are still in a draft stage or lack sufficient funding for their implementation. Also the paradigm shift from post disaster response to preparedness and prevention is not yet complete and networking among donors and regional coordination still needs to be developed. While many of the national and international NGO's dispose of very good disaster reduction approaches and action plans, a common national approach is still lacking. It can also be observed that there is a gap in the transfer of knowledge about DRR from

science/universities to the project implementation at community level. In general coordination among actors has to be improved at all levels. The involvement of local government and community is another critical issue which hinders the development of the local level during emergency.

The major initiatives of Ministry of Disaster Management and Relief (MDMR) reflect the policy thrusts that emphasize disaster preparedness and risk management; and, a transition from relief oriented activities to development approach. At the same time, disaster management, preparedness and mitigation programs have been undertaken through raising awareness among the people to reduce the loss of life and properties; improvement of the signalling system; establishment of wireless facilities at the district and upazila level to facilitate easy communication with the ministry. The three years rolling plan (2002-2005) of MDMR has a number of projects that cover all aspects of vulnerability reduction and risk management. The major program in this respect is the Comprehensive Disaster Management Program (2002-2007) that aims "to reduce the level of community vulnerability to natural and human induced hazards and risks to manageable and humanitarian levels" and increases the participation of Local Government. There are number of strict and control oriented policies, rules and implementation regulations for making decision, mobilizing resources and engaging relevant public/private organizations. But there is no implementation of these policies in reality.

The roles and responsibilities of different institutions at local level during disasters are clearly defined by the Government of Bangladesh Standing Orders on Disaster. The findings of the FGD found some consistency between the SOD and the roles and responsibilities attributed to the UP by the participants but considerable gaps were also found in particular with regards to the role that should be played by UDMC in the Kumarbhogh and Teotia Union of Upazila of Munshigonj on shelter management and search and rescue. There seemed to be a consensus on the key role played by the youth during disaster even though this was not reflected in the institutional setup for disaster response, in particular in the membership of UDMC. There was no evidence that the youth had any mandate and/or training to perform the activities that seemed to be expected from them during disasters.

An initial challenge is often the lack of interest and capacities for disaster risk reduction by local governments. This is oftentimes a reflection of weak local governance capacities. The political will needed to initiate changes to levels of acceptable risk and the processes through which standards are established does not appear to exist at the local government level (at present). The local governments do not want to deviate too drastically from the traditional standards and initiate changes for fear of retribution from other local governments as well as the National and District Government and development interests. The lack of political will to initiate change further demonstrated the tussle between managing the flood risk. The confusion surrounding which level of government (local or state) is and should be responsible for floodplain management/ mitigation might be preventing local governments from initiating change.

The overall state of Local government and local governance appears to be frail and weak. Resource allocation for local government is meagre and it is only around 2% percent of the total development allocation of the Government. Thus the LG system as such cannot take proactive development functions including addressing disaster related development interventions. There is no inter-governmental fiscal transfer policy in Bangladesh to ensure a prescribed mode and practice fiscal transfer to the local governments. Lack of such policy has made the Local Government highly dependent of the Central Government discourage the Local government, particularly the UP which is resource poor, to get involved in disaster management activities.

8.7 Elements of DRM Strategy and Policy Implications that Highlights and Strengthens the Role Played by Local Government to Deal with the Disaster Management Cycle

Over the years the concept of decentralization has been broadened and is perceived as a component of "good governance" addressing the agenda of accountability, transparency, participation and decision making. Decentralization as an approach of devolution of power is built in the Constitution of the Republic (Article 59 and 60). The Constitutional provisions have clearly spelled out the extent of authority, power, roles and responsibilities of the local government system of the Republic. There are five sets of Acts and plethora of rules that further elaborates the decentralization framework.

In view of the Constitutional commitment, Bangladesh is perhaps one of the leading countries in the developing world where a number of policy regimes, regulatory framework, and a comprehensive management and monitoring system have been developed for a decentralized disaster management and climate change approach. In addition to that various structural processes and institutional framework has also been developed. Such policy framework and institutional structure is indeed a shift of paradigm and created a platform for the national and local government to get engaged and work together for disaster management activities. It reaffirms that policy and management framework is the first step to develop a comprehensive intervention. The policy and management framework through duly recognized the role of rural local government but in reality the Local Government Institutions (LGIs) are still under-prepared and poorly resourced and under capacitated to play such critically important role.

