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# **Living with Cyclone: coping and recovery strategies**

**A case study from the coastal area of Bangladesh**

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## **ABSTRACT**

Bangladesh has a long history of coping with and recovery from disasters. Although climate extremes are increasingly taking huge tolls especially in the Southwestern part of the country, households are resisting the negative outcomes of these events as best they can. This research explores the coping strategies of the people of a coastal village in the wake of a cyclone, Aila. The vulnerability approach to disaster is adopted as theoretical framework of the research, in which disaster is considered as hazards affecting vulnerable people. Using semi-structured interviews of household heads, the coping strategies of a cyclone affected village community are examined. The study finds that people's livelihood coping strategies largely depend on the indigenous knowledge. Results show that households followed diverse strategies such as livelihood diversification, informal risk sharing within the community and migration in response to the cyclone Aila. The study also addresses the role of local government, civil society organizations and communities, and finds that these actors hardly addressed the root causes of vulnerability, and as a consequence households remain vulnerable.

**Key Words:** Disaster, cyclone Aila, vulnerability, adaptive capacity, access, community and resilience.

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## **Acronyms and abbreviations**

BBS	Bangladesh Bureau of Statistics
DFID	Department for International Development
DMB	Disaster Management Bureau
DMRD	Disaster Management and Relief Division
GDP	Gross Domestic Product
GR	Gratuitous Relief
HIES	Household Income and Expenditure Survey
IPCC	Intergovernmental Panel on Climate Change
MoFDM	Ministry of Food and Disaster Management
MoEF	Ministry of Environment and Forest
NGO	Non-Governmental Organization
SIZ	Sundarbans Impact Zone
SRF	Sundarbans Reserve Forest
SSNP	Social Safety Net Programme
UDMC	Union Disaster Management Committee
UNDP	United Nations Development Programme
UNISDR	United Nations International Strategy for Disaster Reduction
VGD	Vulnerable Group Development
VGf	Vulnerable Group Feeding

### ***Currency Equivalents***

Currency Unit = Taka (US\$1= 81.74 Taka on May 13, 2012)

# CHAPTER 1

## Introduction

### 1.1 Statement of purpose

The study attempts to explore how the people of coastal areas of Bangladesh respond to climate extremes. Historically the country faced different calamities in the form of cyclones, floods and droughts, and the frequency and intensity of these events have increased over the past decades (Government of Bangladesh, 2010). The inhabitants of coastal areas are more exposed to specific hazards such as coastal flooding, cyclones and tsunami, among which cyclone and induced surges are the most recurrent natural hazard (Wisner et al. 2004). The people of this area lose their lives and livelihoods disproportionately due to the tropical cyclones. However, they strive to return their normal life following any extreme climatic event. This research focuses on how a village community of coastal Bangladesh coped with and recovered their livelihood in response to a tropical cyclone, Aila. Here, coping refers to a process through which households attempt to smooth the consequences of the disaster, and recovery includes the restoration, and improvements where appropriate, of facilities, livelihood and living conditions of disaster-affected communities, including efforts to reduce risk factors (UNISDR 2009 and Pantoja 2002). The research will provide household and community level analysis of the strategies the people follow in sustaining their livelihoods. Households are taken as the unit of analysis because the decision of choosing livelihood strategies is taken primarily at household level. Rashid et al. (2006) contend that the pattern of coping strategies that households adopt depends on specific characteristics of households and the nature of the shock that the households experience. The Aila affected households strived to restore their livelihood with the support from the Government and civil society organizations. I am interested in exploring the human dimension of disasters because without people there is no disaster (Hewitt 1997; Canon 2000; Wisner et al. 2004). Cyclones and other extreme weather-events that strike in the coastal regions of Bangladesh often become disastrous for the large number of poor people who are mainly dependent on climate related livelihoods such as agriculture and fisheries. As during natural disasters the means of livelihood are impeded by adverse weather, the victims are supplied with their needs by kinship networks, community, local and international organizations. While cyclones are unavoidable, preventive and mitigating measures taken by institutions such as those mentioned may reduce (or

possibly increase) the vulnerability of the victims. The study therefore analyses the role of these institutions in coping with and recovery from the natural hazards.

## **1.2 The nature of the problem**

Disaster is a recurrent phenomenon in Bangladesh and the climate change will enhance such occurrence. Climate change effects take the form of calamities such as cyclones, floods, and droughts. The Intergovernmental Panel on Climate Change (IPCC) has underscored that developing countries are disproportionately vulnerable to climate change (IPCC 2007). The 2011 Climate Change Vulnerability Index put Bangladesh at top in the list of 170 vulnerable countries to the impacts of climate change (Maplecroft 2011). This is owing to its geographical location coupled with socio-economic conditions.

The country is located on the Bay of Bengal in the delta of the Ganges, Brahmaputra and Meghna rivers. The impacts of climate change are visible in the form of erratic rainfalls, increased number of intensified floods, cyclones, droughts and prevalence of rough weather in the Bay (Government of Bangladesh 2010). The southern region of the country along the Bay of Bengal is prone to severe tropical storms known as cyclone, which develop over warm tropical oceans and are characterised by sustained winds of 64 knots (32.92 metres per second) or more (MoEF 2008:11). The cyclones tend to surge higher than in neighbouring countries because the Bay narrows towards the north, where Bangladesh is located (ibid). Tropical cyclones and storm have devastating impacts on the life and livelihood of the coastal habitants. From 1990 to 2007, Bangladesh faced several deadly cyclones, causing death of 150,000 people and displacing millions (Climate Change Cell 2007). Although there is hitherto no rigorous scientific evidence that tropical storms in the Bay of Bengal are increasing in frequency or intensity, the coastal people perceive an increased number of cyclones over the past few years. For instance, Super Cyclone Sidr hit on 15 November 2007, Cyclone Nargis on 2 May 2008 hit Myanmar but had less impact on Bangladesh, Cyclone Rashmi occurred on 27 October 2008, and Cyclone Aila hit on 26 May 2009. On average, a severe cyclone hit Bangladesh every three years (MoEF 2008:10). The global distribution of cyclones shows that on average only 1% of cyclone strikes Bangladesh per year, but the fatalities they cause are 53% of the whole world total (Ali 1999). Although the death toll from cyclone event has been decreased in recent years by constructing cyclone shelters and improving early warning systems, cyclones continue to put heavy burdens



on the socio-economic life of Bangladesh. According to Global Climate Risk Index 2010 extreme weather conditions of Bangladesh cause damage amounting to over US\$ 2 billion a year and a Gross Domestic Product (GDP) loss of 1.81 percent between 1990 and 2008 (Harmeling 2009:7). Eventually they constrain the sustainable development of the country.

Bangladesh has a population of about 142 million<sup>1</sup> (BSS 2011a) with a total territory of 147,570 sq. km, which makes it the most densely populated in the world after some city states. The per capita GDP equals US\$ 621 per annum (BBS 2009). Over the last two decades, Bangladesh has experienced positive economic and social changes. The economic performance of the country has been relatively strong since 1990, with an annual 5% average growth rate. The country also has achieved substantial improvements in some social indicators like, a decrease in the infant and maternal mortality rate as well as in the illiteracy rate, and an increase in the life expectancy. However, Bangladesh remains as one of the most poverty-ridden countries in the world. Approximately 31.5% of the total populations continue to live below the poverty line (BBS 2011b). The Gini co-efficient of consumption expenditure is estimated at 0.321 (ibid). Even though agricultural share in GDP is only 19%, nearly half of the economically active population of the country is engaged in this sector, with rice as the single-most important product (BBS 2009).

The coastal people of Bangladesh suffer from extreme poverty, inequality and marginalization in income compared to the other areas. A comparative analysis on poverty status between Sundarbans<sup>2</sup> Impact Zone<sup>3</sup> (SIZ) and non-SIZ areas shows that SIZ upazilas (sub-districts) have a much higher extreme poverty rates (0.42) compared to non-SIZ upazilas (0.26) of the country (Islam 2010:35). Moreover, land distribution is more skewed in the region and the poor are more socially and politically marginalized than those living in other parts of the country (Datta et al. 2003). This makes the coastal communities particularly vulnerable to any extreme climatic events.

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<sup>1</sup> The number of population clearly differs with that of the State of World Population Report 2011, which puts the number of Bangladesh's population at 150 million.

<sup>2</sup> The largest mangrove forest in the world (140,000 ha), lies two-thirds of it in Bangladesh and rest one-third in West Bengal, India.

<sup>3</sup> A 20 km surrounding of Sundarbans is called Sundarbans Impact Zone (SIZ).

### ***The cyclone Aila***

Within two years of the devastating cyclone Sidr, when the coastal people of Bangladesh were struggling for the recovery of damages, another outrageous cyclone, Aila, struck the southern part of the country. The cyclone hit the Southwestern coast of the country with incessant rainfall accompanied by strong winds and tidal surges. About 320 people were left dead (Kumar et al. 2010:4). The waves damaged the river and flood control embankments and dykes causing widespread inland flooding and submerged many villages in 15 coastal districts. About 2.3 million people in the region were affected, many of whom were left stranded in the flooded villages as they had no alternatives of saving themselves (ibid). The tidal surge washed away a huge number of houses, livestock, crops and other livelihood resources of the affected region. The affected communities were struggling to cope with this devastated situation and sustain their livelihoods. Since the livelihoods of affected areas are mainly dependent on agriculture and natural resources, the inhabitants of these areas are extremely vulnerable to weather-induced shocks and stresses. With the help of informal and formal institutions the affected communities were trying to recover from the previous cyclone and adapt their livelihood in different ways. This study attempts to explore the livelihood strategies of the affected people in the wake of cyclone Aila.

### **1.3 Rationale for the study**

A disaster is conceived in this research as “*a severe disruption to the survival and livelihood system of a society or community, resulting from their vulnerability to the impact of one or a combination of hazards and involving loss of life and/or property on a scale which overwhelms the capacity of those affected to cope unaided*” (White et al. 2004:12). This definition indicates that the cyclone Aila translated into a disaster as a large number of the population of coastal communities in Bangladesh failed to ‘bounce back’ to their normal life. Why did this large number of population fail to cope with the shock immediately? How did they eventually manage to withstand the disaster? What made households and communities resilient? The thesis answers these questions by revealing the mechanisms that made the people to “bounce back”. In this research, emphasis is put on sustainable livelihoods that reduce susceptibility to disaster.

