

**WOMEN IN CLIMATE CHANGE ADAPTATION PROGRAMME IN  
BANGLADESH: EXTENT OF PARTICIPATION AND THE PERCEIVED  
CONSEQUENCES**

**By**

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## **ORIGINALITY DECLARATION**

This is to certify that this thesis is my own work. It has not been submitted to any other university for a higher degree.

This Thesis strictly follows the proper citation for resources taken from other sources.

Tarana Begum

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## LIST OF ABBREVIATIONS

ADB	Asian Development Bank
ADF	African Development Foundation
AIACC	Assessments of Impacts and Adaptation to Climate Change
BCAS	Bangladesh Centre for Advance Studies
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BFD	Bangladesh Forest Department
BFIDC	Bangladesh Forest Industries Development Corporation
BFRI	Bangladesh Forest Research Institute
BIDS	Bangladesh Institute for Development Studies
BIISS	Bangladesh Institute of International and Strategic Studies
BNH	Bangladesh National Herbarium
BRAC	Bangladesh Rural Advancement Committee
BWDB	Bangladesh Water Development Board
CCC	Climate Change Cell
CCF	Climate Change Fund
CDMP	Comprehensive Disaster Management Programme
CIDA	Canadian International Development Agency
COP7	Seventh Session of the Conference of the Parties
CPD	Centre for Policy Dialogue
CRA	Community Risk Assessment
DFID	UK Department for International Development
DMB	Disaster Management Bureau
DMRD	Disaster Management and Relief Division
DoE	Department of Environment
FAO	Food and Agriculture Organization

GoB	Government of Bangladesh
IGA	Income-Generating Activities
IMDMCC	Inter-Ministerial Disaster Management Coordination Committee
IPCC	Intergovernmental Panel on Climate Change
LDFC	Least Development Countries Fund
LDRR Fund	Local Disaster Risk Reduction Fund
MDGs	Millennium Development Goals
MDMR	Ministry of Disaster Management and Relief
MoEF	Ministry of Environment and Forests
MoFDM	Ministry of Food and Disaster Management
NAPA	National Adaptation Program of Action
NDMC	National Disaster Management Council
NEC	National Environment Committee
NGOs	Non Government Organizations
NIDOS	Network of International Development Organization in Scotland
OECD	Organization for Economic Cooperation and Development
PRSP	Poverty Reduction Strategy Paper
RRAP	Risk Reduction Action Plan
SAARC	South Asian Association for Regional Cooperation
SHARP	Socio Health and Rehabilitation Program
UDMC	Union Disaster Management Committee
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNEP	United Nations Environment Program
VRRCPP	Vulnerability & Risk Reduction through Community Participation
WFP	World Food Program

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Community

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## **ABSTRACT**

The thesis examines the extent of participation of women in the Comprehensive Disaster Management Programme (CDMP). CDMP is a program undertaken by Bangladesh government to reduce the vulnerability of women to climate change. The study looks at the consequences or outcomes of CDMP from women's perspectives.

The research focuses on the poor and vulnerable women in Bangladesh. Field work was conducted in Bahuli and Ratankandi unions in Sirajgonj district, Bangladesh wherein the Comprehensive Disaster Management Programme (CDMP) Phase One was implemented after a devastating flood in 2007.

The study finds that while Bangladesh women are the most affected and vulnerable sector of society to adverse climate changes such as flooding and river erosion, they do not have any slight idea about the nature of climate change. The climate-related hazards cause social, health and economic insecurity to women. Women suffer from food crisis, scarcity of drinking water and health problems most acutely whenever floods occur.

The thesis finds that CDMP helped women cope better with natural disasters. Women are satisfied with the Income Generating Activities (IGA) training component of CDMP as it allowed them to generate income while at home. However, they are not satisfied with the support program and the awareness raising components of CDMP. The poultry, saplings of trees, tube wells and sanitary latrine support were not sufficient for the beneficiaries. Respondents are most dissatisfied with the plinth height raising support program. Overall, CDMP was helpful to women but was not adequate to improve the lives of women in times of disasters. The program was limited to providing information about the opportunities and possible actions during adverse conditions and did provide on-the-spot material assistance to women to mitigate their difficult conditions

With regards to the extent of participation, it has been found that women's participation in the CDMP was at the bottom level. Based on Arnstein's "ladder of participation model," women's participation in CDMP was at the Informing stage. This means that women participated in the CDMP program merely as receivers; they did not participate or exert control in the decision making process.

# CHAPTER ONE

## INTRODUCTION

### 1.1. Introduction

Bangladesh is a flood-prone and climate vulnerable country.<sup>1</sup> The low resource base, high population density, poor infrastructure and intensive dependence on agriculture make the country weak in its economic development and low quality of life.<sup>2</sup> A large number of poor people living in rural Bangladesh areas are exposed to extreme flooding and riverbank erosion that destroy crops, houses, household assets and livelihoods.<sup>3</sup> Flood and riverbank erosion undermine the local economy and household food security; and hold the affected people, especially women and children to serious deprivation.<sup>4</sup>

Climate change poses significant risks for Bangladesh.<sup>5</sup> Bangladesh has been experiencing a number of disastrous events like flood, river erosion, cyclone, and tornados every year. Climate change and disaster have caused great losses to lives and properties and have pushed a great number of people, including women into poverty. The negative socio-economic impacts of these disasters on human beings are far-reaching and hamper the achievements of the country's overall

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<sup>1</sup> MoEF. (2005). *National Adaptation Program of Action (NAPA) 2005*. Dhaka: Government of the People's Republic of Bangladesh, MoEF.

<sup>2</sup> *Ibid.*

<sup>3</sup> NIRAPOD. (2010). *Assessment Report on Mainstreaming Livelihood Centre Approach in Disaster Management*. Dhaka: Practical Action Bangladesh.

<sup>4</sup> *Ibid.*

<sup>5</sup> CCC. (2009). *Climate Change, Gender and Vulnerable Groups in Bangladesh*. Dhaka: Climate Change Cell, DoE, MoEF, Component 4b, CDMP, MoFDM.

development efforts, particularly the vision of Poverty Reduction Strategy Papers (PRSP) and the Millennium Development Goals. Climate change-related disasters have become a major development concern to the government, development partners, NGOs and local communities.

In this context, the mitigation of the negative impact of climate-change in Bangladesh has become a development challenge. Bangladesh government has already adopted a climate policy that aims to enhance the adaptive capacity of its citizens, especially women. The role of the government is crucial in minimizing the vulnerability of women. In this regard, Bangladesh government disaster management program puts especial emphasis on women. For instance, Comprehensive Disaster Management Programme (CDMP) creates opportunities for women to participate in the disaster management program.

The impact of climate change on women depends on how such issues can be managed and mitigated. Mearns (2010) states that existing gender inequalities undermine women's access to resources and restrict their control over material, financial and human resources. He also mentions that women have fewer capacities against their male counterparts which then undermine women's adaptive capacity to the changing climate.<sup>6</sup>

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<sup>6</sup> Mearns, R., & Andrew, N. (2010). *Social Dimensions of Climate Change Equity and Vulnerability in a Warming World*. Washington DC: The World Bank.



Bangladesh government formulates its climate change and environment policies according to international guidelines and protocol. Bangladesh has adopted National Adaptation Program of Action (NAPA) and Bangladesh Climate Change Strategy and Action Plan (BCCSAP) to address the adverse impact of climate change.<sup>7</sup> The government has also created a climate change fund (CCF) to reduce the climate change vulnerability and promote effective adaptation process.<sup>8</sup> To ameliorate funding requirements for climate change adaptation policies, Bangladesh government has sought the assistance of international donor agencies and some developed countries.

As discussed, women have limited adaptive capacity on climate change. Therefore, it is worth analyzing how the Bangladesh government policy and programmes on climate change address and respond to this concern.

At the outset, Bangladesh government's policy on climate change does not directly mention the women's issues. However, the CDMP creates opportunities for women to participate in government-initiated adaptation programme. The CDMP Phase I was implemented in research area in Sirajganj Sadar Upazila to mitigate the disasters' impact and build the adaptive capacity of the local community after the devastating floods in 2007 and 2008. The programme emphasizes community participation, capacity building, community risk

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<sup>7</sup> MoEF. (2009). *Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009*. Government of the People's Republic of Bangladesh, Dhaka: Ministry of Environment and Forests (MoEF).

<sup>8</sup> *Ibid.*

assessment, training for alternative livelihood option, tree plantation, etc. Women participated in CDMP as a stakeholder.

This research explores the nature of participation of women in CDMP and how women perceive the consequences of the programme. This thesis is concerned mainly with establishing the levels of participation of women in the CDMP.

## **1.2. Research Problem**

This thesis explores the questions: What is the nature of women participation in the programme? What are the perceived consequences of CDMP on women?

## **1.3. Research Questions**

Under the above umbrella questions the research tries to answer the following questions:

- What challenges and problems do women face due to climate change?
- What is the nature of women's participation in the Comprehensive Disaster Management Programme (CDMP)?
- What are the CDMP's perceived consequences on women?
- Are women satisfied with the CDMP?

## **1.4. Research Objectives**

The research objectives are:

- Identify challenges and problems women face due to climate change.
- Describe the nature of participation of women in the CDMP.

- Identify the perceived consequences of CDMP on women.
- Describe the level of satisfaction of women with CDMP.
- Propose recommendations to enhance Bangladesh women's adaptive capacity to climate change.

### **1.5. Research Methodology**

This thesis is an exploratory descriptive research utilizing a mix of qualitative and quantitative methods.

The research uses primary and secondary data. Secondary data were gathered from relevant literature, books, journals, published and unpublished documents, papers, online resources, and websites. Primary data for this study were collected from two selected research areas *Bahuli* and *Ratankandi union*<sup>9</sup> through a questionnaire. The fieldwork was carried out from February to March 2012. The research areas were selected through purposive method. Bahuli and Ratankandi were purposely selected because these were the areas where the CDMP (Comprehensive Disaster Management Programme) had been implemented by SHARP (Socio Health and Rehabilitation Program), an NGO in Bangladesh.

### **1.6. Significance of Research**

Bangladesh is a climate vulnerable country. Bangladesh government has formulated policies and programs to mitigate the negative impacts of climate

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<sup>9</sup> Union is the lowest tier of Local Self Government of Bangladesh

change. In particular, Bangladesh government has established CDMP to increase women's adaptive capacity to climate change. This thesis is significant in that it is the first study that examines the nature and extent of women's participation in CDMP and identifies the consequences of the programme based on the perception of women.

There are several studies on global climate change and adaptation programmes. However, there has been no in-depth research work yet about a specific Bangladesh government adaptation programme on women. The opportunity of women's participation in the government programmes is hardly seen in Bangladesh. Though the constitution of Bangladesh assures equal opportunities for women to participate in all spheres of society; in practice, women have limited opportunities. Ensuring participation of women to climate-change adaptation programmes poses difficult and unique challenges for Bangladesh. In this regard, there is utility in examining the nature and extent of women's participation in CDMP. The research findings may contribute to future policy formulation and implementation both with regards to the overall concerns of climate change, including increasing adaptive capacity, and women participation.

### **1.7. Scope and Limitations of the Research**

The research seeks to examine the consequences of disaster management programme on women and the nature of women's participation in this programme. The research is expected to examine the effectiveness of disaster management

programmes on women. The respondents of the study were women as they are in jeopardy to climate change and have fewer capacities to adapt.

Lack of materials and data was the main problem encountered in the conduct of this research. Many of the documents like Bangladesh Government Climate Change policies and programs and related literature were taken from government website and online sources. The research areas were *Bahuli* and *Ratankandi* union; the remote areas situated in *Jamuna* river flood plain. Transportation problem was a big issue; we had to start our journey very early in the morning from Dhaka city to research area. It took almost five hours to reach the area. All day long, we walked for data collection. Primary data collection from remote rural areas was a difficult task.

The women in Bangladesh stay inside the home with a strict *purdah* system and their mobility is restricted by social and patriarchal norms. I was assisted with two male data collectors; most of the time women were hesitant to talk with them.

### **1.8. Thesis Overview**

The thesis is divided into seven chapters. Chapter one is an introductory part, stating the problems, objectives, and scope of the research. Chapter two presents the review of related literature on climate-change adaptation programs and women participation. It also tries to build a conceptual framework for analysis of the thesis. Chapter three presents a detailed research methodology of the research. A

brief overview of the research area and the socio-economic background of the respondents are likewise discussed. Chapter four highlights the climate change challenges and threats in Bangladesh. It also discusses the policies and programmes of Bangladesh government to reduce climate vulnerability. Chapter five examines the vulnerability of women to climate change disaster in the research areas. Chapter six examines and analyses the nature and extent of women's participation in the Comprehensive Disaster Management Programme (CDMP), as well as women's perception of the consequences of the programme. Finally, Chapter seven provides the conclusion and related policy recommendations.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE AND CONCEPTUAL FRAMEWORK

#### 2.1. Introduction

Climate hazards significantly endanger developing countries. Current policies have limited success in mitigating climate impacts on human life and environment. Existing arrangements for managing climate and other risks to poor people offer limited protection from adverse impacts.<sup>10</sup> Although climate change is a global process, the way it manifests varies by locality. Climate change challenges require responsive and accountable government institutions.<sup>11</sup> At the same time, international institutions have to find ways to provide not only resources but also incentives and information for adaptive actions that are responsive to the poor.<sup>12</sup> There is much uncertainty about the socio-economic implications of climate change and how to design adaptation to reduce vulnerability. Heltberg (2010) states that unless community and societies adapt, risks associated with climate change could cause large financial losses, increased vulnerability, and more frequent humanitarian disasters.<sup>13</sup>

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<sup>10</sup> Mearns, R., & Andrew, N. (Eds.), *Social Dimensions of Climate Change Equity and Vulnerability in a Warming World* (259-275). Washington, DC: The World Bank.

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*

<sup>13</sup> Heltberg, R., Siegel, P.B., & Jorgensen, S. L. (2010). Social Policies for Adaptation to Climate Change. In Mearns, R., & Andrew, N. (Eds.), *Social Dimensions of Climate Change Equity and Vulnerability in a Warming World* (259-275). Washington, DC: The World Bank.

The socio-economic impact of climate-change disaster such as floods and erosion on poor Bangladesh women are adverse in nature. Half of Bangladesh population is women. However, Bangladesh women are the disadvantaged at every level of the society.<sup>14</sup> They have little opportunity to participate in policy formulation. Their role as a development stakeholder is not recognized regardless of the fact that the current development approach worldwide emphasizes the involvement of the disadvantaged sectors of society at the policy level.<sup>15</sup>

In recent years, the concept of women's participation in the community development process becomes a popular phenomenon. Women's participation at all levels of the community development and women empowerment have been advocated. Women's participation in all the development processes requires ensuring their participation from policy formulation to implementation process at all levels. However, in Bangladesh, women participate in the development programmes merely in the base level.

In regard to climate change policies and programs, Bangladesh government has promoted community capacity building and economic stability of poor people, including women, to enhance better coping mechanism.

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<sup>14</sup> Khan, M. M. R., & Ara, F. (2006). Women, Participation and Empowerment in Local Government: Bangladesh Union Parishad Perspective. *Asian Affairs*, 29(1): 73-100.

<sup>15</sup> *Ibid.*



This chapter presents a brief overview of the theoretical concept of analysis. The research reviews the related literature to build up a conceptual framework for the analysis of this thesis. The pattern of vulnerability of women to climate change and how they participate in the climate-change adaptation program is examined here. The thesis identifies the key terms related to the research question and set the operational definition for analysis. By reviewing related literature the research tries to find out how climate change adaptation and women's participation process are addressed in recent literature. Research findings from related literature were explored to formulate a theoretical framework of analysis for this thesis.

## **2.2. Climate Change**

Ahmed (2005) states that Bangladesh experiences mostly water related natural hazards like floods and river erosion.<sup>16</sup> According to Huq *et al.* (1998) the most critical impacts associated with climate change in Bangladesh are prolonged flood, flood-related drainage congestion, erosion, cyclone, reduced fresh water availability, salinity, frequent and increased intensity of disasters, among others.<sup>17</sup>

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16 Ahmed, A. U. (2005). *Adaptation Options for Managing Water Related Extreme Events Under Climate Change Regime: Bangladesh Perspectives*. In Mirza, M.M.Q., & Ahmed, Q.K. (Eds.). *Climate Change and Water Resources in South Asia*, Leiden: Balkema Press. cited in CCC. (2009). *Climate Change, Gender and Vulnerable Groups in Bangladesh*. Dhaka: Climate Change Cell, DoE, MoEF; Component 4b, CDMP, MoFDM.

17 Huq, S., Z. Karim, Asaduzzaman, M., & Mahtab, F. (Eds.). (1998). *Vulnerability and Adaptation to Climate Change for Bangladesh*. Kluwer Academic Publishers: Dordrecht. cited in CCC.( 2009). *op.cit.*

IPCC claims that the poorest from the developing countries, which have the least resources and the least capacity to adapt, are the most vulnerable to climate change.<sup>18</sup>

Klein (2005) indicates that "people's vulnerability is not only determined by climate change, but also by factors like population growth, access to resources, gender inequality, among others."<sup>19</sup>

Mearns (2010) states that:

*People who are already poor and marginalized experienced the impacts of climate change most acutely. At the same time, those who are poor and marginalized have the least capacity or opportunity to prepare for the impacts of changing climate. Gender inequalities, poverty and other forms of the vulnerability increase environmental stress on women. These impediments undermine their capacity to adapt to exist and predicted impacts of climate change.*<sup>20</sup>

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<sup>18</sup> Intergovernmental Panel on Climate Change (IPCC). (2001). *Climate Change 2001: The Scientific Basis*. Contribution of the Working Group I to the Third Assessment Report of the IPCC. cited in World Bank, ADB, AfD, DFID. (2003). *Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation*.

<sup>19</sup> Klein, R.J.T. (2005). *From "Climate Change So What?" to "Climate Change What To Do?"* International Workshop on Community Level Adaptation to Climate Change. Organised by Bangladesh Centre for Advanced Studies, IIED, CIDA, IUCN & The Ring. Pan Pacific Sonargaon Hotel, Dhaka, 16th – 18th January, 2005. cited in Pender, J.S. (2008). *What Is Climate Change? And How It Will Effect Bangladesh*. Briefing Paper. Dhaka, Bangladesh : Church of Bangladesh Social Development Programme.

<sup>20</sup> Mearns, R., & Norton, A. (2010). *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*. Washington, DC: The World Bank.

In Bangladesh, women remain marginalized due to patriarchal society.<sup>21</sup> Islamic religious beliefs such as restriction on women mobility<sup>22</sup> prohibit women from participating in income-generating activities.

### **2.3. Climate Change Adaptation and Adaptation Programs**

The word adaptation has evolved from the term adapt which means, "to make suitable to or fit for a specific use or situation" or "to adjust (someone or something) to different conditions, a new environment."<sup>23</sup> Adaptation to climate change is therefore "the process through which people reduce the negative effects of climate on their health and well-being and adjust their lifestyles to the new situation around them".<sup>24</sup>

Adaptation focuses on reducing risk and on capacity development. Adaptation means resilience to climate variability, regardless of cause, thereby framing the goal of adaptation as poverty alleviation and vulnerability reduction more than as climate management (Sabates, Mitchel, & Ellis 2008)."<sup>25</sup>

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<sup>21</sup> Khan, S. (1988). *The Fifty Percent Women in Development and Policy in Bangladesh*. Dhaka: The University Press Limited.

<sup>22</sup> Naher, A. (2005). *Gender, Religion and Development in Rural Bangladesh*. (Unpublished doctoral dissertation). Department of Ethnology. South Asia Institute . Heidelberg University, Germany.

<sup>23</sup> Adapt. (n.d.). *The Free Dictionary*. Farlex, Inc. Retrieved from <http://www.thefreedictionary.com/adapt>

<sup>24</sup> Pender, J.S. (2008). *What Is Climate Change? And How It Will Effect Bangladesh*. Briefing Paper. Dhaka, Bangladesh : Church of Bangladesh Social Development Programme.

<sup>25</sup> Sabates, W. R., Tom, M., & Frank, E. (2008). *Avoiding Repetition: Time for CBA to Engage with the livelihood Literature?* IDS Bulletin, 39(4): 53-59. cited in Mearns, R., & Andrew, N. (Eds.), *Social Dimensions of Climate Change Equity and Vulnerability in a Warming World* (259-275). Washington, DC: The World Bank.

Although societies have long records of adapting to climate risks and climate changes, management of climate fluctuations continues to be costly, inadequate, and ineffective in mitigating humanitarian disasters (Heltberg, 2010).<sup>26</sup> Heltberg (2010) also states,

*How poor countries and its people will cope with climate changes on their social systems remains an unanswered question. However there is growing emphasis on preparing for ongoing and future climate changes via adaptation process; whereby societies improve their ability to manage climate risks and disasters.*<sup>27</sup>

Stern (2006) argues that developing countries are expected to see the most adverse impacts because of their geographic exposure, reliance on climate-sensitive sectors, low incomes, and weak adaptive capacity.<sup>28</sup>

Donor agencies and developing-country governments have begun working to accelerate adaptation to climate change. However, the adaptation knowledge and the design of adaptation interventions in developing countries is limited (Stern, 2006).<sup>29</sup> Though adaptation policy emphasizes the reduction and mitigation of adverse impacts of climate change, there is a little understanding of how to

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<sup>26</sup> Heltberg, R., Siegel, P.B., & Jorgensen, S. L. (2010). Social Policies for Adaptation to Climate Change. In Mearns, R., & Andrew, N. (Eds.), *Social Dimensions of Climate Change Equity and Vulnerability in a Warming World* (259-275). Washington, DC: The World Bank.

<sup>27</sup> Heltberg, R., Siegel, P.B., & Jorgensen, S. L. (2010). *op.cit.*

<sup>28</sup> Stern, N. (2006). *The Economics of Climate Change: The Stern Review*. Cambridge, U.K.: Cambridge University Press.