Bangladesh has a relatively strong policy framework and intuitional mechanism for disaster management. Furthermore pronounced policies have strongly suggested the space and role of local government in all development activities at the grass roots level including disaster management and climate change. However at the operational level due to political and economic dynamics and power play LG still remain in the back seat. The local government institutes specially the UP is still under-utilized, under-capacitated and lack resources to play the desired role in the broader field of development management.

Bangladesh has framed an integrated disaster risk reduction and management approach which thematically complementary to policies like the Poverty Reduction Strategy Paper (PRSP), social safety net programs, and thereby contribute towards a holistic disaster management framework.

Constitutional and policy framework of Bangladesh are in favour of a strong, effective local government system. Unfortunately the laws, Acts and rules are not truly reflective of the core principles of the decentralization rather reflect the pattern of deconcentration. There are number of Acts and rules, however, in fact, Bangladesh does not have a declared decentralization policy as such. Thus disaster management policy framework and implementation process is bogged down due to absence of decentralization.

In order to manage the consequences of natural disasters, formal public policymaking institutions in Bangladesh have formulated a well-developed mechanism national and field levels. . At the national level, four high-profile bodies were established for the multi-sectoral coordination of emergencies associated with environmental disasters as well as disaster management in general: the National Disaster Management Council (NDMC), headed by the prime minister; the Inter-Ministerial Disaster Management Coordination Committee(IMDMCC), led by the minister of food and disaster management; the National Disaster Management Advisory Committee (NDMAC), headed by a specialist nominated by the prime minister; and a Parliamentary Standing Committee on Disaster Management to supervise national policies and programs. The common missions of these bodies have been to provide policy and management guidance and the macro-coordination of activities, particularly relief and rehabilitation.

The factors that led to such a development can be explained as follows:

- the severity of the consequent casualties has led to motivations at local, national and international levels to address the issue;
- the recurrent disasters created serious development setbacks: loss in the production and infrastructure sectors set back the affected regions and the country; and
- in order to attract external investment, the minimization of disaster risks and vulnerabilities warranted intervention at the policy level.

Bangladesh has developed a new strategic focus of Comprehensive Disaster Management Program (CDMP) to lay the foundation for the shift in principle from a post-disaster relief and response strategy towards a comprehensive risk minimization culture that encouraged disaster-resilience initiatives.

Under the Comprehensive Disaster Management Program (CDMP)it is recognized that a top- down management approach has gross limitation to reach the remote communities and the approach has been unsuccessful in addressing the needs of vulnerable communities. Under the CDMP program, in the pilot areas, *Community-Based Disaster Management (CBDM)* has introduced a new strategy that directly involves vulnerable people in the planning and implementation of mitigation, preparedness, response, and recovery measures.

CHAPTER NINE

Recommendations and Conclusion

9.1 Recommendations

Based on the present study in the flood-affected area in Munshigonj, it is recommended a number of measures by the Local Government to reduce the vulnerability of local community to flood hazards. These initiatives include policies and programs on disaster management based on sustainable development.

Since during the aftermath of natural disasters that it is often observed a "gap" between the existence of DRM laws and their actual application, investigations must be preoccupied much more with the latter, in particular with the reasons of non-application. They may be used for a broad range of activities in the disaster management cycle, including the dissemination of DRM information, for which a clear information dissemination policy should be conceived. In this respect, as well as in planning and coordination, the involvement of cross-sectoral ministries, such as Ministries of Finance, and of Ministry of Women and Children Affairs, has proven valuable.

Information dissemination needs effective technology and a communication strategy that encourages simple language for household DRM. The government should keep special attention to give strength on The Union Information Service Centre for Information dissemination

Codes of Conduct (including do's and don'ts in emergency situations) for all actors, non-government and government, are a good idea to avoid loss of professionalism in the general confusion of urgent disaster responses. Agricultural and rural development strategy and policy documents should include sections on emergency food aid. The design of specific response interventions (such as, typically, FFW programmes) and approaches, should be regulated by a Relief Code, which is something that only a few disaster-prone countries have and apply.