Disasters are increasingly challenging the development efforts of Bangladesh. In response to this, disaster risk reduction has become increasingly important in development policy and programming. Traditionally, Bangladesh has put more emphasis on the structural solutions (cyclone shelter, etc.) than on non-structural interventions (awareness raising, early warning, etc.) to buffer cyclone hazards, although it has become evident that the structural measures so far undertake are neither economically viable, nor environmental friendly (Westcoat and Jacobs 1993; Haque and Zaman 1993; Hutton and Haque 2004). Moreover, reducing the underlying vulnerability to disasters and increasing their resilience is now seen as an important element in pursuing sustainable development. This research will contribute to the understanding of existing coping mechanisms of the coastal communities, which may help researchers and policymakers in formulating sustainable mechanism for reducing the risk of disaster.

In recent decades, there is strong body of thought pointing to bottom-up approaches instead of universal and government-driven programmes of development. The latter type of policies and programmes, driven by top-down development approach, face difficulties to provide a mechanism for evaluating the effectiveness of development initiatives (Pranwell 2008:111). It is therefore important to know the local people's perceptions in order to formulate localized and contextually rooted development initiatives. In line with this argument, this analysis helps to understand indigenous coping and recovery strategies of a coastal community in Bangladesh.

#### **1.4 Research aim and objectives**

The aim of this thesis is to explore the livelihood adaptation strategies of a village community in response to cyclone Aila in Bangladesh. The study will strive to answer the question: *How did the cyclone Aila affect communities and their chances to cope with the hazard and restore the means of their livelihood?* The following specific questions will be answered:

- How did the members of the affected communities perceive the effects of cyclone Aila?
- How did the communities respond to and cope with the cyclone with regards to their livelihoods?
- Which factors influenced households' capabilities to cope with the cyclone damage?
- How did different institutions respond to the disaster?
- What were the implications of the institutional responses for different groups of people?

## **1.5 Delimitations**

This study consists of several limitations regarding methodological and empirical considerations. The problem of the disaster in the coastal region of Bangladesh is much diversified as the contexts differ from one district to others, from one upazila to others and even from one union<sup>4</sup> (subdivision of sub-districts) to others. Therefore, studying one village community, this research catches only a partial and not necessarily representative view of coastal communities' disaster responses. Besides, this research uses qualitative techniques for collecting data and also deals with a limited number of samples because of time and financial constraints. Thus the results cannot be naively generalized to coastal Bangladesh as a whole and I will be careful to avoid overgeneralizing from my data. Capturing the perception of the disaster affected people with only two weeks field study is quite challenging. The gender dimension has important implication in disaster response, but precise attention was not given to this research. Finally, while progressing to realize my research proposal, the research issue of this thesis appeared as very broad. In this sense, this analysis is limited; nonetheless, it broadens the discourse on coastal livelihood and is important for a better understanding of the coping strategies of coastal people following a disaster.

## **1.6 Outline of this paper**

This paper delineates the underlying mechanisms of livelihood adaptations of the coastal communities of Bangladesh and in so doing the first chapter introduces the thesis. Chapter two presents the theoretical framework based on the vulnerability perspective of disaster. This chapter also includes the literature review and explicates the disciplinary niche of this research. Chapter three outlines the methodological framework applied in collecting empirical resources and in the analyzing process. The findings of this study are analysed and compared to previous research findings in the chapter four and five. The final chapter is a conclusion to the study by summarizing the key findings.

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<sup>4</sup>The lowest administrative unit of Bangladesh.

## CHAPTER 2

# **Literature Review and Theoretical Framework**

This chapter reviews the literatures on livelihood response to disaster in the context of Bangladesh as well as in other countries, and also presents the conceptual and analytical framework. It also attempts to delineate the disaster response through the lens of Sociology and Development Studies.

### **2.1 Review of the literature**

Voluminous researches have been conducted on disasters triggered by natural hazards in the context of Bangladesh. Disaster research in the country mainly focuses on the causes and consequences of disasters; however, less attention is given on revealing coping and recovery mechanisms in response to disaster. Moreover, the physicalist perspective of disaster is dominant in disaster research, and so a quite limited social science literature is available (Nasreen 2004:6).

Paul and Routray (2010:493-494) point out the traditional preventive and mitigation strategies of people in the context of flood in Bangladesh. They suggest that based on their socio-economic characteristics, people use various indigenous mitigating strategies including “reducing the number of meals and relying on inexpensive food, collecting wild food, depending on relief, taking shelter along an embankment with one’s personal belongings, searching for alternative sources of income, selling unproductive assets, and borrowing, mortgaging and selling land and other productive assets. It is not necessarily the case, though, that all affected households move along this continuum; rather, it depends on their level of vulnerability and their ability to absorb shock. They also find that traditional strategies have a positive contribution to improve the adaptive capability of people to a flood hazard, but it is a complex process related to other physical and socioeconomic variables. Therefore, the discussion of variation in coping strategies considers endogenous factors, such as education, income and occupation, and exogenous factors, such as external assistance and type of hazards (Paul and Raoutry 2010:498). The study by del Ninno et al. (2001:80-92) reveals the coping strategies of households following the 1998 flood, which include borrowing, reducing expenditure and selling assets. Borrowing was the major coping mechanism of the households in terms of both the value of the resources and the number

of households that borrowed. They either borrowed money or purchased food on credit to manage their household expenditure especially for purchasing food. Credits were sought from informal sources to cover the shortfalls of consumption and also to get resources for productive purposes and therefore households were left in debt and at further risk of not recovering from another shock. Another important coping strategy was reducing expenditure in the form a modification of eating habits and reduction in the frequency of meals. Disposal of assets is also an important coping strategy. Frankenberger (1992:90) classifies asset disposal as a coping strategy in several phases, with liquid assets, such as small livestock and jewelry disposed of first and productive assets later. When productive assets are disposed of, it becomes more difficult for a person or household to return to a pre-crisis state. An individual or household may finally attempt to migrate after having failed to cope with the crisis (ibid). Thus it is evident that households employ diversified strategies during disaster and that this depends on their socio-economic characteristics.

Bangladesh has a long history of coping with disasters. The people of the country passively react to cyclone hazards before the event; nonetheless, during and after the cyclone and associated sea surge they do not remain passive, rather they demonstrate strong coping capabilities, including ensuring the access to daily necessities through individual initiatives, kinship ties and obligations, and social networking (Alam and Collins 2010:949). These coping strategies, during and after a cyclone, have existed for generations and play a significant role in people's ability to survive. Rashid et al. (2006) conducted a study on the coping strategies of the households seeking to sustain their livelihood after being affected by a disaster. The study was conducted in an area in the Northwestern Bangladesh, which was plagued by flood. They classified household coping strategies into three broad categories: i) current adjustment-strategies of reducing household food consumption, shifting to less preferred foods with lower cash cost, and reallocating household labor to increase current income, ii) unsecured borrowing which refers to borrowing that is not secured by providing household assets as collateral and, iii) secured borrowing denotes borrowing against assets owned by the household. Amongst these three strategies, current adjustment is most frequently followed by the households. The studies mentioned successfully describe the *ex-post* coping strategies to disaster; nevertheless, it is imperative also to explore the role of the government, respective community civil society

organizations. Nasreen (1995) presents a detailed picture of a disaster experienced by rural households based on sociological approach and contends that disaster affects both men and women but the burden of flood coping falls heavily on women. Coping strategies of women are vital in enabling rural people to cope with disaster because they “demonstrate considerable fortitude and ingenuity in their attempts to maintain the livelihoods of their households” (Nasreen1999:37).

The literature review furthermore finds that there is a lack of documentation of indigenous knowledge and practices and the implication of the external supports to make the coping mechanism successful in response to natural hazards. Therefore, this study intends to explore *ex-post* coping measures following the impacts of a cyclone. An attempt has also been made to review how the Governments and NGOs influence coping strategies.

## **2.2 Sociological understanding of disaster**

Climate extremes are natural processes, but response to such events depends on the societal factors. Much of the early disaster thinking belonged to the physical sciences whereas social science knowledge was limited. As such, disasters are considered as natural phenomena. Cannon (2000) points out that:

“Much of the conventional work on disasters has been dominated by ‘hard science’ and has been a product of the prominence that natural phenomena have acquired in the disaster causation process. But this ‘physicalist’ approach is also a result of the social construction of disasters as events that demonstrate human condition as subordinate to nature. Within such a framework, there is the inherent danger that people are perceived as victims rather than being part of socio-economic systems that allocate risk differently to various types of people”.

In response to the limitations of the physical science understanding of disaster, social scientists have conceptualized research from different perspectives. Sociologists have been prominent in the earliest social scientific efforts in disaster research (Quarantelli 1978:2) and the sociological perception of disaster is close to Dunlap and Catton’s (1979) seminal work in the field of

environmental sociology. These scholars argue that social and natural processes must be viewed in an interactive and relational manner. In line with this argument, sociologists emphasize the interaction between social and natural processes in understanding disaster. The first social and behavioral study of a disaster was conducted by sociologist Samuel Henry Prince and Pitirim Sorokin. Prince's famous study on the Halifax explosion was carried out in 1920 and Sorokin in his book, *Man and Society in Calamity* (1943), made some theoretical sociological statements about certain aspects of calamity. Later on, scholars like Quarantelli, Dynes and Kreps advanced the sociological perspective of disaster. They see disaster as a social process. They argue that disasters are social constructions, meaning that they are the results of the social, political, and economic environment, and not only caused by the 'natural environment'. In this vein, Rodriguez et al. (2006:xvii) suggest that disasters are inherently a social phenomenon and that the source of disasters is rooted in the social structure or social system. This view is similar to the social vulnerability approach to disaster which emphasizes the social construction of vulnerability (Wisner et al. 2004, Cannon 2000, Hewitt 1997). The vulnerability approach to disaster is grounded in political ecology rather than in a sociological framework (Quarantelli 1994). However, vulnerability analysis shares some common ground with the sociological perspective of disaster as it considers a broad range of social, economic and political factors that shape disasters. Focus is on societies' inability to manage the outcomes of natural events. A natural hazard is a 'triggering' event that interacts with the social and economic environment, and particularly affects a part of population that is highly vulnerable (Quarantelli 1990 cited in Bolin 2006:114). From this vantage point, disasters are not seen as "acts of nature" but as consequences of the actions or inactions of a particular community or society (Rodriguez and Russell 2006:194). Disaster is therefore a disruption of society which is only partially and incidentally related to the physical damages (Dynes, 1985; Rodriguez et al. 2006:xiii). This view of disaster is related to the sociological perspective as the role and impact of social stratification, inequality and development on a population's vulnerability to disasters are central to the sociological analysis. According to Oliver-smith (1998 cited in Rodriguez and Russell 2006:196), disasters are a combination of a "destructive agent" and a vulnerable group, resulting in societal disruption.