<sup>29</sup> *Ibid.*

promote adaptation investments, policies, and programs and how to identify country-level barriers to effective adaptation (Heltberg, 2010).<sup>30</sup>

Adapting to the changing climate and to the resulting changes is a basic human response to have a better way of life. It is difficult to predict actual effects of climate change in any given place or community precisely but it is better to take initiatives and policies to improve environmental degradation, and natural resource management. This is because better social conditions and sustainable development and many adaptation policies make good sense even without climate change (SouthSouthNorth. (2006).<sup>31</sup> There is a concern that by promoting pro-poor adaptation to climate change through a range of social programs, vulnerability reduction may come up effective (Heltberg, 2010).<sup>32</sup>

Leary et al. (2008) specify the importance of adaptation as:

*We can adapt to climate change and limit the harm, or we can fail to adapt and risk much more severe consequences..... The means and capacity in developing countries to adapt to changes in climate are scarce due to low levels of human and economic development and high rates of poverty. Climatic variations and extremes cause substantial damage to households, communities and economies. In many places, the damage is*

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<sup>30</sup> Heltberg, R., Siegel, P.B., & Jorgensen, S. L. (2010). *op.cit.*

<sup>31</sup> SouthSouthNorth. (2006). *Community Based Action on Mitigation and Adaptation to Climate Change*. A SouthSouthNorth Primer for Partners in the Developing World. Retrieved from [www.southsouthnorth.org](http://www.southsouthnorth.org)

<sup>32</sup> Heltberg, R., Siegel, P.B., & Jorgensen, S. L. (2010). *op.cit.*

*increasing, giving evidence of an adaptation deficit. An adaptation deficit can widen the climate-change threats.*<sup>33</sup>

Smith et al. (1996) believe that adaptation is a topic of considerable policy relevance and concern.<sup>34</sup> A sound policy framework is important for adaptation. However, policy implementation is also important for an effective adaptation process.

Huq (2007) states that adaptation is being better prepared or adapting to climate change, not fighting it, but learning to live with it.<sup>35</sup>

Rahman (2002) states that any adaptation strategies undertaken should be a holistic approach and must take into consideration other community needs; if climate change runaway is not stopped the cost of adaptation measures will get higher and the degree of poor and vulnerable will increase.<sup>36</sup>

To examine adaptation strategies a group of case studies was undertaken under Assessments of Impacts and Adaptations to Climate Change (AIACC) research project. AIACC studies explore the challenge of adaptation and formulate nine

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<sup>33</sup> Leary, N. et al. (Eds.). (2008). *Climate Change and Adaptation*. London: Earthscan.

<sup>34</sup> Smith, J. B., Bhatti, N., & Menzhulin, G.V. (Eds.). (1996). *Adapting to Climate Change: An International Perspective*. New York, NY: Springer.

<sup>35</sup> Rahman, N. (2007, February 15). Environmental Heroes. *Star Weekend Magazine*. *The Daily Star*, Dhaka, Bangladesh.

<sup>36</sup> Rahman, A. A. (2002). Mitigation Must, Adaptation Too: Poorest Cannot Pay Anymore. *Clime Asia*. COP 8 Special Issue. cited in Pender, J.S. (2008). *What Is Climate Change? And How It Will Effect Bangladesh*. Briefing Paper. Dhaka: Church of Bangladesh Social Development Programme.

adaptation lessons as follows: (1) Adapt now; (2) Create conditions to enable adaptation; (3) Integrate adaptation with development; (4) Increase awareness and knowledge; (5) Strengthen institutions; (6) Protect natural Resources; (7) Provide financial assistance; (8) Involve those at risk; and (9) Use place-specific strategies.<sup>37</sup>

In Bangladesh, a study undertaken by Climate Change Cell (CCC) finds that the adaptation and protection capacity of Bangladesh women to the disaster are low. CCC (2009) states that:

*Women are the ones who are supposed to ensure well-being of the family. when a hazard strikes she has to safeguard all the belongings and any hint of an asset, send everybody to safer refuge, and stay back to ensure that the household is not ransacked while in absence. In this process, she accepts whatever the consequence of the imminent hazardous event. Following a hazardous event, the same woman (if poor or destitute) has to queue on lines for hours to receive relief for the family, provide physical labour to reconstruct dilapidated dwelling, and again do the usual stuff as always.*<sup>38</sup>

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<sup>37</sup> To better understand who and what are vulnerable to climate change, and examines the adaptation strategies, a group of case studies was taken under AIACC (Assessments of Impacts and Adaptations to Climate Change) project. The studies span Africa, Asia, Central and South America, and Islands of the Caribbean, Indian and Pacific Oceans. Results from the studies presented in Leary et al. (2008). Climate Change and Adaptation. London: Earthscan.

<sup>38</sup> CCC. (2009). *op.cit.*

Enarson (2002) opines that the extent of men's and women's response and capacity to the crisis situation differ by their control over resources. In the gender-based social inequalities, women are typically at higher risk than men.<sup>39</sup>

Socio-economic status is an important factor to survive from disaster and to increase the adaptive capacity of people to disasters. Enarson (2002) states that social vulnerability is an important factor in understanding peoples control over resources. Social vulnerability and women's ability to survive and recover from disaster are closely related.<sup>40</sup>

#### **2.4. Theory of Participation**

Participation theory has received considerable focus in the context of community participation, development participation and women's participation at local, community or NGO organized development process.

For theoretical grounding, the research reviewed the related literature on participation, participation of women and climate-change adaptation. The research on women and development are important from the perspectives of participation in the local government, micro-credit programs, and development project.

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<sup>39</sup> Enarson, E. (2002). *op.cit.*

<sup>40</sup> *Ibid.*



### 2.4.1. Participation

Participation means "to take part in something."<sup>41</sup> Participation is a process through which stakeholder's influence and share control over priority setting, policy-making, resource allocations, and access to public goods and services.<sup>42</sup>

The World Bank (1994) defines participation as: "a process through which stakeholders influence and share control over development initiatives, and the decisions and resources which affect them."<sup>43</sup>

The African Development Foundation (2012) states that participation is a process through which community members get involved in the development activities and influence the decision's making process.<sup>44</sup> This definition implies that community development activities will address those community's needs, and the community people will be able to influence in the decision-making process.<sup>45</sup>

Sidorenko (2006) defines participation as a process of taking part in the different spheres of societal life.<sup>46</sup> Empowerment and participation are correlated.

Participation enriches empowerment. Sidorenko (2006) also mentions that people

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<sup>41</sup> Participate. (2012). *The Free Dictionary*. Farlex Inc. Retrieved from <http://www.thefreedictionary.com/participate>

<sup>42</sup> Rahman, A. (2005). *Effective Participation: Community Engagements in Participatory Budgeting in Bangladesh*. Dhaka: Unnayan Shamannay.

<sup>43</sup> World Bank. (1994). *The World Bank and Participation*, Operations Policy Department, Washington, DC: World Bank cited in Rahman, A. (2005). *Effective Participation: Community Engagements in Participatory Budgeting in Bangladesh*. Dhaka: Unnayan Shamannay.

<sup>44</sup> The African Development Foundation (ADF). (2012). *Participation*. United States African Development Foundation. Washington D.C Retrieved from <http://www.adf.gov/Training/documents/Participatory%20Developme>

<sup>45</sup> *Ibid.*

<sup>46</sup> Sidorenko, A. (2006). *Empowerment & Participation in Policy Action on Ageing*. Conference Paper on "UN Programme on Ageing" in the International Design for All Conference 2006, Rovaniemi, Finland.

can be empowered by ensuring participation.<sup>47</sup> Therefore, empowerment means promoting people's participation. Empowerment creates opportunities for participation. If people's participation is ensured in all spheres of society, then people's rights are enabled.<sup>48</sup>

Stoker (1997) notes that community participation is “taking part in any processes of formulation, passage and implementation of public policies.”<sup>49</sup> The definition emphasizes the public participation in the policy development, decision-making and implementation levels. According to Skidmore et al. (2006), community participation tends to be dominated by a small group of people. The small group disproportionately influences in the governance and inside the government.<sup>50</sup> It means that in the decision-making process, majority of people have no access. This scenario is true for Bangladesh governance and development process.

#### **2.4.2. Community Participation**

Community can be defined as a living entity, which is continuously changing both physically and psychologically. A community has interaction and equality within the group; they share equal opportunities and have the possibility to grow a collective consciousness (Oakley et al., 1991).<sup>51</sup>

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<sup>47</sup> *Ibid.*

<sup>48</sup> *Ibid.*

<sup>49</sup> Stoker, G. (1997). Local Political Participation. In Hambleton, R. et al (1997). *New Perspectives on local governance: reviewing the research evidence*, York: Joseph Rowntree Foundation. cited in CAG consultants. ( 2011). *Participation: A Theoretical Context*. London: UK.

<sup>50</sup> Skidmore, P., Bound, K., & Lownsborough, H. (2006). *Community participation: Who benefits?* York: Joseph Rowntree Foundation.

<sup>51</sup> Oakley, P. et al. (1991). *Projects with People: The Practice of Participation in Rural Development*. Geneva: International Labour Office.

Community participation theory mainly focuses on community capacity building, inclusion, and representation towards the community decisions. Participation is an important outcome of the community participation theory. Brown (2000) mentions that "beneficiary groups influence in the direction and the execution process of a project. Their role is not only being consulted or receiving a share of the project benefits."<sup>52</sup> Brown's concept of community participation gives an effective role to the community people, in the decision making level.

Nghikembua (1996) states that "*community participation is empowering people to enhance their own capacities. As a social actor, they can manage the resources, take decisions and control the effect on their lives through the process of participation.*"<sup>53</sup>

Community participation is essential to ensure the sustainability of any development project. The project's sustainability depends on whether or not it addresses the respective people's needs. People need to participate in the project and also be committed to it. Community people and development project workers partnership is important in this regard. According to Friedmann (1992) without

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<sup>52</sup> Brown, C. J. (2000). *A Model for the Facilitation of Community Participation in the Scoping of Projects*. In Theron, F., R., A. Van, & Baalen, J. (Eds.). *Good Governance for People: Policy and Management*. Bellville: School of Public Management and Planning, University of Stellenbosch.

<sup>53</sup> Nghikembua, S. (1996). *From Drought-Relief Recipients to Community Based Development Organizations: A Case of Participation in Human Settlement Development*. Windhoek: Multi-disciplinary Research Centre.

the participation of the community, the project implementation is difficult.<sup>54</sup> Therefore, any development program should include people who know about their own livelihood. The knowledge and skill of the community people should be valued (Mikkelsen, 1995).<sup>55</sup>

There is a diverse range of participation strategies. For sustainable development, securing efficient community participation is essential. Theron (2005) states that effective, efficient and equitable participation depend on the appropriate combination of objectives and strategies to be used.<sup>56</sup>

### **2.4.3. Women and Participation in Bangladesh**

Women's participation from grassroots level to policy implementation level is now an important issue in development concern. A number of studies have focused on the grassroots level participation of women through their organisations as against the top-down processing of projects.<sup>57</sup> If women get opportunities to participate in the development process, they can contribute to the society. Moser (1987) argues on women's dedication and states that men often pursue leadership

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<sup>54</sup> Friedmann, J. (1992). *Empowerment The Politics of Alternative Development*. USA: Blackwell Publishers.

<sup>55</sup> Mikkelsen, B. (1995). *Methods for Development Work and Research: A Guide for Practitioners*. New Delhi: Sage Publications.

<sup>56</sup> Theron, F. (2005). *Trends in Micro-level Development*. In Davids, I., Theron, F., & Maphunye, K. J. *Participatory Development in South Africa: A Development Management Perspective*. Pretoria: J.L.van Schaik Publishers.

<sup>57</sup> Muraleedharan, K. (2000). *Women's Participation in Development: The Kerala Experience*. Conference paper, International Conference on Democratic Decentralisation , 2000 May 23-27, Kerala, India

for personal advancement unlike women who demonstrate deeper commitment to community goals.<sup>58</sup>

Khan (2006), in a research on "women's participation and empowerment", states that in spite of women's economic achievement through hard work, the majority of women in Bangladesh have yet to be empowered to participate actively in the social, cultural, economic and political life of the country.<sup>59</sup>

Ahmed (1987) believes that women have been neglected in rural development strategies.<sup>60</sup> Development process has been male dominated. Women's empowerment and mainstreaming in the development process through participation are now the national and international concern.<sup>61</sup> Khan (2006) indicates that "socio-economic development cannot be fully achieved without the active participation of women at the decision making level in society."<sup>62</sup>

Ali et al. (1983) state that while the government policy framework is person-oriented the participation mechanism is not people's friendly.<sup>63</sup>

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<sup>58</sup> *Ibid.*

<sup>59</sup> Khan & Ara. (2006). *op.cit.*

<sup>60</sup> Ahmed. I. (1987). Technology, Production Linkages and Women's Employment in South Asia. *International Labour Review*. 126: 21-40. cited in Muraleedharan, K. (2000). Women's Participation in Development: The Kerala Experience. Conference paper, International Conference on Democratic Decentralisation, 2000 May 23-27, Kerala, India.

<sup>61</sup> Fonjong, L. (2001). Fostering Women's Participation in Development through non-governmental efforts in Cameroon. *The Geographical Journal*, 167(3): 223-234.

<sup>62</sup> Khan & Ara. (2006). *op.cit.*

<sup>63</sup> Ali, S. M., Rahman, S. M., & Das. K. M. (1983). *Decentralization and Peoples Participation in Bangladesh*. Dhaka: NIPA (National Institute of Public Administration). cited in Mohammad, S. N. (2010). *People's Participation in Development Projects at Grass-Root Level: A Case Study of*

Aminuzzaman (2008) mentions that decision-making process does not allow poor's participation. Poor are excluded from participating in the process due to weak institutional capacity and mechanism.<sup>64</sup>

In a research on local level participation, Nazneen (2004) states that:

*The benefit of the rural development process doesn't go to the poor. Local influential, rural elites capture the rural development projects benefit. She argues that despite the legislative safeguard, rights of the underprivileged have been consolidating by the rural elites.*<sup>65</sup>

#### **2.4.4. Arnstein's Ladder of Participation**

Arnstien presents a model for step-by-step participation called “Ladder of participation.” (See Figure 2.1). In this participation process, the information is mainly articulated from bottom level. With a step-by-step development partnership in middle level, the top step represents citizen's control.<sup>66</sup> Arnstein develops eight steps for participation ranging from Manipulation to Citizen Control, as follows:

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*Alampur and Jagannathpur Union Parishad.* (Unpublished Masters Dissertation). North South University, Bangladesh.

<sup>64</sup> Aminuzzaman, S. M. (2008). *Governance and Politics: Study on the Interface of Union Parishad, NGO and Local Actors.* Dhaka: Institute for Environment and Development.

<sup>65</sup> Nazneen, D.R.Z.A. (2004). *Popular Participation in Local Administration: A Case Study of Bangladesh.* Dhaka: Gyan Bitarani. cited in Mohammad, S. N. (2010). *op.cit.*

<sup>66</sup> Arnstein, S. (1969). A ladder of citizen participation. *American Institute of Planners Journal.* 35(4): 216-224 cited in CAG consultants. (2011). *Participation: A Theoretical Context.* London: UK.

**Manipulation and Therapy:** In the bottom level, the Manipulation and Therapy both are non-participation. The two steps' aim is to cure or educate the participants.

**Informing:** The third step, Informing, is the most important to legitimate participation. On the way of participation its emphasizes on a one-way flow of information.

**Consultation:** A legitimate step for attitude surveys, neighbourhood meetings and public inquiries.

**Placation:** It allows citizens to advise or plan infinitum. But the power holders have the right to judge the legitimacy or feasibility of the advice.

**Partnership:** Power is in fact redistributed through negotiation between citizens and power holders. Planning and decision-making responsibilities are shared through joint committees.

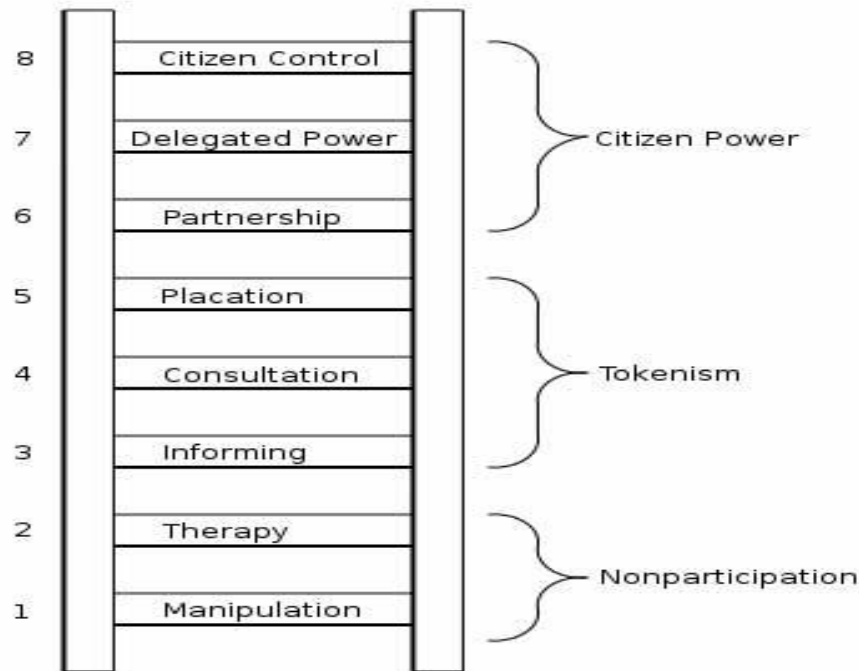
**Delegated power:** Citizens holding a clear majority of seats on committees with delegated powers to make decisions. Public now has the power to assure accountability of the program to them.

**Citizens Control:** Have-nots handle the entire job of planning, policy making and managing a programme.<sup>67</sup>

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<sup>67</sup> Arnstein, S. (1969). A ladder of citizen participation. *American Institute of Planners Journal*. 35(4): 216-224 Retrieved from <http://www.partnerships.org.uk/part/arn.htm#sherry>

**Figure 2.1: Arnstein's (1969) Ladder of Participation**



[Source: Arnstein, S. R. (1969). 'A Ladder of Citizen Participation' in *Journal of the American Planning Association*, 35(4): 216-224. Retrieved from [http://partnerships.typepad.com/civic/2004/11/ladder\\_of\\_parti.html](http://partnerships.typepad.com/civic/2004/11/ladder_of_parti.html)]

To understand the community participation perhaps Arnstein's "Ladder of Participation" is the best way.<sup>68</sup> However, the step is too broad and a bit complex to understand the women's participation in the NGO development process. Wilcox (2003) states that Arnstein's Ladder of Participation model is one of the most powerful models to understand the extent of participation of peoples in public programmes.<sup>69</sup> According to Wilcox, the "Ladder of Participation remains a useful way of thinking about power and control, though participation programmes

<sup>68</sup> CAG consultants. (2011). *Participation: A Theoretical Context*. London: UK.

<sup>69</sup> Wilcox, D. (2003). *Designing for Civil Society: Ladder of Participation*. Retrieved from [http://partnerships.typepad.com/civic/2004/11/ladder\\_of\\_parti.html](http://partnerships.typepad.com/civic/2004/11/ladder_of_parti.html)



are more complex."<sup>70</sup> Wilcox (2003) has mentioned that for effective participation the high levels of engagement and upper levels in the ladder are better.

CAG Consultants (2011) in "Participation: A Theoretical Context" states that "each of the steps in the ladder represents a very broad category. Increased control may not always be desired by the community and increased control without the necessary support may result in failure."<sup>71</sup>

The thesis adopts the Arnstein's Ladder of Participation as its theoretical concept of analysis to explain the "participation of women" in Bangladesh in the climate-change adaptation programme.

#### **2.4.5. Burns' Ladder of Citizen Empowerment**

Burns modifies the Arnstien's model and presents the ladder of citizen empowerment. Burns describes participation in terms of the empowerment of individuals and communities. The model suggests the idea of citizen as a consumer. The choice among different alternatives is seen as a means of access to power. Burns' model emphasizes people's responsibilities. It urges that people are expected to be responsible for them and should be active in public decision-making.<sup>72</sup> (*Figure 2.2*)

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<sup>70</sup> *Ibid.*

<sup>71</sup> CAG consultants. (2011). *Participation: A Theoretical Context*. London: UK.

<sup>72</sup> *Ibid.*

**Figure 2.2: Burns' Ladder of Citizen Empowerment**

<b>CITIZEN CONTROL</b>
12. Independent control
11. Entrusted control
<b>CITIZEN PARTICIPATION</b>
10. Delegated control
9. Partnership
8. Limited decentralised decision-making
7. Effective advisory boards
6. Genuine consultation
5. High quality information
<b>CITIZEN NON-PARTICIPATION</b>
4. Customer care
3. Poor information
2. Cynical consultation
1. Civic hype

[Source: Burns, D. et al. (1994). *The Politics of Decentralization*. London: Macmillan. cited in CAG consultants. (2011). *Participation: A Theoretical Context*. London: UK.]

#### **2.4.6. Wilcox's Ladder of Participation**

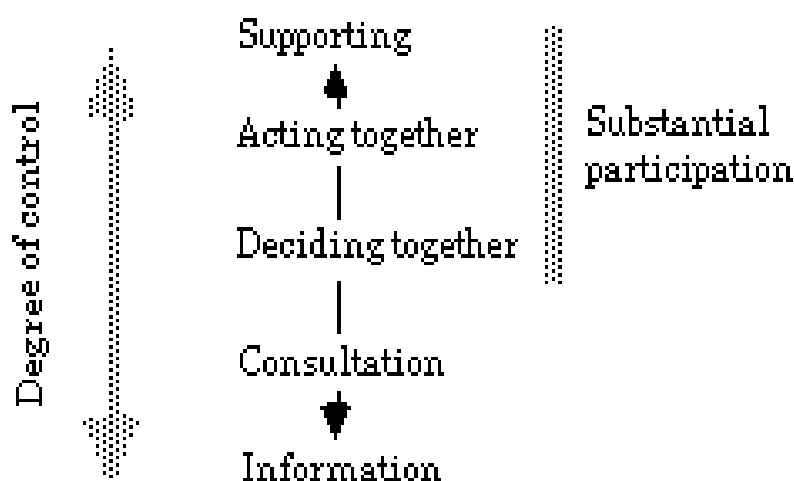
As a process of development of Arnstien's model, Wilcox (1999) proposes five-rung ladder of participation such as information, consultation, deciding together, acting together, and supporting independent community interests.<sup>73</sup> In this model, Wilcox shows that different levels of participation in different situations are acceptable. In this context, power is always transferred in a participatory process and each process has its own value. Wilcox (2003) does not suggest that any one

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<sup>73</sup> Wilcox, D. (2003). The guide to Effective Participation. Retrieved from <http://www.partnerships.org.uk> cited in Rahman, A. (2005). *Effective Participation: Community Engagements in Participatory Budgeting in Bangladesh*. Dhaka: Unnayan Shamannay.

stance is better than the other. He avers that “different levels are appropriate at different times to meet the expectations of different interests.”<sup>74</sup>

**Figure 2.3: A Ladder of Participation (Wilcox, 1999)**



[Source: Wilcox, D. (1999). *A to Z of Participation*. York: Joseph Rowntree Foundation. Retrieved from Partnership Online. <http://www.partnerships.org.uk/guide/index.htm>]

In Bangladesh, community participation in the development process is a new idea. The level of participation is not still well-organized. Poor people participate in the process as mere receivers. Their participation in any community development initiative is mainly motivated by their need to improve their economic and social status rather than a need to exert control or power in the process.