The microfinance sector too is in need of disaster response and recovery policies, whilst debt forgiveness should be an option of last resort. A lesson learnt concerns the setting up of new MFIs as a post-disaster response, which has largely been found ineffective. Among existing MFIs those concerned should themselves periodically test the effectiveness of their DRM strategies and need to prepare for worst case scenarios by applying a comprehensive approach to risk management, integrating disaster risk management strategies into their operations and organizational culture. They tend to find it easier to succeed at their operations if they can avail themselves of committed and easy to deploy field staff, whilst their geographical diversification through a wide network allows them to cross-subsidize for DRM. Micro lending programmes should not mix loans and grants - the latter should be provided by a different organization - and the solidarity group lending methodology is not suitable for home improvement loans. For poor communities, savings and emergency funds are better than insurance.

For the microfinance sector, donors and governments should agree on basic disaster response principles and recovery policies before a natural disaster strikes. The World Bank has summed up its DRM experience as showing that effective natural disaster management needs to be part of the development planning and budgeting process of countries at risk. To help tap the maximum potential of the organized civil society sector, government should contemplate introducing fiscal measures to act as incentives in this respect. For example, these may include the exemption of sales and entry taxes for materials used by NGOs in the relief phase.

The setting up of a central (NGO) Coordination Cell *and* Internet site to "guide" NGOs, volunteers, and others from outside the affected area in their disaster response activities, has been found helpful. Because of their community mobilization capacities and participatory outreach, NGOs are often the most appropriate partners to work with in DRM and in the immediacy of a post-disaster situation. It is good practice to "pre-select" NGOs by compiling an inventory of existing organizations that includes brief institutional profiles, not least to gain precious time in responding. In some countries, foreign funded NGOs are seen as agents of global players and policy criticism on their part may implicitly be considered as threatening to destabilize the government. Conversely, where local population groups frown upon such projects simply because initiated by government, government-led activities may not be the right entry point for

community-based DRM, in which case they should be contracted out to locally reputable civil society institutions and intermediaries.

'Win-win' partnerships between international and local NGOs contribute greater and more informed grass-roots contact to the former and capacity-building to the latter. Without mutual respect and a predisposition towards reciprocal learning, however, such partnerships may not maximize the synergies of respective comparative advantages. As there are often concerns about the quality and reliability of national NGO support to disaster-affected households, this not only raises questions about the sustainability of these organizations after their international colleagues move out, but may also threaten the longer-term relationships they have developed with local population groups and the administration. As successful DRM tends to consist of a combination of 'formal' development with more traditional risk reduction activities, this is all the more compelling.

Hazard-sensitive development cooperation needs a multisectoral, integrated approach, involving inter-disciplinary DRM experts who start by looking at household coping strategies. They can help to "mainstream" DRM as part of participatory planning and awareness-raising programmes, which should also include training and preliminary risk analysis to diagnose hazard risk.

DRM should be seen as a process, not a product, an approach to development planning, not just a project. Public awareness-raising campaigns on steps to take before, during and after a natural disaster are more successful if communities feel consulted - they should be as interactive as possible. Hazard risk diagnosis ideally involves the participatory construction of risk scenarios for delimited areas, sectors or populations, considering particular hazard and vulnerability factors, the social, economic and political processes and actors behind these, and the local development context in which risk is manifested.

Desirable attitude and behavioural changes are more easily achieved by working with local governments that associate to their endeavors key resource persons holding the respect of local communities. Although certain 'hardware', such as early warning systems, may be expensive, its installation also demonstrates political will and provides a

signal and incentives to local population groups to "do their part" by setting up and participating in the accompanying 'software', such as local emergency committees.

To control for flood risk, where appropriate, the establishment of natural forest buffer zones *and* erosion control measures through the involvement of watershed management and pastoral associations should be encouraged, paying special attention to household-level NRM incentives. Most of these efforts will however be diluted unless a better enabling environment for NRM is created. Economists will need to carry out further cost-benefit analyses on the long-term development impact of disasters to convince policy makers of DRM investments; environmental economists will need to continue work on imputing economic value to new "environmental services".