Social science knowledge on coping with disaster is newly developed. Disaster researchers have examined the social organization of response and relief efforts and the underlying organizational and political cultures of disaster planning and response policies (Quarantelli et al. 2006:21). The aim of this dissertation is to explore the coping strategies that the people in the studied community applied to sustain their livelihoods. The capacity to respond to and cope with such hazards is strategically embedded in overall relations to natural, technological and social environments (Hewitt 1997:151). The social environment of a society differs according to the social structures and cultural frameworks. These societal factors determine disaster mitigation, recovery and reconstruction measures undertaken. The sociological perspective plays a pivotal role in understanding the social structure, i.e., the interaction between individuals, groups and organizations. This viewpoint is therefore important in understanding what causes a disaster and how people respond to hazards since this always occurs in a social setting. This research will use a sociological lens to see the people's response to cyclone damages in terms of their livelihood at household and community level.

### **2.3 Disaster and development**

Bangladesh is frequently exposed to different weather-related hazards such as storms, floods and droughts. These hazards are often translated into disasters due to the low level of human development and a vulnerable population. Disasters have had adverse long-term effects on the socio-economic life of the poor. It hinders the country's development process directly by causing the loss of lives and livelihoods, and indirectly by causing the diversion of funds from development to emergency relief and reconstruction (White et al. 2004:19). Thus disasters affect poverty reduction and hold back the progress towards the Millennium Development Goals (MDGs). In this context, disasters are deeply embedded in contemporary and historical development decisions (ibid:11). Disaster risk reduction is thus a critical element of development and poverty reduction. As White et al. (2004:17) suggest:

“...poverty reduction can help reduce disaster risk, but this requires an active focus on disaster issues to be built into poverty reduction programmes. While poverty reduction measures help to support livelihoods, disaster risk reduction adds value to this work by protecting livelihoods from and boosting their capacity to cope with specific hazard impacts, thus helping to make them sustainable”.

As noted above, Bangladesh is widely recognized as one of the most disaster prone countries in the world because of its state of development and densely settled population. Disaster risk reduction therefore needs to be considered at the core of any development planning. To this end, the aim of current disaster management approach is to achieve a paradigm shift from conventional relief and post-disaster recovery efforts to a more comprehensive risk reduction culture which attempts to include disaster management into development planning (CDMP 2010). In so doing, it emphasizes enhancing the capacity of affected people to create resilience to disasters. However, without addressing underlying vulnerabilities to natural hazards, disaster risk reduction strategies are considered unlikely to succeed. Instead, it may reproduce vulnerability by maintaining existing social structures. As Hewitt (1997) contends, “robust and enduring reductions of vulnerability are unlikely without changes in the social order or the situation of more vulnerable groups in it”. From this perspective, disaster response is highly political since it is related to the wider socio-economic context (Paulson and Gezon 2005:23).

Poverty is not same as the concept of vulnerability, but they are highly correlated. Poverty is a static concept measured in terms of a minimum level of income and consumption, whereas vulnerability is a dynamic concept characterized by changes in socio-economic status and refers to an inability to cope with shocks and stresses (Vatsa 2004). A vulnerable household can maintain a minimum standard of living at a certain period, but it falls below that level following any shock. Vulnerability is more than just poverty, and the poor tend to be the most vulnerable (Twigg 2001). Poverty is an important aspect of vulnerability because of its direct association with access to resources (Adger 1999:252). Poor people are more exposed to hazards, suffer greater relative loss of livelihood assets and have a much lower capacity to recover. As Adger and Kelly (1999:260) suggest:

“Poverty affects vulnerability through individuals’ expectations of the impacts of hazards and their ability to invest to alleviate risks. It also affects the coping and recovery from extreme events through directly constraining opportunities for coping and reducing the resilience to impacts”.

Aside from Government initiatives, nongovernmental and humanitarian organizations and other informal support mechanisms have made significant contributions during and post-disaster relief

and recovery efforts. In so doing, these institutions try to enhance the adaptive capacity of the affected people. In the analysis section, the role of these institutions will be explored.

## **2.4 Conceptual and analytical framework**

The conceptual framework of this study is based on concepts such as vulnerability, resilience, adaptive capacity and livelihood. The concept of vulnerability is crucial in understanding why a hazard becomes a disaster and for whom. However, the concept of vulnerability has mostly been treated in a simplistic way focusing on the hazards and this disconnects the disasters from the social, economic and political context. Using the concept of vulnerability as a characteristic of exposure to hazards has allowed researchers to evade the problems of what causes vulnerability (Cannon 2000). In recent years, the human dimension of vulnerability to natural disaster has received significant attention in social science. The analysis of vulnerability perceives disaster as the interaction between hazards and people's vulnerability, while traditional disaster response considers those separately. Cannon (2000) argues that an extreme climatic event is not a disaster until a vulnerable group of people is exposed. Vulnerability is understood in this research as "*the characteristics of a person or group and their situation that negatively influence their capacity to anticipate, cope with, resist and recover from the impacts of a hazard*" (Wisner et al. 2004:11). It is clear from this definition that a person's vulnerability is determined by the interaction of natural events and social, economic and political factors. Similarly, Adger (1999) argues that vulnerability should be seen as the exposure of a group or individual to stress due to social and environmental change. This definition contrasts with the dominant views of vulnerability to disaster, which concentrates on environmental determinism. Extreme natural events are not equally distributed in a given locality; instead, societal factors determine which groups are more vulnerable to these events (ibid:12). The socio-economic factors therefore play a very important role in determining which groups are more vulnerable to hazards than others. This does not mean that this approach denies the significance of natural hazards as trigger events, but puts the main emphasis on the various ways in which social systems operate to generate disasters by making people vulnerable (ibid:10). The causes of vulnerability are associated with the environmental hazards and fundamentally with the formal institutional arrangements which organize warning, planning and other services and also with the institutions of the wider political economy (Adger 1999:255). Vulnerability therefore depends upon how society treats its members or groups in

terms of access to resources. This study takes vulnerability as the susceptibility of individual to the negative impacts of cyclone hazards that change and disrupt livelihoods.

Resilience is used as the opposite of vulnerability and indicates the capacity to cope with future shocks. Cannon (2000) points out that most usages of the idea of vulnerability accepts that it is part of a continuum or ranking of people, and that vulnerability implies being at the ‘negative’ end of that scale whereas the positive end represents capabilities and resilience. Walker et al. (2002) define resilience as “*the potential of a system to remain in a particular configuration and to maintain its feedbacks and functions, and involves the ability of the system to reorganize following disturbance-driven change*”. The definition highlights the ability of an actor to cope with and adapt to shocks. This approach is similar to the present study as reliance is used to identify the capacity of the households and communities to recover from disaster and their capacity to reorganize in order to maintain crucial functions of livelihoods. Resilience is considered as a product of household characteristics, the assets, their means of making a living, as well as the characteristics of the community to which they belong. This is thus related to the capacity of households to resist and recover from the adverse effects of disaster (Vatsa 2004). A resilient society has a high capacity to deal with the natural hazards and can restrict their impacts to manageable quantities. In the coastal regions of Bangladesh, natural hazards often translate into disaster due to lack of resilience. The coastal people of Bangladesh are inseparably intertwined with natural resources and, therefore, their vulnerability depends on access to and control over these resources, which are based on socio-political relations. Hence following the cyclone, human factors become predominant over natural ones in retaining the normal system of life and livelihoods.

Adaptive capacity is an important aspect of resilience indicating to what extent people are capable to withstand the natural extremes. Chapin et al. (2009:23) contend that adaptive capacity is “*the capacity of actors, both individuals and groups, to respond to, create, and shape variability and change in the state of a system*”. It depends on the wider governance regimes and different kinds of assets/capitals (White et al. 2004:16). Adaptive capability is also a central concept in the ‘Sustainable Livelihood Framework’ developed by Chambers and Conway’s (1991). Livelihood is defined in this paper as “*the command an individual, family and other social group has over an income and/or bundles of resources that can be used or exchanged to*

*satisfied its needs*” (Wisner et al. 2004:12). In this definition resources indicate information, social networks and legal rights as well as land and other physical assets. Livelihood resilience is the opposite of a vulnerable livelihood which also depends on the societal context where people live. A livelihood is sustainable when it can cope with and recover from crises and shock, maintain and enhance its capabilities and assets in response to future needs (Chambers and Conway 1991:1). Livelihood sustainability is therefore a function of how assets and capabilities are utilized, maintained and enhanced in order to preserve livelihoods. From this view point, access to resources is a primary factor in determining vulnerability and adaptability. Here, resources refer to different types of capital, namely: physical capital such as infrastructure and equipment; financial capital such as cash and savings; natural capital such as soil and water; human capital such as knowledge and skills; social capital such as networks and affiliations (DFID 2000). The access to these livelihood resources is always based on social and economic relations such as social relations of production, gender, ethnicity, status and age. (Wisner et al. 2004:94). According to Adger (2000), people’s use of and access to resources determines the ability of individuals or households to cope with and adapt to stress. Therefore, the concept of access becomes pivotal in the analysis of adaptive capacity. In this context, an ‘access model’ has been developed by Wisner et al. (2004) in order to deal with the issue of access that people must have to the resources which enable them to avoid disaster or not.

#### **2.4.1 The Access Model as analytical framework**

The concept of access is central to the explanation of vulnerability and adaptation (Wisner et al. 2004:94). Access refers to *“the ability of an individual, group or community to use resources to secure livelihood, and their access to resources is always based on social and economic relations”* (ibid). They propose an ‘access model’ to analyze the amount of people’s access to the capabilities, assets and livelihood opportunities that enable them to reduce their vulnerability. This model is developed specifically for the analysis of disaster, whereas sustainable livelihood approach has been designed for a wide range of policies. The ‘access model’ considers livelihood strategies as the key to understand the way people cope with hazards. Therefore, those who have better access to means of production, information, tools and social capital are less vulnerable and are able to cope more quickly.