<sup>74</sup> Wilcox, D. (2003). *The Guide to Effective Participation*. Retrieved from Partnership Online. <http://www.partnerships.org.uk/guide/index.htm>

## **2.5. Definition of Terms**

The thesis uses the following terms:

### **2.5.1. Women**

Women refer to “female human beings” or more specifically “adult female persons.”<sup>75</sup> The research sets the operational definition of women as “an adult female person.” The respondents for the research include only adult<sup>76</sup> Bangladesh rural women who are vulnerable to climate change induced disasters like flood and river erosion.

### **2.5.2. Participation**

The thesis identifies participation as a process to take part in the climate-change adaptation program. Specifically, participation refers to Bangladesh women’s participation in CDMP. This thesis will examine the level of women’s participation in the CDMP using Arnstien’s participation model.

### **2.5.3. Climate Change**

Climate change is a problem and phenomenon that affects the people and the environment drastically. It has very adverse environmental, economic, social and human consequences, particularly for developing countries like Bangladesh.

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<sup>75</sup> Harer, D. (2010). Women. *Online Etymology Dictionary*. Retrieved from <http://dictionary.reference.com/browse/women>

<sup>76</sup> Adult is a person who has attained the age of maturity as specified by law. Bangladesh constitution identify “adult” people in their age from 18 years old.

#### **2.5.4. Climate Change Adaptation**

The research refers to adaptation as a mechanism to adjust in the changing climate and capacity to reduce the adverse impact due to climate change. Climate change adaptation then refers to a process of reducing the negative effects of climate on women's lives and improving their capacity to adapt to the adverse impact of climate change.

#### **2.5.5. Climate Change Adaptation Programs**

The research refers to Climate Change Adaptation Programs as the initiatives formulated by Bangladesh government to introduce long-term adaptation strategies. Bangladesh government emphasizes capacity development programs rather than conventional relief-oriented adaptation program. Therefore, adaptation program is a process of implementing a government climate change policy initiative for long-term adaptation.

#### **2.5.6. Comprehensive Disaster Management Program (CDMP)**

Bangladesh government introduced CDMP as part of a long-term strategy for disaster risk reduction. The programme comprises of two phases: Phase I (2004–2009) and Phase II (2010-2014). The ultimate goal of CDMP is to mitigate the impacts of disasters in both national and community levels. The research defines CDMP as a process of reducing the vulnerability of the poor in a manageable and

acceptable level and strengthening the capacity of the disaster management system of community women.

#### **2.5.7. Perceived Consequences**

"Perceived consequences" refers to the outcomes or consequences of the CDMP based on the perception or opinions of the women.

#### **2.5.8. Satisfaction**

Satisfaction refers to women's perception of CDMP's effectiveness. It also refers to how women considered the impacts of CDMP in minimizing their vulnerability to the disasters and in improving their living standards.

### **2.6. Summary**

Climate change adaptation and women participation have been the focus of various studies. The literature on women, climate change, and development reveal that the participation of women in the development process has remained at the marginal level. Patriarchal and social obligations prevent women from participation process. The development phenomenon encourages an effective partnership between women and other stakeholders. Without an effective partnership, the delegation of power and control over power is impossible.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

This chapter presents the methodology applied in the thesis. It also introduces the research area and the socio-economic profile of the women respondents.

#### **3.2. Research Area**

Under CDMP programme, the Local Disaster Risk Reduction Fund (LDRR Fund) comprising of eight projects was implemented by a local non-government organization (NGO) called Socio Health and Rehabilitation Program (SHARP) in Sirajganj Sadar upazila. The programme implementation areas are *Bahuli, Khokshabari, Bagbati, Ratankandi, Chongacha, and Kaokhola union*. *Bahuli and Ratankandi* union have been selected by a purposive method. These areas are most disaster-prone due to flood and river erosion. These two areas are representative in terms of flood-proneness nature and geographical location. The areas are in the flood plain of Jamuna River. River's erosion and flood hit the two areas almost every year. Disaster management, disaster preparedness, and community capacity building programmes have been implemented in the area by government and NGOs after the devastating floods in 2007.

##### **3.2.1. Sirajganj District**

Sirajganj district is vulnerable to disasters. Sirajganj is mainly comprised of *char* land (floodplain). People of this area live in very insecure and uncertain situation.

Sirajganj district is located in Greater Rajshahi Division, Bangladesh; its geographical coordinates are 24°27'0" North, 89°43'0" East.<sup>77</sup> Sirajganj district lies on the riverbank of Jamuna in the northern region of Bangladesh. It consists of nine *upazilas*, namely Sirajganj Sadar, Kazipur, Chauhali, Raiganj, Kamarhanda, Ullahpara, Tarash, Belkuchi, and Shahjampur. Sirajganj has eighty two unions and four municipalities. About thirty five unions lie on river basin area and the rest are located in the low lands.<sup>78</sup> Most of the people live in villages; 65% of them are poor.

### **3.2.2. Sirajganj Sadar upazila**

*Sirajganj Sadar upazila* is located in *Sirajganj* District. The total area is 325.77 sq km.<sup>79</sup> It is situated on the riverbank of *Jamuna*, *Ichamati* and *Hurasagar* which makes the area vulnerable to flood and riverbank erosion. Sirajganj Sadar Upazila was established in 1772. It consists of ten union parishad, fifteen wards, two hundred and sixty one mouzas, one municipality, and two hundred and eighty two villages.<sup>80</sup>

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<sup>77</sup> Banglapedia: The National Encyclopaedia of Bangladesh. (2006). Retrieved from [http://www.banglapedia.org/httpdocs/HT/N\\_0131.HTM](http://www.banglapedia.org/httpdocs/HT/N_0131.HTM)

<sup>78</sup> NDP. (2009). CDMP project completion report. Submitted to CDMP.(Unpublished).

<sup>79</sup> DC office web. Sirajganj District.

<sup>80</sup> Banglapedia: The National Encyclopaedia of Bangladesh. (2006). Retrieved from [http://www.banglapedia.org/httpdocs/HT/N\\_0131.HTM](http://www.banglapedia.org/httpdocs/HT/N_0131.HTM)



**Table 3.1: Brief Information of Sirajganj Sadar Upazila**

Area: 325 sq km
Total Union under this Upazila: 10
Total Pourashava <sup>81</sup> : 01
Total Mouza: 216
Total Cultivable Land: 23872.93 hectares (fallow land 772.16 hectares)
Total Agriculture based Family: 77,822
Main River: 03 (Jamuna, Ichamoti and Hurasagar)
Total Village: 300
Total Population: 230,540 (Male: 4, 82,580; Female: 252, 040)
Population Density: 1481.35 (per sq kms)
Government Primary School: 151
Communication facilities: Mud road 280 km, pacca road 90 km, waterway 15 nautical miles, railways 23 km.
Total Voter (2008): 320,354 (Male: 158,661; Female: 161,693)

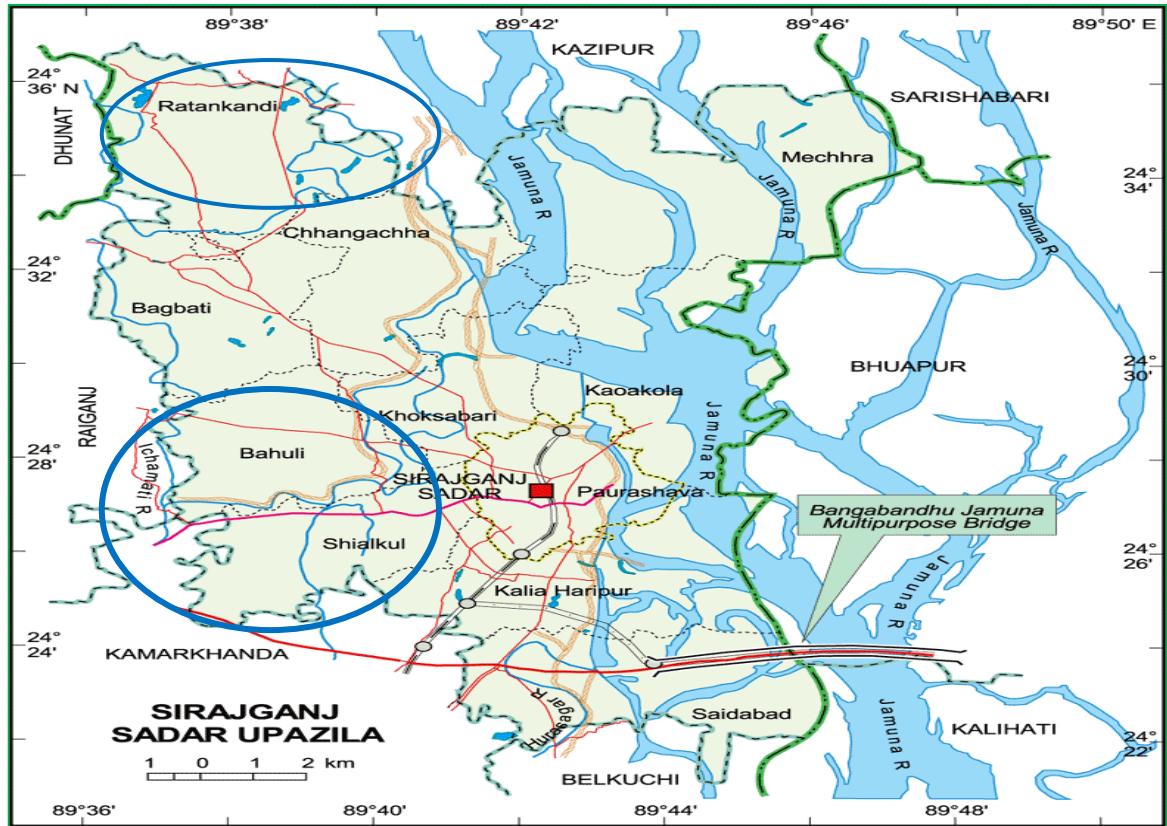
[Source: Compiled from DC Office of Sirajganj District, Bangladesh; Banglapedia: The National Encyclopaedia of Bangladesh. (2006).

Retrieved from [http://www.banglapedia.org/httpdocs/HT/N\\_0131.HTM](http://www.banglapedia.org/httpdocs/HT/N_0131.HTM) ]

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<sup>81</sup> Pourashava is an administrative division of local self government in Bangladesh.

**Figure 3.1: Location of *Bahuli* and *Ratankandi* Union, Sirajganj Sadar Upazila**



[Source: Office of the DC of Sirajganj District Bangladesh Web, <http://www.dcsirajganj.gov.bd/> Banglapedia, 2006]

### **3.2.3. Location and Demography of Bahuli Union**

The research areas are Bahuli and Ratankandi, two unions in Sirajganj Sadar Upazila, Sirajganj district, where the CDMP funded disaster management programme was implemented after a devastating flood in 2007. *Bahuli* and *Ratankandi* are situated on the river plain of Ichamoti River.

Bahuli union has a total area of 6067 acres. Its population is 37,760, comprising of 19,448 male and 18, 322 female.<sup>82</sup> Bahuli is comprised of 49 villages. It has 7320 households.<sup>83</sup> The infrastructure of the union consists of one college, four higher secondary schools, thirty two junior high schools, eleven primary schools, eleven religious education centres (*Madrassa*), three *hat-bazaars* (local market), three post offices, five community clinics, one bank, thirty six bridge-culvert, etc. The total percentages of the educated people (people who can read and write) are 53% of which 60% are male and 46% are women.

Bahuli union has 70 km long road; among them, 25 km are *paka* road (brick-laid roads) and 45 km are *kancha* road (mud roads). The means of transportation are local curt rickshaw, van, bus, tempos, cycle, and motorcycle. Bahuli has a long waterway. Boats (both with engine and without engines) are a means of transportation. During floods, when roads are inundated and become unusable, the waterway plays an important role as a medium of transportation.

#### **3.2.4. Location and Demography of Ratankandi Union**

Ratankandi Union of Sirajganj Sadar upazila is considered as one of the disaster vulnerable areas of Bangladesh. The economy is agriculture-based. People in Ratankandi are also involved in weaving, fishing and small business. The literacy rate is almost 65% according to 2006-07 data. The total area of Ratankandi union is 34.95 sq. km. The total population is 56,215 of which 29,990 are male and

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<sup>82</sup> Bahuli Union parishad. (2007). *Annual Budget 2006-2007*. Sirajgonj: Bahuli Union parishad.

<sup>83</sup> *Ibid.*

26,295 are female.<sup>84</sup> Ratankandi is comprised of 31 villages and has a total of 12,015 households.<sup>85</sup>

**Table 3.2: Profile of the of the Bahuli and Ratankandi Union**

Features	Bahuli Union	Ratankandi Union
Area	6067 Acres	34.95 sq. km
Population	37,760	56,215
Male	19,448	29,920
Female	18,322	26,295
Total <i>Mouza</i>	22	19
Total Village	48	31
Total Household	7,320	12,015
Literacy Rate	53%	65
Male	60%	62%
Female	46%	48%
Educational Institution	01	03
College	04	10
High School	32	04
Junior High School	11	16
Government Primary School	10	17
Registered Primary School	11	13
Madrassas (Religious Edu. Ins.)		
Post office	03	04
Community Clinic	05	05
Health Complex	01	02
Mosque	75	68
Mandir	02	07
Communication Facilities	70 km Total	150 km Total
Kancha Road	45 km	120 km
Pacca Road	25 km	30 km
NGOs	04	04
Main Occupation	Agriculture	Agriculture
Cultivable Land	4,798 Acres	2,642hectre
Local Hat- Bazaar	03	05

[Source: Compiled from Union Parishad Office, Annual Budget Booklet 2006-2007 Bahuli Union; Annual Budget Booklet 2006-2007 Ratankandi Union]

<sup>84</sup> Bahuli Union parishad. (2007). *Annual Budget 2006-2007*. Sirajgonj: Bahuli Union parishad.

<sup>85</sup> *Ibid.*

**Figure 3.2: Location of Bahuli and Ratankandi Union**



[Source: Google Earth Map. 2012.]

### **3.3. Research Design**

This is an exploratory descriptive research using sample survey research design. Primary data have been collected through interview, survey and personal observation. The research also uses secondary data. Women who were beneficiaries of the CDMP project implemented in the Bahuli and Ratankandi union were selected as respondents for questionnaire interview.

### **3.4. Methods of Data Collection**

The research applied mixed methods in generating data. The research uses primary and secondary data sources. Secondary data were gathered from relevant literature, books, journals, published and unpublished documents and online resources.

Primary data were collected from Bahuli and Ratankandi union through an interview questionnaire. The fieldwork for this study was carried out from February to March 2012. The research areas were purposely selected because these are the areas where CDMP had been implemented. To get in-depth information, personal observation methods were also applied in this research.

### **3.5. Sampling**

The respondents for this study include ninety three (93)<sup>86</sup> women beneficiaries of the CDMP program who were chosen through purposive sampling method.<sup>87</sup> The CDMP total beneficiaries in both unions were 6,121, comprising of 2,550 women and 3,571 men. The figure of 93 was arrived at after calculating the necessary sample size for a total population of 2,550 with a desired reliability of 0.95,

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<sup>86</sup> The thesis mainly follows the Lynch et al. (1974). Table of Sample formula with sampling error of 0.10 cited in chapter 11 : Selecting the Unit of Analysis and Probability Sampling Strategies" in Bautista, V. A. (1998). *Research and Public Management*, University of the Philippines: Open University. 163-164.

<sup>87</sup> Victoria A. Bautista stated that, "Purposive sampling is an useful methodology for qualitative studies. Since the qualities of the key person are defined out by the researcher. The objective is not to have many respondents but to make sure that the person who would be interviewed will provide a wealth information." cited in chapter 11 : Selecting the Unit of Analysis and Probability Sampling Strategies" in Bautista, V. A. (1998). *Research and Public Management*, University of the Philippines: Open University.pp.175-176.

$p=0.50$  and sampling error of  $\pm 0.10$ . The distribution of the sample respondents in two unions are shown below.

**Table 3.3: Distribution of Respondents by union**

Bahuli Union	53
Ratankandi Union	40
Total	93

The research includes only adult women, aged 18 years old and above who were beneficiaries of CDMP and participated in its various disaster management programmes.

A pre-test of the research questionnaire was done to adapt to the local situation. Personal interviews with 93 respondents were conducted through a pre-defined questionnaire between February to March 2012. The researcher was supported by two assistant data collectors. Data collected were compiled for analysis.

The interview questionnaire is comprised of five sections. The first section comprises of basic questions such as age, occupation, income, education, marital status, religion and household composition to understand the socio-economic background of the women respondents. Questions on the vulnerability that women face during climate disasters were asked in the second section. The third section of the questionnaire inquires about the participation of women in the CDMP. A total of eight questions are outlined to determine whether or not the respondent

participated in the CDMP, the motivation of her participation and the nature of her participation. The fourth section is about the perceived consequences or outcomes of the CDMP on women. Five questions were asked to determine whether the CDMP improves the respondent's income, life, disaster and risk management adaptation capabilities and awareness of the climate change issue. The last section queries about the women satisfaction of the CDMP and inquires the respondent's opinion on the government efforts to reduce women's vulnerability to climate change. The thesis mainly adopts closed ended question with an option to clarify respondent's comments and answer. The interview questionnaire is annexed as *Appendix 1*.

### **3.6. Respondents' Socio-economic Background**

This section examines the socio-economic status of women respondents from Bahuli and Ratankandi union. Hossain (1995) indicates that socio-economic status is a factor in creating opportunities for participation in the decision-making process.<sup>88</sup> Therefore, socio-economic status is an important factor to understand the extent of women participation. The improvement of the socio-economic status of women results in the creation of more opportunities for their participation in adaptation and community development processes. Hossain, in a recent research paper, states that the village women in Bangladesh have little access in the social safety net system.<sup>89</sup> Kabeer (1993) in her analysis on *poverty, basic needs and resource entitlements*, states that, as a survival strategy of the poorest people of

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<sup>88</sup> Hossain, N., & Huda, S. (1995). *Problems of the Women Headed Households*. The BRAC-ICDDR,B Matlab Joint Research Project, Dhaka: BRAC-ICDDR,B.

<sup>89</sup> *Ibid.*



the society, social attainment is a crucial factor. She suggests that the poorest have limited scope to access to resources.<sup>90</sup>

**Table 3.4: Distribution of Women by Age Group**

Age	Total Number	Percentage (%)
18-25	25	26.88%
26-35	27	29.03%
36-45	24	25.81%
46-55	10	10.75%
55+	07	07.53%
Total	93	100.00

[Source: Compiled from Fieldwork]

Table 3.4 shows the age distribution of the respondents. The respondents were from ages 18 years old and above. Categorizing the respondents into five age groups, the following results were noted 27% of the respondents are from 18-25 year age category, 29% from 26-35 age category, and 26% are from 26-35 category. Only 7% respondents are over 55 years old. It is interesting to note that most of the respondents forgot their real age. Sometimes they had to ask their relatives for their age. Some answers were variants of statement like “my age will be between 30 to 40 years.” In this situation, the question was asked in the context of some specific special events, *e.g.* “how old are you during the 1988 flood or during the independent war?” The difficulty in the recall of age is not without

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<sup>90</sup> Kabeer, N. (1993). Gender Dimensions of Rural Poverty: Analysis from Bangladesh. *Journal of Peasant Studies*, 18(2): 241-262. cited in Hossain, N., & Huda, S. (1995). *Problems of the Women Headed Households*. BRAC-ICDDR,B Matlab Joint Research Project, Dhaka: BRAC-ICDDR,B.

reason. In Bangladesh, birth registration system is not being appropriately followed. In recent years, Bangladesh government has taken initiatives to have all children registered; however, some people are still not still aware of the birth registration system.

**Table 3.5: Distribution of Women by Educational Attainment**

<b>Educational Attainment</b>	<b>Total Number</b>	<b>Percentage (%)</b>
Illiterate	35	37.64%
Primary Level (class I-V)	42	45.16%
Secondary Level (class VI-X)	08	08.60%
Higher Secondary (class XI-XII)	06	06.45%
Graduate	02	02.15%
Total	93	100.00

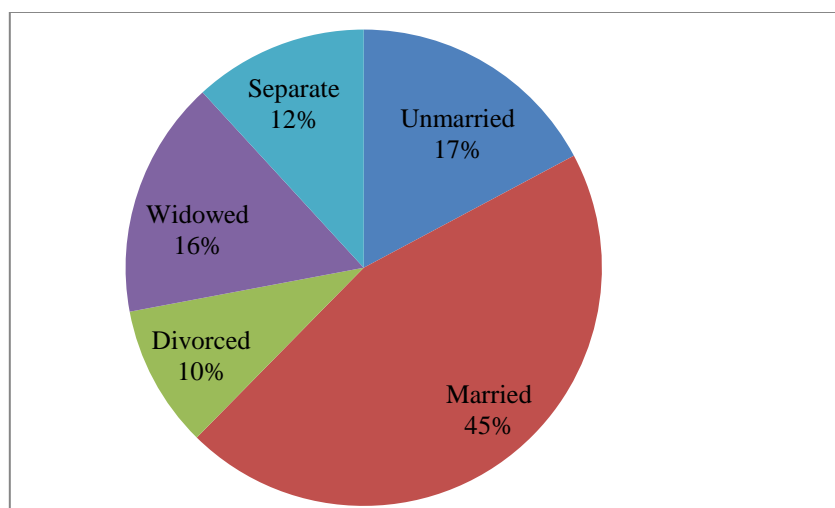
[Source: Compiled from Fieldwork]

The percentage of girl's education in Bangladesh has been increasing in recent years. Nowadays, a large number of females attend school. Primary education in Bangladesh is now free for all. Bangladesh government declares free female education up to higher secondary level and food for education up to secondary level for women. Nonetheless, there are still considerable number of girls who could not complete the primary level due to poverty.

Table 3.5 shows the distribution of respondents by level of education. 45% of women have primary education, 8% have completed secondary level and only 2% of the respondents are university graduate. They graduated from local university college. 37% belong to the illiterate group, most of whom cannot sign their name.

They actually learned to sign their name while they were participating in the CDMP.