The microfinance sector too is in need of disaster response and recovery policies, whilst debt forgiveness should be an option of last resort. A lesson learnt concerns the setting up of new MFIs as a post-disaster response, which has largely been found ineffective**.** Among existing MFIs those concerned should themselves periodically test the effectiveness of their DRM strategies and need to prepare for worst case scenarios by applying a comprehensive approach to risk management, integrating disaster risk management strategies into their operations and organizational culture. They tend to find it easier to succeed at their operations if they can avail themselves of committed and easy to deploy field staff, whilst their geographical diversification through a wide network allows them to cross-subsidize for DRM. Micro lending programmes should not mix loans and grants - the latter should be provided by a different organization - and the solidarity group lending methodology is not suitable for home improvement loans. For poor communities, savings and emergency funds are better than insurance.

Although international assistance provided regularly without conditions may provide 'perverse incentives' to local population groups and governments alike, at a minimum, donors should help mobilize financial and in-kind resources to pay compensation to the next of kin of those having lost a household member due to a disaster. A little creativity in relief programmes, such as temporarily paying school fees, can go a long way in helping households cope. To bridge the humanitarian-development aid continuum, activities such as animal restocking are necessary but not sufficient to recover household

welfare, and complementary measures are needed to catalyze a local development dynamic by restoring the hopes of those affected.

Donors should support both Local governments and civil society organizations, recognising that although the state can cover covariant risks more effectively than the private sector, effective DRM remains unattainable without Community involvement. Implemented in the context of larger, coherent strategies targeting hazard risk reduction, even one-off capacity-building exercises for community based organizations, paying special attention to gender issues, are very worthwhile pursuing and can contribute to DRM at critical times.

9.2 Conclusion

This research, which has been conducted within the disaster prone communists living on southern part of Munhigonj District, Clearly reflects the risks faced by the farmers, fishermen women and the vulnerability of these communities to natural hazards. Frequently disasters adversely affect the livelihood of communities by damaging their means of earning and tools. Families, who lose their means of livelihood during a disaster, fend their recovery from adverse effects become more wilfully and their vulnerability to future disaster more increased. Here diversity in the sources of livelihood is very important for increasing proper capacity to cope and recover.

In addition to the economic dimension there are also other aspects of social positioning such as class, ethnically, community structure, community decision making process and political issues that determines poor people's vulnerability.

A poor community may be economically vulnerability, but at the same time may have social and cultural capacities to cope with disasters. Risk reduction strategies for the poor community should not works towards reducing economic vulnerability and at the same time capitalize (and perhaps nurture) on the inherent social and cultural capacities of poor communities. It is imperative that while improving the economic resilience of such communities, the physical, social and political risks are also recognized and managed.

Bangladesh has a well established disaster management institutional framework that extends from the highest level of government through to Union and Local Government levels. Although these systems mobilize quite quickly immediately before and after a crisis event, they are not so well energized to undertake a proactive leadership role in driving risk reduction initiatives.

The involvement of local government there critical issue in disaster risk reduction. Which was ensured through the local project society. The society was independent in its operation, but was closely linked to the local government (Union *Parishad*, which is the lowest level government, in charge of several villages). Local project society and other participating agents instrumental with clear vision, management capacity, adequate

knowledge, information and true facilitation are found to be fundamental for the success of community based interventions. Legal status of CBOs and linking with other development initiatives and local community was the key factor in linking the activities with local government.

Presently NGOs, Disaster Management agencies, the government and other intermediary organizations such as national or regional level people's organization play a key role in initiation the process of community based disaster management. They either respond to request coming from vulnerable communities or identify vulnerable communities where disaster risk reduction programs should be prioritized. Criteria for the prioritization of vulnerable communities may include the following: most disaster area; most vulnerable to a particular hazards; least served by the government and/or NGOs; additional considerations such as possibility of replication or spread effects of the program to neighbouring communities, presence of existing development projects or community partner.

Disasters are increasing worldwide and their impact on society is also escalating to new heights. Among the various consequences of disaster, its impact on development is noticeable. Disaster and development are clearly related. Poor development can intensify vulnerability and cause devastating impact, but at the same time wise development practices may reduce vulnerability. Disasters also hinder developmental works, but can concurrently provide development opportunities as well. Hence, there is a need for a new kind of development that reverses the social construction of disaster, and fosters the positive aspects of the 'disaster and development' relationship.