The 'access model' emphasizes the agency of the individuals and households, the impacts of hazards on them and how they develop strategies for adaption. This model shows that livelihood of households depends on the individual decisions being influenced by the political-economic environment. In particular, the underlying political economy shapes the pattern of access to resources (ibid). In the access model, the political economy is modeled in two systems such as *social relations* and *structure of domination*. The *social relations* denotes "the flows of goods, money and surplus between different actors", while *structure of domination* refers to the politics of relations among individuals and groups, which include relations within households, kinship ties, ethnic groups and relation between individuals and the state. These two systems set the root causes of vulnerability (ibid:94), which determine the adaptive strategies of community members. Thus the 'access model' provides an in-depth understanding of the underlying factors that influence the coping and recovery of the households. Using this model, the analysis of this research includes the coping and recovery strategies of the community members of Dumuria village in response to cyclone Aila.

## CHAPTER 3

### Methodology

This purpose of this chapter is to outline the methodological approaches and considerations of this study including the research design, field and sampling procedures, data collection procedures, analysis methods and ethical considerations.

#### 3.1 Research design

The study design is qualitative and used both primary and secondary data in order to obtain the objectives outlined. Semi-structured interviews and direct observations were employed for collecting primary data. As choosing a methodology broadly depends on the research problem, qualitative interviewing and observation have a specific relevance to the study because it underlines to understand and explain complex phenomena more comprehensively. Furthermore, secondary literature is reviewed which mostly includes situation assessment reports, Government and NGOs' documentations, scholarly articles and books.

#### 3.2 Qualitative interview

Interviewing is a powerful way to gain insight on a particular social issue enabling the researcher to understand the experiences of the individuals (Seidman 2006:14). The interview method thus affirms the importance of individuals without denigrating the possibility of community (ibid). Besides, a range of data can be obtained using this method within a limited timeframe. Quarantelli (2002) points out that qualitative approaches such as in-depth interview are useful tools for understanding people's responses to and impact of a disaster. The study aims to explore people's perception of adaptation strategy and the interview method allows us to do so within the scope of this thesis. Giving the fact that there are different forms of interview, choosing the interview style largely depends on the nature of the research (Willis 2006:144). Considering the purpose and context of the research, semi-structured interview method is selected as it enables covering the research area, and provides opportunity to the interviewees to bring up their own ideas and thoughts (ibid:145). In semi-structured interviews, an interview guide (see appendix A) is followed in directing the interview. The guide is a list of questions that is to be covered in interviews. However, it does not mean that the interviewer has to stick to the list, rather

interviewees are allowed to change the topics of the discussion that is important to them. During the preparatory stage of this research, the interview guide was prepared in English based on the literature review and the objectives of the study, and later this was modified following the field observations and discussions with the experts in the respective fields, and finally it was translated into Bengali. Flick (2006:156) argues that interviewees have their own subjective theories on the topic under study. Revealing these underlying theories and including them into the analysis were the aims of the interviews.

### **3.3 Sampling**

In selecting the interviewees from the Dumuria village community, I employed purposive (judgment) sampling which allowed me to identify the informants who were more likely to provide data that were in-depth and relevant to the research questions (Jupp 2006:245). As Bryman (2008:458) argues purposive sampling is essentially strategic and entails an attempt to establish a good correspondence between research question and sampling. In purposive sampling, the researcher uses his or her research skills and prior knowledge to choose informants in meeting the purpose of the study (Baily 1982:99). The respondents were selected based upon different criteria, that is, willingness to participate and knowledge on the research issue (ibid:244). The aim of this research is to explore the quality of data not the quantity, and therefore the informants were selected purposively. However, the most common bias of this sampling technique is the bias of the researcher, which is a significant challenge to the validity of the research findings (Bryman 2008:245). In reducing this bias, the interviewees were selected based on the main occupations of the studying community. A total of 11 residents consisting of 7 male and 4 female were interviewed from the village of Dumuria to explore their coping strategies, and also to examine how they recovered their livelihood after the cyclone Aila. The interviews were carried out from February 28 to March 11, 2011. As my aim is to employ the interview method to learn the people's coping strategies, the sampling frame was the all adult males and females (not less than aged 18) of Dumuria village.

### **3.4 The field and informants**

The field study was conducted in a coastal village of Bangladesh called Dumuria, which is often ravaged by several varieties of natural hazards. The area of the village is 303.5 hectares.



According to estimates of the local Union Parishad<sup>5</sup>, the village has a total of 2,900 residents, among them 1,350 are male and 1,550 are female. There are 700 families in Dumuria village. The study village lies in Gabura union under Shyamnagar upazila of Satkhira district, located in the mouth of Bay of Bengal. This village is selected as one of the most affected areas by cyclone Aila. Dumuria is located in the polder<sup>6</sup> no. 15, in an area surrounded by embankments. The embankments were breached in different places at the riverside while the cyclone hit along with the tidal surge. The storm surge height was from 10 to 13 feet along the coast line and as a result the whole village was submerged at a great speed (Kumar et al. 2010:4). The whole incident happened so quickly that people had no time to move to safer places like cyclone shelters, therefore it took a heavy toll on lives and livelihoods. Most of the households of the village were not able to return to the village as their houses were either destroyed or inundated and they had to stay on the embankment for about two years. Most of the people took shelter on the nearby embankments for more than two years as the broken points were left unrepaired. During my field study, most of the households of Dumuria had just returned to their homesteads from the different temporary shelters as the embankment had at last been repaired.

Before leaving for the field, I had contacted the director of Sushilan, a local NGO working in with socio-economic development in the South-western districts of Bangladesh. Sushilan extended the support and offered me to reside me at their newly-built rest house at Munshiganj union of Shyamnagar upazila. An employee of the NGO played gatekeeper in introducing me to the inhabitants of Dumuria village. My gatekeeper has long experience in working with the local community of the village and so he provided me information about the community. However, I was well-aware about the tentative biases may rise in connection with his gatekeeper role. The village Dumuria is about 7 kilometers away from the Sushilan's rest house. Motorbike is the only suitable vehicle to go to the field from the rest house. The motorbike stand was about 3-5 minutes' walk from my residence at Munshiganj. After around 20 minutes journey by motorbike, I had to cross the river Khulpetua by ferryboat to reach the village. I conducted one interview on average and discussed with several informants about their life and livelihood.

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<sup>5</sup> Lowest level of administrative body in Bangladesh.

<sup>6</sup> In the early 1960s and 70s, 123 polders (of which 49 are sea-facing) were constructed to protect low lying coastal areas from tidal flood and salinity intrusion.

### **3.5 Conducting interview**

On the first day of my field work, I made a transect-walk with the gatekeeper and was introduced to the different sections of the people of Dumuria village including two of my interviewees, which enabled me to get preliminary idea on their lives and livelihood. The rest of the interviewees were selected by me based on the criteria that I set out in sampling process. I conducted the interviews alone from the second day of my field work. The village appeared to me as a newly settled one because the residents of Dumuria village were repairing houses, and local government and NGOs were reconstructing rural roads and growth centers. People were waiting for the next rainy season to start fish cultivation and to get fresh water for drinking and daily uses. People were much aware of the presence of outsiders, since after the Aila there were lots of national and international humanitarian organizations and NGOs working to support their lives and livelihood. They therefore had a tendency to think of outsiders as providers of relief or development professionals. I introduced myself as a student and the respondents cordially gave consent for performing interview. In the interview, I followed the interview guide as to cover the research questions. Before starting the interview, I had explained to the respondents the purpose and goals of this research. The interview took place in the respondents' homestead, with their consent and during their free time. On average, each interview lasted one and a half hours.

In order to keep the record, I did not use any audio recorder as it could work as a disturbance to the natural setting, rather I wrote a short note while performing the interview and I prepared a detailed note for every interview during the night in light of the research questions. In this regard I was aware of the quality of field notes which is imperative to check the reliability of analytic (interview) research (Pärekylä 2004:285). The informants described their experiences in regard to my research questions and they also described how they had saved their lives from the worst natural ravage.

### **3.6 Analysis method**

In order to analyse the interview data I developed profiles of individual interviewees. Profiles describe the interviews in the word of respondents which allows to present the participant's experiences in context and to convey a sense of process and time (Seidman 2006:119). The 11 interviews generated an enormous amount of text and that was reduced to the most significant

and interesting passages. After reducing the data, the first step of presenting the interview materials, I proceeded to interpret and analyse the material. The analysis of the interviews intends to produce knowledge of an independent and objective reality. In order to do that, interview text is used as ‘resources’ where the interview itself integrates with the products of the research instead of including the interviews as ‘topic’ (Dunne et al. 2005:32). The social reality is formed in this case through the interaction of interviewers and respondents in a particular social setting. Responses of the interviews were included in the analysis under anonymity in order to protect their identities.

### **3.7 Ethical consideration**

Ethical issues arise from the social context and from the kinds of questions the researcher asks the informants (Sufian 1998:5). Accordingly I considered the culture factors in the interview sessions. The participation in this study was voluntary and the aim of the study was explained to the informants and confirmed that the interviews and other collected information will be used only for the research purpose. In other words, the ‘informed consent’ has been obtained to perform the interviews (Brydon 2006:26).

Confidentiality is of particular importance in this study. The confidentiality principle needs to be maintained to avoid risks for the participants in the interviews. The participants were assured that their interviews will not be disclosed in order to protect their anonymity. Due to such circumstances names, interview locations and dates were not disclosed in this study. The next two chapters present the analysis of the empirical data and secondary resources.

## CHAPTER 4

# **Relief, Rehabilitation and Livelihood Diversification as Coping and Recovery Strategy**

This chapter presents the empirical resources of the research carried out in a village of the Southwest district of Bangladesh. It aims at a thorough understanding of the livelihood practices applied in response to cyclone Aila, and the interview findings are also compared with the relevant literature. While households suffer from a shock like cyclone, they employ their available resources and options to survive. Such surviving mechanisms are considered as coping strategies. The coping strategies are fallback mechanisms when habitual means of meeting needs are disrupted (Frankenberger 1992:90). Coping and recovery strategies of the poor households of Dumuria village have been revealed through the household level interviews. Moreover, attention is also paid to the challenges that people faced in coping and recovery.

