



## Vulnerabilities, adaptation capacities and conflict dynamics in the context of climate change in Bangladesh

by Dr. DL Mallick, Shekhar Kanti Ray and Belayet Hossain



AUGUST 2023

# Contents

|   |    |
|---|----|
| Executive Summary .....   | 3  |
| List of Abbreviations.....  | 7  |
| List of Tables.....   | 9  |
| List of Appendices .....  | 10 |
| Chapter- 1: Background and Methods of the Study.....  | 11 |
| 1.1. Background of the Study .....  | 11 |
| 1.2. The Objectives of the Study .....  | 12 |
| 1.3. Approach, Methods and Tools.....   | 13 |
| Chapter- 2: Socio-economic Conditions of the Study Population.....  | 15 |
| 2.1Religion and Ethnicity.....  | 15 |
| 2.2Level of Education of the Household Heads.....   | 16 |
| 2.3Occupational Patterns and Economic Activities .....  | 16 |
| 2.4Household Land Ownership.....  | 17 |
| 2.5Annual Household Savings.....  | 18 |
| 2.6Access to Drinking Water in Study Areas .....  | 19 |
| 2.7Sanitation Practices and Latrine Types .....   | 19 |
| Chapter- 3: Disaster Patterns and the Impacts of Climate Change in the Study Regions                            | 20 |
| 3.1Perceptions about Major Disasters .....  | 20 |
| 3.2Impacts of Climate Change & Level of Vulnerability .....   | 23 |
| 3.3Survey Insights on Most Vulnerable Groups.....   | 25 |
| Chapter- 4: Social and Institutional Causes of Vulnerability of Marginalised People and Impoverished Women..... | 28 |
| 4.1Institutional Causes of Vulnerability.....   | 28 |
| 4.2.1 Barriers to Social Safety Net Programmes (SSN) Access for Vulnerable Communities .....                    | 28 |
| 4.2.2 Shortcomings in Assessing and Meeting Needs of Vulnerable Communities during Climate Disasters .....      | 30 |
| 4.2.3 Gender Disparities and Awareness Gaps in Disaster Management.....   | 30 |

|   |    |
|---|----|
| 4.2.4 Limited Job Opportunities, Especially for Impoverished Women and Those Living in Poverty .....                  | 32 |
| 4.3 Social Causes of Vulnerability .....  | 33 |
| 4.3.1 Gender Barriers and Community Relations in Disaster Management.....   | 33 |
| Chapter- 5: Climate Change Induced Conflicts and Challenges .....   | 34 |
| 5.1 Key Drivers of Social Conflicts in the Three Regions .....  | 34 |
| 5.2 Manifestation of Conflicts at Family and Community Levels.....  | 36 |
| 5.3 Climate Change as Driver for Social Conflicts.....  | 38 |
| 5.4 Current Approaches to Conflict Resolution and Associated Challenges .....   | 40 |
| Chapter- 6: Role of Women and Actors in Gender Responsive Adaptation and Social Conflict Management .....             | 41 |
| 6.1 Adaptive Capacity of coping mechanism of the People Living in Poverty and Impoverished Women in particular .....  | 41 |
| 6.2 Current Coping and Adaptation Needs for Resilient Livelihoods .....   | 44 |
| 6.3 Enhanced Role of Women in Adaptation and Social Conflicts Management & Transformation .....                       | 48 |
| Chapter- 7: Institutional Responsiveness and Governance for Climate Justice .....                                     | 51 |
| 7.1 Assessing Access and Social Support Mechanisms in Bangladesh.....   | 51 |
| 7.2 Advocacy for Government and Non-governmental Actors on Gender Responsive Adaptation and Conflict Resolution ..... | 52 |
| 7.3 Enhancing the Role of State and Non-state Actors and Stakeholders.....  | 54 |
| Chapter- 8: Conclusions and Way-ahead.....  | 58 |

# Executive Summary

NETZ Bangladesh, in collaboration with its partners, conducted an exploratory study within the frameworks of two projects: a) “Combating the Impacts of Climate Change in Severely Affected Areas of the Ganges-Brahmaputra Basin in South Asia (TECSAI)” and b) “Strengthening the Resilience of the Poorest Population to the Impacts of Climate Change (PORIBESH).”

The primary objectives of this study were:

1. To explore the diverse underlying factors increasing vulnerability for people living in poverty with a specific focus on women living in poverty and the dynamics of social conflicts;
2. To identify prevailing local adaptive capacities and recognize adaptation requirements in response to climate change within the program areas;
3. To uncover conflict resolution strategies and human rights protection mechanisms to promote equity and climate justice.

Acknowledging the complex interplay of social conflict dynamics exacerbated by the impacts of climate change, this study adopted a new and emerging area of research and collective actions. The research encompassed seven districts across three primary ecosystems: a) Coastal regions (Satkhira); b) High Barind (Chapainawabganj, Dinajpur, and Naogaon); and c) the Northern River Basin (Kurigram, Lalmonirhat, and Nilphamari).

The research employed a participatory and multidisciplinary methodology capturing the insights of those most affected: women, men, and girls living in severe financial hardship, as well as local community representatives. An extensive social survey was carried out involving 434 households chosen through a systematic, stratified, and randomized sampling method. Notably, a substantial proportion of the respondents were female. In total, 15 Focus Group Discussions (FGDs) were organized across the seven districts with balanced representation from both genders. To further enrich the data, in-depth case studies and Key Informant Interviews (KIIs) were undertaken, drawing out detailed local perspectives on the study's primary and interconnected issues.

The study participants live in extreme poverty. Agricultural labor is the predominant occupation, with 39% of household heads involved, while 15% engage in non-agricultural wage-earning activities. The data indicates a significant reliance on wage-earning occupations with diverse roles, but many households face challenges concerning productive employment opportunities and occupational variety, resulting in irregular income. Survey results illustrate that while participating households' annual incomes range below the 2022 national monthly average, the emphasis of the projects on financial prudence is evident. Encouragingly, households have demonstrated a proactive savings culture. The surveyed households are factually landless, with an average land holding of only 3.5 decimal units, mostly as homestead land, and the vast majority lacking cultivable land. Additionally, a significant portion of project participants live in areas vulnerable to climatic disasters, including flat terrains, riverbanks, roadsides, and flood-prone charland areas, highlighting their exposure to climate-related risks. For water provisions, the majority (54%) source from private tube wells, 27% from public

taps, and 6% utilize rainwater harvesting. In terms of sanitation, 55% of households use basic "Kacha" latrines while 38% have adopted sanitary latrines. For a detailed exploration of these socio-economic insights, please see [Chapter 2](#) of the report.

The core focus of the study was to explore the impacts of climate change and understand deeply the interface between the physical causes and social and institutional factors of the growing vulnerability of the study population. Across the surveyed regions in Bangladesh, there is a widespread awareness of climate change, with many respondents identifying changes in seasons, rising temperatures, and irregular rainfall as key indicators. Bangladesh's diverse climatic regions experience a range of climate-related disasters, from cyclonic storms, salinity intrusion, and water scarcity in coastal zones to recurrent floods, droughts, and extreme cold in the north-central and northwestern regions, affecting the employment and wage of people who live in poverty. The survey and FGDs emphasize the vulnerability of agriculture, home gardens, and local livelihoods such as livestock and small-scale fisheries to these climate stresses, particularly affecting impoverished households with significant impacts on trees and plants in coastal areas. Women across different regions of Bangladesh face climate-related vulnerabilities, including increased time in water collection and food preparation, health risk management for children, reproductive health challenges, and heightened family conflicts due to financial crises; these vulnerabilities necessitate gender-sensitive adaptation measures. FGDs and KIs reveal that marginalized communities, particularly women, grapple with challenges like landlessness, heightened exposure to climate extremes depending on their residence, and increased responsibilities and hardships during disasters, especially when male members migrate for work. For a detailed exploration of disaster patterns and impacts of climate change, please see [Chapter 3](#) of the report, while the underlying factors and the nature of vulnerability faced by women living in poverty and socially marginalized communities are analyzed in [Chapter 4](#).

Another focus of the study was to explore the nature and dynamics of social conflicts in the three regions. The majority of respondents (63%) across the three study areas concurred that there has been an increase in social conflicts during and after climate disasters. The study reveals that climate-induced conflicts have profound and lasting effects on families and communities related to the extended absence of male family members seeking work elsewhere, reduced natural resources, and increased disaster-related damages and losses among impoverished and marginalized groups. Conflict escalation during disasters is a shared experience across the three study regions. The conflicts often stem from institutional shortcomings at the grassroots level, a lack of transparency and accountability in local government institutions, governance issues, and existing power dynamics, especially in the context of marginalized communities and women living in poverty. These factors hinder their access to social safety nets and contribute to conflicts over vital resources like freshwater and grazing lands, which are exacerbated by environmental challenges like increasing water salinity and flooding, particularly in coastal areas. Furthermore, transitions in agriculture practices, limited representation in local decision-making, and challenges associated with river erosion exacerbate conflicts in specific regions. Conflict resolution measures in the study areas are generally insufficient, with local mediation being the most common method (70%), followed by interventions by elected officials and community leaders (47%), dialogue to foster mutual understanding (39%), and legal actions (26%). Challenges in conflict resolution are primarily attributed to local political dynamics marginalizing vulnerable communities (61%), followed by prevailing distrust among community members (59%) and competition over natural resource allocations (49%). [Chapter 5](#) focuses on the dynamics of social conflicts with an emphasis on the increased role of women, human rights, and women-led

organizations in managing and transforming these conflicts. Additionally, the report includes three compelling case studies that delve into the dynamics of social conflicts and their transformation.

The adaptive capacity (**Chapter 6**) of women living in poverty and men is significantly restricted due to poverty, gender disparities, and inadequate governance across all research areas. A significant majority of respondents feel unable to manage the impacts of climate change (67%) with very few confident in their complete ability to handle risks. Additionally, the respondents predominantly rely on loans from moneylenders to cope with economic loss, while strategies to boost livelihood resilience differ significantly across the regions. There is a recognized need to amplify women's involvement in climate change adaptation strategies and enhance their access to vital climate information.

Communities in the study areas face challenges in voicing their rights and demands to Local Government Institutions (LGIs) and other actors for disaster responses. Overall, the findings indicate significant barriers exist across all regions, especially in the Coastal Area, where a majority feel unheard or unsupported in the face of disasters. Overall, the study reveals varying levels of collective action among impoverished individuals and women in different regions with a consistent need for interventions to encourage sustained collaboration in climate adaptation and conflict resolution. Additionally, advocacy efforts for climate justice should prioritize awareness-raising, social mobilization, capacity-building, alternative income opportunities, and greater participation of marginalized communities, particularly women, in local decision-making processes. The survey, KIs, and FGDs have uncovered advocacy priorities and actionable steps to advance gender-sensitive adaptation, resolve social conflicts, and achieve climate justice, recognizing the interconnected nature of these issues in **Chapter 7**:

- Foster more purposeful engagement of government officials from LGIs, NGOs, and sectoral actors who possess greater resources, skills, and institutional capacity in the planning and execution of gender-responsive adaptation and locally-led adaptation (LLA) initiatives.
- Implement location-specific alternative income-generating activities accompanied by comprehensive training and financial/material support in collaboration with relevant development entities (such as the livestock department, agriculture department, and NGOs) to benefit marginalized communities living in poverty.
- Intensify collaborative efforts to address climate-induced social conflicts and facilitate their transformation.
- Initiate negotiations and dialogues with LGIs and local administrative bodies to enhance the participation and influence of marginalized impoverished communities in committees and forums like UDMC at the local level.
- Launch awareness campaigns involving local communities, Upazila administration, PIO office, and LGI representatives to ensure accurate listing and provide rehabilitation support for landless individuals.
- Facilitate awareness and dialogue programs between legal service providers and local communities to help them access legal support when engaged in legal disputes with influential figures, particularly regarding issues like the grabbing of Khas lands.
- Maintain regular dialogue, lobbying efforts, and networking activities with duty bearers and policymakers to advocate for the inclusion of women living in poverty, marginalized groups, and climate-vulnerable communities in regional policies and action plans.

NETZ partners and project field officers have developed robust relationships with local government entities, NGOs, and civil society organizations, stressing the importance of locally led adaptation (LLA) strategies, especially for women living in poverty in the context of climate change vulnerabilities. The institutional mapping detailed in Chapter 7, outlining the roles and responsibilities of various actors and stakeholders, can serve as a valuable resource for NETZ and its partners. It provides a foundation for devising tailored adaptation strategies and capacity-building efforts aimed at promoting gender-responsive adaptation, effective social conflict management, and climate justice for women in poverty-stricken and highly vulnerable communities within climate-affected regions.

The study comprehensively explored the causes of vulnerability, including physical, social, institutional, and gender-related factors, alongside the dynamics of climate-induced social conflicts. It underscores the urgent need for pro-poor and gender-responsive adaptations to reduce climate risks and vulnerability. Vulnerable groups, particularly those living in poverty and women, require improved access to resources, climate education, and support services. Additionally, it underscores the significance of civil society organizations and local actors in addressing climate justice, enhancing conflict resolution mechanisms, and translating national climate policies into actionable measures within communities. **Chapter 8** summarizes the study's findings, provides key conclusions, and offers a forward-looking perspective.