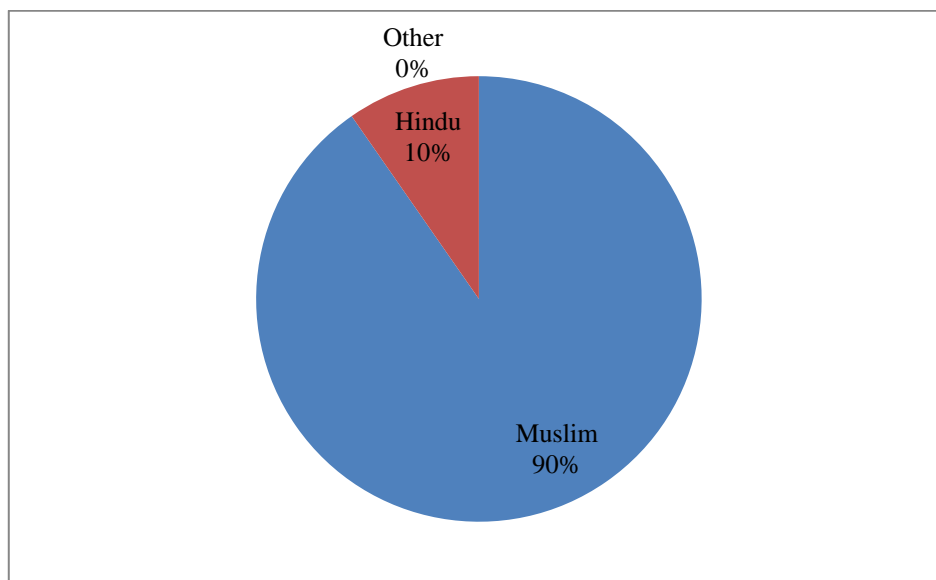
**Figure 3.3: Distribution of Women by Marital Status**



[Source: Compiled from Fieldwork]

Figure 3.3 represents the distribution of the respondents based on their marital status. Among the respondents, 45% of women are married, 17% are not married, 16% are widowed, 12% women are separated, and 10% are divorced. The marital status is significant because the patriarchal society of Bangladesh does not allow women to live alone. However, the increasing violence against women in family life has encouraged women who were victims of violence to go through separation. Within the poor families, the percentage of separation or divorce rate is high; in most cases, the husband leaves the family.

**Figure 3.4: Distribution of Women by Religious Status**



[Source: Compiled from Fieldwork]

Figure 3.4 shows the distribution of respondents by their religion. Majority of women belongs in Muslim community (90%) whereas only 10% are from Hindu religion. The research did not find any Christian or Buddhist religious people among the programme beneficiaries.

**Table 3.6: Distribution of Women by Occupation**

Occupation	Total Number	Percentage (%)
Unemployed	12	12.90%
Student	10	10.75%
Housewife	42	45.16%
Farmer	02	2.15%
Small Business	06	6.45%
Day Labour (Agriculture)	12	12.91%
Other	09	09.68%
Total	93	100.00

[Source: Compiled from Fieldwork]

Table 3.6 represents the distribution of women according to their occupation. 13% women are unemployed, 11% are students, and 2% are farmers. 45% women are housewives. When posed with the question "what is your occupation," the latter respondents replied "nothing, just housewife" further indicating they are not income earners. In close observation, however, it is found that they are involved in household agricultural work. Though Bangladesh women are at work from dawn to dusk, they are not recognized as income earners.<sup>91</sup> They called their work as "household work" which in Bangladesh has no corresponding price value.

**Table 3.7: Distribution of Women by Level of Income**

Level of Income (Taka) <sup>92</sup>	Total Number	Percentage (%)
<2,000	68	73.12%
2,000-3,000	10	10.75%
3,001-4,000	08	08.60%
4,001-5,000	05	5.38%
5,001+	02	02.15%
Total	93	100.00

[Source: Compiled from Fieldwork]

Table 3.7 shows that most of the women do not have their own income. 73% of women claimed receiving monthly income below 2,000 taka (1 taka = 1.07 yen). Their income comes from part-time or seasonal agricultural day labour. 11% of women earned up to 3,000 taka monthly which came from small business.

<sup>91</sup> Khan, S. (1988). *The Fifty Percent Women in Development and Policy in Bangladesh*. Dhaka: The University Press Limited.

<sup>92</sup> One Taka is equivalent to 1.07 Yen (as of February 2012)

**Table 3.8: Distribution of Women by Family Pattern**

<b>Family Pattern</b>	<b>Total Number</b>	<b>Percentage (%)</b>
Nuclear <sup>93</sup>	58	62.37%
Joint <sup>94</sup>	34	36.56%
Extended <sup>95</sup>	01	01.07%
Total	93	100.00

[Source: Compiled from Fieldwork]

Table 3.8 indicates that the respondents are mainly from nuclear family (63%) and almost 37% are from joint family.

**Table 3.9: Distribution of Women by Number of Family Member**

<b>Number of Family Member</b>	<b>Total Number</b>	<b>Percentage (%)</b>
01-02	08	08.60%
3-4	38	40.86%
4-6	20	21.51%
7-9	12	12.90%
10+	15	16.13%
Total	93	100.00

[Source: Compiled from Fieldwork]

Table 3.9 shows that most of the respondents' families are composed of 3 to 4 members. 21% respondent families consist of 4 to 6 members.

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<sup>93</sup> Nuclear family is composed of father, mother and their children. In *Encyclopaedia Britannica online*. Retrieved from <http://www.britannica.com/EBchecked/topic/421619/nuclear-family>

<sup>94</sup> Joint family composed of father mother, their children, and the children's spouses. In *Dictionary Online*. Retrieved from <http://dictionary.reference.com/browse/joint+family>

<sup>95</sup> Extended family is an expansion of nuclear family. In *Encyclopaedia Britannica online*. Retrieved from <http://www.britannica.com/EBchecked/topic/198830/extended-family>

### **3.7. Summary**

This exploratory descriptive research has collected primary data from Bahuli and Ratankandi union from questionnaire and also from personal observation. Socio-economic background of respondents indicates that the participants of the CDMP mainly come from the poorest part of the village. 45% of women are housewives, 13% are unemployed and 11% are students. Data shows that 69% of women do not have any income or have very nominal income. A housewife, who works hard for household works, is not recognized as an income earner. Most of the students are also out of work. Only 31% of women are involved directly in income-generating activities. Women's mean income is between 2,000 to 3,000 taka which is not enough for everyday survival needs of the family. Thus, it becomes difficult for women to survive during disasters. In recent years, prolonged flood in their villages made women more vulnerable. 82% of the respondents are between 18-45 years old. In sum, the socioeconomic profiles of the respondents indicate that the beneficiaries of the CDMP are mainly young, married housewives who came from marginal income level families.

## CHAPTER FOUR

### POLICIES AND PROGRAMMES OF BANGLADESH TO ADDRESS CLIMATE CHANGE THREATS TO BANGLADESH AND WOMEN

#### 4.1. Introduction

Around the world, the climate change is already beginning to manifest its impacts like seasons shifting, sea levels rising, and so on.<sup>96</sup> Climate change increases the risk to women and children. Carter (1991) states that Bangladesh is one of the most vulnerable areas to climate change due to its geographic location. that Bangladesh situated in the Tropic of Cancer point, one of the hotspot of disaster occurrence point.<sup>97</sup>

#### 4.2. Climate Change Threats to Bangladesh

Bangladesh is now facing extreme weather and is frequently hit by severe disasters. According to Bangladesh Disaster statistic's data from 1980 to 2010, Bangladesh recorded 234 disaster events which killed 191,836 people.<sup>98</sup> Flood and cyclone hazards occur in Bangladesh with huge devastating power. Drought,

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<sup>96</sup> *The Nature Conservancy*. (2011). Retrieved from <http://www.nature.org/ourinitiatives/urgentissues/climatechange/threatsimpacts/rising-seas.xml>

<sup>97</sup> Carter, W. N. (1991). *Disaster Management: A Disaster Manager's Handbook*. Manila: Asian Development Bank.

<sup>98</sup> Bangladesh Disaster Statistics (n.d.). *Prevention web*. Retrieved from <http://www.preventionweb.net/english/countries/statistics/?cid=14>



river erosion, and earthquake also hit Bangladesh regularly resulting in heavy economic losses.

**Table 4.1: Number of Natural Hazards in Bangladesh from 1980-2010**

Number of Extreme Hazardous Events	234
Peopled Killed by Disasters Events	191, 836
Average People Killed Every Year	6,188
Total Number of Affected People	323,480,264
Average Number of Affected People	10,434,874
Economic Damage Per Annum (US\$)	550,726 X1000

[Source of Data: Bangladesh Disaster Statistics (n.d.). *Prevention web*. Retrieved from <http://www.preventionweb.net/english/countries/statistics/?cid=14>]

#### 4.2.1. Floods

River overflow and monsoon flood are common in Bangladesh. For poor people of Bangladesh, floods are a recurrent fact of life.<sup>99</sup> Every year, floods hit the country and damage resources and livelihood systems. The low lying areas and *char land* (flood-plain) are affected by flood most adversely. As floodplain, Sirajganj district is affected by flood every year. The 1988 flood inundated 89,000 square km areas of Bangladesh and took 1517 human life.<sup>100</sup> The flood of 1988 and 1998 together inundated 65% area of the country.<sup>101</sup> The 1998 flood

<sup>99</sup> Oxfam GB. (2011). *Bangladesh floods*. Retrieved from [http://www.oxfam.org.uk/oxfam\\_in\\_action/emergencies/bangladesh-floods.html](http://www.oxfam.org.uk/oxfam_in_action/emergencies/bangladesh-floods.html)

<sup>100</sup> BWDB (Bangladesh Water Development Board). (2012). *Floods*. Retrieved from <http://www.bwdb.gov.bd/index>

<sup>101</sup> *Ibid.*

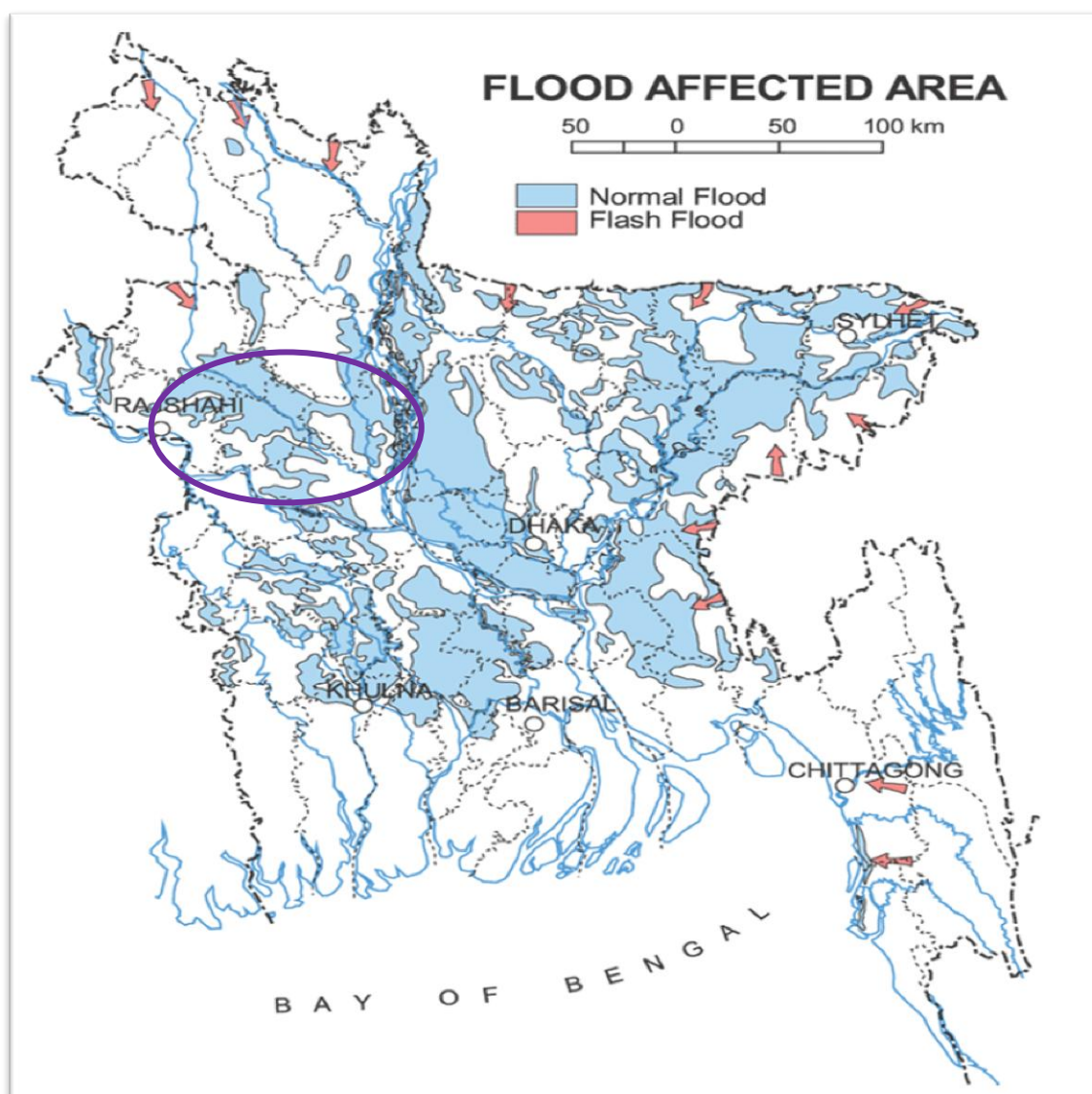
considered as one of the worst natural disaster of Bangladesh. With 65 days of duration, it affected 67% area, and destroyed livelihood systems drastically.<sup>102</sup>

Flood's nature is changing; now it is lengthier. The 1988, 1998, 2004 and 2007 floods were the lengthiest flood in the history of Bangladesh. The recent frequent and prolonged occurrence of floods makes people's life more miserable.

**Figure 4.1: Sirajganj District in Bangladesh Flood Hazard Map**

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<sup>102</sup> *Ibid.*



[Source: BWDB. (2012). Bangladesh Hazard Map.; Banglapedia: The National Encyclopaedia of Bangladesh. (2006). Retrieved from [http://www.banglapedia.org/httpdocs/HT/N\\_0131.HTM](http://www.banglapedia.org/httpdocs/HT/N_0131.HTM)]

#### 4.2.2. Cyclone

Tropical cyclone and tornadoes hit the coastal areas year along the Bay of Bengal almost every. In 2007, cyclone *Sidr* hit the coastal area killing 3,406 people and resulting in an estimated US\$2.3 billion economic loss.<sup>103</sup> The 1970s *Bhola*

<sup>103</sup> MoEF. (2009). CDMP II. Dhaka: MoEF.

cyclone was one of the deadliest tropical cyclone.<sup>104</sup> Five million people lost their lives in the storm. *Char* (coastal plain) *Tazummuddin*, one of the coastal *thana*<sup>105</sup> of Bangladesh alone lost its 46.3% population. The cyclone resulted in the death of 77,000 people out of Tazummuddin's 167,000 total population.<sup>106</sup>

The 1991 Tropical Cyclone Marian (also called Tropical Cyclone 02B) killed almost 140,000 people and more than five million became homeless.<sup>107</sup> McCarthy (1994), in his report on Operation Sea Angel, states that the 1991 cyclone Marian hit the coast with 15 to 20 feet tidal surges and with wind speed of 235 km/hour.<sup>108</sup>

#### **4.2.3. Drought**

Drought causes crops losses in the north-western part of Bangladesh. Drought mainly occurs in pre-monsoon period due to deficiency of rainfall. Climate change exacerbates the dryness and delayed rainfall problems. During harvesting period, farmers suffer from the lack of rainfall and soil dryness resulting in agricultural losses and famine in that area.

#### **4.2.4. Earthquake**

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<sup>104</sup> Sommer, A., & Mosely, W. (1972). *East Bengal Cyclone of November, 1970: Epidemiological Approach to Disaster Assessment*. Retrieved from [http://www.laskerfoundation.org/awards/library/sommer/pdfs/east\\_bengal\\_cyclone\\_1970.pdf](http://www.laskerfoundation.org/awards/library/sommer/pdfs/east_bengal_cyclone_1970.pdf)

<sup>105</sup> *Ibid.*

<sup>106</sup> *Operation Sea Angel*. (1991). Retrieved from [http://www.globalsecurity.org/military/ops/sea\\_angel.htm](http://www.globalsecurity.org/military/ops/sea_angel.htm)

<sup>107</sup> McCarthy, P. A. (1994). *Operation Sea Angel: A Case Study*, RAND (Prepared for the US Army), Library of Congress: USA.

Bangladesh is under the threat of earthquake. The northern and central parts of the country are frequently hit by short and medium range of earthquakes resulting in the loss of lives and properties.<sup>109</sup> If Bangladesh gets hit by stronger type of earthquake, it is projected that most of the building of the capital of Dhaka will be destroyed. Bangladesh, as a whole, lies in the earthquake zone wherein two-third comes under major and moderate fault.

#### **4.2.5. River bank erosion**

River bank erosion is associated with the rivers the Padma, Brahmaputra, Jamuna and Megna.<sup>110</sup> Floodplains of these rivers are affected by erosion. Every year millions of people become homeless and landless due to river bank erosion. According to BWDB (2012), in the last three decades the *Padma*, *Jamuna* and *Gangse* rivers have inundated 180,000 ha of land.<sup>111</sup>

#### **4.2.6. Flash Flood**

Flash flood mainly affects the *Haor Basins*<sup>112</sup> and hilly areas of Bangladesh. Flash floods damage the agricultural crops every year, cause landslide, destroy properties and force people to evacuate from the affected areas. Due to climate

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<sup>109</sup> Banglapedia: The National Encyclopaedia of Bangladesh. (2006). Retrieved from [http://www.banglapedia.org/httpdocs/HT/N\\_0131.HTM](http://www.banglapedia.org/httpdocs/HT/N_0131.HTM)

<sup>110</sup> UNEP. (2001). *State of the Environment: Bangladesh Disasters*. Bangkok. Retrieved from [http://www.rrcap.unep.org/reports/soe/bangladesh\\_disasters.pdf](http://www.rrcap.unep.org/reports/soe/bangladesh_disasters.pdf)

<sup>111</sup> BWDB (Bangladesh Water Development Board). (2012). Retrieved from <http://www.bwdb.gov.bd/index>

<sup>112</sup> Banglapedia defines '*Haor Basins*' as follows, Haor is an extensive water body. It receives water from surface runoff by rivers, and canals. The Haor basin includes 47 *haors*, 6,300 *Beels*. Banglapedia: The National Encyclopaedia of Bangladesh. (2006). Retrieved from [http://www.banglapedia.org/httpdocs/HT/N\\_0131.HTM](http://www.banglapedia.org/httpdocs/HT/N_0131.HTM)

change, the frequency of these types of flash-flood increased drastically with huge economic loss.

### **4.3. Climate Change Policies and Programmes to Address the Climate**

#### **Change Threats to Bangladesh**

Managing climate risks is a major challenge today and in the future.<sup>113</sup> The United Nations Food and Agriculture Organization (FAO) states that the frequency of climate-related disaster increases and with corresponding severe consequences. It is therefore urgent to take immediate response to provide assistance at the global, regional and national levels to improve preparedness and early-warning systems.<sup>114</sup> It is clear that changing climate pattern requires an effective policy response.

Bangladesh government recognises that the climate change is an important issue and takes an attempt to incorporate potential response measures for reducing negative impacts of climate change in the country.<sup>115</sup> The issue is already recognized at the higher political level of Bangladesh. The government has declared that it is ready to contribute to the efforts for the reduction of greenhouse gases (GhG) and to undertake initiatives that will manage the climate challenges and protect the well beings of the Bangladesh people from the adverse impacts of

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<sup>113</sup> FAO. (2011). *Climate Change*. Retrieved from <http://www.fao.org/climatechange/49376/en/>

<sup>114</sup> FAO. (2008). *Climate Change and Disaster Risk Management*. Technical Background Paper from Expert Consultation. Retrieved from <http://www.fao.org>

<sup>115</sup> MoEF. (2005). *National Adaptation Program of Action (NAPA)*. Government of the People's Republic of Bangladesh, Dhaka: Ministry of Environment and Forests (MoEF).

climate change.<sup>116</sup> At present, Bangladesh government, the research institutions, civil-society organizations, and many NGOs are quite aware of the growing risks and the vulnerability of the country to climate change.<sup>117</sup> The government has introduced the National Adaptation Programme of Action (NAPA), as an immediate response to climate change and recently formulated the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) to promote climate-resilient development in the country.

This chapter discusses the Bangladesh government climate policy and actions, institutional arrangements, and the Comprehensive Disaster Management Programme (CDMP).

#### **4.3.1. The National Adaptation Program of Action (NAPA) 2005**

In order to help developing nations plan for tackling the effects of climate change, the United Nations established National Adaptation Program of Action (NAPA) framework. NAPA aims to build the capacity of developing nations and to identify priority actions required for effective adaptation to climate change.<sup>118</sup>

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<sup>116</sup> MoEF. (2009). *Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009*. Government of the People's Republic of Bangladesh, Dhaka: Ministry of Environment and Forests (MoEF).

<sup>117</sup> Mallick, D., & Jilan, G. (2006). *Global climate change will hit the poor the hardest*. Bangladesh Environment Newsletter.

<sup>118</sup> NIDOS (Network of International Development Organizations in Scotland). (2009). *Bangladesh Climate Change Factsheet*. Retrieved from <http://www.nidos.org.uk/downloads/BangladeshFactsheet.pdf>

The ultimate goal of NAPA is to decrease developing nation's climate change adaptation costs and climate change vulnerability.<sup>119</sup>

Natural disaster and climatic events are not new in Bangladesh. Historically, Bangladesh people have always experienced disasters and have their own formal and informal coping mechanisms to reduce the loss of life and property from such disasters. NAPA's target is to integrate that mechanism within the development process so that when the climate change impacts become more discernible, the nation is ready to handle the climate change impacts as routine affairs in the country's development process. NAPA's strategic goals and objectives are to suggest future coping mechanism based on existing processes and practices to reduce adverse effects, to adjust with adverse situation of climate change and to promote sustainable development. Through this policy framework, Bangladesh government has urged global community to undertake their role and comply with their commitments under the United Nations Framework on Climate Change (UNFCCC) and Kyoto Protocol (KP). Bangladesh expects global community to immediately allocate adequate fund through the Least Development Countries Fund (LDFC) for the implementation of NAPA.<sup>120</sup> NAPA emphasizes sustainable environmental development and natural resources management, and the participation of all stakeholders in the pursuit of those goals.<sup>121</sup>

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<sup>119</sup> *Ibid.*

<sup>120</sup> *Ibid.*

<sup>121</sup> BCAS. (2010). *op.cit.*



#### **4.3.2. Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009**

Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009 is a complete version of the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2008. The main aim of this strategy is the attainment of sustainable development, poverty reduction, and increased well-being of all vulnerable groups in society with special emphasis on gender sensitivity.<sup>122</sup>

BCCSAP is a set of programmes based on six broad areas of intervention. BCCSAP 2009 includes water resources and river issues to address the occurrence of floods in the future which are expected to be more severe due to climate change. Adaptation is the major priority issue in relation to climate change, Bangladesh also has shown its interest on low carbon development path as an important element in its quest for sustainable development. The strategy emphasizes adaptation and mitigation initiatives and recognizes that the development of institutional and human capacity within the country is absolutely essential for managing investment as well as identifying areas for intervention through research and knowledge management.