### **4.1 Cyclone Aila and livelihood of the people of Dumuria village**

As a cyclone prone area, the people of Dumuria village have faced numerous cyclones over their lifetime. The people of the village have no clear idea why such cyclones occur time and again. Some people think it happens as “the wish of God”, while others have no explanations for such extreme events. As noted earlier, they experienced the ravage of the cyclone Sidr only two years earlier, which was a severity category above Aila. However, cyclone Aila was different for the people of Dumuria because this cyclone breached the embankment in three different places. As a result, the whole village was washed away, unexpectedly and in no time. Although Aila did not kill anyone, they lost all their livelihood resources. As the 6<sup>th</sup> interviewee stated:

“I somehow managed to save myself and family members with the help of the neighbours, but lost everything including household utensils, and this happened to almost all households of the village”

Dumuria village has a strong group cohesiveness and so when a cyclone strikes, they not only think about personal safety but also try to protect family and extend supports to community members. However, when Aila hit them and sucked them into water, personal survival strategy dominated because “*if personal safety was not ensured how could I help others*”, according to

several respondents. Although the village is located in the cyclone zone, the nearest cyclone shelter is about two-kilometer away from the village centre. Therefore, the people of the village took shelter on the roof-top of the primary school, the mosque and on concrete-built houses of their neighbours, and even on the embankments of the river. The whole village community moved in makeshifts on the embankments within three to four days and had to stay there for about two years as the Government failed to repair the damaged embankments especially because of high tides in the adjacent river. This inability of repairing the embankments following the cyclone contributed to delay the period of recovery. During the field work, as observed, people were just returning to their homesteads from the embankments and striving to reconstruct their houses from scratch.

Before the cyclone, as the local Union Parishad official estimates reflected, the majority (around 70 percent) of the households in Dumuria village depended on fishing (especially shrimp fry collection), shrimp cultivation and collection of Sundarbans forest resources (honey collection, *golpata*<sup>7</sup> collection, shell/crab collection). The rest of the households (about 30 percent) relied on petty-businesses and services. People usually fished from the nearby and rivers adjacent to Sundarbans, but they also cultivated fish, especially shrimp, in *Ghers*<sup>8</sup> instead of cultivating crops. While Aila hit, shrimp cultivators were preparing for harvesting, and therefore the loss of the cultivators was enormous. The fish cultivation remained paralysed for about two years as the embankment remained unrepaired. The other livelihood options were also obstructed because of the destruction of means of livelihood such as boats, nets etc. and due to long-term inundation of homesteads and farmlands. Besides, regular collection of resources from Sundarbans was impeded due to high tide in its adjacent rivers. Thus the livelihood options of the Dumuria village community became extremely limited following the cyclone.

Consequently food shortage was severe especially for the poor household of the village. Along with this, scarcity of drinking water was a serious concern for the community as salt water contaminated nearly all the sources of fresh water. Aside from this, salinisation of ground water aggravated the water crisis, and therefore people faced a huge water crisis. Several of the

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<sup>7</sup> A kind of mangrove palm mostly used as material for roofing.

<sup>8</sup> Ponds inside polders used for the fish and shrimp farming.

interviewed households were struggling to collect drinking water as they either had to fetch from the other side of the river or from water tanks installed by NGOs.

The households of Dumuria village resorted to different livelihood strategies to cope with the dire situation. Livelihood strategies refer to the ways in which individuals, households or communities use and combine their assets within particular institutional and vulnerable contexts with a view to achieving desired outcomes (Longley et al. 2006:11). The following sections in this chapter discuss the livelihood coping and recovery strategies of the households in response to the cyclone.

#### **4.2 Humanitarian responses and relief**

In the immediate aftermath of the cyclone a widespread relief interventions was initiated by the Government, NGOs and national and international humanitarian agencies. Relief materials (foods, household goods, tools, clothes, etc.) had been distributed for about two years in order to reduce the sufferings of the Aila affected people. All the interviewed households had received relief for at least a year to meet their basic needs, but the amount was very limited. Furthermore, the relief operations were not well-coordinated at community level which led to overlaps and gaps.

Most of the respondents received relief from the NGOs and the local Union Parishad, which was helpful in maintaining their livelihoods. However, all this played a minor role in restoring their livelihoods. The poor households were not therefore satisfied with such provision as they feel uncertainty of the sustainability of their livelihoods; instead, they want long-term employment opportunities. As 3<sup>rd</sup> informant noted:

“...both government and NGOs provided different types of relief but they did not create any long-term working opportunity for the community people, by which we might sustain our livelihoods”.

Although huge volumes of relief had been distributed in the village, the poor section was excluded from such interventions. In line with the prevailing law, the Union Parishad is responsible for implementing development plans and programmes at local level. However, informal village power structure mainly controlled by political parties influences the activities of

the Union Parishad. In case of relief distribution, the politicians decide whether anyone will receive the relief or not. The politicians have a tendency to divert relief indiscriminately to their supporters, neglecting the most distressed people. In case of Dumuria, the recipients of reliefs were selected by the local Union Parishad, and the selection was politically motivated as local leaders of the ruling party played an influential role in the process. The relief was distributed disproportionately as the 1<sup>st</sup> respondent pointed out:

“The selection of affected people was not fair because of the bias of the local governing body, so that some of the extremely poor people did not receive any relief. Those who have a close relationship with the local political leaders received relief time and again, even though they are not poor”.

It is argued that relief and development processes lie in direct opposition. Relief is generally understood as short-term provision of physical commodities to victims in an acute crisis; in contrast, development is perceived as a process that enables chronically marginalized people, individuals, households and communities to achieve self-reliance in meeting human needs (Buckland 1998). Development is by definition is meant to enhance the capabilities of poor and vulnerable groups through the expansion of physical, human, social and political capital. The efforts of development generally therefore attempts to promote self-reliance. Relief, on the other hand, creates dependency on the providers through the physical provision of goods and services. Using the case of Nicobar Island in the aftermath of the 2004 tsunami, Singh (2009) shows that:

“Aid programmes of the government and international aid organizations in the Nicobar Islands have changed the traditional social and power relations, leading to an erosion of traditional institutions, values and rules of resources use. Aid money has accelerated the transition from a formerly hunting-and-gathering subsistence based economy towards an economy linked more to the global market and dependency on aid money and goods”

Traditional disaster thinking considers disaster as disruption of linear development process and relief intervention can patch things up so that the process of development can start up again (Twigg 2004). Emergency relief measures are critical following the disasters, but there is a debate to what extent relief intervention is developmental. Macrae (2002 cited in Christoplos et al. 2004:26) argues that loading relief with development objectives is unrealistic. Relief has also

been criticized because of the failure of addressing underlying causes of vulnerability. Christoplos et al. (2004:26) have observed that humanitarian relief has little impact in helping people to reestablish their lives and livelihoods in situations of chronic conflicts. Moreover, relief and rehabilitation interventions are widely criticized as they reinstate prevailing systems and thus risk the rebuilding context which continues to be vulnerable as many people utilize the opportunities of relief to lead a care-free and long life being dependent on it.

This argument is also supported by the case of Dumuria village. Many people did not look for work, rather depended on relief. Even some families who had migrated to work in city centers returned quickly as to get enlisted as beneficiaries of NGO rehabilitation projects. Besides, the Prime Minister had announced the provision of an amount of Taka 20,000 to every household of Gabura Union as one of the most affected unions. All households opened bank accounts as a requirement to receive the money. Many households were waiting for this money and lobbying with the local power brokers. This dependency relationship reinforces long-term structural constraints to development and weakens self-reliance of households (Buckland 1998). As the 1<sup>st</sup> respondent put it:

“...long-term relief distribution and aid make the community people greedy and lazy and ferocious and even shameless”.

The implication of the provision of goods and services in enhancing coping capacity is yet to be carefully analyzed. The informants confirm that relief helped them to smooth their consumption immediate after the cyclone; however, it triggered conflict in the community, as the 1<sup>st</sup> respondent said:

“The unequal distribution of relief makes for conflict and complexity in the community”.

The emphasis on linking relief and development is therefore burgeoning. Watson (1994 cited in Davies and Hussain 1997) argues that developmental objectives should not be forgotten in emergency situation. Rather disaster risk reduction should be regarded as a part of long-term sustainable development work and should be a core element of development planning<sup>9</sup>.

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<sup>9</sup> [http://practicalaction.org.org//disaster-reduction?dm\\_i=6WS,KAQC,4CFMZL,1NENO,1](http://practicalaction.org.org//disaster-reduction?dm_i=6WS,KAQC,4CFMZL,1NENO,1)



### **4.3 Livelihood rehabilitation**

Rehabilitation is often regarded as the process that links relief and development of which the implicit aim is to return to former, supposedly stable and desirable states of affairs (Longley et al. 2006:7). After the phase of emergency assistance, initiatives were taken to rehabilitate the livelihoods of the Aila affected communities. The impact of disaster was greater on the poor of Dumuria village as they had fewer resources to recover their livelihood. Households lost their productive resources such as boats and nets, and these losses reduced their ability to earn income and maintain livelihood. In response, the Government, NGOs and international development agencies were working to rehabilitate and recover the livelihoods of vulnerable communities affected by the cyclone through livelihood support and restoration of the damages. Bangladesh has a long history of operation of public works through cash and food-for-work programmes in response to the disaster. *Ex-post* public works was useful to restore infrastructure and to provide employment to those households that had lost access to labour opportunities. However, these responses mainly focus on physical reconstruction of the damaged household and community infrastructures, while relatively little attention was paid to the rehabilitation of livelihood. For livelihood recovery, NGOs provided supports such as equipments, tools and work opportunities. People who were employed in the infrastructure restoration programmes were paid only TK 150 per day, not enough to rebuild livelihoods that have long-term sustainability. As a consequence, the beneficiaries of such livelihood support projects often felt unable to pursue their own recovery (Pomeroy et al. 2006:787).