# List of Abbreviations

- BBS:** Bangladesh Bureau of Statistics
- BMD:** Bangladesh Meteorological Department
- BWDB:** Bangladesh Water Development Board
- CBOs:** Community Based Organization
- CCA:** Climate Change Adaptation
- CPP:** Cyclone Preparedness Programme
- CSO:** Civil Society Organisation
- DAE:** Department of Agriculture Extension
- DRR:** Disaster Risk Reduction
- DSS:** Department of Social Services
- DWA:** Department of Women's Affairs
- ESDO:** Eco Social Development Organization
- ESS:** ecosystem services
- FD:** Forest Department
- FGDs:** Focus Group Discussion
- GBV:** Gender-Based Violence
- GRA:** Gender Responsive Adaptation
- GRCA:** Gender Responsive Climate Action
- HH:** Household
- HIES:** Household Income and Expenditure Survey
- HSC:** Higher Secondary School Certificate
- IPCC:** Intergovernmental Panel on Climate Change
- KAP:** Knowledge, Attitudes and Practices
- IAPP:** Integrated Agriculture Plant Production
- KII:** Key Informant Interview
- LADDP:** Livestock and Dairy Development Project
- L&D:** Loss and Damage
- LGED:** Local Government Engineering Department
- LGI:** Local Government Institution
- LGRD:** Local Government Rehabilitation Department

**LLA:** Locally Led Adaptation  
**NA:** Not applicable  
**NGO:** Non-government Organization  
**PAR:** Participatory Action Research  
**PSF:** Pond Sand Filter  
**PwD:** Person with Disability  
**RDRS:** Rangpur Dinajpur Rural Services  
**SDG:** Sustainable Development Goal  
**SPM:** Summary for Policymakers of the IPCC AR6 report  
**SSC:** Secondary School Certificate  
**SSN:** Social Safety Net  
**SSNP:** Social Safety Net Programme  
**ToR:** Terms of Reference  
**TK:** Taka (Bangladeshi currency)  
**UDMC:** Union Disaster Management Committee  
**UHFWC:** Union Health Family Welfare Centre  
**ULO:** Upazila Livestock Office  
**UZ:** Upazila  
**WASH:** Water Sanitation and Hygiene

# List of Tables

Table-2.1: Religious Composition of the Study Households/Population

Table-2.2: Ethnic Identity

Table-2.3: Main Occupation of the Household Heads

Table-2.4: Average Ownership of Land in Decimal

Table-3.1: Distribution of Perceptions about Climate Change and Natural Disasters

Table-3.2: Level of Vulnerability by Key Sectors

Table-3.3: Level of Vulnerability by other Key Sectors

Table-3.4: Perceptions of Most Vulnerable Groups by Study Participants

Table-3.5: Social Causes & Gender Drivers of Women's Vulnerability

Table-4.1: SSN support received in the previous 2-3 years

Table-4.2: Assessment of Adequacy in Addressing Needs During Climate Disasters by LGIs and Duty Bearers

Table-4.3: Awareness of Union Disaster Management Committees (UDMCs) Among Respondents

Table-5.1: People's perception regarding increase of conflicts during and after disasters

Table-5.2: Types of Conflicts at the Family, Community, and Social Level Due to Climate Change Disasters

Table-5.3: Conflicts at the Community Level Due to Climate Change

Table-6.1: % Distribution of Self-Perceived Capacity to Manage Climate Change Impacts on Their Own by Region

Table-6.2: % Distribution of the responses regarding the Coping Measures to reduce the Economic Loss

Table-6.3: % Distribution of Responses on Measures to Enhance Livelihood Resilience

Table-6.4: Distribution of the Existing Coping Strategies to Climate Disasters by Region

Table-6.5: Coping & Adaptation Practices in Coastal Areas (based on FGD findings)

Table-6.6: Adaptation Options in the High Barind (Dinajpur, based on FGD Findings)

Table-6.7: Adaptation options in the Northern River Basin (Kurigram, based on FGD findings)

Table-6.8: The Support Required for the Community & Family to Address Social Conflict

Table-6.9: % Distribution of Responses on the Role of Local Government and Village Committees in Conflict Management

Table-7.1: % Distribution of the responses regarding Placing their Rights and Demands to LGIs and other Actors for Disaster Responses

Table-7.2: Do the People Living in Poverty and Women in Particular Work Collectively in Developing and Implementing Adaptation Strategies as Well as Conflict Resolution?

Table-7.3: Organizations' Roles in Addressing Climate Vulnerabilities and Promoting Climate Justice

Box-1: Insights from Community Leaders on Vulnerability and Social Conflict Drivers

Box-2: Overview of Case Studies on Conflict Dynamics and Transformation Across Three Ecological Zones - A study conducted by Prof. Meghna Guhathakurta

# List of Appendices

Appendix-1: ToR of the Study

Appendix-2: Final Survey Questionnaire

Appendix-3: List of FGDs with selected reports

Appendix-4: List of KIIs with summary report

Appendix-5: Case Study reports

Appendix-6: Selected data tables in reference to the text in the report

Appendix-7: Report of the Study "Conflict Dynamics and Conflict Transformation in Three Ecological Zones in the Context of Climate Change"

# Chapter- 1: Background and Methods of the Study

## 1.1. Background of the Study

NETZ Bangladesh, in collaboration with its partners, is dedicated to addressing the challenges of extreme poverty, hunger, and vulnerabilities exacerbated by climate change through various programs. These initiatives aim to contribute to the eradication of extreme poverty (SDG 1), advance Zero Hunger (SDG 2), promote Gender Equality (SDG 5), and mitigate vulnerability to the adverse effects of climate change (SDG 13) in regions affected by both poverty and climate change.

One of NETZ's programs, "Combating the Impacts of Climate Change in Severely Affected Areas of the Ganges-Brahmaputra Basin in South Asia (TECSAI)," directly supports 4,300 marginalized households in the districts of Chapainawabganj and Kurigram in Bangladesh, as well as Birbhum in India. Additionally, NETZ and its partners are implementing the "Strengthening the Resilience of the Poorest Population to the Impacts of Climate Change (PORIBESH)" program, which includes 10,600 women and their families, totaling 42,400 individuals, across five districts: Dinajpur, Lalmonirhat, Nilphamari, Naogaon, and Satkhira.

The participants targeted by these programs in Bangladesh are primarily individuals and communities particularly vulnerable to climate-related disasters and have been previously affected by such events. Studies conducted by NETZ have indicated that the impacts of climate change are unevenly distributed, with impoverished individuals, indigenous groups, and marginalized segments of society being more severely affected. Climatic stresses and extreme events such as floods, cyclones, droughts, and heavy rainfall consistently disrupt local resources, livelihoods, and social cohesion. Severe climate events like floods, cyclones, tidal surges, and cold waves, along with gradual phenomena like droughts, salinity intrusion, and waterlogging, often force impoverished individuals and wage earners to migrate in search of better livelihoods and living conditions, often from rural to nearby urban areas and eventually to larger cities like Khulna, Rajshahi, Rangpur, and Dhaka. These migrations exacerbate existing social problems, including poverty, food and water insecurity, unemployment, gender-based violence (GBV), and competition and social conflicts over scarce resources in climate hotspots. Government development policies and strategies strongly recommend addressing climate-induced migration in the present and future (NAP, 2022, and Delta Plan 2100). Man-made and unplanned development initiatives, such as commercial shrimp cultivation on agricultural lands in coastal villages or the conversion of agricultural lands into commercial horticulture, have also contributed to the challenges faced by impoverished individuals, impoverished women, and marginalized sections in the Barind region.

In this context, NETZ Bangladesh initiated an exploratory study within the project areas. This study seeks a comprehensive understanding of the various factors contributing to vulnerability, including physical, social, institutional, and gender-related factors. It also explores the dynamics of social conflicts exacerbated by the impacts of climate change in the program areas. The study adopts a novel approach by focusing on social conflict dynamics resulting from climate change impacts as an emerging area of research and collective action. Furthermore, it examines pro-poor and gender-responsive adaptation strategies aimed at reducing risks and vulnerabilities, as well as effective

approaches for conflict resolution and transformation within local contexts. The study covers seven districts across three major ecosystems: a) Coastal areas (Satkhira); b) High Barind (Chapainawabganj, Dinajpur, and Naogaon); and c) Northern River Basin (Kurigram, Lalmonirhat, and Nilphamari).

## 1.2. The Objectives of the Study

In alignment with the programme objectives, the overarching aims of the study are to investigate:

1. The underlying causes of vulnerability and the dynamics of social conflicts in the context of climate change impacts.
2. The existing local capacities for adaptation to address the consequences of climate change in the program areas.
3. Mechanisms for conflict resolution and the protection of human rights to ensure equity and climate justice.

The study also has specific objectives, which include:

- Identifying the causes of vulnerability among marginalized communities.
- Assessing existing local options for adaptation.
- Analyzing the climate justice landscape to understand the role of duty bearers in relation to marginalized communities.
- Developing an understanding of the roles of both state and non-state actors within these complex causal relationships and conflicts.

A gender analysis was conducted to enhance understanding of the distinct vulnerabilities and increasing adaptation needs of impoverished women and men in the context of social, climate, and local factors. To achieve these aims and objectives, the study employed the following activities and steps:

- Investigation of the multiple causes of vulnerability, with a focus on marginalized populations, and examination of selected conflict dynamics arising from the impact of climate change.
- Identification and assessment of existing local adaptive capacities, options, and vulnerabilities within affected communities, along with the analysis of climate-related conflict dynamics.
- Conducting a stakeholder analysis to assess the roles of state and non-state actors within these complex causal relationships and conflicts.
- Analysis of the climate justice situation experienced by communities affected by climate change.
- Developing an influence map and an action plan for local, national, and transnational advocacy actors and organizations.
- Presenting the study's results, strategic options, and policy briefs in a national-level seminar.

### 1.3. Approach, Methods and Tools

The exploratory study adhered to the framework and approach of the Intergovernmental Panel on Climate Change (IPCC) to deeply understand the multiple causes of vulnerability to climate change impacts. Climate vulnerability is understood as a situation in which individuals are unable to escape the risks posed by climate-related disasters, resulting in significant losses and damage. In the context of climate change, risk arises from the dynamic interplay among climate-related hazards, the extent of exposure, sensitivity, and the capacity of affected human and ecological systems (IPCC AR5, Vol. II, 2014). The level of vulnerability is high for people living in poverty and marginalized groups who have low adaptive capacity and resilience due to various social, economic, institutional, and gender-related factors. Children, elderly people, ethnic communities, impoverished women, and persons with disabilities (PwD) are considered underprivileged in society and possess the least adaptive capacity, thereby facing higher levels of risk and vulnerability.

The study incorporated and examined a range of social and institutional factors and indicators, including age, gender, occupation, economic status, access to resources, availability of climate information and adaptation technologies, physical disabilities, women's participation, and decision-making power. This comprehensive approach allowed for the assessment of differentiated vulnerability and the uncovering of root causes entrenched within society, the economy, and culture, in addition to physical stresses. Vulnerability levels, particularly among people living in poverty and impoverished women, are further exacerbated by governance deficiencies and the lack of responsiveness of local government and duty bearers. Additionally, the absence of access for disadvantaged individuals to existing support and services, which is closely tied to climate justice, compounds their vulnerability. Essentially, people living in poverty, especially women, contribute minimally to climate change issues, yet they bear the brunt of its impacts and consequences.

The study adopted a **participatory and multidisciplinary research approach**, capturing the perspectives and insights of vulnerable groups, including highly disadvantaged women, men, girls, and local stakeholders, through participatory research tools. Qualitative and quantitative data, information, and viewpoints were collected, cross-referenced, and analyzed to gain a deeper understanding and interpretation of the pertinent issues and concerns, substantiated by factual evidence. The study assessed vulnerability levels and the capabilities of the highly disadvantaged study population within the context of escalating physical stresses (exposure to climate change effects, climate disaster sensitivity, and adaptive capacity), as well as social and gender drivers, including inadequate resource access, service availability, institutional accessibility, unequal rural power dynamics, governance shortcomings, and prevailing patriarchal social norms and values, among others.

To ensure a representative sample, the study employed a **multi-stage random sampling procedure** to select 434 households from the program participants for the social survey. This systematic, stratified, and random sampling procedure allowed for the capture of the views, experiential knowledge, and perspectives of respondents from the project participating households regarding climate change impacts, vulnerability levels, coping and adaptation practices, access to government resources and services, and social conflicts arising from livelihood resource competition. Interviews at the household level included a substantial number of female respondents. Fifty households were selected from each of the six project districts in the North (Chapainawabganj, Dinajpur, Naogaon, Kurigram, Lalmonirhat, and Nilphamari), while 134 households were chosen from two Upazilas in the coastal district of Satkhira. A total of 15 Focus Group Discussions (FGDs) were conducted across seven districts, involving both female and male participants. To gain local insights and perspectives on key study aspects, such

as climate change impacts, the social and institutional origins of vulnerability, adaptation practices, and the dynamics of social conflicts in the three regions (High Barind, Coastal Areas, and Northern River Basin), numerous case studies were conducted. Additionally, several Key Informant Interviews (KIIs) were carried out with relevant government officials, representatives of Local Government Institutions (LGIs), Non-Governmental Organizations (NGOs), and community leaders.