The vision of BCCSAP is to eradicate poverty, increase employment opportunities, ensure food security, provide access to energy and power, and achieve economic and social well-being of all citizens of the country.<sup>123</sup> This will be achieved through a pro-poor Climate Change Management Strategy which prioritizes

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<sup>122</sup> MoEF. (2009). Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009. *op.cit.*

<sup>123</sup> MoEF. (2009). Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009. *op.cit.*

adaptation and disaster risk reduction and also addresses low carbon development, mitigation, technology transfer and the mobilization of adequate and timely flow of funds. Resettlement of environmental refugees invoking the free movement of natural persons must be monitored and adequate institutional support is to be provided.

The strategy sets up a ten year programme to build the capacity and resilience of the country to meet the challenge of climate change over the next 20-25 years. The aforementioned objective is hoped to be achieved through the implementation of a Climate Change Action Plan based on six thematic fields such as (1) food security, social protection and health; (2) comprehensive disaster management; (3) infrastructure; (4) research and knowledge management; (5) mitigation and low carbon development; and (6) capacity building and institutional development.<sup>124</sup>

The strategy declares that the needs of the poor and vulnerable, including women and children, will be prioritized in all activities implemented under the action plan. The action plan will be implemented under the guidance of the National Environment Committee (NEC) and coordinate by the Ministry of Environment and Forest (MoEF).

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<sup>124</sup> *Ibid.*

### **4.3.3. Bangladesh Environment Policy 1992**

Bangladesh government has formulated the Environment Policy in 1992 to maintain the ecological balance, promote environment protection and improvement, protect citizen's life and well-beings from natural disaster environment degradation and pollution, and ensure environmentally sound and sustainable development.

In the context of environment and climate change, Bangladesh government has also formulated some supplementary policy initiatives and action.<sup>125</sup> The Forest Policy 1994, the Fishery Policy 1998, the Water Policy 1998, the Agriculture Extension Policy 1995, The Energy Policy 1995, the National Conservation Strategy 1995, the National Environment Action Plan 1995 have been formulated in this perspectives.<sup>126</sup>

### **4.3.4. National Plan for Disaster Management 2010-2015**

The National Plan for Disaster Management for 2010-2015 is a document based on the global and regional commitment of the Government of Bangladesh and its vision on disaster management; introduced by Disaster Management Bureau, Disaster Management & Relief Division, April 2010.<sup>127</sup> Its aim is to reduce vulnerability of the poor to natural and human-induced disaster in a manageable

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<sup>125</sup> MoEF. (2009). Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009. *op.cit.*

<sup>126</sup> *Ibid.*

<sup>127</sup> Disaster Management Bureau. (n.d.). Disaster Management and Relief Division, Government of the People's Republic of Bangladesh. Retrieved from <http://www.dmb.gov.bd/>

and acceptable level. This plan is a reflection of government's commitment to SAARC Framework on Disaster Management and Hyogo Framework for Action 2005-2015.<sup>128</sup>

#### **4.4. Institutional Arrangement for Climate Change and Disaster Management**

##### **4.4.1. Ministry of Environment and Forest (MoEF)**

The Ministry of Environment and Forests (MoEF) is the focal ministry for all work on climate change, including international negotiation. It is responsible for the planning, coordination and the implementation of environmental and forestry programme. It also plays a principal role in international level climate issues and participates in United Nations Environment Programme (UNEP).

MoEF is established in 1989. Prior to that, the forest and environment issues were managed by Bangladesh Forest Department. From 1971 to 1989, the Bangladesh Forest Department (BFD) fell under the Ministry of Agriculture.<sup>129</sup> In 1977, the Department of Environment (DoE) was established under the Environment Pollution Control Ordinance. DoE, as the technical arm of the Ministry, was responsible for environmental planning, management, monitoring and enforcement. With the establishment of MoEF in 1989, the DoE and BFD were transferred to this new Ministry. Besides these two departments, MoEF controls

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<sup>128</sup> *Ibid.*

<sup>129</sup> MoEF (The Ministry of Environment and Forests). (2003). Government of the Peoples Republic of Bangladesh. Retrieved from [http://www.moef.gov.bd/html/about/about\\_us.html](http://www.moef.gov.bd/html/about/about_us.html)

the Bangladesh Forest Industries Development Corporation (BFIDC), Bangladesh Forest Research Institute (BFRI) and Bangladesh National Herbarium (BNH).<sup>130</sup>

#### **4.4.2. Climate Change Cell (CCC)**

The Climate Change Cell (CCC) is established in 2004 under the Comprehensive Disaster Management Program (CDMP) in the Department of Environment (Ministry of Environment and Forest) to implement climate change-related research, build capacity to carry out modelling, and establish a climate change database, among others.<sup>131</sup> The CCC responds to the recognition that Bangladesh is particularly vulnerable to the effects of climate change, and that the number and scale of climate-related disasters is likely to increase.<sup>132</sup> CCC provides the central focus for the Government's climate change related work and is supported by DFID International and UNDP Bangladesh. CCC's objective is to enable the management of long term climate risks and uncertainties as an integral part of national development planning.<sup>133</sup>

#### **4.4.3. The Ministry of Food and Disaster Management (MoFDM)**

The Ministry of Food and Disaster Management (MoFDM) is the focal ministry for disaster management. MoFDM has been given the mandate to drive national

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<sup>130</sup> *Ibid.*

<sup>131</sup> CDMP Web Portal. Retrieved from <http://www.cdmp.org.bd/modules.php?name=MoFDMMission>

<sup>132</sup> CCC. (2009). *Climate Change, Gender and Vulnerable Groups in Bangladesh*. Dhaka: Climate Change Cell, DoE, MoEF, Component 4b, CDMP, MoFDM.

<sup>133</sup> *Ibid.*

risk reduction reform programmes. Its mission is to achieve a paradigm shift in disaster management from conventional response and relief to a more comprehensive risk reduction culture and to promote food security as an important factor in ensuring the resilience of communities to hazards.<sup>134</sup>

#### **4.4.4. Disaster Management Bureau (DMB)**

The Government of Bangladesh (GoB) established the Disaster Management Bureau (DMB) in April, 1993 as the successor of the Disaster Coordination and Monitoring Unit.<sup>135</sup> Disaster Management Bureau (DMB) is the core organization and technical arm of the Ministry of Food and Disaster Management (MoFDM). The main role of the DMB is to provide support to disaster management decision makers, planners and practitioners at all levels in Bangladesh to perform specialist functions in the field of disaster preparedness, local level disaster action and contingency planning, awareness training, facilitating improved information collection.<sup>136</sup>

The Comprehensive Disaster Management Programme (CDMP), a donor funded programme, aims to strengthen the DMB and shifts the emphasis away from relief to disaster preparedness and risk reduction.

#### **4.4.5. National Disaster Management Council (NDMC)**

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<sup>134</sup> CDMP Web Portal. Retrieved from

<http://www.cdmp.org.bd/modules.php?name=MoFDMMission>

<sup>135</sup> Disaster Management Bureau's home page. <http://www.dmb.gov.bd/>

<sup>136</sup> Disaster Management Bureau, Disaster Management and Relief Division, Government of the People's Republic of Bangladesh. Retrieved from <http://www.dmb.gov.bd/>

The National Disaster Management Council (NDMC), headed by the Prime Minister, is the highest-level forum for the formulation and review of disaster management policies. The National Disaster Management Council is established to provide policy guidance towards disaster risk reduction and emergency response management in Bangladesh.

#### **4.4.6. Inter-Ministerial Disaster Management Co-ordination Committee (IMDMCC).**

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

### **4.5. Climate Change Adaptation Programs in Bangladesh**

#### **4.5.1. Comprehensive Disaster Management Programme (CDMP)**

Bangladesh government has formulated Comprehensive Disaster Management Programme (CDMP) with the United Nations Development Programme (UNDP) assistance in 2000. The CDMP was approved in 2003. The programme comprises of two phases: Phase I (2004–2009) and Phase II (2010-2014). CDMP has partnership with DFID, UNDP, SIDA, AusAID, Norwegian Embassy, and the European Union. The objective of the CDMP is as follows:

*The ultimate goal of CDMP is to mitigate disaster's effect from national level to community level. Its policy is to emphasize the rehabilitation to address the disasters. The Ministry of Food and Disaster Management*

*(MoFDM) is responsible for the implementing of the CDMP. CDMP's aim is to a shift from a conventional relief policy to establish a comprehensive disaster risk reduction culture and policy for Bangladesh.*<sup>137</sup>

In addition to the discussions below, further discussions on CDMP can be found in Chapter 6.

#### **4.5.1.1. Comprehensive Disaster Management Programme (CDMP) Phase I**

CDMP phase I (2004–2009) has been implemented in seven disaster affected target districts.<sup>138</sup> The first phase includes the most vulnerable seven districts such as Sirajganj, Rajshahi, Faridpur, Sunamganj, Lalmonirhat, Satkhira, and Cox's Bazar.<sup>139</sup> CDMP aims to enhance adaptation capabilities of targeted community population. It also aims to increase capacities of core business factions and enhance leadership among the vulnerable stakeholder. The total budget for the programme was US\$27.12 million.<sup>140</sup> The funding was sourced from UNDP, DFID, AusAID, Norwegian aid, and other development partners.

The first phase adaptation programme generated the following outcomes: (1) Mapping the hazards; (2) Introduce disaster risk map by the affected community;

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<sup>137</sup> Luxbacher, K. (2011). *Inside Stories on Climate Compatible Development: Bangladesh Comprehensive Disaster Management Programme*. In CDKN (Climate and Development Knowledge Network). Retrieved from <http://cdkn.org/resource/cdkn-inside-story-bangladesh%E2%80%99s-comprehensive-disaster-management-programme/>

<sup>138</sup> CDMP (Comprehensive Disaster Management Programme). (2003). *Bangladesh Country Report 2003*. Ministry of Environment and Forest (MoEF). Retrieved from <http://www.adrc.asia/countryreport/BGD/2003/page2.html>

<sup>139</sup> Luxbacher, K. (2011). *op.cit.*

<sup>140</sup> CDMP (Comprehensive Disaster Management Programme). (2003). *op.cit.*



(3) Create early warning system; (4) Early disaster preparedness; (5) Increased disaster management capacities of community stakeholder; and (6) Introduce and increase capacities of disaster volunteers' and disaster managers.

#### **4.5.1.2. Comprehensive Disaster Management Programme (CDMP) Phase II**

After the successful implementation of CDMP Phase 1, CDMP then extended to Phase 2 (20010-2015). The programme covers 32 out of 64 districts to establish a long-term disaster management system. The activities of this phase were designed based on the achievements, lessons and outcomes of the CDMP Phase 1. Phase 2 tries to overcome the first phase programmes' deficiency. The total budget for this phase is US\$70 million sourced from donors.<sup>141</sup>

The programme's aim is the adoption of disaster risk reduction approach to enhance institutional management capabilities to address and manage disaster. The disaster risk reduction approach's goal is to establish people-oriented disaster management and risk reduction partnership as well as channel support to the national level to community level through government, development partners, civil society, and NGOs.<sup>142</sup>

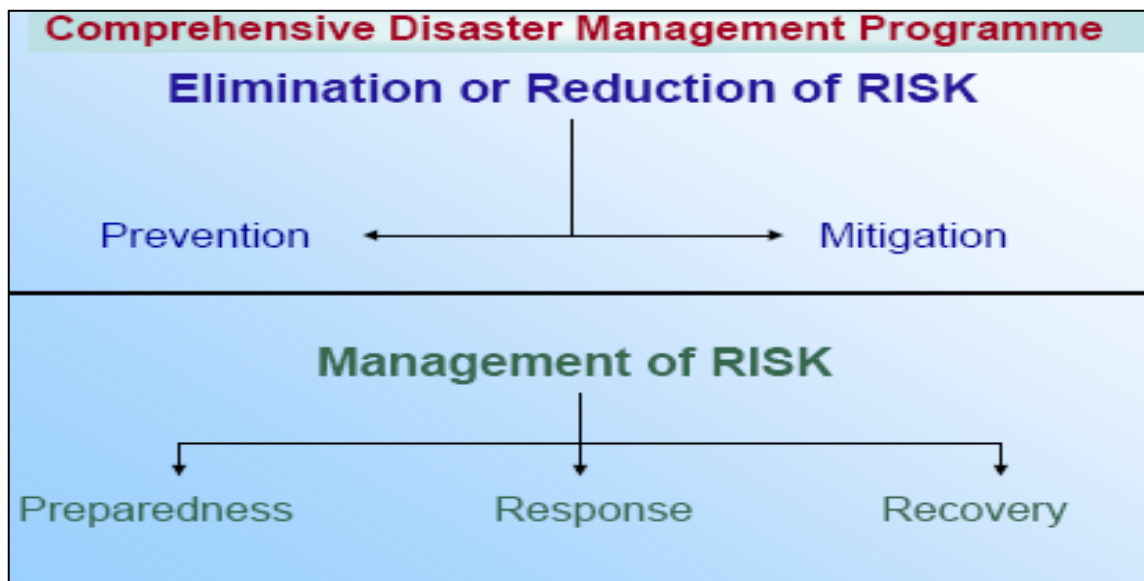
#### **4.5.1.3. CDMP Adaptation Process Implementation Framework**

#### **Figure 4.2: CDMP Adaptation Process to Risk Reduction**

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<sup>141</sup> *Ibid.*

<sup>142</sup> CDMP (The Comprehensive Disaster Management Programme). 2003. Bangladesh Country Report 2003  
Retrieved from <http://www.adrc.asia/countryreport/BGD/2003/page2.html>



[Source: MoFDM. (2005). *Comprehensive Disaster Management Programme: Corporate Plan*. Stakeholder Briefing. Dhaka: MoFDM. Retrieved from [http://www.lcgbangladesh.org/derweb/achieved/docs/2005/MoFDM%Corporate%20Plan%20Presentation%20to%20DER\\_Mar05.pdf](http://www.lcgbangladesh.org/derweb/achieved/docs/2005/MoFDM%Corporate%20Plan%20Presentation%20to%20DER_Mar05.pdf)]

**Figure 4.3: CDMP Risk Management Framework for Action**



[Source: MoFDM. (2005).*op.cit.*]

#### 4.6. Summary

Bangladesh government has taken a holistic approach<sup>143</sup> to disaster management. The government's main objective is to include public private stakeholder in the process of disaster management. Government policy emphasizes cooperation among all relevant government departments, public- private stakeholder, NGO's, and also the country's development partners and donor agencies to build an effective disaster management partnership. Bangladesh government has shown its commitment to all global climate change and environment policy framework and action plan and introduced its own policy framework to reduce vulnerability.

<sup>143</sup> MoEF, (2009). Bangladesh Climate Change Strategy and Action Plan 2009. *op.cit.*

Bangladesh government places equal emphasis on adaptation and mitigation policies.

CDMP is a framework which prioritizes disaster management in the context of adaptation. One important fact is climate change adaptation programme requires funding, for which Bangladesh government depends heavily on donor aid. The impact of climate change adaptation program on women and their livelihood in Bangladesh could be effective in terms of early warning system, awareness building process, but in terms of total adaptation efficiency it still requires more attention from the government as well as international financial organizations and donor agencies. Bangladesh government expects the global community to ensure a smooth flow of adaptation fund towards disaster vulnerable developing countries.

## CHAPTER FIVE

### CLIMATE CHANGE CHALLENGES AND VULNERABILITY OF WOMEN

#### 5.1. Introduction

The vulnerability of women to climate change is among the most crucial concerns of Bangladesh government. Recent researches indicate that poor people suffer most from climate change. In a research paper, DFID states that the poorest people from climate vulnerable countries will be the worst victim of adverse impacts of climate change.<sup>144</sup> Some research highlight the gender concern of climate change and attempt to establish a link between women's vulnerability and adverse impact of climate change. BIDS research on climate change claim that the geo-physical implications of climate change would be severe on women and disadvantaged groups.<sup>145</sup>

Climate Change Cell (CCC), in its research on gender dimension of climate change, states that:

*Bangladesh women's participation are fewer in policy level. Our male dominated patriarchal society does not allow public participation of women. Women's mobility also restricted by norms. Women have less scope to go for a safe shelter even during the disaster. The safe disaster shelter is not safe for women, in sense of health, sanitation and social security aspects. During flood or other events the sources of pure*

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<sup>144</sup> DFID. (2004). *Climate change deepens poverty and challenges: poverty reduction strategies*. DFID key sheets. UK: Department of International Development.

<sup>145</sup> Asaduzzaman, M., Ahmed, A.u., Haq, E., & Choudhury, S.M.Z.I. (2005). *Climate change and Bangladesh: Livelihoods issues for adaptation*. Dhaka: BIDS.

*drinking water damaged most of the cases. In those cases it becomes family's women's responsibility to arrange pure drinking water for family from distant sources and they suffer from various gynaecological problems in the long run for taking over extra hurdle of work in their daily.*<sup>146</sup>

This chapter examines the nature of vulnerability of women to flood and river erosion. General discussions on the vulnerabilities that women face in regard to climate change are outlined in the first part of this chapter. This is followed by the presentation of the findings of this thesis on the vulnerabilities or challenges of the climate change on Bangladesh women as gleaned from the research survey conducted in Bahuli and Ratankandi.

## **5.2. Challenges and Vulnerabilities of Women to Climate Change**

Kelly & Adger (2000) define vulnerability as the capacity of individuals or a group of people to respond to and cope with or adapt to any external stress placed on their livelihoods and well-being.<sup>147</sup> Kelly & Adger (2000) argue that vulnerability must consider the social, economic, and institutional factors that influence the levels of vulnerability within a community and nation or constrain options for adaptation. Burton (1997) clarifies a link between vulnerability and adaptation.<sup>148</sup>

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<sup>146</sup> CCC. (2009). Climate change, gender and vulnerable groups in Bangladesh. *op.cit.*

<sup>147</sup> Kelly, P. M., & Adger, W.N. (2000). Theory and Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation. *Climatic Change*, 47:325-352, Netherlands: Kluwer Academic Publishers. Retrieved from <http://nome.colorado.edu/HARC/Readings/Kelly.pdf>

<sup>148</sup> Burton, I. (1997). Vulnerability and Adaptive Response in the Context of Climate and Climate Change. Burton, I.: 1997, 'Vulnerability and Adaptive Response in the Context of Climate and Climate. *Climatic Change*. 36: 185-196. cited in Kelly, P. M., & Adger, W.N. (2000). Theory and

IPCC defines vulnerability as an extent by which climate change may damage or harm a system and ability to adapt to a new climatic condition.<sup>149</sup>

This section examines the vulnerability of women to disasters, specifically those concerning climate variability.

### **5.2.1. Social Insecurity of Women during Disaster**

In Bangladesh traditional patriarchal social systems, women are oppressed by social norms and values and their mobility is restricted by Muslim customs and traditions. When women try to break this system, they have to face lot of sufferings and even physical abuses. Hossain in a research has shown that "*socio cultural constraints contribute women to go outside. Purdah system is very strong in the village. It put restriction on women's mobility.*"<sup>150</sup>

Amena Mohsin (2009), in a seminar organized by Bangladesh Institute for Strategic Studies (BISS), presents that:

*Participation of women is essential for their empowerment. However, in public space of life their entrance is restricted and limited. The constitution of Bangladesh and National Development Policy 2008 provide legal support to enact women advancement. In spite of*

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Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation. *Climatic Change*, 47:325-352, Netherlands: Kluwer Academic Publishers. Retrieved from <http://nome.colorado.edu/HARC/Readings/Kelly.pdf>

<sup>149</sup> Watson, R. T., Zinyowera, M.C., & Moss, R. H. (Eds.).(1996). *Climate Change 1995. In Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses*, Cambridge: Cambridge University Press.

<sup>150</sup> Hossain & Huda (1995) . Problems of the women headed households. *op.cit.*

*government declaration, women's right are suffered by the Personal and Family laws (Muslim).*<sup>151</sup>

### **5.2.2. Sexual Harassments of Women**

As a social and legal problem, sexual harassment gets both national and international attention.<sup>152</sup> The United Nations Convention for the Elimination of All form of Violence against Women includes "sexual harassment" as a form of violence.<sup>153</sup>

Dr. Siddiqi states that the unequal distribution of power in the society has encouraged sexual violence and harassment of women in Bangladesh.<sup>154</sup> The frequency of sexual harassment increases for women who go outside their homes to work. According to *Odhikar*, from January to September 2011, 446 women were harassed and 129 women were assaulted by stalkers all over the country.<sup>155</sup>

### **5.2.3. Health and Sanitation Problems of Women**

According to High Commissioner for Human Rights, "people's access to safe drinking water and sanitation facilities is considered as fundamental human

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<sup>151</sup> Mohsin, A. (2009). *Gender and Security: Bangladesh Regime*. BIISS Eminent Person's Lecture Series (EPLS). Dhaka: BIISS.

<sup>152</sup> CPD. (2004). *Workplace environment for women: issues of harassment and need for interventions*. 65, Dhaka: Centre for Policy Dialogue.

<sup>153</sup> *Ibid.*

<sup>154</sup> Siddiqi, D. (2004). *Globalization, Sexual Harassment and Worker's Rights in Bangladesh*. Research paper presented in CPD. (2004). *Workplace environment for women: issues of harassment and need for interventions*. 65, Dhaka: Centre for Policy Dialogue.

<sup>155</sup> Banglawire. (2011). *Sexual Harassment: Bangladesh Perspective*. Retrieved from <http://banglawire.com/blog/2011/09/14/sexual-harassment-bangladesh-perspective/>



rights.”<sup>156</sup> However, household sanitation in developing countries, especially in the rural areas, is poor.<sup>157</sup> Domestic sanitation, which is an important determinant of health or disease in population, has been neglected in pastoral areas of Bangladesh.