Rehabilitation of livelihoods requires looking beyond a return to the status quo and instead addressing the root causes of the vulnerability of the coastal people and communities. As Pomeroy et al. (2006:788) argues that the “rehabilitation of coastal livelihoods after a natural disaster should be seen as an opportunity to strengthen and revitalize coastal communities. The focus of rehabilitation efforts should be on building the economic basis of livelihoods rather than on physical reconstruction, and on giving the coastal people the skills and resources for self-recovery”. As such, rehabilitation programmes need to address the factors that have led to vulnerability such as social and economic inequality, limited asset ownership and lack of participation in decision-making. However, the rehabilitation measures taken in response to Aila hardly addressed these issues. Although coastal communities are diverse (ibid) in terms of their

differences of livelihood means, one-size-fits-all approach is being followed in rehabilitation of coastal livelihoods. Such short-term action can impede the sustainable long-term rehabilitation.

The repair work of Aila affected embankments and rural roads created massive employment opportunities for the people of Dumuria village, and many collectors of Sundarbans reserve forest (SRF) resources had been chosen to be employed there rather than earning from SRF extraction amidst the risk of pirates and tigers. The SRF collectors would be unwilling to travel Sundarbans if they had alternative opportunities for employment and income. Many temporary migrants also returned to the village with the expectation of working in rehabilitation programmes. However, interviews suggest that rehabilitation programmes did not enable them to become self-reliant. Instead the local people still felt vulnerable with these rehabilitation programmes since they worried about what they would do after phasing out the programmes. The 7<sup>th</sup> interviewee said:

“Temporary work opportunity in rural rehabilitation programmes has been helping me a lot in maintaining my livelihood. But I am worried about what will happen when the work opportunity disappears”

Besides, the access to employment opportunities was unfair. In many cases, the most vulnerable people failed to enjoy work opportunities as the selection process was captured by the local power brokers. Rehabilitation programmes also provided little consideration on ‘social feasibility’ such as compatibility with local needs and aspiration, existing livelihood strategies, economic and social structure, gender differences and the culture of affected communities and households. In most of the cases, these programmes took ‘standard’ strategies following the organization’s values. Therefore, instead of relying on rehabilitation initiatives, the households depended on individual resources and social networks for rehabilitating their livelihoods.

#### **4.4 Informal support mechanisms in the coping process**

Informal credit contributed to the coping process of cyclone-exposed households of Dumuria village. Households who had fewer alternative options depended on various types of informal social mechanisms to recover (Mozumder et al. 2008:205). According to the interviews, households took loans from *mahajans* (money-lenders), who are mainly better-off households in

the community, neighbors, and kin. They use the loans especially for purchasing food items, but in part they borrowed also for repairing houses and for business. In the context of Dumuria village, borrowing from *mahajans* played a crucial role in the recovery process. As the 11<sup>th</sup> respondent said:

“I ran a cloth business that got washed away because of Aila, but now I have resumed my business by purchasing cloth on credit from the *mahajans*. Though they charge comparatively high price for the products, they give me flexible time to payback. I have a good relationship with *mahajans* and so I buy the cloth on credit and return the dues after selling these”

Well-off neighbours also extended help to the poor households of Dumuria during the disaster. The 6<sup>th</sup> respondent recounted:

“I had to borrow for my living from the neighbours. Neighbours were very helpful as they came forward in my need”.

Many households mentioned loans from relatives were important coping mechanism of Dumuria village. Societies of Bangladesh are based on a strong kinship system (Quisumbing and Maluccio 2003 cited in Mozumder et al. 2008:205), and the kinship networks tend to offer support to the relatives in crisis. Another very common coping strategy was purchasing food on credit. People purchased basic necessities such as rice, pulses, oil and other products from local shops on credit, though shoppers charged higher prices for these essentials. According to the interviews, informal credit had important implications in rehabilitating the livelihood of cyclone Aila victims, which is further illustrated in following section. In response to the 1998 floods in Bangladesh as a whole borrowing or purchasing of food on credit was the major coping strategy of the poor households (del Ninno et al. 2001:82-84). Evidence from other countries confirms that poor households commonly increase their borrowing in disaster periods. In Vietnam, as Beckman (2006:77) shows, many households took informal loans for food security in response to the 1999 flood disaster.

#### **4.5 Livelihood diversification as coping and recovery strategy**

Diversification of livelihood strategies is commonly employed to cope with temporary crisis. Livelihood diversification is a “*process by which rural families construct a diverse portfolio of*

*activities and social support capabilities in their struggle for survival and in order to improve their standard of living*” (Ellis 1997). Livelihood diversification is an important strategy employed by the rural people of sub-Saharan Africa in order to cope with crisis and seasonal stress (Jiggins 1986; 1989, cited in Hussein and Nelson 1998). People attempt to diversify their income portfolios into both on- and off-farm activities in response to a risk, when primary activities fail to satisfy their subsistence needs (Hussein and Nelson 1999). Datta et al. (2003:32) expand this notion in the context of Bangladesh:

“The main disaster-coping strategy of almost all groups in the coastal zone is diversification of income sources. Instead of households depending on one or two activities, they now spread their working-age adults over different activities, and if possible, localities, thereby ensuring that problems in one area of their livelihoods has a lesser impact on them”.

Livelihood diversification strategies of a household are determined by a wide range of factors such as ability of households to access credit (Dercon and Krishnan 1996 cited in Hussein and Nelson 1999). As such, researchers suggest that formal and informal institutions, social networks and NGOs also shape some aspects of livelihood diversification. On the other hand, as Hussein and Nelson (1999) demonstrate, the livelihood diversification affects social relationships and institutions, which can result in “changes in the respective roles of men and women within the household and society”. For example, the roles of women have changed in the study of Dumuria after Aila, which is discussed at the length in section 4.7.

Diversification of income-earning activities appeared as a key factor because intensification of primary activities is not possible in the SIZ. Livelihood of the region has unique characteristics as it tremendously depends on SRF about 18 percent of households in the area depend on the forest, although agriculture is still the mainstay of the economy in the region (Islam 2010). SRF is now directly providing income and subsistence for at least half a million people, and maintaining a similar number of household in the buffer area (ibid). SRF collection activities comprise a unique financial network across its buffer area, revolves around an informal financial credit system, which is called *dadon*<sup>10</sup>. In the economy of Sundarbans, *dadon* provides the major bulk of finance for the SRF resource collectors; while institutional sources (banks or NGOs)

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<sup>10</sup>*Dadon* is a unique credit transaction system dominant in SIZ, which is based on social connections, whereby the debtors have to sell their product to or through the creditors at a discounted price.

supply only small amounts. Islam (2010:52) shows that about 96 percent of the working capital by SRF collectors is derived from *dadon*, whereas only 4 percent is derived from the NGOs. “The *dadon* takers, more often the harvesters, usually cannot pay-off the debt, the whole cycle is never ending and they lock for a long time, sometimes for forever. In turn, some of them charge interest from 2 to 10 percent on sales. They also take additional share of the profit for their investment, apart from making pilferage in terms of weights on the purchased quantity.” Islam (2010) identifies also the causes for which SRF collectors prefer *dadons* to all other resources, as he puts it: “one of the major reasons is that *dadon* provides physical security (e.g., from pirates), social security (in lean and hazard periods) and financial securities (funds for running extraction activities) to the collectors, a feature institutional sources seldom can provide”. Being a village in the SIZ, the Dumuria village community members are largely dependent on *dadons* for SRF collection. After the cyclone Aila, livelihoods of the people of Dumuria largely revolved around the collection of resources from Sundarbans, which includes fish, honey, wood, leaves of trees, wax, etc. Therefore, they became heavily dependent on *dadon* for SRF collection. As the 5<sup>th</sup> respondent said: “*I took dadon from a local mahajan to go to Sundarbans as I lost my all previous livelihood means*”. Almost all the male respondents predominantly depended on the forest for maintaining livelihoods, although they really wanted to reduce their dependency on the Sundarbans. The 3<sup>rd</sup> respondent opined that:

“I do not want to go to Sundarbans because it involves several hazards including risks to life from tigers and other ferocious animals and from pirates in Sundarbans, but so far I do not have any other option for feeding my family”.

Following the cyclone, agriculture activities were suspended as the village was submerged and thus people became heavily dependent on Sundarbans. As the 5<sup>th</sup> interviewee put it:

“I depend on the Sundarbans for my livelihood because there are no employment opportunities like there used to be. I go to Sundarbans for *golpatha* collection, honey collection etc. But this profession is not profitable as I have to borrow money from a local *mahajan* on condition of selling my products to him at lower prices”.

The livelihood pattern of this village drastically changed especially after the 1990s following the advent of shrimp culture. Shrimp culture was popular due to the demand in international markets.

Moreover, crop cultivation was no longer financially viable because polders had become waterlogged due to poor drainage (Karim 1986). As a result, massive amounts of crop land were turned to shrimp farms within a few years along the entire area of the Southwest region of the country. The large absentee landowners found shrimp cultivation a golden opportunity to become rich quickly with access to the institutional capital, the fisheries and business expertise, the international market and the political power structure (Datta et al. 2003). According to Datta, owing to the demand for land for shrimp cultivation, local small farmers leased out their land to shrimp business, though it had negative impacts on them and their land (ibid). The interviews also confirm that the small farm holders had no option but to lease out their land because neither cultivation of rice was possible due to salinity intrusion, nor cultivation of shrimps because of the small size of farms and lack of capital. Therefore, marginalized people became even more marginalized. The 4<sup>th</sup> interviewee recalled:

"Today, nothing is grown in our land. In the past, people from other districts would come to assist us, especially during rice harvest. Now we have to work for others during harvest of cereals. We want to return to farming, which is urgent both for our survival and the protection of the Sundarbans. In the absence of agriculture, everyone has become dependent upon the Sundarbans."

The shrimp firms are controlled by a small but a very powerful group of mainly absentee owners. There is a growing demand now to return to rice production. As a result, conflict over the different uses of land has increased and so vulnerability of the poorest quartile has increased as well (Datta et al. 2003). The 2<sup>nd</sup> respondent observed:

"Even thirty years back we had enough fields for rice production and at that time we also had good harmony in the community. At present, people are not united since some people want to return to crop cultivation while others (mainly shrimp farm holders) want to continue shrimp cultivation".

A majority of the respondents think that large-scale shrimp cultivation was fatal mistake that partially uprooted them from on-farm activities, since prawn cultivation is less labour intensive. At present, agriculture is no longer the mainstay of the economy of the coastal zone and many wage labourers have diversified their livelihoods by moving into non-farming activities as well as self-employment opportunities (ibid). The subsequent disasters have accelerated this process. After the cyclone Aila, many people of Dumuria further diversified their livelihoods, for

instance, working in small-scale enterprises in the nearby bazaars. In addition, several households also migrated to the urban centers in order to diversify their livelihoods.