The study explored the **analysis of social conflict dynamics** within the context of climate change impacts, encompassing conflicts related to local resources and those stemming from corruption in service delivery processes (e.g., relief distribution) and the adoption of local adaptation strategies. A stakeholder analysis was also conducted, scrutinizing the roles of both state and non-state actors within these complex causal relationships and conflicts. Emphasizing the distinct role of women, given their disproportionately higher vulnerability to climate change consequences and their potential to address the root causes of vulnerability and advocate for appropriate strategies, was a recurring theme throughout the study.

The findings of the study have provided substantial facts, figures, and information to various stakeholders, including government institutions. It is anticipated that these findings will be harnessed for policy development and refinement. Evidence-based advocacy efforts may be initiated for climate justice and ensuring the rights of marginalized people.

# Chapter- 2: Socio-economic Conditions of the Study Population

The vulnerability to climate change is assessed in the context of its physical impacts on the socio-economic conditions and adaptive capacity of various entities, including systems, communities, families, individuals (both women and men), and other stakeholders. This study involves the collection, analysis, and presentation of essential socio-economic data related to the study population. In addition to examining climate-related stressors, the study also investigates social and institutional factors, as well as gender-related determinants of vulnerability. This section provides an overview of the fundamental socio-economic conditions of individuals and families facing significant disadvantages.

## 2.1 Religion and Ethnicity

The study encompasses diverse religious communities across three distinct climatic zones: the Coastal Area, High Barind, and the Northern River Basin (within Rangpur division), covering a total of seven districts. Among the surveyed population, Muslims constitute the majority, accounting for approximately 67% of respondents, followed by Hindus at 30%, and Christians at 3%. It is worth noting that there are some location-specific variations in the religious composition of the study population across the three regions (refer to Table 2.1).

**Table 2.1: Religious Composition of the Study Households/Population**

| Types of Religious Community | Coastal Area (%) | High Barind (%) | Northern River Basin (%) | All (%) |
|------------------------------|------------------|-----------------|--------------------------|---------|
| Muslims                      | 62.7             | 53.3            | 84.0                     | 66.8    |
| Hindus                       | 37.3             | 37.3            | 16.0                     | 30.0    |
| Christians                   | -                | 9.3             | -                        | 3.2     |
| All                          | 100.0            | 100.0           | 100.0                    | 100.0   |

Table 2.2 provides insights into the ethnic composition of the study population. The majority of the population identifies as Bengali, constituting 90% of the community composition, while small ethnic communities make up a minor percentage of 9% of the population and the Dalit/Horijan group represents less than 1%. Ethnic minorities are notably concentrated in the High Barind areas, where approximately 25% of the respondents belong to ethnic minority groups. However, it should be noted that in the coastal villages, there were no Dalit households in the survey framework.

**Table 2.2: Ethnic Identity**

| <b>Types of Community/Ethnic Group</b> | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=434)</b> |
|--|-------------------------|------------------------|---------------------------------|------------------------|
| <b>Bengali</b>                         | 98.5                    | 74.7                   | 98.7                            | 90.3                   |
| <b>Dalit/Horijan</b>                   | -                       | 0.7                    | 1.3                             | 0.7                    |
| <b>Small Ethnic Communities</b>        | 1.5                     | 24.7                   | -                               | 9.0                    |
| <b>All</b>                             | 100.0                   | 100.0                  | 100.0                           | 100.0                  |

The survey findings reveal that approximately 10% of household heads are young, falling within the age range of 18-29 years, with none below 18 years. The majority of household heads are adults ranging from 30 to 60 years of age (82%), while only 8% fall into the elderly category (60+). According to the survey, there are no significant differences in the age structure of household heads across the three regions (see Appendix 6, Table 2.1).

## **2.2 Level of Education of the Household Heads**

According to the survey data (see Appendix 6, Table 2.2), a significant percentage of household heads have limited formal education, with a substantial portion having completed only primary education (25%), while others are able to sign their names only (42%) or have no formal education (18%). Higher education levels such as high school (11%), SSC (3%), HSC (1%), and beyond are less prevalent among household heads.

## **2.3 Occupational Patterns and Economic Activities**

The distribution of the main occupations of household heads provides insights into the economic activities prevalent in the study areas, highlighting key trends that have implications for vulnerability and adaptation.

Overall, agriculture-related occupations, such as agricultural labour and farming, are prominent, with a significant percentage of household heads engaged in these activities. Non-agricultural wage earners, including those in service or petty government jobs, are also present but to a lesser extent. It is important to note that around 54% of household heads are engaged in wage-earning occupations, indicating a substantial reliance on such employment. This includes 39% involved in agricultural labour and 15% engaged in non-agricultural wage-earning activities. Many of these disadvantaged households face challenges related to a lack of productive employment opportunities and occupational diversity.

Please refer to the following table 2.3 for the detailed percentage distribution of the main occupations of household heads in different regions.

**Table-2.3: Main Occupation of the Household Heads**

| Types of Primary /Main occupation                                | Regions (%)  |             |                      | All (%) |
|--|--------------|-------------|----------------------|---------|
|  | Coastal Area | High Barind | Northern River Basin |         |
| <b>Agricultural labor</b>  | 26.1%        | 50.0%       | 38.0%                | 38.5%   |
| <b>Non-Agri-wage earner</b>                                      | 24.6%        | 8.7%        | 11.3%                | 14.5%   |
| <b>Service or Job (Petty govt's jobs, or private sector job)</b> | 2.2%         | 8.0%        | 10.0%                | 6.9%    |
| <b>Fisherman</b>   | 15.7%        | 0.7%        | 2.7%                 | 6.0%    |
| <b>Housewife (Domestic work)</b>                                 | 6.0%         | 4.7%        | 7.3%                 | 6.0%    |
| <b>Rickshaw van pulling</b>                                      | 1.5%         | 8.0%        | 6.7%                 | 5.5%    |
| <b>Small business</b>  | 6.0%         | 4.0%        | 4.7%                 | 4.8%    |
| <b>Livestock rearing</b>   | 2.2%         | 4.0%        | 3.3%                 | 3.2%    |
| <b>Agriculture</b>   | 3.7%         | 1.3%        | 4.0%                 | 3.0%    |
| <b>Handicraft</b>  | 3.0%         | 2.0%        | 2.0%                 | 2.3%    |
| <b>Shrimp fish fry collection</b>                                | 3.7%         | -           | -                    | 1.2%    |
| <b>Fishing in the river</b>                                      | 1.5%         | -           | 2.0%                 | 1.2%    |
| <b>Fish cultivation</b>  | 0.7%         | 2.0%        | 0.0%                 | 0.9%    |
| <b>Homestead gardening</b>                                       | -            | 0.7%        | 1.3%                 | 0.7%    |
| <b>Others</b>  | 3.0%         | 6.0%        | 6.7%                 | 5.3%    |

## 2.4 Household Land Ownership

Among the surveyed households, there is a notable disparity in land ownership. While some possess homestead land, a significant portion lacks cultivable land in the study areas. On average, the households have only approximately 3.5 decimal units of land. This land allocation is predominantly comprised of 3.4 decimal units of homestead land, supplemented by a significantly smaller portion of cultivable land (0.5 decimal units), indicating that a substantial proportion of the study participants do not have any cultivable land. For detailed land ownership statistics, please refer to the following table.

**Table-2.4: Average Ownership of Land in Decimal**

| Types of Land                                  | Regions      |             |                      | All   |
|--|--------------|-------------|----------------------|-------|
|  | Coastal Area | High Barind | Northern River Basin |       |
| <b>Average of Homestead land (in decimal)</b>  | 3.258        | 3.373       | 3.737                | 3.465 |
| <b>Average of Cultivable land (in decimal)</b> | 0.024        | 0.143       | 1.195                | 0.469 |
| <b>Average of Other land (in decimal)</b>      | -            | -           | 0.295                | 0.104 |
| <b>Average of Total land</b>                   | 3.231        | 2.643       | 4.583                | 3.495 |

The project participants primarily inhabit regions that are highly susceptible to a range of climatic disasters, which encompass floods, erosion, cyclones, as well as slower-onset events like salinity, waterlogging, and drought. A closer look at their residential locations (see Appendix, Table 2.3) reveals the following distribution:

- Approximately 45% of the respondents reside in houses and homesteads located on flat, low-lying terrain.
- Around 22% have homes situated in close proximity to riverbanks.
- Approximately 16% live along roadside areas.
- About 8% have dwellings on embankments.
- Approximately 5% inhabit Charland areas, which are particularly vulnerable to frequent flooding and erosion.

Notably, within the Northern River Basin, 11% of households find their homes in Charland regions, while in coastal villages, as much as 34% of the surveyed households are situated on roadside land. These geographic details underscore the population's exposure to a range of climate-related risks and hazards based on their residential locations.

## 2.5 Annual Household Savings

Both programmes have implemented savings initiatives for their participants, promoting a culture of saving among households living in poverty and women involved in the projects. While these households demonstrate a commitment to saving money as a means to address economic crises and the impacts of disasters, it is worth noting that the average annual savings remain quite low, amounting to an average of Tk. 2,003 in the past year.

A significant portion of participants (about 34%) report annual savings of less than Tk. 1,000. Interestingly, households in the High Barind area exhibit relatively higher average savings, with Tk. 2,202, while those in the Northern River Basin report Tk. 2,086 in savings. In contrast, households in the Coastal Area tend to have lower average savings, with an average of Tk. 1,742. Further details can be found in the relevant table provided in Appendix 6, Table 2.4. Overall, the data indicates that a

significant portion of households in the study areas have relatively low savings, which may impact their ability to cope with climate-related challenges and social conflicts.

## **2.6 Access to Drinking Water in Study Areas**

Community members, primarily women, source their drinking water from various outlets. Approximately 54% of the surveyed households obtain water from their private tube wells or boreholes. Around 27% of households access water from public taps or community tube wells. Notably, about 6% of households rely on rainwater harvesting systems, particularly prevalent in coastal villages. Another 6% of households utilize designated water collection points.

It is worth highlighting that a larger proportion of households in the Northern River Basin extract water from tube wells (94%), whereas a relatively higher number of surveyed households in the High Barind (37%) and Coastal Area (39%) depend on public water supply systems. For specific figures, please refer to the corresponding table in Appendix 6, Table 2.5.

## **2.7 Sanitation Practices and Latrine Types**

The survey findings indicate that a significant portion of programme participants rely on "Kacha" latrines, constituting 55% of the respondents. These latrines are typically constructed using materials like bamboo, tin, and polythene, often lacking an effective water seal system. In contrast, 38% of respondents across all three regions utilize sanitary latrines. Open field defecation is relatively low in all regions.

It is noteworthy that findings indicate differences in sanitation practices among the regions: in the Coastal Area, a majority of households (61%) have sanitary latrines with rings and slabs, while in the High Barind and Northern River Basin, Kacha latrines with bamboo and sacks are more prevalent, with 58% and 66% of households, respectively. For precise figures, please refer to the corresponding table in Appendix 6, Table 2.6.

# Chapter- 3: Disaster Patterns and the Impacts of Climate Change in the Study Regions

The comprehensive household survey and participatory study findings shed light on the prevailing disaster patterns and the profound impacts of climate change in the three designated climate hotspots. Across all regions, common disasters identified include temperature rise, heat stress, shifts in seasonal patterns, and unpredictable rainfall. However, the coastal villages in the Satkhira district face additional challenges such as frequent cyclones, tidal surges, salinity intrusion, and waterlogging.

In contrast, the districts situated in the Barind region—namely Chapai Nawabganj, Naogaon, and Dinajpur—contend with distinct climatic issues such as drought, cold spells, dense fog, and localized floods. Meanwhile, the Northern River Basin districts, including Lalmonirhat, Nilphamari, and Kurigram, grapple with unique climate-related challenges, encompassing recurring monsoon floods, riverbank erosion, drought, Nor'westers (intense summer storms characterized by heavy rain and thunder), and severe cold spells with fog, all of which occur annually. These climate-induced disasters exert a significant and detrimental impact on the lives and livelihoods of the surveyed population, underscoring the urgency of addressing climate vulnerabilities in these areas.

## 3.1 Perceptions about Major Disasters

The study reveals that the majority of respondents associate climate change with specific perceptible changes in their environment. Key indicators of climate change, as perceived by the participants, include abrupt shifts in seasons (79%), rising temperatures and heightened heat stress during prolonged summers (78%), and irregular rainfall patterns (70%).

Regional variations in perceptions are evident. In the Northern River Basin, irregular rainfall emerges as a predominant concern (81%), likely due to the region's heavy reliance on agriculture, making it particularly vulnerable to fluctuations in precipitation. Conversely, the High Barind area shows a higher percentage of respondents identifying drought (54%) as a prominent climate change indicator, reflecting the region's susceptibility to water scarcity.

In the Coastal Area of Satkhira district, 80% of respondents perceive an increase in salinity as linked to climate change. This finding aligns with the vulnerability of coastal regions to sea-level rise and saltwater intrusion, which adversely affect agriculture and water sources. Perceptions of extreme events, such as cyclones, tidal surges, and floods, as indicators of climate change are more prevalent in the Coastal Area (74%), aligning with the heightened exposure of coastal regions to such climatic extremes.