A study done by Yusuf (1990) on water supply and sanitation system in rural Bangladesh, has found that not a single house in their study area could fulfil the minimum criteria of sanitary hygiene and only 11.5% had a satisfactory level of water usage.<sup>158</sup> Bangladesh government has launched “Sanitation for all by 2013” campaign to ensure hygienic sanitation system in Bangladesh.<sup>159</sup>

#### **5.2.4. Food Insecurity of Women**

Women play important role in food production in Bangladesh. Due to gender discrimination, women have less access to food than men. Even in families, women are often the first to suffer from malnutrition. Women in Bangladesh suffer from malnutrition and food insecurity. The World Food Programme (WFP)

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<sup>156</sup> Office of the High Commissioner for Human Rights. (2007). *Consultation on Human Rights and Access to Safe-Drinking Water and Sanitation: Summary of Discussions*. Geneva: United Nations. cited in Water and Sanitation Program (WSP). (2007). *An Overview of the Economic Impacts of Inadequate Sanitation in Bangladesh*. Dhaka: The World Bank Office. Retrieved from <http://www.worldbank.org>

<sup>157</sup> Yusuf, M., & Hussain, A. M. (1990). Sanitation in Rural Communities in Bangladesh, 68(5):. *Bull World Health Organization*, 68 (5): 619-624.

<sup>158</sup> Yusuf & Hussain, 1990. op.cit.

<sup>159</sup> Water and Sanitation Program (WSP). (2007). *An Overview of the Economic Impacts of Inadequate Sanitation in Bangladesh*. Dhaka: The World Bank Office. Retrieved from <http://www.worldbank.org>

2009 report states that, in 39% of Bangladesh non-pregnant women and 40% of adolescent girls have anemia as a consequence of insufficient intake.<sup>160</sup>

### **5.3. Research Findings: Challenges and Vulnerabilities of Women to Climate Change in Bangladesh**

#### **5.3.1. Social Insecurity of Women during Disaster**

Security problem is the most often-cited challenge that women face during disasters. One respondent state:

*"law and security system totally break down due to communication problems, roads and high way sank by water, sometimes destroyed by water flow. In a normal period it is quiet difficult to find law and order enforcement staff in the area, even there occurred any serious mishap. It is unexpected that the police or other law enforcement agency will come to the point, if there any incidents during flood. So, we always stay in unknown fears to be victimized by social outlaws. We usually avoid going outside from home. if our houses inundated by flood, we usually take a shelter to nearby relatives house, even so, dare to stay in flood shelter due to gathering of people, lack of privacy and security crisis."*

It must be noted, however, that the security concern mentioned above arises not because of the disasters. Rather, it is a manifestation of a deep rooted social

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<sup>160</sup> Saha, P. (2012). *Food Insecurity of Women in Bangladesh: the Causes, Effects and Solution*. in *Food Justice, Gender Equality*. In Oxfam International. Retrieved from <http://oiyp.oxfam.org.au/blog/food-justice/food-insecurity-of-women-in-bangladesh-the-causes-effects-and-solution/>

security crisis in Bangladesh. Flood and other disasters merely exacerbate these problems for women.

**Table 5.1: Face Social Security Problems during Disaster**

Response	Total Number of Respondents	Percentage
Yes	36	38.71 %
No	25	26.88%
Rare	32	34.41%
Total	93	100.00%

[Source: Compiled from Fieldwork]

Table 5.1 shows that almost 39% of women experienced security problem during flood and other disasters, 27% of women said they never faced or fear to face security problems during disaster and 34% of women claimed to have not faced directly any social security problems during disasters but expressed fear that they will encounter such problems if they are not careful.

**Table 5.2: Social Insecurity Women Faced during Disaster**

Response/ Nature of Social Insecurity of Women
Physical Abuse
Eve Teasing <sup>161</sup>
Fear to send young girl to school
Fears to go to flood shelter due to security crisis
Fears to be theft of valuables, domestic animals from home
Lack of privacy
Fears to be victim of sexual harassment

[Source: Compiled from Fieldwork]

<sup>161</sup> "Eve teasing is a term indicates young men in Bangladesh usually tease the young girls and women on their way and disquieting them." see South Asia Blog on social economic situation. 2010. Retrieved from <http://thesouthasia.blogspot.jp/2010/06/eve-teasing-in-bangladesh-social-curse.html>

Almost 37% of women encountered security problems during floods. When asked what type of security problems they encountered during flood and erosion, most of the respondents stated their fear to be victims of sexual harassments as a result of the disruption of the law and order during the disasters. In the event of disasters, the transportation and communication networks are usually damaged which make it difficult for women to get assistance from law enforcement agency. This situation is taken advantage of by social outlaws who prey on poor rural women. During floods, parents usually do not send their daughter alone to school for fear of being victims of eve-teasing. Also, women hesitate to take shelter in a flood resilience centre due to lack of security and privacy as well as hygienic concerns.

### 5.3.2. Sexual Harassments of Women

**Table 5.3: Face Sexual Harassments during Disaster**

Response	Total Number of Respondents	Percentage
Yes	08	08.60 %
No	66	70.97 %
Rare	19	20.43 %
Total	93	100.00%

[Source: Compiled from Fieldwork]

Table 5.3 indicates that only 9% women faced sexual harassment like physical assault, stalking, and other forms of violence, 71% of women said they have

never faced any sexual harassment and 21% answered rarely. Because of floods, young girls and women usually do not go outside unless in case of emergency. Most of the time, they stay home to protect the family from flood. In the interview, it was disclosed that some women were afraid to inform that they have been victims of sexual harassment. Women hid their problems due to family pressure or patriarchal communal system.

### 5.3.3. Health and Sanitation Problems of Women

**Table 5.4: Face Health Problems during Disaster**

Response	Total Number of Respondents	Percentage
Yes	35	37.64%
No	16	17.20%
Frequent	32	34.41%
Rare	10	10.75%
Total	93	100.00%

[Source: Compiled from Fieldwork]

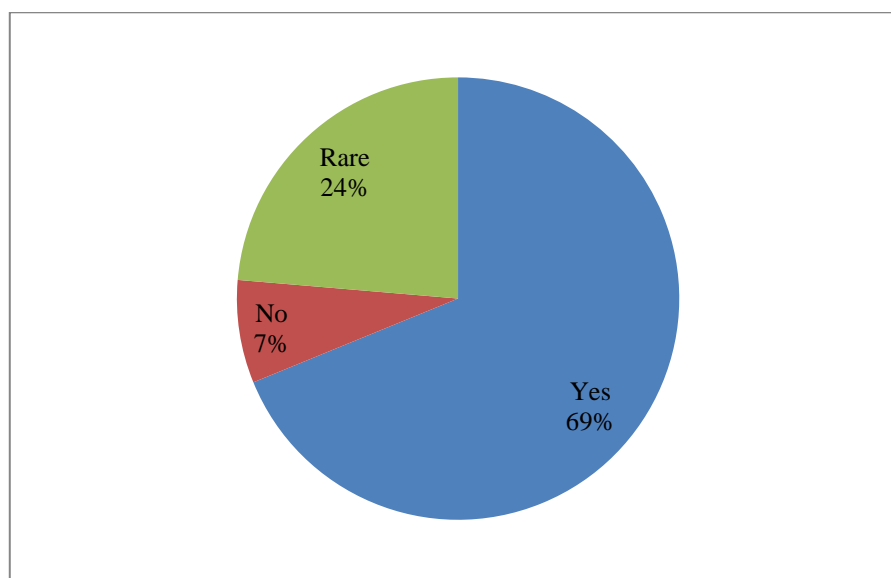
Table 5.4 shows that 38% of women encountered health problems. Health problems during flood arise from water borne diseases. 34% of women experienced frequent health problems, 17% claimed that they did not face any special health problems during disasters, and 11% stated that they faced water borne problems very rarely.

**Table 5.5: Nature of Health Problems during Disaster**

Response/ Nature of Health Problems
Waterborne Disease Such as Diarrhoea, Cholera,
Skin Disease such as Skin Rash, allergic and Parasitic diseases
Gynaecological Problems
Difficulties during pregnancy, safe birth
Lack of Nurse, Doctor, ad Medical Representatives to provide emergency treatment
Difficulties to move with critical patients to the hospital due to communication problems
Deficiencies in safe water supply and sanitation

[Source: Compiled from Fieldwork]

**Figure 5.1: Face Safe Drinking Water Crisis during Disaster**



[Source: Compiled from Fieldwork]

Figure 5.1 indicates that 69% experienced problem in securing safe drinking water during disasters while 24% of the respondents whose houses are located in high plinth areas did not face the problem severely but most of them claimed that their tube wells were inundated during the flood in 2007.

**Table 5.6: Face Food Crisis during Flood**

Response	Total Number of Respondents	Percentage
Yes	49	52.69 %
No	24	25.81 %
Rare	20	21.50 %
Total	93	100.00 %

[Source: Compiled from Fieldwork]

Table 5.6 shows that 53% of women suffered from food crisis during the flood. Since women are responsible for the preparation of food for the family, they encountered difficulty in the food preparation during disasters because of the lack of wood, dry leaves or jute stalks that are usually used to make fire. Flood hits in monsoon and rainy seasons which make it difficult for women to find dry wood fuel for cooking. The women interviewed expressed that they feel helpless when they could not supply food for their children.

### 5.3.4. Economic Loss and Insecurity of Women

**Table 5.7: Face Economic Loss and Economic Insecurity**

Response	Total Number of Respondents	Percentage
Yes	58	62.36%
No Idea	26	27.96 %
Rare	09	09.68 %
Total	93	100.00 %

[Source: Compiled from Fieldwork]

Table 5.7 shows that 62% of women suffered from economic loss during disasters and 28% claimed to have no idea regarding the amount or nature of economic loss but admitted that the floods have definitely hampered their economic activities.

### 5.4. Summary

Security in Bangladesh is problematic and during flood and other disasters it gets worse. In the two research areas, the overall security system breaks down during disasters. The situation is certainly difficult for women who become preys for social outlaws. Women become victims of sexual harassment and other forms of insecurity. Aside from social insecurity, other concerns of women during disasters include health and sanitation problems, food insecurity and lack of access to safe drinking water.



## CHAPTER SIX

### PARTICIPATION OF WOMEN IN CDMP: ITS CONSEQUENCES AND LEVEL OF SATISFACTION

#### 6.1. Introduction

Bangladesh government introduced CDMP Phase one in 2004-2009 as part of a long-term strategy for disaster risk reduction in the seven disaster vulnerable areas. In Sirajgang district, CDMP was implemented after the 2007 flood and erosion. People of this area live in very insecure and uncertain situation. In order to reduce the risks of natural disaster, mainly flood and river bank erosion, SHARP launched a program on Disaster Preparedness Management and Livelihood Security under CDMP.<sup>162</sup> After completion of the first phase, the second phase (2010-2015) program is now running in the 32 disaster vulnerable district of Sirajganj.

This chapter presents the findings of the research on the level of participation of women in the CDMP, the perceived consequences of CDMP on women and the level of satisfaction that women feel about the CDMP. This chapter offers an analysis of the research findings utilizing the Arnstein's Ladder of Participation model as the framework of analysis.

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<sup>162</sup> SHARP (Socio Health and Rehabilitation Program) Brochure.

## **6.2. Overview of CDMP Implemented in the Research Areas**

This section presents a brief overview of the CDMP program implemented in the research areas, *Bahuli* and *Ratankandi union*, by Socio Health and Rehabilitation Program (SHARP). SHARP is a local NGO of Bangladesh. SHARP implemented a total of eight projects in eleven unions of Sirajganj Sadar Upazila. Since 2001, SHARP has launched "Community Based Disaster Risk Management Project" in Sirajganj district. From 2007, with active support of CDMP-UNDP, SHARP has implemented "Vulnerability and Risk Reduction through Community Participation (VRRCP)" Project.<sup>163</sup> Under this program, capacities of *char land* (Flood plain) people are enhanced to cope with the disaster situation and by providing necessary support, the project tried to ensure the livelihood of the most vulnerable people.

The coverage of the project consists of 11 Unions – *Ratnkandi, Bagbati, Bahuli, Shialkole, Khoksabari, Songachha, Mesra, Kawakola, Kaliahoripur, Soydabad* and *Sadar Poursava* of *Sirajganj Sadar Upazila* of Sirajganj district.

The project includes two categories of stakeholder: primary and secondary. The primary stakeholders are farmers, women, disable, landless and other's community professional group. The secondary stakeholders include the Union Disaster Management Committee (UDMC) members, GO / NGO officials, local elites, etc.

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<sup>163</sup> SHARP (Socio Health and Rehabilitation Program) Brochure.

The main objectives of the "Vulnerability and Risk Reduction through Community Participation (VRRCP)" Projects are to:

- Develop sustainable mechanism for effective participation and the community people in preparation.
- Develop and enhance the capacity to disaster risk reduction process.
- Develop capacity the community in the disaster risk reduction process.
- Promote effective participation among the community in planning, designing, execution and monitoring.
- Reduce vulnerability of the natural disaster in the locality.

**Table 6.1: The Disaster Risk Reduction activities under CDMP Implemented by SHARP in Sirajganj Sadar Upazila**

<u>Comprehensive Disaster Management Programme</u> <u>Local Disaster Reduction Fund</u> <u>Risk Reduction activities implemented as of 30th October 2008</u> <u>Partner NGOs : SHARP</u> <u>Upazila: Sirajganj Sadar</u> <u>Implementing Period: November 2007-October 2008</u>				
Name of intervention	Location	Risk reduction	Project Cost	Community/ Beneficiary Contribution <sup>164</sup>
Training on Poultry & Duck rearing with poultry & duck support for livelihood security	Bahuli Union (9 Wards)	Livelihood risks of at least 25 families shall be reduced by rearing poultry & duck, rising plinth, training to enhance family income, ensured safe water and sanitary latrines	480,650	-
Raising of Plinth height of home state with livelihoods support	Bahuli Union	Reduce the risk of livelihood of 8 families at Bahuli union of Sirajgonj Sadar Upazila by raising plinth height, support with Goat, saplings of vegetable, flout bearing & wood trees for enhanced family income and sanitary latrines	180,000	36,000

<sup>164</sup> Community/Beneficiary contribution means the participant of CDMP program have to contribute something to participate in the program such as plinth height raising program. The selected participant for the plinth height raising program, have to contribute at least 20% of cost for homestead rising and other support. Women beneficiary (6) from this plinth height rising program was not satisfied, as they have to provide soil for landfill, and sometimes contribute more the program said.

Raising of Plinth height of home state with livelihoods support (25 HH)	Ratankandi	Reduce the risk of livelihood of 25 families at Ratankandi union by raising plinth height, training on poultry rearing, support with poultry, saplings of fruit & wood trees for enhanced family income, sanitary latrines and tube wells for safe drinking water	604,150	90,000
Raising plinth height above flood level, training on poultry rearing, support with poultry, saplings of fruit & wood trees for enhanced family income, sanitary latrines and tube wells for safe drinking water (34Household)	Khokshabari Union (Chak Khokshabari & Chandra Kona)	People in cluster of 34 houses have reduced risks of flood inundation with support to increase their family income and ensured safe water and sanitary latrines	625,400	105,400
Raising of Plinth height of home state with livelihoods support (30 HH)	Bagbati Union (Dattabari, Ghora village)	Reduce the risk of livelihood of 30 families at Bagbati union by raising plinth height, training on poultry rearing, support with poultry, saplings of fruit & wood trees for enhanced family income, sanitary latrines and tube wells for safe drinking water	603,350	93,000
Raising of Plinth height of home state with livelihoods support (3 HH)	Bagbati Union (Ghorachara Village)	Reduce risk of at least 3 families raising plinth height in same cluster with reduce livelihood risk by build up their capacity on duck and chick rearing, provide sanitary latrine, tube well and sapling of fruit bearing tree.	85,910	9,300
Raising of Plinth height of home state with livelihoods support (26)	Chongacha union	Reduce the risk of livelihood of 26 families at Chongacha union by raising plinth height, training on poultry rearing, support with poultry, saplings of fruit & wood trees for enhanced family income, sanitary latrines, and tube wells for safe drinking water	609,400	95,200
Construction of Killa to be use as temporary shelter	Kaokhola union	construction of Killa to be use as temporary shelter during flood period at KaoKola union	231.000	20,000

[Source: Comprehensive Disaster Management Programme Official Documents, Collected from CDMP office, Dhaka, Bangladesh]

### **6.2.1. CDMP Project Activities Performed in the Area by SHARP**

CDMP is comprised of three main project components: (1) Community Risk Assessment (CRA); (2) Plinth Height Raising of Houses with Livelihood Support Program; and (3) Awareness Raising Programme. Further discussions on these components are in the following sub-sections.

The specific activities of CDMP include:

- Facilitate Community Risk Assessment (CRA) at Union level involving community, UDMC members and other stake holders.
- Organize community meeting/group meeting on awareness raising to the village level.
- Wall Paintings with messages on disaster risk reduction.
- Observation of the national disaster preparedness day.
- Introduce the hazard map and risk-reduction map.
- Training on poultry and duck, goat, chicken rearing, saplings of trees for livelihood security.
- Support with poultry, saplings of fruit & wood trees for enhanced family income.
- Support with sanitary latrines and tube wells for safe drinking water.

#### **6.2.1.1. Community Risk Assessment (CRA)**

Community Risk Assessment (CRA) is a tool to identify the vulnerability or risk of the community.<sup>165</sup> The representatives of the community (women, landless, disables, minority group etc.) mainly conduct CRA with the assistance of project personnel. Through their participation, the people have become directly involved in the identification of problems or risks within their community. A total of eleven

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<sup>165</sup> SHARP. (2008). Project Completion Report on LDRRFs VRRCP Project. (Unpublished). Submitted to Comprehensive Disaster Management Programme (CDMP).Official Documents.

(11) CRA activities have been undertaken in the 11 project areas of Sirajganj Sadar Upazila. In Bahuli and Ratankandi union, 2571 people participated in the CRA program, comprising of 1899 male and 672 female participants.<sup>166</sup> Four types of people such as women, landless, disable, farmer are consulted about the risks of flood, drought, river erosion, tornado, thundershower, cold wave, hail storm, heavy rain, water logging, pest attack etc.

*The CRA's motivation is as an inhabitant of the community, the community are well known about their problem. Through their experiences they able to identified all sorts of vulnerability and capacity exists within the community. In this method a list of disaster centre in the area, a list of children, pregnant mother, elder, disable be collected. Then Risk Reduction Action Plan (RRAP) will compose to overcome the disaster problem to ensure community participation in the planning. Within the CRA program the main exercise was social mapping, hazard mapping, Venn diagram, seasonal calendar of hazards and occupation etc. The CRA helps to identify the capacity and vulnerability of the community.<sup>167</sup>*

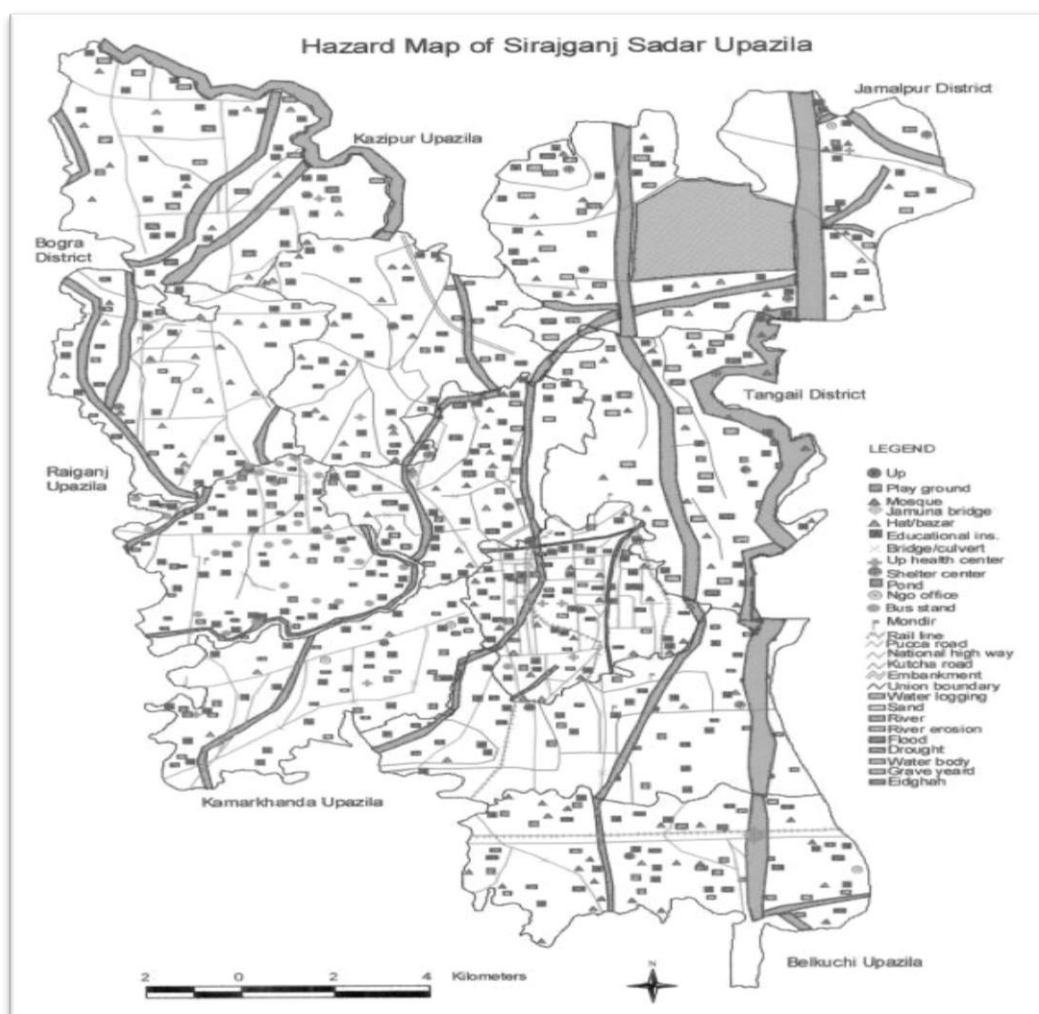
Two of the important activities under CRA include social mapping and hazard mapping. A Venn diagram showing people's occupation and seasonal calendar of hazards was done during the conduct of CRA.

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<sup>166</sup> *Ibid.*

<sup>167</sup> *Ibid.*

**Figure 6.1: Hazard Map of Drawn under CRA program**



[Source: SHARP. (2009). *Project Completion Report on LDRRF's VRRCP Project under Comprehensive Disaster Management Program*. Sirajgonj: SHARP.]

### 6.2.1.2. Plinth Height Raising Program

The program aims to raise the plinth of a house above the flood level.<sup>168</sup> It is a method which is promoted at the household level in the area situated in the flood plain. The plinth, which is often build of earth and tends to be washed away

<sup>168</sup> Rahman, A. & Islam, R. (n.d.). Shelters and Schools Adapting to Cyclone Storm Surges: Bangladesh. *Climate of Coastal Cooperation*. Retrieved from <http://www.coastalcooperation.net/part-III/III-3-3-4.pdf>

during floods, can be made stronger with a little cement and some pieces of stone and brick. In this way, the plinth may last through repeated floods.<sup>169</sup> Under CDMP, the raised ground construction is offered to flood vulnerable communities. The plinth height raising program has other supportive components such as the construction of toilets on raised ground, the installation of raised tube wells and the livelihood support and training program.