#### **4.6 Migration as a coping strategy**

Migration is generally considered an important livelihood strategy. As Hussein and Nelson (1999) argue, “migration forms a central part of rural people’s risk mitigation strategies”. They further suggest that “migration forms a central component of livelihood diversification”. In analyzing the case of Ethiopia, Mali and Bangladesh, McDowell and de Haan (1997) suggest seeing migration as livelihood strategies of households, rather than as isolated migration events. In other words, migration has direct linkages to income generating activities. In the context of Bangladesh, natural disasters play a significant role in forcing people to migrate to large urban centers and cope with shocks (Rayhan and Grote 2007).

Frankenberger (1992) argues that households take three sequential series of activities as stress becomes more prolonged: first, reduce their food consumption at minimal level; second, employ divestment or the gradual disposal of assets and finally, embark upon migration. As such, households decide to migrate when they fail to cope with the crisis. Many households of Dumuria moved into urban centers in search of employment. The 9<sup>th</sup> interviewee said:

“I did not get any work as boat technician since the whole village was under water. In response, I migrated with my family to Jessore for working in a rice mill. I had no other option. At the time, I lived in small room in a slum and earned only Tk 5,000 to maintain my four member family. Although I was satisfied with such a living, I had to go back to the village otherwise I would have lost the ownership of my homestead.”

The cause of migration of the 9<sup>th</sup> respondent was similar to a majority of households of Dumuria village. The majority of households depend on fishing, shrimp fry collection and SRF collection. Poor households in the area mainly depend on the wage work in the farms and in the Sundarbans. Due to Aila, the demand for wage labour decreased significantly and people became jobless for long periods. At that people partially depended on food and cash credit from their kin and community networks. The rehabilitation process was prolonged and so it became impossible to depend on informal loans. Many household migrated either temporarily or permanently due to

the disruption of their livelihoods. Some decided to migrate to repay the loans and to save some amount. The 6<sup>th</sup> respondents recounted:

“After six months of the cyclone, I migrated temporarily to another district for working in *Chatal* (rice mill). I migrated because I could not feed my family...I had to buy food on credit from a *Mahajan*’s shop and borrow from neighbours. At that moment... there was no work available in the village.”

In many cases the head of households migrated to large urban centers and sent remittances back home. In some cases entire households also migrated to make their living and returned later. The decision to migrate was largely influenced by household social networks because, as Rayhan and Grote (2007) shows, it functions as a form of credit and important sources of income for the potential migrants. Migrants used their networks, especially those living at the place of destination, to get information about the host areas. The interviewed households who migrated for recovering their livelihoods also chose their ‘place of destination’ using their social networks. In other words, social capital contributed to manage household’s livelihood through migration.

#### **4.7 Women and disaster**

Gender specific analysis is imperative as literature shows the existence of gender differentiation in coping strategies (Chen 1989, Kabeer 1990, Davies and Hossain 1997, Nasreen 1999). According to Kabeer (1999), norms and religious values exclude women from participation in certain activities. In the context of Bangladesh, the cultural expectation is that women should engage in home based responsibilities. Such cultural norms reduce women’s options of adaptation (Chen 1991; Adams 1993 cited in Davies and Hossain 1997). Furthermore, these constrain women from engaging in diversified livelihood strategies, that is, migration, borrowing, diversification of income sources etc. Even if they pursue the same livelihood strategies as men, they remain vulnerable due to the patriarchal family structure of Bangladesh that constrains access to different assets. Hussein and Nelson (1998) point out that non-farm employment is skewed in favour of men, and against women in an African and Asian context.

Although women are restricted to engage in several livelihood options, traditionally they played a crucial role in household’s capability to ‘bounce back’ after a disaster. As Nasreen (1999:36) shows, the burden of flood coping falls heavily on women. She argues that although the poor



rural women have very few options open for overcoming their problems, their roles in disasters are obviously not simple because of the wider responsibility of having to protect their households. Women engage themselves in a range of socio-economic activities. During floods women continue to be bearers of children and responsible for their socialization, collectors and providers of food, fuel, water, fodder, building materials and keepers of household belongings. Nasreen also argues that it is women's strategies, developed over the last few years, which are vital in enabling the rural people to cope with disaster. This study reveals that the women of Dumuria engaged themselves in diversified income activities outside the home, such as fry collection, earth works in rural rehabilitation programmes along with more gender specific works such as carrying water, cooking and caring of children and animals. The role of women has changed in response to the disaster. The 7<sup>th</sup> interviewee said:

“...I used to maintain my living by working as domestic help in the neighborhood before cyclone Aila... but now I do not have any regular employment...sometimes I work in infrastructure rehabilitation projects. I was not used to working outside home but now there is no alternative for me”

In the wake of cyclone Aila, women increasingly engaged themselves in income-earning activities to cope with the disaster and recover their livelihood along with performing their household activities.

## CHAPTER 5

### **Institutional Context, Social Protection, Coping and Recovery**

Communities do not exist in isolation, but depend on interactions with and inputs from institutions and organizations working inside and outside of their geographical location. Officials of the union, upazila and district play an important role in influencing the course of the livelihood activities undertaken in their respective locations. Besides, civil society organizations especially NGOs play influential role in shaping livelihood strategies in the country. In a disaster situation, these institutions play pro-active roles in making communities cope with disaster. This chapter focuses on the role of these institutions in coping and recovery the livelihood of the people of Dumuria village.

#### **5.1 Social protection in response to Cyclone Aila**

Social protection refers to all public and private initiatives that provide income or consumption transfers to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalized; with the overall objective of reducing the economic and social vulnerability of the poor, vulnerable and marginalized groups (Devereux and Sabates-Wheeler 2004:9). According to this definition, the aim of social protection is to reduce the vulnerability of the poor and marginalized people. Longley et al. (2006:35) observe that social protection is a means of ensuring a smooth transition from the chaotic and haphazard collection of relief projects to a more reliable and regularized system that protects the population as a whole. Nonetheless, social protection alone is insufficient to allow the poor and vulnerable people to recover from a crisis (Shepherd 2004 cited Longley et al. 2006:33).

The Government of Bangladesh has a number of well-established social safety net mechanisms prepared in response to the event of a disaster, namely, Vulnerable Group Development (VGD), Vulnerable Group Feeding (VGF), Cash/Food-for-Work, Test Relief (TR) and Gratuitous Relief (GR). In addition to the government's social safety net responses, NGOs and international bi-lateral and multi-lateral partners provide parallel response programmes as post-disaster relief and rehabilitation efforts. These programmes have positive impacts in smoothening the consumption

of the affected households. Hewitt (1997:188) argues that social protection provisions in a society play a decisive role in whether the disasters will happen, and to whom they will happen. Vatsa (2004:34) contends that:

“Applying social protection programs for disaster management will mean introducing both *ex ante* and *ex post* measures. In practice, *ex ante* measures will include credit, subsidy and assistance for improvement in shelter, flood protection, crop management and diversification of livelihoods, whereas *ex post* measures will mean using the financial services for resumption of economic activities, reconstruction, and even consumption”.

In Bangladesh, social protection measures are employed in the form of target-based social safety net programmes (SSNPs) for both *ex ante*, to prevent and mitigate the impact of natural disaster and *ex post*, to cope with the impacts of natural shocks. The people of the study village had been predominantly dependent on the SSNPs after cyclone Aila. Following the target-based SSNPs of the Government, 250 cyclone affected families of Dumuria received 20 kg rice every month under the above-mentioned VGF programme for 18 months that satisfied their food consumption. They also received in-kind supports (including food) from both national and international NGOs.

Although the objective of targeting was to maximize the benefits for those who were in need of support, and to minimize the wastage and programme cost, the implementation of target-based safety nets remained highly problematic in terms of mis-targeting and leakage. The 10<sup>th</sup> respondent said:

“Some households of the village received more safety net facilities compared to others because they are the supporters of ruling party and the extremely poor households were excluded.”

The World Bank (2006) study points out that leakage from food-based programmes ranges from 10-50 percent and 5-25 for cash based programmes in non-crisis time. Empirical evidence shows that the leakage of SSNPs also remains high in post-disaster situation. However, the respondents of the present study claimed that safety nets significantly helped them through the coping period. Pelham et al. (2011:42) show that in spite of huge floods in 1998 and the loss of ten percent of annual food consumption, safety nets (both VGD and GR) combined with the longer-term changes in economic structure meant that recovery from the floods was relatively rapid.

Regression analysis indicates that the impacts of the food transfers combined with trade liberalization contributed between 64 and 133 kilocalories to daily consumption of each person. Thus the SSNPs are considered as an important tool for managing the risks of natural hazards.

The safety net-based risk management approach is dominant in Bangladesh which tends to focus on the economic aspect of social protection. However, focusing on only economic mechanisms rather than development objectives, social protection interventions do not fully address the issues of social vulnerability including marginalization and exclusion (ibid:12). Furthermore, social protection policies and programmes hold minimal dialogue with intended beneficiaries, although development as well as disaster risks reduction policies of the government aim to be more people-centered. Besides, short-term safety net responses, as respondents told, only meet the basic needs of households, but do not address livelihood rehabilitation sufficiently. The social protection responses therefore contributed to coping with livelihood stress but failed to address the causes of vulnerability during disaster.

## **5.2 Government institutions in coping and recovery**

Bangladesh has formulated a National Plan for Disaster Management 2010-2015 in order to address the disaster risk comprehensively. The plan reflects the country's initiatives in line with the paradigm shift in disaster management from conventional response and relief to a more comprehensive risk reduction culture including development linkages; however, this approach is yet to be realized in practice.