**Table 3.1: Distribution of Perceptions about Climate Change and Natural Disasters**

| Response                                       | Coastal Area (%) | High Barind (%) | Northern River Basin (%) | All (%) (N=431) |
|--|------------------|-----------------|--------------------------|-----------------|
| Change in Seasons (long summer & short winter) | 81.1             | 73.2            | 82.0                     | 78.7            |
| Rise of temperature and heat stress            | 87.1             | 71.1            | 75.3                     | 77.5            |
| Irregular rainfall                             | 65.9             | 61.7            | 81.3                     | 69.8            |
| Increase of salinity in the Coast              | 79.5             | -               | -                        | 26.5            |
| Drought  | 22.7             | 53.7            | 42.0                     | 40.1            |
| Extreme Events: Cyclones, tidal surges, floods | 73.5             | 17.4            | 29.3                     | 38.7            |
| Others   | 7.6              | 2.7             | 2.0                      | 3.9             |

### Most Common Climate Disasters

The data provides valuable information about the distribution of responses regarding the main climatic disasters across different regions. Flood-related concerns are widespread, with significant percentages of respondents in all regions identifying floods as a major climatic disaster. Cyclones and storms are significant issues in the Coastal Area, while river erosion is more pronounced in both the Coastal Area and the Northern River Basin. High tides and salinity are predominant in the Coastal Area. Cold and dense fog are more commonly reported in the High Barind and Northern River Basin regions, while drought is a major concern in the High Barind. Nor'westers (Kalboishakhi) are prevalent in the Northern River Basin.

The findings from the FGDs and KIs conducted in three regions of Bangladesh provide additional valuable insights into the major climate disasters experienced by different communities:

- In the coastal villages of Assasuni and Shyamnagar in the Satkhira district, residents highlighted cyclones, tidal surges, increasing salinity in water and soil, high tides, heavy rainfall, erratic rainfall, waterlogging, temperature rise, and drought as major climate disasters affecting their communities. These disasters not only occur with greater intensity and frequency but also have significant impacts on the localities. The rising incidence of floods and water surges poses a serious threat to the vulnerable coastal populations.
- In Chapainawabganj, the Higher Barind region (Nachol and Gomostapur), residents identified drought, severe cold, dense fog, Nor'westers, hailstorms, heavy rainfall, erratic rainfall, heatwaves, and thunderstorms as primary climate disasters. The increasing frequency of Nor'westers, drought, and erratic rainfall is causing greater hardship in these areas. Despite a shortened winter season, the severity of cold weather persists for a considerable period each year, impacting local communities, agriculture, home gardens, livelihoods, and wage earners.
- In the Northern River Basin, including Nilphamari (Domar and Dimla), Lalmonirhat (Lalmonirhat Sadar and Aditmari), and Kurigram (Bhurungamari and Nageswari), floods, river erosion, heavy

rainfall, thunderstorms, Nor'westers, drought, severe cold, dense fog, and erratic rainfall were identified as major climate disasters. These regions face recurrent floods and river erosion throughout the year, with increasing severity. Drought conditions have intensified, affecting the local population. Kurigram experiences river erosion, heavy rainfall, Nor'westers, hailstorms, drought, severe cold, dense fog, and erratic rainfall, all of which have significant implications for the residents.

These findings highlight the diverse range of climate-related challenges faced by different regions in the study, underscoring the need for region-specific strategies to address these challenges effectively.

### **Key Climate Disasters and Growing Vulnerability in the Regions**

Recent studies and government reports in Bangladesh have highlighted the growing impact of global climate change and climatic extremes across various ecosystems within the country. Bangladesh is characterized by distinct climatic regions, and the Bangladesh National Adaptation Plan (NAP) 2023 has identified 12 climate-stressed areas, including the southwestern coastal region, Rajshahi, and Rangpur, each facing multiple climate-related disasters.

According to the Bangladesh Delta Plan (2100), the primary climate-related disasters in the coastal zone encompass cyclonic storms, tidal surges, tidal floods, salinity intrusion, waterlogging, riverbank and coastal erosion, freshwater scarcity, and declining groundwater levels. In contrast, the north-central floodplains and river systems contend with recurrent floods during the pre-monsoon, monsoon, and post-monsoon seasons, along with issues like erosion, accretion, sedimentation, and navigation challenges. Additionally, extreme cold and dense fog affect this region. In the High Barind region of the Northwestern part of the country, factors like drought, rising temperatures, heat stress, and localized floods take center stage.

The local climate in Bangladesh's coastal zone is heavily influenced by freshwater inflow from rivers, tidal actions from the Bay of Bengal, and meteorological phenomena like cyclones, storm surges, and wind patterns. Sea-level rise is a pivotal driver of environmental and socio-economic vulnerabilities in coastal areas due to salinity intrusion and coastal flooding. The intrusion of saline water into groundwater and soil occurs gradually, but its consequences are already profound. Salinity intrusion into coastal rivers and groundwater aquifers diminishes the availability of freshwater for human consumption and agricultural irrigation, significantly impacting crop yields and contributing to issues of under-nutrition and health concerns across all coastal regions.

The northwestern region encompassing Rajshahi and Rangpur divisions has been experiencing recurring below-average rainfall. While perennial river flows are present in major river systems in this region, many minor rivers lack sufficient water during the dry period, making them susceptible to drought. Historically, droughts have affected a significant portion of the country, covering 47% of its land area and impacting about 53% of the population. The Barind tract in northwest Bangladesh, considered a semi-arid region, has been facing recurrent droughts. Under the influence of climate change, a projected increase in temperatures, coupled with reduced and more erratic rainfall during the dry season, is expected to lead to a rise in the frequency of droughts, particularly in the northern and western regions of the country. This increase in droughts will result in soil dryness and hydrological

imbalances, leading to water scarcity, groundwater depletion, extremely low stream flows causing crop failures, shortages of livestock fodder, and drinking water scarcity.

The north-central flood-prone area experiences highly variable rainfall patterns in the upstream region of the Himalayan river basins. Most precipitation occurs during the monsoon season, spanning from west to east across the Hindu Kush Himalayan region. The primary climate change threat facing this region is the potential increase in floods, particularly flash floods, as a consequence of erratic upstream rainfall. Furthermore, the region contends with drought and water scarcity during the summer months. In the Northern River Basin, severe cold and dense fog pose additional challenges during the winter.

### **3.2 Impacts of Climate Change & Level of Vulnerability**

The study's comprehensive assessment delved into the effects of climate change and the levels of vulnerability within marginalized communities, with a particular focus on women and socially disadvantaged groups. The findings unveil significant challenges that cut across various dimensions.

In terms of agricultural vulnerability, small-scale agriculture and sharecropping face high susceptibility to multiple climate-related disasters throughout the year. These disasters disrupt crucial stages of crop and vegetable cultivation, from seedling preparation to planting, irrigation, growth, productivity, and harvest. Beyond agriculture, the impact on livelihoods is extensive. It affects income earned from both agricultural and non-agricultural labor. Moreover, the income of individuals living in poverty is severely affected in these three climate hotspots. The study also reveals that climate change significantly affects the livestock and poultry owned by impoverished households across all surveyed districts. Alarmingly, over 91% of respondents reported severe consequences, including increased disease prevalence due to heat stress and cold weather, resulting in reduced productivity and substantial losses during climatic disasters. Additionally, approximately 85% of respondents noted adverse effects on crop agriculture and vegetable cultivation due to climate-related factors.

In coastal villages, climate change negatively impacts various aspects beyond agriculture and wage earnings. This includes access to safe drinking water, the practice of Water, Sanitation, and Hygiene (WASH), physical infrastructure (houses and habitats), the well-being of trees and plants, the availability of cooking fuel, and food security. In the Barind areas, the most affected sectors are livestock and poultry, agriculture, and wage earning. Meanwhile, in the Northern River Basin, pronounced impacts are observed in sectors such as employment and wages, housing and habitats, the schooling and education of children, and market linkages. These challenges add to the significant impacts on livestock, poultry, and agriculture.

The findings from surveys and focus group discussions (FGDs) confirm the high vulnerability of crop agriculture, home gardening, and vegetable cultivation in all three regions. Impoverished individuals, particularly women, heavily rely on home gardens for sustenance, often cultivating them on their small plots of land. Livestock, poultry, and small-scale fisheries, which provide a basis for livelihoods in impoverished households, are also profoundly affected and highly susceptible to the stresses imposed by climate change. Trees and plants face substantial adverse effects in the Coastal Area, while their impact is somewhat less severe in the High Barind and Northern River Basin regions.

**Table 3.2: Level of Vulnerability by Key Sectors**

| Vulnerable sectors                 | Level of Vulnerability* by Regions |             |                      | All    |
|------------------------------------|------------------------------------|-------------|----------------------|--------|
|                                    | Coastal Area                       | High Barind | Northern River Basin |        |
| Small Agriculture & Share Cropping | High                               | Medium      | High                 | High   |
| Wage Earning & Income              | High                               | Medium      | High                 | High   |
| Home Gardening & Vegetable         | High                               | High        | High                 | High   |
| Trees, Plants & Orchard            | High                               | Medium      | Medium               | Medium |
| Cattle & Poultry                   | High                               | High        | High                 | Medium |
| Fisheries- Capture and culture     | High                               | Medium      | Low                  | Medium |

Source: Household Survey in 2022

**\*Level of Vulnerability:**

- **High Vulnerability:** Families and livelihoods face severe exposure and sensitivity to climate disasters, lacking adaptive capacity, leading to significant and sustained losses and damages.
- **Medium Vulnerability:** This group encounters multiple climate disasters with moderate risk and vulnerability, possessing some adaptive capacity, which results in manageable yet impactful losses.
- **Low Vulnerability:** These families and communities can reduce climate risks due to their stronger adaptive capacity, awareness, knowledge, and social networks, resulting in manageable losses.

Overall, Table 3.2 reveals that small agriculture, income, home gardening, and livestock are highly vulnerable sectors across all regions, suggesting the urgent need for adaptation strategies to address climate change impacts. Additionally, the vulnerability levels in other sectors, such as trees, plants & orchards, and fisheries, vary by region.

Table 3.3 highlights that houses and habitats, drinking water and WASH, cooking fuel, food security, and health and health services are sectors facing varying degrees of vulnerability across the regions. For instance, in the Coastal Area, these sectors consistently experience high vulnerability (e.g., houses and habitats, drinking water and WASH). In contrast, the Northern River Basin faces high vulnerability in several key areas (e.g., health and health services), reflecting the unique challenges posed by climate change in this region. The High Barind generally exhibits a lower level of vulnerability in most sectors, such as cooking fuel, due to relatively stable energy sources. These findings underscore the importance of tailored adaptation strategies to address vulnerabilities in specific sectors and regions, considering the diverse climate-related challenges faced by impoverished and socially disadvantaged groups.

**Table-3.3: Level of Vulnerability by other Key Sectors**

| Vulnerable sectors                  | Level of Vulnerability* by Regions |             |                      | All    |
|-------------------------------------|------------------------------------|-------------|----------------------|--------|
|                                     | Coastal Area                       | High Barind | Northern River Basin |        |
| <b>Small Business</b>               | Medium                             | Low         | Medium               | Medium |
| <b>Houses &amp; Habitats</b>        | High                               | Medium      | High                 | High   |
| <b>Drinking water &amp; WASH</b>    | High                               | Medium      | High                 | High   |
| <b>Cooking Fuel</b>                 | High                               | Medium      | Medium               | Medium |
| <b>Food Security</b>                | High                               | High        | Medium               | High   |
| <b>Health &amp; Health Services</b> | Medium                             | Medium      | High                 | Medium |

Source: Household Survey & FGDs

The comprehensive analysis of vulnerability and the impacts of climate change across different regions in Bangladesh reveals several critical insights. The country's diverse climatic regions are exposed to a range of climate hazards, leading to varying levels of vulnerability. The survey and PRA findings highlight the significant impact on the working potential and opportunities of impoverished individuals, with a particular emphasis on women. Cyclones and floods in the Coastal Area and Northern River Basin regions have severely restricted the mobility of women and Persons with Disabilities (PwD). Additionally, access to resources and markets has been disrupted by climatic disasters across all study areas. These communities often face economic crises during disasters, depleting family savings, particularly when individuals are unable to engage in outdoor work due to events such as floods, cyclones, and severe cold waves. These findings underscore the importance of tailored adaptation strategies that consider the diverse climate-related challenges faced by impoverished and socially disadvantaged groups in different regions. Investments in sectors like houses and habitats, drinking water and WASH, cooking fuel, food security, and health services are crucial for building climate resilience in vulnerable regions like the Coastal Area and the Northern River Basin.

### 3.3 Survey Insights on Most Vulnerable Groups

The survey gathered valuable insights into the most vulnerable groups within the study areas. An overwhelming 95% of the respondents identified women living in poverty as the most vulnerable group in the project villages. Additionally, families living in poverty (43%), women-led households (43%), and wage earners (52%) were also recognized as highly vulnerable to the impacts of climate change, along with other forms of social and institutional deprivation. Persons with Disabilities (PwD) (25%), elderly individuals (35%), and children (19%) were acknowledged as vulnerable to various climate disasters in all three regions. This vulnerability also extended to small-scale farmers, sharecroppers, and fishers.