### **Installing toilets on raised ground**

Most of the toilets in flood prone areas are built by digging the earth and setting up the rings made of concrete in it.<sup>170</sup> During flood season, toilets are inundated causing sanitary and health problems for people, especially women. This creates furthermore water pollution.<sup>171</sup> In order to overcome this problem, the CDMP provides support for the installation of toilets in higher ground.

### **Installing raised tube well**

Tube wells are the most common source of safe drinking water in Bangladesh. There are an estimated 8-10 million tube wells throughout the country.<sup>172</sup> The water source can be protected against floods by raising the suction head of the tube well above the level of flood water through the use of an additional pipe.<sup>173</sup>

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<sup>169</sup> IFRC- International Federation of Red Cross and Red Crescent Societies. (2008). *Building Safer Communities in South Asia: Case Study Bangladesh*. Dhaka and The Hague. cited in Rahman, A. & Islam, R. (n.d.). Shelters and Schools Adapting to Cyclone Storm Surges: Bangladesh. *Climate of Coastal Cooperation*. Retrieved from <http://www.coastalcooperation.net/part-III/III-3-3-4.pdf>

<sup>170</sup> Rahman, A. & Islam, R. (n.d.). *op.cit.*

<sup>171</sup> IFRC (2008). *op.cit.*

<sup>172</sup> Rahman, A. & Islam, R. (n.d.). *op.cit.*

<sup>173</sup> *Ibid.*



The raising of plinth heights of houses is the most effective way of saving houses and properties, including livestock, from inundation during flood. Plinth height raising helps minimise the sufferings of people. Since most beneficiaries of the project area are poor, they are unable to raise the ground and build the house. Most areas in Bahuli and Ratankandi union were inundated in 1988, 1998, 2004 and 2007 floods. The people have experienced a gradual increase of intensity and levels of flood. In order to cope with the flood situation, the Risk Reduction Action Plan (RRAP) recommended raising the heights of plinths at least 2 feet above the highest flood level.

Many people are living in scattered location in the area. Raising plinth heights in a cluster helps other people (and their livestock) living nearby to take shelter during extreme flood situations. Through the program, villagers are also provided with tube wells for safe drinking water and sanitary latrine. Training and support for Income-Generating Activities (IGA) like poultry raising, plantation of saplings of fruit-herbal and wood trees is also provided under the program.

In Ratankandi union, 25 extremely poor and vulnerable families from low land areas received funds to raise their homestead. Total plinth raising cost was BDT. 604,150. Beneficiaries' contribution was BDT. 90,000.<sup>174</sup> In addition to the raising of plinth height, the selected 25 families also received training on poultry rearing, one goat, saplings of fruit bearing, herbal and wood trees, sanitary latrines and tube wells.

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<sup>174</sup> SHARP. (2008). Project Completion Report on LDRRFs VRRCP Project. (Unpublished). Submitted to Comprehensive Disaster Management Programme (CDMP). Official Documents.

In Bahuli union, eight extremely poor and vulnerable families got financial support for plinth raising. The project total cost was BDT. 180,000; beneficiaries contribution was BDT. 36,000.<sup>175</sup>

#### **6.2.1.3. Livelihood Support Program**

As an adaptive measure, the CDMP program also provides livelihood support to the participants. To empower the communities, the program emphasized the use of the existing local knowledge in determining the appropriate livelihood program. The program trained the participants to find alternative source of income during disasters. After completion of the training, the participants also received support to implement their ideas to raise income. Support given under the program include cluster-wide homestead raising, super structure latrine, tube well installation, trees saplings, bamboo fence, and poultry (hen or duck) or goat support.

#### **6.2.1.4. Awareness Raising Programme**

In the project areas, awareness raising campaign had been undertaken by SHARP to create mass awareness about disaster risk management. Workshop, day observation, wall painting, community and group meetings, discussion, etc. were the tools used for the campaign. The aim of this program was to increase the awareness among the community people on disaster management and establish gender equity.<sup>176</sup>

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<sup>175</sup> *Ibid.*

<sup>176</sup> SHARP. (2008). Project Completion Report on LDRRFs VRRCP Project. (Unpublished). Submitted to Comprehensive Disaster Management Programme (CDMP).Official Documents.

### **6.3. Nature of Women's Participation in the CDMP**

#### **6.3.1. Participation in the Income-generating Activities (IGA) Training Program**

A number of beneficiaries have been trained on four livelihood programs.<sup>177</sup> The training program was implemented in succession. The training program ensured active participation of community people and local government agencies. The aim of the training was to motivate people to cope with the disasters through increased capacity.<sup>178</sup>

The training program includes:

- Poultry (Goat) and Duck Raring training with support
- Saplings of Fruits and Wood Trees training with support
- Homestead gardening; support with vegetables seeds, tress, and equipment

The training program was one of the important activities aimed at creating opportunities for alternative livelihood and income-generating activities. It attracted most women to participate in the CDMP project. Poor village women considered livelihood training significant in generating income not only during disasters but also during normal times, *i.e. non-disaster days*. Women in Bangladesh have limited opportunity to get involved in income generating

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<sup>177</sup> *Ibid.*

<sup>178</sup> *Ibid.*

activities due to social norms. The training, therefore, has encouraged them to earn extra money within their homestead.

**Table 6.2: Participate in the Income-generating Activities (IGA) Training Program**

<b>Response of the Women</b>	<b>Total Number</b>	<b>Percentage</b>
Participated	71	76.34%
Not Participated	22	23.66%
Total	93	100.00%

[Source: Compiled from Fieldwork]

Table 6.2 indicates that 76% of women participated in the training program to explore opportunities for alternative sources of income during disasters. They were trained on how to mitigate the financial loss due to flood, erosion and other disasters. These women participated in different income-generating activities (IGA) such as poultry, duck rearing, homestead gardening, and growing saplings of fruits and wood trees, etc. Only 22% of the respondents indicated that they did not participate in the training session.

**Table 6.3: Motivation to Participate in the Training Program**

<b>Motivation of Participation</b>	<b>Total Numbers</b>	<b>Percentage</b>
Poverty	16	22.53%
Unemployment	09	12.68%
Women Headed Household	07	09.86%
Raise Income from home	32	45.07%
Knowledge and skill Development	07	09.86%
Total	71	100.00%

[Source: Compiled from Fieldwork]

The motivation of the respondents to participate in the program was primarily to raise income; 45% of women wanted to raise income from home. 23% of the respondents indicated that the motivation behind their participation is poverty and 10% claimed knowledge and skill development as motivating factor. 10% came from female-headed household which means that they bear the burden of providing for the family and their participation in the program was mainly to increase their income.

**Table 6.4: Reason that Refrain Women from Participating in the IGA Program**

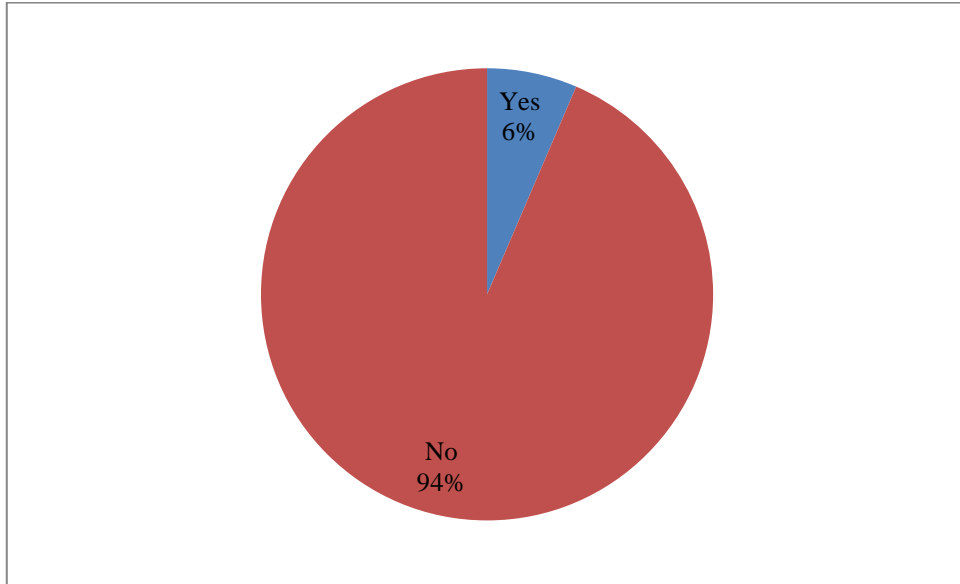
<b>Response</b>	<b>Total Numbers</b>	<b>Percentage</b>
House hold work load, child rearing	08	36.36%
Husband's apathy to the program	02	09.09%
Social norms like <i>pardah</i>	02	09.09%
Program is not lucrative to them	03	13.64%
They already have idea	05	22.73%
No idea or reason	02	09.09%
Total	22	100.00%

[Source: Compiled from Fieldwork]

Among the women who did not participate in the training program, 36% cited family responsibilities as the reason, 23% indicated that they already knew about the livelihood program, 14% opined that the program is not lucrative to them, and 9% did not offer any reason at all. 18% of women did not participate in the program due to *pardah* and family bonding. To participate in the training session, they have to go outside their home. 9% claimed that they were not allowed by their husbands who felt that the training is a useless exercise.

### 6.3.2. Plinth Height Raising of Houses with Livelihood Support Program

**Figure 6.2: Benefited from Plinth Height- Raising Program**



[Source: Compiled from Fieldwork]

Figure 6.2 indicates that though plinth height raising program was one of the important steps to protect lives and properties during flood water, only 6% of the respondents received financial support from CDMP. 94% did not get support from the program.

### 6.3.3. Awareness Raising Programme

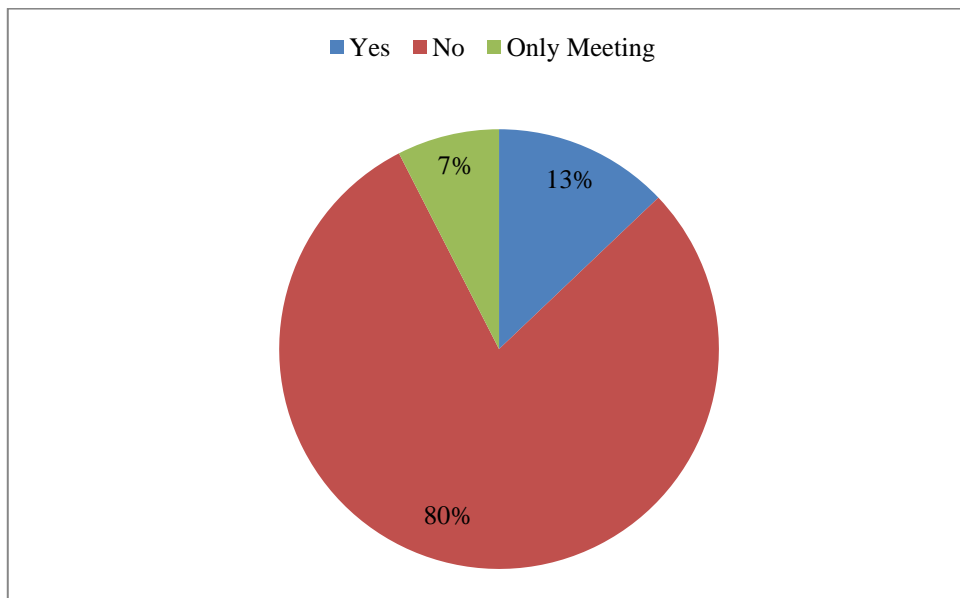
**Table 6.5: Participation in the Community and Group Meeting**

Response	Total Number	Percentage
Yes	09	09.68%
No	52	55.91%
Not Actively	32	34.41%
Total	93	100.00%

[Source: Compiled from Fieldwork]

Table 6.5 shows that only 10% of women participated in the group or community meetings, 34% attended the meeting but did not actively participate and 56% did not participate in the meetings at all. Some women admitted to feeling shy to participate in meetings because of the presence of male participants. Most women were absent in the meetings due to household responsibilities and family's disapproval.

**Figure 6.3: Participation in the Disaster Preparedness Day Observation Rally, Meeting, and Discussion**

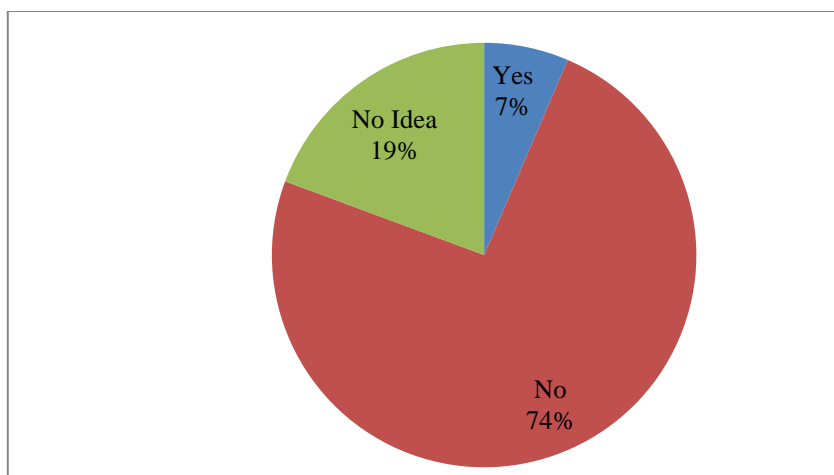


[Source: Compiled from Fieldwork]

As shown in the above figure, 80% of the respondents did not participate in the Disaster Preparedness Day Observation program whereas 13% participated in the rally as well as meeting. Women who participated in the meeting only comprised 8% of the respondents.

### 6.3.4. Participation in the Community Risk Assessment (CRA)

**Figure 6.4: Participate in the Disaster Risk Map Drawing**



[Source: Compiled from Fieldwork]

Figure 6.4 shows the women's non-participation in the Disaster Risk Map Drawing program. As indicated, a mere 7% participated in the disaster map drawing session and those who did not participate in the session comprised 74% of the respondents. On the other hand, 19% have no idea about program.

### 6.3.5. Support Program: Support with Sanitary Latrine, Tube Wells, Poultry and Saplings of Trees

**Table 6.6: Nature of Benefit from Support Program**

Nature of Support	Total Number	Percentage
Poultry Support	71	76.34%
Support with Saplings of Trees	79	84.95%
Sanitary Latrine Support	10	10.75%
Tube wells Support	04	04.30%
Plinth Rising Support	06	06.45%

[Source: Compiled from Fieldwork]



Table 6.6 indicates the type of support that women received from CDMP. As shown, 85% of the respondents received saplings of fruits, herbal and wood trees support, 76% benefited from poultry support program, 11% women received the support to install hygienic sanitary latrine in their households, 6% got the plinth height raising support, and 4% obtained tube wells from the program. While almost every woman who participated in the program received the poultry and saplings support, the support was very minimal to improve women's disaster management capabilities. Most got 3 or 4 tree saplings, 2 or 1 duck or hen support after the completion the training program. Only 20 women got poultry (Goat) support.

#### **6.4. Perceived Consequences of CDMP on Women**

##### **6.4.1. Consequences of Livelihood Training Program**

Income-generating training (IGA) program mainly facilitated the increase of earning capabilities of poor people who are vulnerable to disasters. The goal of the training was to introduce alternative livelihood options to the flood affected community. The program envisioned that the alternative sources of income will help people mitigate disaster risks. For women, the program would provide them with opportunity to contribute to their family income especially during disasters when the primary source of income like crops and fields are inundated.

**Table 6.7: Income Generating Training Raise Level of Income**

Response	Number of Respondents	Percentage
Agree	29	31.18%
Strongly Agree	05	05.38%
Disagree	15	16.13%
Strongly Disagree	02	02.15%
Neutral	42	45.16%
Total	93	100.00%

[Source: Compiled from Fieldwork]

However, when asked whether or not the IGA training program augmented their income only 5% of the respondents strongly agreed. 31% agreed that IGA training improved their income while 16% women disagreed with the statement. Based on the researcher's observation, women believed that the IGA training was helpful in increasing their income considering that most of them did not have any poultry and homestead garden in their premises in the past. Almost half (45%) of the respondents were neutral with their opinions. These respondents participated in the IGA training program but did not implement the livelihood options for various reasons, *e.g.* being busy with the household work or lack of space and money for poultry firm. The 31% who agreed that the training increased their income utilized their knowledge to homestead garden, poultry, fishing and other income generating activities. These women claimed that the IGA training improved their skill and gave them means for income generation. These women expressed confidence to face the challenges during disasters.

**Table 6.8: The CDMP programme improved life standard**

Response	Number of Respondents	Percentage
Agree	20	21.51%
Strongly Agree	02	02.15%
Disagree	28	30.11%
Strongly Disagree	00	00.00%
Neutral	43	46.24%
Total	93	100.00%

[Source: Compiled from Fieldwork]

Table indicates that 22% of women believed that the CDMP improved their life standard while 30% expressed otherwise. The latter claimed that the support of the CDMP were not significant so as to recover their losses from flood and erosion. Majority (46%) have no idea about the impact of CDMP on their lives.

**Table 6.9: the CDMP improved Disaster Management Capabilities**

Response	Number of Respondents	Percentage
Agree	32	34.41%
Strongly Agree	10	10.75%
Disagree	12	12.90%
Strongly Disagree	05	05.38%
Neutral	34	36.56%
Total	93	100.00%

[Source: Compiled from Fieldwork]

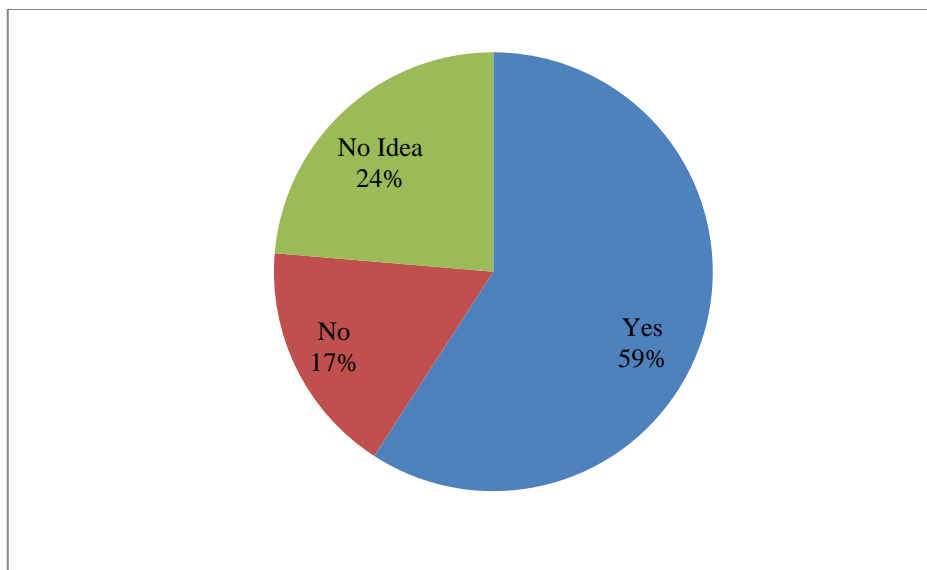
Table 6.9 shows that a great number of women agreed that the CDMP has improved their disaster management capabilities. Around 18% believed otherwise while 37% women were neutral with the statement. From interviews, most women

expressed their hope for more interventions to mitigate the disaster risks from the government.

#### 6.4.2. Consequences of Awareness Raising Program

The Awareness Raising Program was implemented in the research areas in 2008. The goal of the program was for the beneficiaries to become aware of the disaster risk reduction strategies. Women beneficiaries were expected to learn how to manage or mitigate disaster risk by themselves and to know about disaster management mechanism.

**Figure 6.5: Awareness of Women to Disaster Management Mechanism**



[Source: Compiled from Fieldwork]

The results of the research as shown in the above figure indicate that women have become aware about disaster risk reduction strategies with 59% claiming to know

what to do during disaster. Unfortunately, a large number (24%) of the respondents still have no idea about the disaster management mechanism.

## **6.5. Level of Satisfaction of Women with CDMP**

### **6.5.1. Satisfaction with Livelihood Training Program**

**Table 6.10: Satisfaction with Livelihood Training Program**

<b>Response</b>	<b>Total Respondents</b>	<b>Percentage</b>
Satisfied	44	47.31%
Dissatisfied	21	22.58%
Don't Know	28	30.11%
Total	93	100.00%

[Source: Compiled from Fieldwork]

Table 6.10 shows that 47% of women were satisfied with the livelihood training program while 23% expressed their dissatisfaction. A third of the respondents (30%) did not reply; most of them did not participate in the training program.

### **6.5.2. Satisfaction with Community Risk Assessment (CRA) and Awareness Raising Program**

**Table 6.11: Satisfaction with CRA and Awareness Raising Program**

<b>Response</b>	<b>Total Respondents</b>	<b>Percentage</b>
Satisfied	08	08.60%
Dissatisfied	24	25.81%
Don't Know	61	65.59%
Total	93	100.00%

[Source: Compiled from Fieldwork]

Table 6.11 shows that majority of women could not say whether or not they were satisfied with the CRA and awareness raising programs. Only 9% women said they were satisfied with the program but could not offer reasons for their satisfaction. 26% expressed their dissatisfaction with the programs claiming that *"Those were not important. What is important is to provide us help, but they are doing only discussion, meeting. What will we do with meeting and rally? We need urgent help to protect our field, crops, poultry from erosion, and flood."*

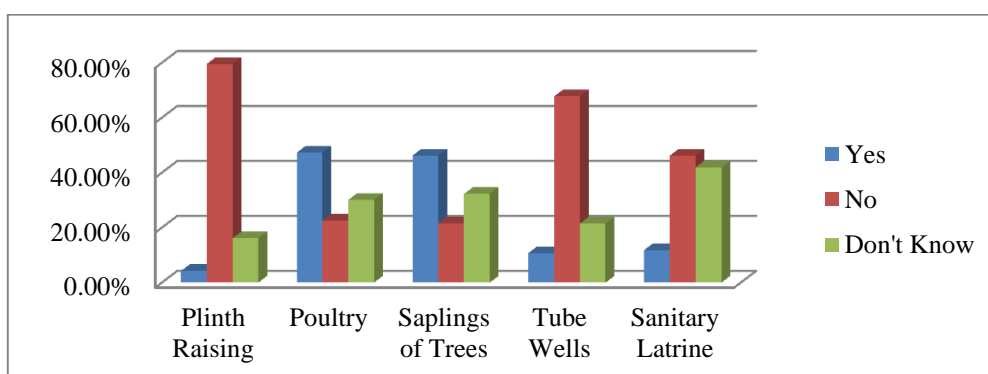
### 6.5.3. Satisfaction with Support Program

**Table 6.12: Satisfaction with Support Program**

Support Program	Yes	No	Don't Know
Plinth Raising	04 (04.3%)	74 (79.57%)	15 (16.13%)
Poultry	44 (47.31%)	21 (22.58%)	28 (30.11%)
Saplings of Trees	43 (46.24%)	20 (21.50%)	30 (32.26%)
Tube Wells	10 (10.75%)	63 (67.74%)	20 (21.51%)
Sanitary Latrine	11(11.83%)	43(46.24%)	39(41.93%)

[Source: Compiled from Fieldwork]

**Figure 6.6: Satisfaction with Support Program**



[Source: Compiled from Fieldwork]

Table 6.12 shows the percentage of the level of satisfaction with the CDMP support program. The support program's main goal, as earlier discussed, was to provide support for plinth raising and provide poultry and tree saplings so that a vulnerable family could protect their house and as well as secure an alternative source of income during disasters. After the completion of the livelihood training, the beneficiary will get the poultry, tube wells, sanitary latrine, trees, etc. support. In reality, the community got very nominal support from the program; the financial support was insufficient. The research reveals that only 6 women received the plinth height raising support. Out of 6 women only 4 expressed satisfaction with the program. This is because the nominal support that they received could not cover the expenses required for plinth height raising which prompted them to shoulder the remaining cost. 47% expressed satisfaction with the provision of poultry and saplings of trees. 11% women were satisfied with tube well support and 12% with sanitary latrine support.