Likewise, consideration should also be on reducing all types of vulnerabilities while simultaneously enhancing a broad range of emergency management capabilities. For this to occur, future research should focus on ways to reduce risk and susceptibility, and at the same time find ways to increase resistance and resilience.

Concurrently, practitioners should also play an important role for overcoming the challenges associated with integrating disaster and development by focusing on policies that address all hazards, disaster variables, emergency management phases, disaster participants and academic disciplines.

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APPENDIX

Annex-1: Questionnaire of Household Survey

Interview Schedule
On

The Role of Local Government in Managing Disaster Induced Risk: A Sociological Study in Munshigonj

(For partial fulfilment of the M.Phil Dissertation in the Institute of Disaster Management and Vulnerability Studies, University of Dhaka)

Informed Consent

Dear Participants,

Assalamulaikum / Nomosker

We are currently conducting an interview-survey on the " The Role of Local Government in Managing Disaster Induced Risk: A Sociological Study in Munshigonj". For this, we are going to interview flood affected community of the partial fulfilment of the M.Phil Dissertation in the Institute of Disaster Management and Vulnerability Studies, University of Dhaka. For the present Survey, we need to collect data related to the role of Local Government in managing induced risk. Data collected from you would entirely be used only for the above mentioned academic purpose. Personal identity of the respondents would be kept strictly confidential. If you do not like to participate in this survey, you can do it. It will take 20-25 minutes to answer the questions here in interview schedule.

Can we start the interview? (If the respondent agrees, please start interview)

Interview started at ☐

interview end at ☐

Signature of the interviewer .....

Checked by .....

Location of the study area

A) Union ..... B) Post Office .....

C) Upazilla ..... C) District .....

Section A: Questionnaire for Community People

Identity of the respondents:

Name of the respondent: .....

Father/Husband's Name: .....

1. Age :
2. Gender : a. Male b. Female
3. Marital Status : a. Married b. Unmarried c. Divorced d. Separated e. Widow f. Widowed
4. Religion : a. Islam b. Hinduism c. Buddism
5. Literacy of the HH : a. Cannot read or write Primary b. HSC c. Primary drop out High School d. Bachelors and above
6. Occupation : a. Professional b. Clerical Support Workers c. Craft and related Trade d. Managerial e. Service & Sales Workers f. Unskilled farm Workers g. Skilled Agriculture h. Forestry & Fishery Workers i. Technicians & Associates j. Plant and Machine Operator k. Small Shop owner l. Other Occupations

7. During last 5 years how many times have you faced disaster like flood?

   a. Five times b. Three times c. Twice d. Once

8. What was the duration of last flood?

   a. Long-term b. Short-term

9. Have you changed your occupation after flood?

   a. Yes b. No

10. Has there been any damage of your property and assets during the last incidences?

    a. Yes b. No

11. Did you ever have to migrate elsewhere / and or have move from your household due to the impact or implications of a disaster?

    a. Yes b. No

12. If yes, Did there any problem? Brief shortly.

13. Had you lend money after flood?

a. Yes b. No

14. Use of Communication media: Do you use any of the following:

a. Public announcement of UP b. Radio c. Television d. Red Crescent e. Others

15. Has the prior announcement helped you?

a. Yes b. No

16. Did you receive any support from any of the following sources during the last disaster?

a. Central government b. Union Parishad c. NGOs d. Community Members e. Others

17. Did the UP Officials (Chairman/ Members or Secretary) offer any support to you prior / during and after the disaster?

1=no support at all, 2= very little support, 3- Indifferent 4- Good support
5- Excellent support

18. Are you aware of the Union Parishad Disaster Management Committee (UPDMP?

a. Yes b. No

19. Are you or any one from your household is involved with UDMC in any capacity?

a. Yes b. No

20. How would you rate the preparedness of the UP in facing the disasters?

a. Not prepared b. Poor preparation c. Somehow prepared d. Satisfactory

21. What in your opinion are the factors that affect the preparedness of the UP?

a. Management skill b. Corruption c. Capability d. Others

22. Do the UP Members or Officials visit your household immediately after the disaster?

a. Yes b. No

23. Did the UP undertake any survey on loss/ damage of the disaster?

a. Yes b. No

24. Was that enough to compensate your damages?

a. Yes b. No

25. Do you agree that the UP provides the post disaster relief and support to the community members in a fair and transparent manner?

a. Yes b. No

26. How do you assess the capacity of UP to provide appropriate of pre/ post disaster relief and support to the community?