**Table-3.4: Perceptions of Most Vulnerable Groups by Study Participants**

| Categories of people                   | Regions (%)             |                        |                                 | All (%)*<br>(N=432) |
|--|-------------------------|------------------------|---------------------------------|---------------------|
|  | Coastal Area<br>(N=133) | High Barind<br>(N=149) | Northern River Basin<br>(N=150) |                     |
| <b>Poor Women</b>                      | 99.2%                   | 89.3%                  | 98.0%                           | 95.4%               |
| <b>Poor families</b>                   | 78.9%                   | 29.5%                  | 24.0%                           | 42.8%               |
| <b>Women-led families</b>              | 69.2%                   | 22.1%                  | 39.3%                           | 42.6%               |
| <b>Wage earners</b>                    | 69.9%                   | 41.6%                  | 47.3%                           | 52.3%               |
| <b>Small Farmers</b>                   | 20.4%                   | 22.8%                  | 26.0%                           | 24.7%               |
| <b>Sharecroppers</b>                   | 6.8%                    | 11.4%                  | 14.0%                           | 10.9%               |
| <b>Fishermen</b>                       | 17.3%                   | 5.4%                   | 2.7%                            | 8.1%                |
| <b>Rickshaw &amp; Van driver</b>       | 22.6%                   | 8.7%                   | 14.7%                           | 15.0%               |
| <b>Marginal occupational groups</b>    | 15.0%                   | 8.1%                   | 4.7%                            | 9.0%                |
| <b>Persons with disabilities (PwD)</b> | 55.6%                   | 6.7%                   | 14.7%                           | 24.5%               |
| <b>Elderly people</b>                  | 67.7%                   | 10.7%                  | 29.3%                           | 34.7%               |
| <b>Children</b>                        | 33.8%                   | 10.1%                  | 16.0%                           | 19.4%               |
| <b>Transgender</b>                     | 0.8%                    | 0.7%                   | -                               | 0.5%                |
| <b>Others</b>                          | 4.5%                    | 0.7%                   | 0.7%                            | 1.9%                |

\*Multiple Responses

Significant gender-related vulnerabilities in different regions (Table 3.5) emphasize the multifaceted challenges faced by women due to climate change. Notably, women in the Coastal Area experience the need for extra time in water collection and food preparation, while the Northern River Basin reports the highest burden of health risk management for children. Reproductive health is significantly affected in the Coastal Area, and family conflicts related to financial crises are prevalent across regions, particularly in the High Barind and the Northern River Basin. The data also highlights reduced consumption of food and water and compromised safety and security for women, especially in the Coastal Area. Deprivation of proper bathing and cleanliness practices is common, particularly in the Northern River Basin. These findings underscore the urgency of gender-sensitive adaptation measures to address these vulnerabilities and ensure the well-being of women living in poverty in the face of climate change impacts.

**Table-3.5: Social Causes & Gender Drivers of Women’s Vulnerability**

| Response  | Regions (%)             |                        |                                    | All (%)*<br>(N=431) |
|---|-------------------------|------------------------|------------------------------------|---------------------|
|   | Coastal Area<br>(N=133) | High Barind<br>(N=148) | Northern<br>River Basin<br>(N=150) |                     |
| <b>Extra time is needed for collecting water</b>            | 95.5%                   | 35.8%                  | 50.7%                              | 59.4%               |
| <b>Extra time is needed for preparing food</b>              | 80.5%                   | 41.2%                  | 58.0%                              | 59.2%               |
| <b>Burden of health risk management of children</b>         | 79.7%                   | 51.4%                  | 60.7%                              | 63.3%               |
| <b>Reproductive health is badly affected</b>                | 75.9%                   | 13.5%                  | 31.3%                              | 39.0%               |
| <b>Family conflicts over financial crisis</b>               | 71.4%                   | 61.5%                  | 59.3%                              | 63.8%               |
| <b>Consume of less amount of food &amp; water</b>           | 57.1%                   | 31.8%                  | 32.0%                              | 39.7%               |
| <b>Women’s safety &amp; security is hampered</b>            | 60.9%                   | 24.3%                  | 41.3%                              | 41.5%               |
| <b>Deprived of proper bathing and cleanliness practices</b> | 60.9%                   | 31.8%                  | 34.7%                              | 41.8%               |

\*Multiple Responses

The social factors that exacerbate the risks and vulnerabilities faced by women and girls vary among the regions, as further elucidated in the Focus Group Discussions (FGD) and Key Informant Interviews (KII) reports provided in Appendix 3.

A deeper understanding of the challenges faced by marginalized communities and women in the study regions, including issues related to landlessness and the occupation of Khas lands, emerges from the insights gleaned through those FGDs and KIIs. Along the Coastal Area, landless individuals predominantly reside near embankments, while in the High Barind region, they tend to cluster around Khas ponds and railway stations. In contrast, residents of the Northern River Basin areas mostly inhabit riverbanks or rely on neighboring lands, either through informal agreements or rentals. In each of these scenarios, these segments of the population find themselves highly exposed to extreme events, such as cyclones in the Coastal Area, Nor'westers and droughts in the High Barind, or floods and river erosion in the Northern River Basin region. Consequently, the vulnerability of impoverished women and socially marginalized groups is compounded. Climate-induced human displacement and out-migration further elevate the vulnerability of families living in extreme poverty. With male household members often working outside the home for income, women from impoverished households in the study areas assume full responsibility for their families, enduring hardship during disasters and lean periods. Additionally, their income generated from activities like homestead gardening, poultry rearing, and livestock farming is adversely impacted by disasters, and they struggle to recover.

# **Chapter- 4: Social and Institutional Causes of Vulnerability of Marginalised People and Impoverished Women**

Climate change and its associated disasters pose significant risks to families and communities. Vulnerability is a complex outcome shaped by the interaction of climate-related impacts, socio-economic conditions, and social and institutional factors within a specific geographical context. Privileged individuals often possess the knowledge, resources, and capacity to understand, avoid, and mitigate risks, while those living in poverty, especially impoverished women and socially excluded groups, lack such advantages. Consequently, they are highly vulnerable due to their heightened exposure and sensitivity to climate disasters and their limited adaptive capacity. This vulnerability is deeply rooted in the social system, institutional framework, gender dynamics, and governance. While the previous chapter detailed the physical aspects and vulnerability factors, the subsequent sections will delve into the numerous social and institutional contributors to the vulnerability experienced by people living in poverty, with a particular focus on impoverished women, drawing on evidence and insights from the study areas.

The study has identified various social and institutional causes that enhance the vulnerability of people living in poverty, women in particular, and socially disadvantaged communities. These institutional causes include the lack of responsiveness and accountability of the LGIs and local actors, poor governance, and the dominance of power-elite relations that disadvantage people living in poverty and women in particular in all the study areas. In many cases, people living in poverty and impoverished women do not have good relationships and linkages with the LGIs and local elected representatives, creating barriers to accessing government support and services. This is linked with climate justice issues and the entitlement of people living in poverty, and impoverished women, to resources and services for adaptation, DRR, and livelihood protection.

## **4.1 Institutional Causes of Vulnerability**

### **4.2.1 Barriers to Social Safety Net Programmes (SSN) Access for Vulnerable Communities**

The government of Bangladesh has implemented several Social Safety Net (SSN) programmes designed to provide support to vulnerable populations, including impoverished individuals, elderly women, and Persons with Disabilities (PwD). These programmes, such as Vulnerable Group Development (VGD) and Vulnerable Group Feeding (VGF), aim to enhance food security and offer financial assistance to widows and elderly individuals. These initiatives are crucial for reducing the risks and vulnerabilities faced by these groups during and after climate-related disasters such as floods, cyclones, and tidal surges.

However, the effectiveness of these SSN programmes is often hindered by institutional weaknesses and corruption, resulting in many people living in extreme poverty and other vulnerable communities being unable to access the benefits they desperately need. The survey conducted as part of this project sought to gather insights from participants regarding their experiences with SSN programs and Local Government Institutions (LGIs). It revealed that the quality of relationships with duty bearers plays a significant role in determining access to SSN support. Unfortunately, only 8.3% of vulnerable community members across all regions reported being well-connected with these authorities (cf. Appendix 6, Table 4.1). The perception among people living in poverty and other vulnerable groups is that duty bearers are unfriendly to them due to their socio-economic status, further exacerbating the challenges they face in accessing vital SSN resources. This underscores the importance of addressing institutional weaknesses and promoting transparency and fairness in the distribution of SSN benefits to ensure that those most in need receive the support they require. Many individuals, especially those living in poverty and women, often struggle to assert their demands and rights when it comes to accessing information about SSN programmes. Additionally, they face significant barriers in obtaining loans from NGOs and other sources, primarily due to the perception that they may not be able to repay loans in a timely and proper manner. Their social status and the prevailing power dynamics within society compel them to endure an environment characterized by intimidation and fear. Furthermore, corruption adds another layer of challenge for people living in poverty and marginalized groups. This corruption takes the form of having to pay extra money to obtain essential services from duty bearers, such as deep tubewells in the northern regions or water treatment plants in the Coastal Area. These obstacles underscore the urgent need for reforms and measures to promote transparency, inclusivity, and equal access to resources and information, ensuring that individuals in vulnerable situations are not further marginalized by systemic issues and power imbalances.

Findings related to access to SSN support in the study regions over the past 2-3 years are presented in Table 4.1. The data reveals that a majority of respondents, representing 57% of the overall sample, reported not receiving SSN support during this period. This trend was most pronounced in the Coastal Area, where 66% of respondents indicated a lack of SSN support. In contrast, 43% of respondents overall reported receiving SSN support, with the highest proportion in the Northern River Basin (47%), followed by the High Barind region (45%).

These findings highlight disparities in SSN programme access among different regions, with a significant portion of respondents, especially in the Coastal Area, not benefiting from these social safety nets. The data underscores potential challenges in the SSN implementation, outreach, and accessibility, which may disproportionately affect vulnerable communities, including people living in poverty and marginalized groups. To address these disparities and ensure equitable access to SSN programmes, targeted efforts and improvements in institutional capacity and governance are imperative, as revealed by the survey results.

**Table 4.1: SSN Support Received in the Previous 2-3 Years**

| <b>Response</b> | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=434)</b> |
|-----------------|-------------------------|------------------------|---------------------------------|------------------------|
| <b>No</b>       | 65.7                    | 54.7                   | 52.7                            | 57.4                   |
| <b>Yes</b>      | 34.3                    | 45.3                   | 47.3                            | 42.6                   |

## 4.2.2 Shortcomings in Assessing and Meeting Needs of Vulnerable Communities during Climate Disasters

The needs and demands of people living in poverty and other vulnerable communities are not adequately addressed by the concerned authorities according to the majority of respondents (71%). The table (Table 4.2) sheds light on the assessment of needs in the context of climate disasters by Local Government Institutions (LGIs) and duty bearers in different regions. Notably, a substantial proportion of respondents in certain regions indicated that their needs were not adequately assessed. In the High Barind region, 49% of respondents reported that their needs were not well assessed, and in the Northern River Basin, 30% shared the same sentiment. These regional disparities highlight the need for improved need assessment processes, particularly in areas where vulnerable communities may not be receiving the necessary attention and support during climate disasters. In contrast, the Coastal Area exhibited a comparatively higher rate (53%) of perceived well-assessed needs. Effective need assessment is crucial to ensuring that all regions receive the appropriate support during climate-related challenges. Still, a good need assessment does not ensure better SSN support for communities that live in poverty due to existing socio-economic factors as mentioned in 4.1.1.

**Table 4.2: Assessment of Adequacy in Addressing Needs During Climate Disasters by LGIs and Duty Bearers**

| Response  | Coastal Area (%) | High Barind (%) | Northern River Basin (%) | All (%) (N=434) |
|-----------|------------------|-----------------|--------------------------|-----------------|
| Sometimes | 29.1             | 34.0            | 49.3                     | 37.8            |
| No        | 17.9             | 48.7            | 30.0                     | 32.7            |
| Yes       | 53.0             | 17.3            | 20.7                     | 29.5            |

## 4.2.3 Gender Disparities and Awareness Gaps in Disaster Management

The women participants of the FGDs from Shyamnagar (Satkhira), Atrai (Naogaon), and Lalmonirhat Sadar (Lalmonirhat) regions revealed significant barriers faced by people living in poverty, especially impoverished women, in challenging the malpractices of LGIs. Their marginalized societal status often prevents them from asserting their rights to food and essential government services. Additionally, gender-related factors, such as entrenched patriarchal norms and values, further limit the mobility and decision-making power of women and girls living in poverty, PwD, and socially disadvantaged groups across all study areas. These vulnerable populations are disproportionately affected by climate disasters, yet they have limited access to local disaster management committees. While a few female members are part of the Union Disaster Management Committees (UDMCs), their input is often disregarded in disaster management planning at the Union Parishads, as well as in the distribution of relief goods and disaster support following events like floods and cyclones. These findings underscore the urgent need to address gender-specific challenges in empowering vulnerable communities and ensuring their inclusion in disaster management and relief efforts.