The Government has established well-designed institutional mechanisms for responding to disasters in line with its current perspective. The National Disaster Management Council (NDMC) and Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) will ensure the coordination of disaster related activities at the national level. The Disaster Management and Relief Division (DMRD) under the Ministry of Food and Disaster Management (MoFDM) of the Government of Bangladesh has the responsibility for coordinating national disaster management efforts across all agencies. The Disaster Management Bureau (DMB), a technical arm of DMRD, is responsible for overseeing and coordinating all activities related to disaster management from national down to grass-roots level. The Government has enacted Standing Order of Disaster (SOD) with the aim of making the concerned authorities understand

their duties and responsibilities regarding disaster management at all levels, and accomplishing them. In other words, it defines the roles of government and non-government entities in disaster management. In line with this, co-ordination at district, upazila and union levels is done by the respective district, upazila and union disaster management committees. The Union Disaster Management Committee (UDMC) is the lowest administrative unit of disaster management. The UDMC consists of the chairman of Union Parishad as the chairperson and members comprising all the Government departments' head at Union level, members of Union Parishad, NGO leaders, working in the respective union, and civil society members. The committee is supposed to meet bimonthly during normal periods and when necessary during emergency situations. Nonetheless, in most cases the committees are non-functional, or they function only in times of crisis (Khan and Rahman 2007:369). Immediately after the disaster, community people meet mainly with the local government representatives for supporting their needs, but local governments had no autonomy either in decision making or financial matters (ibid).

All the respondents confirm that the local government body was controlled by the political parties in power and therefore relief and rehabilitation programmes were used as a political instrument that hinders the coping and recovery process. The 10<sup>th</sup> interviewee, also a female member of local Union Parishad, was not able to participate in the activities of the relief and rehabilitation as she is a member of the opposition political party. Mostly the local leaders of the political party in power controlled everything. In addition, selection of the beneficiaries for relief was unfair. The 3<sup>rd</sup> respondent observed:

“The selection of households for relief and rehabilitation was biased, so some of extremely affected people did not get any relief and work”.

There were widespread allegations of misappropriation of disaster relief against the chairman and members of Union Parishads and other organizations responsible for distribution of relief in Aila affected upazilas, including the studied one<sup>11</sup>. Several respondents of the study also held this view. Moreover, the Government, in coordination with NGOs and international organizations, responded to the cyclone emergency and assisted the affected population, but interviews suggest that there was a lack of coordination among them. The Government therefore drafted Disaster

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<sup>11</sup>[http://arrkhan.blogspot.com/2010\\_05\\_01\\_archive.html](http://arrkhan.blogspot.com/2010_05_01_archive.html)

Management Act with the provision to hold the accountable authorities responsible for reducing disaster risks and protecting lives and livelihoods of people.

### **5.3 The role of NGOs in coping and recovery process**

In the absence of strong public action, civil society plays significant role in coping and recovery of livelihood in Bangladesh. Davies and Hossain (1997:8) have distinguished between formal and informal organizations of civil society, considering their complexity and plurality. According to them, formal civil society is comprised of visible, legally recognized organizations and institutions (such as foreign and indigenous NGOs, business association and established community organization), whereas informal civil society is made up of less defined and less visible rules and alliances based on kinship, caste, class and gender, which operates within and outside the household. The role of informal civil society in livelihood adaptation is crucial, although it is often ignored because of difficulty to observe, measure or generalize. As such, informal civil society is generally marginalized by the state's and formal civil society's attempts to support adaptation during shocks. Amongst formal civil society organizations in Bangladesh, NGOs are the most visible and actors influencing livelihood adaptation after shocks. Over a dozen national and international NGOs have been working in the study area so as to provide emergency assistance and recovery support.

NGOs have played significant roles in the disaster management of Bangladesh over the last three decades. At present, a quarter of all foreign assistance to the country is channeled through the NGOs and an increasing portion of these funds are used for disaster management. The DMB, the apex government organization responsible for coordinating natural disaster management across all agencies, has been assigned the role of coordinating the NGO activities. The NGOs, both national and international ones, have been implementing a range of relief and rehabilitation programmes after cyclone Aila. Immediately after the Cyclone, NGOs were mainly involved in humanitarian relief distribution and later they have taken on numerous rehabilitation programmes. The immediate support of NGOs has been diverse in nature and has included asset transfers (such as boats, nets, livestock and food), cash transfers and other non-food and emergency items (such as jerry cans, mosquito nets, pure water). These emergency interventions were initiated to address the basic survival and protection needs of the affected households. All

the respondents reported that NGO relief and rehabilitation programmes helped them in sustaining livelihood after the Aila.

Rehabilitation programmes also have been initiated by the NGOs to support the restoration of livelihoods, shelters and basic water and sanitation standards covering only a small portion of affected families with the aim of decreasing vulnerability<sup>12</sup>. Along with the local government, NGOs are implementing cash for work programmes to restore the damages of rural infrastructure as well as to recover households from crisis. Thus NGOs have become the core partner in the livelihood coping strategies. Nonetheless, this short-term livelihood support may not contribute to reduce livelihood vulnerability. The 3<sup>rd</sup> interviewee responded:

“...Government and NGOs provided different types of relief and short-term employment, but they did not create any long term working opportunity for the community people, by which we can sustain our livelihoods”.

Microcredit is often considered an important tool for reducing the vulnerability of the poor, usually operated by the NGOs. Microcredit refers to small loans made to poor households by a bank or other institution which are offered without collateral to individuals or to groups (see [www.microfinancegateway.org](http://www.microfinancegateway.org)). By providing access to credit, savings and insurance, microfinance can contribute to increase the disaster risk management capacity of individuals and households (Pantoja 2002:27). However, there is a lack of empirical evidence on the extent to which microcredit in particular may promote and reinforce coping practices and so it is not possible to draw firm conclusion on the impact of microcredit on post-disaster recovery. Ray-Bennett (2010) suggests that “microfinance alone cannot solve women’s vulnerability to multiple disasters”. Although loans are used for short-term risk through measures such as housing repairs and livestock vaccination these loans may increase long-term risks if they are not translated into stable or increased income levels (Pantoja 2002:28). Households therefore tend to borrow from the informal sector.

When a disaster strikes in Bangladesh, it is observed that Microfinance Institutions (MFIs) reschedule their repayment programmes and offer new loans for speeding up the rehabilitation. However, rescheduling creates a greater financial burden for clients during the post-disaster

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<sup>12</sup><http://cccm.iom.org.bd/file/pdf/32.pdf>

reconstruction phase (Brown and Nagaranjan 2000:23). A one- or two-month reschedule on a short-term loan is likely to create unsupportable increases in the remaining payments and, in cases where clients have lost everything, rescheduling may not be enough to help them survive and re-establish themselves (ibid). Besides, microfinance hardly considers the risk measures and therefore people become heavily dependent on informal credit. The majority of the respondents confirmed that they have borrowed from their kin, neighbours and local money lenders at an exorbitant credit rate.

Microfinance services typically do not reach the poorest of the poor (Cohen 1999). Thus destitute households are outside the reach of most microfinance programmes. It supports the economically active poor, or those who are hovering just above the poverty line to help them stay above it. The present study also supports this claim. Selection criteria are used to select participants for microcredit programmes mostly to ensure that participants are capable of repaying loans (World Bank 2006). Only one of the interviewed respondents, who is comparatively better-off and runs an enterprise, has received credit from a local NGO. He (11<sup>th</sup> respondent) reported that *“Aila washed away my cloth business...a credit of TK. 20,000 has helped me to restart my business a bit smoothly”*. This indicates that the loan was distributed to the less vulnerable members, which in turn helped them to recover from cyclone shocks.



## CHAPTER 6

### Conclusions

The study is intended to know the coping and recovery strategies of a coastal community of Bangladesh in response to the cyclone Aila. In so doing, semi-structured interview and observation were used to collect empirical data and secondary data sources include books, research articles, development reports and internet resources. The foregoing two chapters present the findings of this research which are summarized below.

The households of Dumuria village had low resource bases to cope with the cyclone hazard. The findings suggest that the poor section predominantly relied on ‘common property resources’ such as water and forests for their livelihood. The dominant coping strategies included fishing and collecting fish fry and SRF resources and thus the means of coping were very much dependent on access to ‘natural capital’. In addition, informal support mechanisms such as kin and community networks, credit from *mahajans* helped them to cope with the devastating situation. Thus ‘social capital’ was crucial and contributed to access to other resources including loans and day labour opportunities. Livelihood diversification was also important strategies for coping and recovery livelihoods and in this case the social and human capitals shape the means of diversification. The people of the village diversified their livelihood by engaging in different on- and off-farm activities in response to risks.

The Government and NGOs took initiatives with the support of the international development partners in order to increase the coping and recovery capacity of the community but it only partially satisfied their consumption, so that the long-term impacts of such responses were not enough to recover livelihoods. This research identifies a set of socio-political factors and unequal access to the necessary capitals impeded the process of coping and recovery of the households. The interviews suggest that there were no initiatives to address these root causes of the households’ vulnerability.

Most of the respondents cast doubt on the initiatives of disaster recovery as they did not lead to long-term recovery. Moreover, long-term relief and rehabilitation programmes hindered the local recovery process. Local coping and recovery strategies, such as informal credits, livelihood

diversification and migration proved to be the main livelihood alternatives for recovery. The most important component of coping and recovery of the poor households was access to natural resources such as forest, land and water. The Government and NGOs' rehabilitation projects hardly considered the access to resources in order to reduce disaster risks. Despite of the setbacks, households' efforts were successful in recovering the livelihoods of the village community.

Coping and recovery strategies based on indigenous strategies have been far more significant than external assistance. Following many generations of experience, people of the study village have learned to cope with disasters in their own ways. Although they have limited options, people are increasingly searching for alternative livelihood strategies to adapt to the reality of severe disruption of their livelihoods. Due to lack of financial and physical capital, households increasingly rely on natural, human, social capitals, but these capitals are not enough for making them resilient. Risk reduction strategies therefore need to capitalize on the inherent social and cultural capacities of the communities.

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# **APENDIX A**

## **Interview guide**

Semi-structured interview were conducted based on but not strictly following to the interview guide.

1. Background information (name, gender, age, profession, religion).
2. What do you mean by cyclone hazard? How does it affect your life?
3. Have you changed your livelihood? If yes why?
4. What was your livelihood before the cyclone?
5. What is your main livelihood practice now?
6. Are you satisfied with this livelihood? If not why?
7. What were the responses of government and nongovernmental organizations following the cyclone Aila?
8. What were the implications of the GO and NGOs in sustaining and adapting livelihoods?
9. What can be done by GO and NGOs to adapt cyclone hazards?

**APPENDIX B Selected Photographs**



*Aila Devastated Dumuria Village*



*Repaied Rural Road in Dumuria*



Drinking Water Supply in the Study Village



Sign Board of a Humanitarian Assistance Project



*Fishing in the Adjacent Khulpetua River*



*A Boat Used for Collecting Resources from Sundarbans*