1. = Very low, 2= low, 3= moderate, 4= High 5= very High

27. Are you aware of any development plans of UP that in meant for disaster risk reduction and management?

a. Yes b. No

28. Did you take part in any of the ward level UP planning committee meeting?

a. Yes b. No

29. What is the expected role of the UP after flood?

Section B: Questionnaire for UP Officials and DRM Committee

Identity of the respondents:

1. Does the UP have any process or mechanism to involve all people, especially vulnerable and marginalized groups in disaster prevention decision-making and implementation?

2. Does the UP ensure that women and men participate equally in disaster prevention decision-making and implementation?

3. Does UP disaster prevention practices take into account the specific needs of children and young people?

4. Does the UP support the participation of local volunteers in disaster prevention measures?

5. Does the UP regularly review disaster prevention policies to protect vulnerable people from disasters (elderly, ethnic minorities, children & youth, people with disability, migrants)?

6. Does the UP disaster prevention practices take into account local (indigenous) knowledge, skills and resources?

7. Does the UP have a plan of action to turn disaster prevention policies into practice?

8. Does the UP have an adequate budget for disaster prevention?

9. Does the UP have sufficient expertise to carry out disaster prevention?

10. Does the UP provide disaster prevention training for Government Officials, the Community and Civil Society Leaders?

11. Does the UP regularly monitor and report on progress on disaster prevention?

12. Does the UP involve Communities and Civil Society in monitoring of disaster prevention?

13. Does the UP provide a mechanism for vulnerable people to make complaints and get a response for lack of progress in disaster prevention measures?

14. Does UP regularly collect, review and map information on disasters risks and climate change?

15. Does the UP provide vulnerable people with updated, easily understandable

information on disaster risks and disaster prevention measures?

16. Does your institution regard the DRA process as a strategy towards disaster Risk Reduction (DRR)?

17. What are the real challenges and difficulties experienced, by your organization, in the DRA process?

Annex- 2 : Checklist for FGD

FGD Checklists focused on the following areas:

General knowledge on DRR

-Understanding of hazards, risks and vulnerabilities
-Knowledge of early warning
-Awareness of changing patterns

Community practices related to DRR

-Mitigation measures (Homestead raising, protecting water resources, safe storage of food,
-Disaster resilient constructions, reforestation, etc)
-Contingency plans (formal or informal)
-Specific mechanisms for vulnerable groups
-Prevention activities at community-level
-Dissemination of early-warning
-Mock drill exercises
-Adjustment of livelihoods due to flood

Awareness of DRR-related services available

-Existence of resource people/groups on DRR
-Shelter
-NGOs
-GOB

More specifically, for each stakeholder interviewed, the following areas were considered: Union Parishad levels

- General knowledge on DRR
- Integration of DRR activities in operational documents and activities
- Coordination on DRR At union level.
- General knowledge on DRR and utilization/appropriateness of DRR curriculum
- Integration of DRR in Union Parishad
- Levels of involvement of community in DRR.

Annex- 3 : Checklist for Case Study

Group A

1.0 Personal Identity

1.1 Name

1.2 Age

1.3 Village

1.4 Occupation

1.5 Husband's occupation

1.6 Number of children

1.7 Type of family

2.0 Experience of Recent floods

2.1 What is the more terrible experience during flood.

2.2 Livelihood pattern

2.3 Food security

2.4 Damages of household

2.5 Damages of social capital.

3.0 Vulnerability to Health and Sanitation

3.1 Access to water and sanitation

3.2 Access to health care services.

4.0 Vulnerability to Economic Crisis

4.1 Scope of employment opportunity

4.2 Economic hardship

4.3 Damaging of infrastructure

5.0 Evacuation Behaviour

5.1 Flood warning

5.2 Flood shelter

5.3 Refugee situation

6.0 Perception towards Local Government in Addressing Risks

6.1 Role of local Government

6.2 Development intervention programmes of local government

6.3 Association with community people.

6.4 Effectives of the programmes