The survey findings indicate a noteworthy disparity in respondents' awareness of Union Disaster Management Committees (UDMCs) across the study regions. A substantial 65% of all respondents

reported a lack of awareness regarding the existence of UDMCs. This disparity was more pronounced in the Coastal Area (82%), followed by the High Barind region (69%) and the Northern River Basin (45%). Conversely, 35.3% of all respondents stated that they were aware of UDMCs, as shown in Table 4.3. This variation highlights a crucial gap in disaster management awareness and suggests a need for targeted efforts to inform and engage vulnerable communities in disaster preparedness and response initiatives.



"The beneficiaries of agricultural and rehabilitation support are usually chosen by committees that are largely controlled by local influential figures. If our opinions were considered, the support would go to the truly affected farmers."

**Birendranath Ray, Sub Assistant Agriculture Officer, Aditmari, Lalmonirhat**

**Table 4.3: Awareness of Union Disaster Management Committees (UDMCs) Among Respondents**

| Response | Coastal Area (%) | High Barind (%) | Northern River Basin (%) | All (%) (N=434) |
|----------|------------------|-----------------|--------------------------|-----------------|
| No       | 82.1             | 69.3            | 44.7                     | 64.7            |
| Yes      | 17.9             | 30.7            | 55.3                     | 35.3            |

The social status and marginalization of individuals and communities living in poverty further exacerbate their vulnerability to disasters. Notably, they are often excluded from local decision-making processes related to disaster preparedness. Approximately 50% of individuals who are aware of the existence of Union Disaster Management Committees (UDMCs) have never participated in UDMC meetings. This lack of participation is particularly prevalent in the Coastal Area, with 95.7% of individuals in this region not having engaged in UDMC meetings, followed by the High Barind region at 60.5%. In contrast, the Northern River Basin region exhibited a relatively higher participation rate in UDMC meetings, with 64.2% of individuals having taken part, as indicated in Table 4.2 in Appendix 6. These observations underscore the need for more inclusive and participatory disaster management strategies, especially for marginalized communities.

Community members also face challenges in receiving early warning messages in a timely manner and in their local language, hampering the disaster preparedness of vulnerable populations. Moreover, approximately 65% of respondents from all three study regions noted the absence of suitable conditions and facilities in cyclone and flood shelters, discouraging their utilization during disasters. Additionally, these shelters often lack dedicated spaces and proper toilet facilities for women and girls. Insights from Focus Group Discussions (FGDs) also revealed that adult and elderly women are frequently tasked with remaining at home to safeguard small properties, livestock, and poultry, which cannot be accommodated in shelters. These findings underscore the need for improved communication strategies, gender-sensitive shelter planning, and disaster preparedness measures for the affected communities.



"The cyclone shelters become very crowded during cyclones. Male and female members have to stay together, which is both embarrassing and insecure for us."

**Quote from Focus Group Discussion with women's group in Satkhira.**

#### **4.2.4 Limited Job Opportunities, Especially for Impoverished Women and Those Living in Poverty**

Income generation for landless individuals primarily relies on agricultural wage labour, but the adverse impacts of climate disasters are diminishing employment opportunities for marginalized and impoverished communities. Findings from the Focus Group Discussions (FGDs) reveal that marginalized, impoverished, and wage-earning segments experience higher income levels only during paddy harvesting seasons (Boro and Aman). However, to sustain this, they must work within their localities and migrate to other parts of the country. Wage labourers from the northern regions frequently travel to Khulna, Munshiganj, Tangail, Gazipur, Faridpur, Gopalganj, and other districts to offer their labor for crop harvesting, while those from the southwest region follow a similar pattern.



"Indigenous communities in the Barind Tracts and other parts of northern Bangladesh were previously not accustomed to labor migration. However, due to the conversion of agricultural lands to horticulture, these communities are losing on-farm wage-earning opportunities. They are now forced to migrate to other parts of the country to earn a living."

**Jahangir Alam Khan, Project Coordinator, IWRM Project, DASCOR, Rajshahi.**

According to the household survey, approximately 50% of individuals turn to alternative livelihoods during disasters, such as working in brickfields in other districts or engaging in rickshaw pulling in urban areas. Regional variations indicate a more pronounced impact in the Coastal Area (72%) compared to the Northern River Basin (52%) and the High Barind region (27%). Conversely, about 45% of respondents do not transition to these alternative sources of income, with the majority hailing from the High Barind (69%), followed by the Northern River Basin (37%), and the Coastal Area (25%) (cf. Appendix 6, Table 4.3).

## 4.3 Social Causes of Vulnerability

### 4.3.1 Gender Barriers and Community Relations in Disaster Management

Gender-related factors, encompassing deeply ingrained patriarchal norms and values, exert a significant influence on the mobility and decision-making capabilities of marginalized women, girls, PwD, and socially disadvantaged groups across all study regions. Despite being disproportionately affected by climate disasters, individuals living in poverty, particularly women, frequently encounter barriers preventing their participation in local disaster management committees at the Union Parishad (UP) level, limiting their ability to influence decisions in favour of those living in poverty, including impoverished women.

Additionally, disaster-prone communities often lack robust relationships with their relatives and neighbors, essential for mitigating suffering during pre-disaster, disaster, and post-disaster phases. Approximately 92% of respondents from all study regions indicated that they do not maintain strong connections with their relatives and neighbours (cf. Appendix 6, Table 4.4). This finding suggests a potential gap in social support networks, which is crucial for building resilience in the face of climate change impacts.

The absence of strong bonds within communities may be attributed to factors such as poverty, the scarcity of natural resources, and the migration of family members to other areas for employment, preventing community members from providing essential monetary assistance to one another during times of need.

“

"Social relations are severely impacted during and after floods. Male family members are forced to migrate to cities to earn a living. We have to create temporary shelters in the neighbourhood and on the roads, but if the floods persist for a long time, we suffer greatly. We don't receive adequate support from any source during disasters."

**Quote from Focus Group Discussion with women's group in Kurigram.**

# Chapter- 5: Climate Change Induced Conflicts and Challenges

## 5.1 Key Drivers of Social Conflicts in the Three Regions

The enduring repercussions of climate-induced conflicts at familial and societal levels are profound. These manifest in extended absences of male family members seeking employment elsewhere, diminishing natural resources, and escalating disaster-induced damages and losses experienced by impoverished and marginalized communities. **A discernible decline in livelihood opportunities, particularly in the face of mounting climate disaster impacts, has intensified the outmigration of families living in poverty.** Notably, evidence suggests that, in numerous cases, entire families migrate in staggered phases to new locales. Respondents from all three study areas (cf. Table 5.1) concurred on the escalation of social conflicts (64%) during disasters. Meanwhile, 27% observed it occasionally, and only 9% believed it to be non-existent. Regionally, the Coastal Area records the highest rate of climate change-induced social conflicts at 82%, followed by High Barind at 61%, and Northern River Basin at 49%.

**Table 5.1: People's Perception Regarding Increase of Conflict During and After Disasters**

| Response  | Coastal Area (%) | High Barind (%) | Northern River Basin (%) | All (%) (N=434) |
|-----------|------------------|-----------------|--------------------------|-----------------|
| Yes       | 82.8             | 60.7            | 49.3                     | 63.6            |
| Sometimes | 9.0              | 32.0            | 39.3                     | 27.4            |
| No        | 8.2              | 7.3             | 11.3                     | 9.0             |

The FGDs and KIs highlight various fundamental social and institutional factors acting as catalysts for conflicts among respondents living in poverty. Key concerns encompass institutional shortcomings at grassroots levels, an absence of transparency and accountability within LGIs and local representatives, suboptimal governance, and prevailing power-centric elite relationships within the community. People living in poverty, especially women, often encounter barriers when attempting to access SSNs provided by responsible authorities, primarily due to pervasive corruption and partisan political influences. Additionally, **conflicts frequently emerge from competition over vital resources, such as freshwater and grazing lands, particularly in coastal regions.** While such disagreements have historical precedence in these areas, recent environmental challenges, notably increasing water salinity and flooding, have amplified the occurrence of these disputes.

In coastal zones, the escalating demand for clean water, along with the need for nearby sanitation and health services, has given rise to community-level discord. Individuals on the societal periphery often find themselves bereft of institutional backing, attributed largely to gaps in effective governance and a lack of transparency in procedural support from institutions.



"When we seek social safety net support from the UP chairman and UP members, they initially claim that they don't have adequate allocations. Later, they demand money from us, which we usually cannot provide. However, some of our neighbors manage to meet their demands, leading to bitter relations among us."

**Quote from Focus Group Discussion with women's group in Satkhira.**

In coastal zones, the escalating demand for clean water, along with the need for nearby sanitation and health services, has given rise to community-level discord. Individuals on the societal periphery often find themselves bereft of institutional backing, attributed largely to gaps in effective governance and a lack of transparency in procedural support from institutions.

In the High Barind region, the shift from traditional agriculture to horticulture has reduced opportunities for indigenous communities in livestock rearing, agriculture, and on-farm wage earning. Horticulture requires less labour than traditional farming methods. For instance, in a mango orchard, wage earners find employment mainly during the flowering and harvesting periods of mangoes, lasting 2-3 months. In contrast, vegetable farms or paddy fields offer consistent work throughout the year for those wage-earners.



"We receive a smaller budget allocation compared to the demands of our people. As a result, we cannot adequately compensate disaster-affected farmers. Marginalized individuals often have to take loans from moneylenders and NGOs, adding to their burden. We frequently have to mediate conflicts between communities, NGOs, and moneylenders over loan repayments. Marginalized people are becoming poorer and are migrating to different places to earn a living. Additionally, the lack of an adequate number of wage laborers during the harvesting period has become another crisis for us."

**Md. Jamal Uddin, Chairman, Sadar Union, Gomastapur Upazila, Chapainawabganj**

Within the High Barind region, smaller ethnic and peripheral communities primarily reside near Khas ponds, roads, and railway stations. Recently, these areas are transitioning to commercial uses, such as fish farming by business entities, infringing upon the communal rights of these communities. This shift restricts their traditional use of the ponds. Any deviations from the new rules set by the commercial fish cultivators often lead to legal consequences or direct confrontations. Additionally, these

communities find limited representation in local decision-making platforms where they might seek redress for injustices faced.

In the Northern River Basin, communities living in poverty and those marginalized face the repercussions of river erosion. Typically, they set up new dwellings on Khas land near roads or negotiate arrangements to occupy neighbouring lands, either through mutual agreements or temporary rentals. These communities often find themselves subjugated by dominant local elites, evident in issues such as wage discrimination or exploitative lending practices where they're compelled to commit future labour at rates set by the employers. The decline in influential farmers, rising agricultural production costs for sharecroppers, and insufficient resource allocations contribute to heightened conflicts at familial, societal, and communal levels.

## 5.2 Manifestation of Conflicts at Family and Community Levels

The study reveals distinct regional variations in conflict types related to environmental stresses in Bangladesh (cf. Table 5.2). In the Coastal Area, an overwhelming 98% of respondents reported family conflicts arising from the extra time women take for collecting water and bathing, a percentage significantly higher than the 60% and 51% observed in the High Barind and Northern River Basin regions respectively. Overall, this type of conflict affects about 69% of the surveyed population. Furthermore, the Coastal Area and Northern River Basin display higher rates of conflict over fuel wood collection, at 84% and 72% respectively, compared to a much lower 45% in the High Barind region. Overall, 66% of all respondents identified this as a source of conflict. However, when it comes to conflicts over natural resource collection, the percentages are considerably lower across all regions, with the Coastal Area at 49% being the highest, and both the High Barind and Northern River Basin hovering around 26%. The average across all areas for this type of conflict is 33%. The data underscores the heightened environmental stresses in the Coastal Area, where conflicts related to water, fuel wood, and natural resources are more prevalent compared to the other regions.

**Table 5.2: Types of Conflicts at the Family, Community, and Social Level Due to Climate Change Disasters**

| Types of Conflicts   | Coastal Area (%) | High Barind (%) | Northern River Basin (%) | All (%) (N=428) |
|--|------------------|-----------------|--------------------------|-----------------|
| Family conflict over taking extra time by women for collecting water and bathing | 97.7             | 60.4            | 50.7                     | 68.7            |
| Conflict over fuel wood collection   | 84.2             | 45.0            | 71.9                     | 66.4            |
| Conflict over Natural resource collection  | 48.9             | 26.2            | 26.0                     | 33.2            |

Table 5.3 provides insight into community-level conflicts attributed to climate change across various regions of Bangladesh. One striking observation is the pronounced livelihood crisis in the Coastal Area, where 75% of respondents indicate that slow-onset climate changes accelerate family feuds, a percentage remarkably higher than the 17% in the High Barind and 6% in the Northern River Basin. This yields an average of 31% across all surveyed regions. Health hazards stemming from climate change impacts have been identified as another major concern, leading to escalated medical expenses and consequent family tensions. A significant 83% of the Coastal Area's respondents recognized this, while both the High Barind and Northern River Basin displayed similar responses at 69% and 69% respectively, averaging to 73% across all areas. Lastly, the migration of men seeking improved livelihoods presents varied vulnerabilities across regions. In the Northern River Basin, a notable 73% acknowledged that such migration makes families more susceptible to gender-based violence (GBV) and other forms of harassment. This concern is also evident in the Coastal Area at 67%, though slightly less pronounced in High Barind with 36%. On average, 59% of the total respondents across all regions indicated this as a major challenge. In sum, while each region faces unique challenges, the Coastal Area appears particularly vulnerable to multiple climate change-induced conflicts, from livelihood disruptions to health concerns and migration-related vulnerabilities.