#### **6.5.4. Suggestion of Women for Effective Adaptation: Relief not only**

##### **Awareness Raising**

Majority of women wanted alternative adaptation process. They expressed preference for relief support rather than the program activities (awareness raising, meeting, mapping program, etc.) offered in CDMP. Citing the loss (crops, land, and domestic animals) that they have incurred during flood and disasters, women stated that meetings or rallies were not helpful. What they need are relief,

financial support, and more agricultural support to recover their economic losses. Plinth raising program was good but still not sufficient. Women believed that additional budget should be allocated for the plinth raising program and livelihood support program.

## 6.6. Analysis of Findings

This section focuses on the analysis of research findings. In particular, an analysis about the extent of women’s participation as examined vis-à-vis Arnstein’s participation model is discussed.

### 6.6.1. Extent of Women’s Participation

A summary of the research findings on the extent of women’s participation discussed above is shown in the table below.

**Table 6.13: Research Summary Findings on the Nature of Women’s Participation in CDMP**

CDMP Components	% Participation	% Non-Participation
1. Participation in the IGA Training Program	76.34%	23.66%
2. Plinth Height Raising of Houses with Livelihood Support Program	6.45% (Benefited)	93.55% (not Benefited)
3. Awareness Raising Programme		
a. Community/Group meetings	9.68%	55.91%
b. Disaster Preparedness day, rally, etc.	20.43% (incl those who attended meetings only)	79.57%
4. Community Risk Assessment (CRA)		
a. Disaster Risk Map Drawing	6.45%	74.19%
5. Support Program		
a. Poultry Support	76.34% (Benefited)	
b. Support with Saplings of Trees	84.95% (Benefited)	
c. Sanitary Latrine Support	10.75% (Benefited)	
b. Tube wells Support	4.30 % (Benefited)	
c. Plinth Raising Support	6.45% (Benefited)	



As shown in the summary table, a great number of women (76%) participated in the IGA Training Program as compared to 10% who participated in community or group meetings and 20% who participated in awareness raising program. Meanwhile, those who received plinth height raising support were negligible (6%). In regard to the livelihood support program, majority received saplings of trees (85%) and poultry (76%). In sum, women's participation was more apparent in the program components that aimed at generating income, *e.g.* IGA training program and livelihood program.

Interviews, however, have revealed that women's participation in the CDMP was limited at the bottom level. Women did not have access in the decision making level or control level. Using Arnstein's "Ladder of Participation" model, women's participation in CDMP could be described as at the Informing stage. Women's participation was not active; they were mere receivers of the information provided by the program.

### 6.6.2. Perceived Consequences of CDMP

**Table 6.14: Research Summary Findings on the Perceived Consequences of CDMP**

<b>Consequences of CDMP</b>	<b>%Agree</b>	<b>% Not Agree</b>	<b>% Neutral</b>
1. Raised income level	36.56%	18.28%	45.16%
2. Improved life standard	23.66%	30.11%	46.24%
3. Improved disaster management capabilities	45.16%	18.28%	36.56%
4. Raised awareness about the disaster management mechanism	59.14%	17.2%	23.66%

[Source: Compiled from Fieldwork]

While women's participation was more evident in the project components aimed at generating income, fewer women (36%) believed that the program increased their income level as opposed to a great number of women who opined that CDMP raised their awareness about the disaster management mechanism (59%) and women who perceived that they improved their disaster management capabilities (45%).

### 6.6.3. Level of Satisfaction of Women with CDMP

Most women were satisfied with the livelihood training program. They were neither satisfied with the livelihood support program nor with the plinth raising program. The latter is probably due to the fact that only six women benefited from the plinth raising support. Overall, women viewed the program positively. Women recognized and appreciated that CDMP was an attempt to help mitigate the impacts of disasters.

**Table 6.15: Research Summary Findings on the Level of Satisfaction of Women with the CDMP**

<b>CDMP Components</b>	<b>% Satisfied</b>	<b>% Not Satisfied</b>	<b>% No Answer</b>
1. Livelihood Training Program	47.31%	22.58%	30.11%
2. Community Risk Assessment (CRA) and Awareness Raising Program	8.60%	25.81%	65.59%
3. Support Program			
a. Poultry Support	4.3%	79.57%	16.13%
b. Support with Saplings of Trees	47.31%	22.58%	30.11%
c. Sanitary Latrine Support	46.24%	21.50%	32.26%
d. Tube wells Support	10.75%	67.74%	21.51%
e. Plinth Rising Support	11.83%	46.24%	41.93%

[Source: Compiled from Fieldwork]

### **6.7. Summary**

The thesis reveals that the CDMP program slightly improved the capacity of women to generate income. CDMP has developed the knowledge and skill of women to manage disaster. The support program component of CDMP, however, was very marginal to enhance the capacities of women but had a positive impact on disaster recovery process of women. Even with the dissatisfaction with the plinth height rising, tube wells, sanitary latrine support program, a large number of program beneficiaries were satisfied with the overall program output. They admitted that while the support was not sufficient, the program nonetheless tried to help them. The training program taught them how to generate income. Moreover, through group meetings and the sharing of ideas about disaster and risk reduction process, women believed that the program has helped them manage disaster losses. A few number of women, however, participated in the community or group meetings than in the training programs. As explained above, because of

social norms women in Bangladesh feel hesitant to join meetings where opposite men are likewise present.

## **CHAPTER SEVEN**

### **CONCLUSION AND RECOMMENDATION**

#### **7.1. Conclusion**

As a climate vulnerable country, Bangladesh considers climate change and adaptation as critical national concerns. Particular emphasis is placed on improving the adaptive capacity of the most vulnerable sectors in the society. One climate change programme that Bangladesh government has instituted is the CDMP which targets the most disaster-prone areas in Bangladesh. The beneficiaries of CDMP include women who were among the most vulnerable to climate change related hazards.

As outlined in Chapter One, the objectives of this thesis are as follows:

- Identify challenges and problems women face due to climate change;
- Describe the nature of participation of women in the CDMP;
- Identify the perceived consequences of CDMP on women;
- Describe the level of satisfaction of women with CDMP; and
- Propose recommendations to enhance Bangladesh women's adaptive capacity to climate change.

To determine whether or not the foregoing research objectives have been accomplished, a summary of the relevant discussions are provided in the following sections.

### **7.1.1. Climate Change Challenges to Women**

A poor woman in Bangladesh rural area lives below the poverty index line. Furthermore, women in Bangladesh are placed in an unequal resource allocation process because of existing patriarchal system, religious and cultural beliefs of the society.<sup>179</sup> The patriarchal norms create barriers for women, put restrictions on their mobility and disallow them from leaving their homes to work. These restrictions prevent women from getting involved in income-generating activities and participating in disaster management program. Women become more vulnerable during disasters. Disasters exacerbate the existing security problems in Bangladesh. Some of the challenges that women face during disasters include sexual harassment, health, water and sanitation problems.

### **7.1.2. Policies and Programmes of Bangladesh government**

Bangladesh government has ratified almost all international protocol and climate-change-related policies. Accordingly, Bangladesh has formulated its own climate policy and action plans. While several policies and programmes have been formulated, the implementation aspect still remains inadequate. In this regard, a strong institutional framework is required.

The implementation of the climate change policies and programs is hampered primarily because of the lack of sufficient funds. On this aspect, Bangladesh government has secured the assistance of international community. CDMP's total project cost was 25, 38,960 Taka. The amount is very nominal for adaptation

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<sup>179</sup> Naher, A. (2005). Gender, Religion and Development in Rural Bangladesh. *op.cit.*

programme nonetheless Bangladesh government totally depends on CDMP partner donor agencies such as UNDP, SIDA, Australian AID, DFID, European Union, and Norwegian Embassy as sources of the fund for CDMP.

### **7.1.3. Nature and Extent of Women's Participation**

Arnstein's "Ladder of Participation" model consists of eight steps such as Manipulation, Therapy, Informing, Placation, Delegate power, and Citizen Control for community participation. According to Arnstein's model, manipulation and therapy are not actual steps. Participation actually begins from Informing.

In the CDMP programme, women's participation was at the Informing stage. Women participated in the programme as receivers. This may be attributed to the fact that the CDMP itself did not encourage active participation. CDMP merely informed the community about the disaster management but did not provide opportunities for feedbacks from the participants. Nevertheless, it cannot be denied that CDMP has created opportunities for women participation. CDMP recognized that "women are the badly affected part of disaster; they have least coping capacity."<sup>180</sup>

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<sup>180</sup> CDMP

#### **7.1.4. Perceived Consequences of CDMP**

From women's perspectives, the consequences of livelihood training program component of CDMP on their lives were significant. Women's participation with the program was motivated by the idea of generating income from home. Securing an income generating activity that they can undertake in their homes addressed the issue of women's inability to earn income because of the social, cultural and religious beliefs that prevent them from leaving their homes to work. Livelihood support program component of CDMP, however, was very minimal to generate income. Overall, women believed that CDMP did not significantly improve their living standards. Neither did it significantly enhance women's coping capacities to disasters.

#### **7.1.5. Level of Satisfaction of Women with CDMP**

Most women were satisfied with the livelihood training program only. They were not satisfied with the livelihood support program. They expressed their strong dissatisfaction on plinth raising program and tube wells support program. The dissatisfaction with the plinth raising support may be due to the fact that only six women benefited from it. Despite this, the overall evaluation of CDMP was positive because as women explained: "CDMP tried to mitigate their misery." Women, however, insisted that more fund for training, livelihood support and plinth raising programs should be allocated.



## **7.2. Recommendations**

### **A. Future Studies**

Adaptation to climate change is a development issue for Bangladesh. Climate change and its consequent impacts undermine the development process of Bangladesh. For effective adaptation process, government requires a considerable amount of fund. There are various ways that a government could source funds for climate adaptation programs. However, most of these funds are offered through loans which, even if offered in favourable concessional terms, would still create more debts for Bangladesh and would further undermine its development goals. On the other hand, the necessity of implementing adaptation programs, particularly those which aim to improve the adaptive capacities of the most vulnerable sectors in the society, is undeniable. Thus, a further study on how to secure fund for climate change adaptation programs that does not create more development problems for Bangladesh is significant.

Regarding CDMP, this thesis has mainly concerned with the outcomes of the project based on women's perspectives. Further study could be done that will examine women's perspectives vis-à-vis the perspectives of others including the project implementor (SHARP), the funding agencies and other participants or beneficiaries of the program.

Women's participation in CDMP was significantly hampered by the existing social, cultural and religious norms. However, the research was undertaken in

rural areas. Further study could be done to compare the extent or level of participation in disaster adaptation programs between women in rural areas and women in urban areas. The study could determine whether or not the social, cultural and religious norms affecting women are similar in two areas. Also, the study could shed light on the extent of the influence of the aforementioned norms on women's participation in disaster adaptation programs.

### **B. Policies**

The implementation of CDMP Phase I culminated in 2010. CDMP Phase II is currently being implemented in other areas. However, considering that Bahuli and Ratankandi are among the most disaster-prone areas in Bangladesh and taking into account the insufficiency of the support provided under CDMP, the government should monitor and continue its support to the said areas.

The thesis finds that women's participation in the CDMP was essentially as receivers of information. With the exception of some program components, *e.g.* livelihood program which encouraged the use of the existing local knowledge to determine the appropriate livelihood, CDMP as a whole did not encourage exchanges of feedback between participants and implementers. Bangladesh government should consider the idea of actively involving the community in the new adaptation program.

## **C. Actions**

The research recommends the following actions for sustainable adaptation and effective women's participation:

- Raising plinth is a good initiative to protect houses located in lower plinth areas. Due to insufficient fund, CDMP could not provide the support to all those who needed it. There is therefore a need to address the issue of securing more funds to be able to provide the necessary support.
- Related to the above, there is an essential need for the government to allocate more funds for disaster management and/or adaptation programmes.
- Health problems are exacerbated during disasters. In this regard, Bangladesh Ministry of Health must ensure that proper health care facilities are provided during disasters.
- Security problems are among the main concerns of women during disasters. There is a need to improve law and order situation to ensure women's security and mobility.
- Women, as one of the most vulnerable sectors in the society, should be given more opportunities to participate in similar adaptation programmes. In particular, women should be provided with opportunities to be involved in income-generating activities.
- In the formulation of policies and programs, the affected or concerned communities should be involved, or at least, consulted. Adaptation or disaster management programs should be responsive to the needs of the

communities. Therefore, it is only appropriate that their inputs in any policies or programs should be considered.

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## APPENDICES

### Appendix 1: Questionnaire

#### **Women in Climate Change Adaptation Programme in Bangladesh: Analysis of Participation and Impacts**

##### **Part A:**

1. Name: \_\_\_\_\_ Village Name: \_\_\_\_\_ Union: \_\_\_\_\_
2. Age of Women: 18-25/ 26-35/ 36-45/ 46-55/ 56+
3. Level of Education: Illiterate/Primary/Secondary/ Higher Secondary/Graduate
4. Marital Status: Married/Unmarried/Divorced/ Widow/Separate
5. Religion: Muslim/Hindu/ Other
6. Profession: Unemployed/ Student/ Housewife/ Farmer / Small Business/Day Labour/Other
7. Income (Monthly): <2,000/ 2,000-3,000/ 3,001-4,000/ 4,001-5,000/ 5,001+
8. Profession of Guardian: Unemployed/ Farmer/ Weaver/ Business/ Day Labour/ Other
9. Income of Guardian: ): <2,000/ 2,000-3,000/ 3,001-4,000/ 4,001-5,000/ 5,001+
10. Family Pattern: Nuclear/ Joint/ Extended
11. Total Family Member: 1-2/ 3-4/ 4-6/ 7-9/ 10+

##### **Part B:**

##### **Vulnerability of Women during Disaster**

1. Have you faced social security problem during disaster? Yes/ No/ Rare  
If Yes, please specify the nature of insecurity
2. Have you faced sexual harassments during disaster? Yes/ No/ Rare



If Yes, please specify the nature of insecurity

3. Have you faced any health problems during disaster? Yes/No/ Frequent/Rare

If yes, please specify.

4. Have you faced safe drinking water crisis during disaster? Yes/No /Rare

5. Have you faced food crisis during disaster? Yes/No /Rare

6. Have you faced any economic loss due to flood? Yes/No Idea/Rare

**Participation of Women in the (CDMP)**

1. Have you ever participated in any government organized climate-change adaptation programme, like CDMP? Yes/ No

If your answer is yes, how you participate in this programme?

2. Have you participated in the IGA Training Program? Participated/ No

3. What was your motivation to Participated in the IGA Training Program?

Poverty/ Unemployment/ Women Headed Household/ Raise Income from home/  
Knowledge and skill Development

4. What reason refrain you not to participate in the IGA training program?

House hold work load/ Husband's apathy to the program/ Social norms like *pardah*/ Program is not lucrative to them/ already have idea of IGA/No idea

5. What type of training program you have participated?

6. Have you got the direct support from Plinth Height Raising of Homestead program? Yes/No (If yes, how much?)

7. Have you participated in the Community or Group Meeting? Y/No/Not Active

8. Have you participated in the Awareness Raising Program?

a. (day observation/ rally/discussion) Yes/ No/ Only Meeting

b. Participated in the Disaster Risk Map Drawing Program- Yes/No/ No Idea

**Consequences of CDMP on Women**

1. The IGA training increase your income- Agree/ St Ag/ Disagree/ St Dis A/ N

2. The CDMP programme improved your life - Agree/ S A/ D A/ S D A/ N

3. The programme improved your disaster management and adaptation capabilities? Agree/ Strongly Agree/ Disagree/ Strongly Disagree/ Neutral

4. The CDMP programme raise your awareness Yes/ No/ No Idea

5. Do you know how to manage disaster risk? Yes/ No/ No Idea

**Satisfaction of Women on CDMP**

1. Are you satisfied with IGA Training? Satisfied/ Dissatisfied/ Don't Know

2. Are you satisfied with Awareness Raising Program?

Satisfied/ Dissatisfied/ Don't Know

3. Are you satisfied with Support Program?

Plinth Raising: Yes/ No/ Don't Know

Poultry: Yes/ No/ Don't Know

Saplings of Trees: Yes/ No/ Don't Know

Tube Wells: Yes/ No/ Don't Know

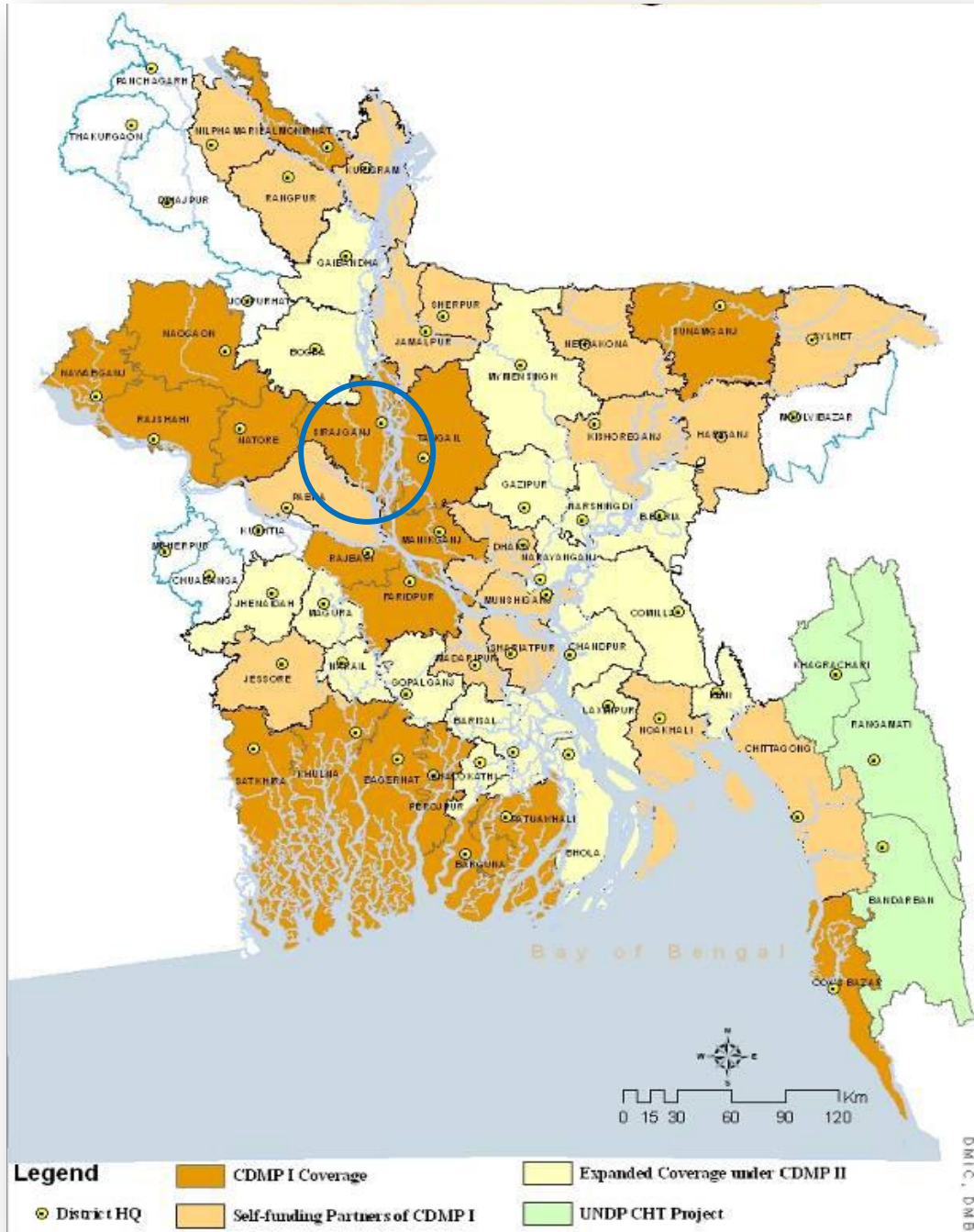
Sanitary Latrine: Yes/ No/ Don't Know

4. Do you think government/non government disaster management programme is sufficient to reduce of vulnerability of women in your area? Yes/ No /No Idea

5. What are your suggestions to reduce vulnerability of women and a sustainable adaptation programme?

## Appendix 2:

### Map: CDMP Working Area



[Source: CDMP website]

**Appendix 3: Risk Reduction Map Drawing of Ratankandi & Bahuli union  
Community**



*Map drawn by community people at  
Bahuli Union with the help of FF*



*Map drawn by community people at  
Ratankandi Union*

[Source: SHARP. (2008). Project Completion Report on LDRRFs VRRCP Project. (Unpublished). Submitted to Comprehensive Disaster Management Programme (CDMP).Official Documents.]

## Appendix 4: Data Collection and Observation from Ratankandi and Bahuli Union



[Photo: Data Collection from Ratankandi Union Parishad Elected Female Representative and Secretary, March, 2012.]



[Photo: The Main Pakka road at Bahuli Union, Destroyed by Flood and Inadequate Drainage System]