**Table 5.3: Conflicts at the Community Level Due to Climate Change**

| <b>Types of Conflicts</b>   | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=424)</b> |
|---|-------------------------|------------------------|---------------------------------|------------------------|
| <b>Livelihood crisis in the context of slow onsets accelerates family feud</b>  | 75.2                    | 16.6                   | 5.5                             | 31.1                   |
| <b>Health hazards due to climate change impacts accelerate medical expenses resulting in increased family tensions</b>                                  | 82.7                    | 69.0                   | 68.5                            | 73.1                   |
| <b>Migration of men to another place in search of better livelihood sometimes makes their families vulnerable to GBV and other forms of harassment.</b> | 66.9                    | 35.9                   | 73.3                            | 58.5                   |

Climate change repercussions have intensified the pre-existing livelihood challenges faced by marginalized communities across all three studied regions. Notably, conflicts have seen a rise in several key domains: fuel-wood collection (53%), collection of animal feed (47%), resource gathering (43%), water procurement (39%), and livelihood losses (37%), among others. Such conflicts are more pronounced in the coastal regions compared to the other two. Nonetheless, the livelihood challenges attributed to climate change remain consistently significant across all regions. For further details, refer to tables in Appendix 6.

Across all regions, migration in search of better livelihoods carries with it a cascade of secondary consequences, not least of which is an increased vulnerability of families to various forms of harassment. The prominence of this concern in the data suggests that climate change impacts are not just immediate and direct but also manifest in more complex, indirect socio-economic repercussions. In essence, while the regions of Bangladesh face shared challenges due to climate change, the manifestation of conflicts and their underlying causes differ. These regional specificities, intertwined with broader socio-economic and gender dynamics, highlight the need for nuanced, tailored interventions to address the multi-faceted impacts of climate change.

### **5.3 Climate Change as Driver for Social Conflicts**

A general trend in the impact of disasters on the livelihoods of vulnerable communities across various regions is evident. A significant majority, averaging 60% across all regions, report being highly affected by disasters, experiencing substantial loss and damages to basic infrastructures, amenities, and livelihood assets, leading to increased dependency on others for survival. Only a small percentage, about 3% on average, experience minimal negative impacts, demonstrating a resilience that allows them to quickly bounce back (cf. Appendix 6, Table 5.1).

The findings from the study highlight an increasing trend in social conflicts across all three study regions in Bangladesh, largely attributed to increased competition exacerbated by climate-related stresses. The data indicates a significant rise in conflicts related to occupation, with an average of 59% across all regions, specifically in the Coastal Area (87%), signalling heightened competition for jobs. Similarly, there is a notable increase in competition over resource collection (43%), water collection (39%), and cooking fuel wood collection (54%). These figures suggest that the scarcity of natural resources, intensified by climate change impacts such as droughts and floods, is leading to more frequent conflicts over their access and utilization. Competition for animal food collection, reported by an average of 48% of respondents, further underlines the stress on agricultural and livestock resources due to changing climatic conditions. While conflicts arising from loss of land, livelihood, and natural resources are comparatively less prevalent, they remain significant concerns, with the loss of livelihood being reported by 37% of respondents. Overall, the data paints a concerning picture of increasing social tensions in Bangladesh, where the struggle for basic necessities and economic security is becoming more pronounced in the face of climate change-induced challenges (cf. Appendix 6, Table 5.2).

The findings from FGDs and KII's underscore that environmental challenges such as cyclones, salinity surges, heightened tides, and unpredictable rainfall patterns have significantly curtailed employment prospects for communities living in poverty, particularly in the coastal areas. These climatic adversities also inflict damage to homes, sanitation facilities, and water sources. Post-disaster, when these disadvantaged communities endeavour to gather mud and soil from agricultural lands to mend their dwellings, they often face disparagement from landowners. Furthermore, restrictions imposed on their use of communal latrines and ponds sow seeds of tension. This strained dynamic frequently evolves into broader social conflicts, with climate change acting as a catalyst.

In the High Barind and Northern River Basin, feedback from FGDs indicated that marginalized sharecroppers are grappling with cultivation challenges, owing to escalating production costs driven by droughts. Simultaneously, vast tracts of agricultural land owned by large landholders are being transformed into fruit orchards, primarily because they demand less irrigation than traditional crops. This shift exacerbates employment scarcity for the local populace. Consequently, many male residents seek employment elsewhere, but often their earnings fall short of expectations, resulting in familial strife that occasionally culminates in separations or divorces. Women and other family members remaining in the villages confront a spectrum of challenges. Not only do they receive reduced wages in guava and mango orchards, but the diminishing grazing lands also hinder effective livestock rearing. Trespasses of livestock into orchard gardens lead to imposed fines. Furthermore, during droughts and floods, they grapple with water and sanitation facility shortages, and any attempts to avail these amenities from neighbors' properties are met with rebuke.

### **Box 1: Insights from Community Leaders on Vulnerability and Social Conflict Drivers**

A workshop of national stature convened in Dhaka, aimed at broadcasting and verifying the study's findings. Throughout this seminar and the ensuing validation session, invaluable insights emerged from the community leaders.

**Ms. Ananda Mayee of Satkhira**, a coastal district, voiced concerns about the repercussions of climate change on the Sundarbans' water, agricultural, and forest assets. Local governance structures, influential elites, and the forest department have imposed limitations on access to freshwater and forest resources, particularly for women and indigenous communities living in poverty. These constraints have fostered social disagreements over essentials like cooking fuel and potable water in coastal settlements. Although disagreements between impoverished residents and local shrimp farm proprietors have spanned two to three decades, climate-induced changes, like escalating salinity levels and recurrent cyclones, have amplified these issues, heightening the vulnerability of women and other impoverished residents.

**Ms. Padma Rani**, hailing from Chapai Nawabganj, recounted the persistent droughts plaguing the High Barind regions. Characterized by sporadic and diminished rainfall, acute water shortages, and intensified heat stress, the locality grapples with consecutive annual threats to small-scale agriculture, home gardening, wage opportunities, and health. This exacerbates food insecurity and poverty. Access to communal ponds, typically under government ownership but leased to the affluent, remains a challenge. Tensions arise even when ethnic women seek drinking water from government-initiated irrigation projects, given that these are dominantly controlled by wealthier farmers.

**Ms. Alfa Tudu** from Dinajpur (High Barind) articulated her apprehensions surrounding prolonged droughts, erratic rainfall patterns, intensified heat stress, and winter cold waves. As extended summers and rainfall shortages alter farming and cropping rhythms, the resultant shifts affect employment opportunities, wage prospects, and small-scale agricultural endeavors. Climate change has detrimentally impacted agricultural yields, thereby magnifying poverty in the region.

## 5.4 Current Approaches to Conflict Resolution and Associated Challenges

In the study areas, current measures for addressing climate-induced conflicts appear insufficient. Local mediation is the most prevalent resolution mechanism, employed in 70% of cases, followed by interventions by elected officials and community leaders (47%), dialogue fostering mutual understanding (39%), and legal actions (26%). The Coastal Area, having a heightened incidence of social conflicts, often resorts to legal avenues for resolution. Notably, in the Northern River Basin, the involvement of elected representatives and local leaders in mediating disputes stands at 51%, slightly surpassing the coastal area's 51% and considerably ahead of the High Barind's 40% (cf. Appendix 6, Table 5.3).

Local political dynamics, which often marginalize vulnerable communities and remain largely under the sway of dominant local powerbrokers, emerge as a significant impediment to the resolution of livelihood conflicts, accounting for 61% of such challenges. This is closely followed by a prevailing distrust amongst community members (58%) and competitions over natural resource allocations (49%) (cf. Appendix 6, Table 5.4). Community leaders believe that successful conflict resolution hinges upon mutual trust, transparency, and mutual respect. Given that rural societies comprise varied segments and self-interested factions, achieving consensus on contentious issues and resolving disputes at the grassroots level becomes particularly challenging.

### **Box 2: Overview of Case Studies on Conflict Dynamics and Transformation Across Three Ecological Zones - A study conducted by Prof. Meghna Guhathakurta**

Following on from this study, Professor Meghna Guhathakurta undertook a separate research project focusing on the roots of vulnerability and conflict dynamics, using specific cases as examples. Key insights and advocacy points from the project have been collated, documented, and shared with pertinent stakeholders. Within the overarching study, three distinct ecosystems from the project's target area have been demarcated:

- The drought-susceptible terrains of the High Barind Tract situated in Naogaon.
- The Coastal Area in southwestern Bangladesh, specifically Shatkhira.
- The Northern River Basin located in Kurigram.

The primary focus of this segment is to pinpoint three case studies that encapsulate conflict/dynamics, be they community-driven or intra-household. These case studies will scrutinize the impacts on local communities and residents and propose pathways to non-violent conflict resolution. The case studies are titled:

- Case 1: The case of the Atrai River dredging conflict.
- Case 2: From abandonment to marginalization- the case of Reema Rahman
- Case 3: Ecological risks incite domestic conflict- the case of Sadia Akter

For a more in-depth exploration, please refer to Appendix 7.

# **Chapter- 6: Role of Women and Actors in Gender Responsive Adaptation and Social Conflict Management**

Marginalized individuals living in poverty often have limited adaptive capabilities, especially given the increasing intensity and frequency of environmental disasters. Effective and strategic adaptation requires new knowledge, heightened awareness, and refined skills. However, these capacities are often absent, hindered by prevailing socio-economic conditions, entrenched local power hierarchies, limited resources, and weak linkages with responsible authorities and Local Government Institutions (LGIs).

Several common resilience strategies employed by these communities include seeking refuge on roads and embankments during cyclonic events and floods; securing financial aid from relatives and acquaintances; taking loans from informal lenders at exorbitant interest rates; liquidating assets such as poultry and livestock, often below market value; pre-committing to wage labor; relocating in pursuit of better opportunities; and diversifying employment into sectors like brick kilns or rickshaw-pulling. Unfortunately, these measures often fall short in ensuring a dignified quality of life and overall wellbeing.

## **6.1 Adaptive Capacity of coping mechanism of the People Living in Poverty and Impoverished Women in particular**

Adaptive capacity refers to the inherent ability of systems, communities, or individuals to adjust to climate change, moderating its potential impacts and reducing current and future risks. In contrast, adaptation to climate change is a deliberate process of making adjustments in response to both actual and anticipated climatic changes and their effects on human, social, and ecosystems.

A substantial majority of respondents across all regions feel they lack the capacity to independently manage the impacts of climate change. Specifically, the Coastal Area has the highest percentage of respondents (83%) who believe they cannot manage these impacts at all, followed closely by the High Barind region at 75%. The Northern River Basin, while still significant, has a comparatively lower percentage at 45%. Conversely, when considering the responses of those who believe they can cope with the impacts to some extent, the Northern River Basin leads with 51%, whereas the Coastal Area and High Barind regions show 13% and 21%, respectively. It is also noteworthy that very few respondents across all regions, ranging from 3% to 5%, are confident in their ability to manage the risks completely. In conclusion, there is a clear and urgent need for enhanced support and resources for these communities, especially in the Coastal Area and High Barind regions. While some in the Northern River Basin feel moderately equipped to handle certain impacts, the overwhelming sentiment across all regions is one of vulnerability and a lack of preparedness in confronting the challenges posed by climate change (cf. Table 6.1).

**Table 6.1: % Distribution of Self-Perceived Capacity to Manage Climate Change Impacts on Their Own by Region**

| Response                    | Coastal Area (%) | High Barind (%) | Northern River Basin (%) | All (%) (N=434) |
|-----------------------------|------------------|-----------------|--------------------------|-----------------|
| <b>Not at all</b>           | 82.8             | 74.7            | 45.3                     | 67.1            |
| <b>To some extent</b>       | 12.7             | 21.3            | 51.3                     | 29.4            |
| <b>Can manage the risks</b> | 4.5              | 4.0             | 3.3                      | 3.5             |

From the data presented in Table 6.2, it is evident that the predominant coping measure to reduce economic loss across all regions is obtaining loans from moneylenders, with a notably high reliance of 92% in the Coastal Area. This is followed by the strategy of migration to other places for earning, which is significant in the Coastal Area and the Northern River Basin, at 61% and 56%, respectively.

In the High Barind region, there is a noticeable deviation from other areas, with a comparatively low reliance on migration for earning, standing at 14%. This region also displayed minimal tendencies to mortgage assets (2%) and showed almost negligible consideration for other unspecified coping measures (1%).

Conversely, the Northern River Basin exhibited a balanced approach between getting financial support from relatives and migrating for earnings, both at 50%. Interestingly, the sale of assets to cope with economic loss is relatively consistent across all regions, hovering around the 19% mark.

In conclusion, the data underscores a significant dependency on loans from moneylenders across all regions, with Coastal Area residents being the most reliant. Furthermore, while migration as a coping mechanism is prevalent in the Coastal and Northern River Basin regions, the High Barind region displays unique coping strategies, suggesting a different socio-economic landscape or available resources in that area.

**Table 6.2: % Distribution of Responses on Coping Measures to Mitigate Economic Loss**

| Response  | Coastal Area (%) | High Barind (%) | Northern River Basin (%) | All (%) (N=288) |
|---|------------------|-----------------|--------------------------|-----------------|
| <b>Sale of assets</b>                           | 19.1             | 17.0            | 24.2                     | 19.4            |
| <b>Getting loans from moneylenders</b>          | 91.8             | 75.0            | 50.0                     | 75.7            |
| <b>Getting financial support from relatives</b> | 47.3             | 29.5            | 50.0                     | 41.0            |
| <b>Mortgage of asset</b>                        | 32.7             | 1.8             | 1.5                      | 13.5            |
| <b>Migrate to another place for earning</b>     | 60.9             | 14.3            | 56.1                     | 41.7            |
| <b>Others</b>                                   | 8.2              | 0.9             | 0.0                      | 3.5             |

When evaluating the strategies residents employ to enhance livelihood resilience across different regions, several distinct preferences are evident. In the Coastal Area, there is a pronounced inclination towards transitioning to different occupations, evidenced by 77% of respondents. This inclination starkly contrasts with the High Barind region, where merely 32% consider shifting professions, while the Northern River Basin region holds an intermediate position at 46%.

Furthermore, migration as an adaptive strategy gains significant traction in the Coastal Area and the Northern River Basin, with 63% and 61% of respondents, respectively, viewing it as a practical solution. This preference dramatically diminishes in the High Barind region, where a mere 22% contemplate relocation.

On the financial side, resorting to loans to facilitate a transition towards more resilient livelihoods varies across the regions. The Coastal Area and the High Barind region are more inclined to consider borrowing, with 69% and 62%, respectively. In contrast, the Northern River Basin adopts a more reserved stance, with just 36% of its residents seeing loans as a feasible pathway.

Such distinct regional variances in adaptive strategies underscore the importance of tailored interventions and policies for each area, keeping in mind the unique challenges and opportunities they present (cf. Table 6.3).

**Table 6.3: % Distribution of Responses on Measures to Enhance Livelihood Resilience**

| <b>Response</b>                                    | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=422)</b> |
|--|-------------------------|------------------------|---------------------------------|------------------------|
| <b>Switch to a different occupation</b>            | 76.7                    | 31.8                   | 46.2                            | 50.5                   |
| <b>Migrate to another place</b>                    | 62.8                    | 21.6                   | 61.4                            | 47.9                   |
| <b>Take loan to restart a resilient livelihood</b> | 69.0                    | 61.5                   | 35.9                            | 55.0                   |

The study examined perceptions concerning women's involvement in formulating and executing strategies for adaptation and livelihood preservation. Around 42% of respondents believe women have a limited role in the development and application of such strategies at familial and community levels. In contrast, 53% feel that women assume a moderately active role, and a slight 5% view their participation as highly influential in mitigating climate change impacts and safeguarding their means of living (cf. Appendix 6, Table 6.1). This suggests a pronounced opportunity to strengthen their ability to discern and employ gender-sensitive adaptation strategies.

In adversity, especially during and post-disasters, 72% of respondents indicate that local communities and relatives are the primary aides for individuals living in poverty, with a particular emphasis on women. Additionally, local government bodies, encompassing LGIs, assist 58% of these individuals, while NGOs provide support to 51% (cf. Appendix 6, Table 6.2).

Further, the data highlights that almost half (48%) of women living in poverty lack the resources to access climate change information, which is pivotal for readiness and adaptation. Simultaneously, 51% claim they possess moderate access, with a mere 2% asserting substantial reach to this crucial climate data. This underlines an urgent requirement to enhance the communication of climate risks, thereby promoting readiness and systematic adaptation at both the household and communal tiers (cf. Appendix 6, Table 6.3).

## **6.2 Current Coping and Adaptation Needs for Resilient Livelihoods**

Both the survey and participatory research (PR) examined the coping and adaptation practices adopted by communities vulnerable to the impacts of climate change in Bangladesh. In response to the looming threats posed by climate disasters, individuals across the three regions have adopted a range of coping strategies. In the Coastal Area, there is a significant focus on home fortifications, with 93% of respondents reporting that they prioritize fixing their homes. This priority resonates in other regions too, with 85% in the High Barind and 87% in the Northern River Basin indicating the same. Elevating the platforms of residences appears to be another prevalent coping mechanism, especially in the Coastal Area (84%) and Northern River Basin (70%). However, its adoption considerably drops in the High Barind to just 36%.

Storing essentials, such as dry food, saline, matches, candles, and medicine, is notably prioritized in the Coastal Area (78%) and Northern River Basin (73%), but starkly contrasts with a mere 18.2% in the High Barind. This divergence in strategy can also be observed in practices like preserving drinking water, where the Coastal Area leads at 88%, but the latter two regions both hover around 20%.

In terms of environmental interventions, tree plantation as a means to guard homes and counteract land erosion sees a significant uptake in the Coastal Area (56%) but remains considerably low in the other two regions. Simultaneously, the act of reserving fodder for cattle holds consistent importance across all areas, fluctuating marginally from 49% to 65%.

Other coping strategies, including the preservation of cash, seeds, and maintaining contact with service providers, have lesser prominence across all regions, with the construction of houses using concrete pillars and iron sheets only being slightly more adopted in the Coastal Area (29%). Interestingly, very few respondents (ranging from 0.7% to 2.3%) report being unsure about their coping strategies.

In summary, while some coping mechanisms are consistently adopted across regions, such as house fortifications, the priority assigned to other strategies varies markedly. These discrepancies underscore the importance of tailoring resilience-building interventions according to the unique needs and challenges of each region (cf. Table 6.4).

**Table 6.4: Distribution of the Existing Coping Strategies to Climate Disasters by Region**

| <b>Response</b>  | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=431)</b> |
|--|-------------------------|------------------------|---------------------------------|------------------------|
| <b>Fixing the house</b>  | 92.5                    | 85.1                   | 86.7                            | 87.9                   |
| <b>Raising the platform of the house</b>                           | 83.5                    | 35.8                   | 70.0                            | 62.4                   |
| <b>Preserving dry food/saline/matchbox/candle/medicine</b>         | 78.2                    | 18.2                   | 73.3                            | 55.9                   |
| <b>Tree plantation to protect house and land erosion</b>           | 56.4                    | 10.1                   | 12.0                            | 25.1                   |
| <b>Preserving drinking water</b>                                   | 88.0                    | 20.3                   | 20.7                            | 41.3                   |
| <b>Preserving fodder for cattle</b>                                | 65.4                    | 49.3                   | 56.7                            | 56.8                   |
| <b>Saving/preserving cash</b>                                      | 30.1                    | 12.2                   | 30.7                            | 24.1                   |
| <b>Preserving seeds</b>  | 36.8                    | 7.4                    | 10.0                            | 17.4                   |
| <b>Keeping contacts with service providers</b>                     | 19.5                    | 13.5                   | 14.7                            | 15.8                   |
| <b>Construction of houses with concrete pillars and iron sheet</b> | 28.6                    | 8.1                    | 16.0                            | 17.2                   |
| <b>Others</b>  | 19.5                    | 0.0                    | 0.0                             | 6.0                    |
| <b>Don't Know</b>  | 2.3                     | 0.7                    | 0.7                             | 1.2                    |

In addition to the survey data, the FGDs and KIIs investigated the coping and adaptation practices. The subsequent table outlines an array of gender-responsive and poverty-sensitive adaptation needs and priorities in the primary affected sectors across the three regions. These coping and adaptation measures aim to mitigate the effects of salinity, cyclones, water logging, and drought in the Coastal Area. Refer to Table 6.5 for further details.

**Table 6.5: Coping and Adaptation Options in Coastal Area (based on FGD findings)**

| Sector                                  | Suggested adaptation measures to reduce climate change impacts  |
|---|---|
| <b>Agriculture &amp; Shrimp Farming</b> | Utilization of salt and drought-tolerant paddy and crops. Zonation to differentiate crop and shrimp farming areas, considering tidal patterns. Construction of strong embankments and drainage systems to mitigate water logging. Provision of seeds and training tailored for vegetable and winter crops, suitable for the coastal climate. Promotion of early crop varieties to harvest before the cyclone season in April-May. Methods for freshwater preservation ensuring irrigation amidst saline water intrusion. Strategies to control prevalent shrimp diseases in the region. |
| <b>Home Gardening</b>                   | Improved seeds of vegetables, fruits, and cash crops suited for saline and drought-prone coastal lands. Promotion of salt and drought-tolerant vegetable and fruit varieties. Training in integrated vegetable, fish, and poultry farming to maximize land use efficiency. Encouragement of community vegetable, poultry, and fish farming on large farms, particularly led by women.   |
| <b>Housing</b>                          | Design houses with plinths raised above typical flood levels. Use durable coastal materials like cement, and quality tin/iron sheeting. Regular maintenance of houses to withstand recurrent coastal storms. Development of enough cyclone shelters in vulnerable zones. Construction of environment-friendly embankments and promotion of social forestry in erosion-prone coastal areas.  |
| <b>WASH</b>                             | Implementation of community-level sanitation systems. Recommendations for raised toilets and high ring slabs to counteract water logging. Promotion of water purification methods, such as Fitkiri and tablets. Initiatives for deep tube wells to ensure freshwater supply. Awareness programs on hand hygiene by both GO and NGOs, critical post-cyclones.  |
| <b>Livestock &amp; Poultry</b>          | Design of raised and robust poultry and cow sheds. Assurance of food security for livestock during peak disaster periods. Creation of special livestock shelters within or near cyclone protection zones. Advocacy for the Macha system for goat rearing. Emphasis on vaccination and other health facilities, especially during disaster periods. Measures to provide safe drinking water for livestock.   |
| <b>Health Service</b>                   | Enhancement of health service facilities, especially during cyclone and flood events. Regular health service provisions with training for affected communities. Strengthening communication channels with LGIs. Implementation of vaccination drives, including for prevalent diseases like Corona. Mobilization of local health service facilitators for door-to-door check-ups.   |

Source: FGD in Shyamnagar, Satkhira, 2022

Coping and adaptation measures have been planned and implemented in the Barind areas in the context of growing drought, heat stress, erratic rainfall, localized floods, and cold waves. A range of gender-responsive adaptation alternatives have been pinpointed. Refer to the subsequent Table 6.6 for a detailed list of prioritized adaptation options.

**Table 6.6: Adaptation Options in the High Barind (Dinajpur, based on FGD findings)**

| <b>Sector</b>                     | <b>Suggested adaptation measures to reduce climate change impacts</b>   |
|-----------------------------------|---|
| <b>Agriculture</b>                | Introduction of irrigation systems tailored for drought-prone conditions. Expert guidance, advice, and material support, like quality fertilizers and seeds, to safeguard seed beds against extreme cold and dense fogs.  |
| <b>Housing</b>                    | Emphasis on constructing homes with robust pillars and securing them with ropes to withstand Nor'westers.   |
| <b>WASH</b>                       | Strengthening and raising the plinths and basements of tube wells and latrines to mitigate flood impacts.   |
| <b>Food Security</b>              | Strategies for food preservation during lean periods. Emphasis on storing dry food in anticipation of floods. Establishment of food banks using durable storage mediums like large plastic drums/pots.  |
| <b>Wage earning</b>               | Advocacy for consistent wage-earning opportunities. Encouragement for diversifying livelihoods through masonry, grocery shop employment, and other local opportunities. Promotion of vocational training, focusing on skills such as hair wig preparation, catering to both men and women. Training and support in poultry and livestock rearing. |
| <b>Livestock &amp; poultry</b>    | Stress on regular healthcare and maintenance for livestock. Emphasis on maintaining cleanliness in cow and poultry sheds. Strategies for fodder preservation.   |
| <b>Addressing Social Conflict</b> | Advocacy for job creation and regular income avenues.   |

Source: FGD in Birol and Kaharole, Dinajpur, 2022

In the Northern River Basin, focused interventions have been initiated to mitigate the effects of recurring floods, riverbank erosion, cold waves, fog, and drought. These measures also aim to enhance the livelihood resilience of the inhabitants amid climatic changes. The prioritized adaptation strategies are detailed in Table 6.7.

**Table 6.7: Adaptation Options in the Northern River Basin (Kurigram, based on FGD findings)**

| <b>Sector</b>                          | <b>Suggested adaptation measures to reduce climate change impacts</b>   |
|--|---|
| <b>Wage earning</b>                    | Small businesses, especially bamboo-made products. Cottage industries, notably Shitalpati mat production. Embroidery, focusing on caps and Shalwar Kameez dresses. Fishing net manufacturing. Technical and vocational training targeting students living in poverty. |
| <b>Livestock &amp; poultry</b>         | Emphasis on poultry, duck, cow, goat, sheep, pigeon, and quail bird rearing. Strengthened focus on cattle feed and disease control.   |
| <b>Agriculture</b>                     | Raising the plinth of homesteads for effective vegetable cultivation. Promoting vegetable cultivation in sacks.   |
| <b>Food Security</b>                   | Initiatives to boost family savings. Support for income-generating activities.  |
| <b>Housing and Road transportation</b> | Prioritizing house repairs and the establishment of strong pillars for homes.   |
| <b>WASH</b>                            | Elevating the plinth of homesteads, latrines, and tube wells.   |
| <b>Social conflict</b>                 | Efforts to increase family income. Promoting enhanced dialogue among family members.  |

Source: FGD in Kurigram, 2022

### **6.3 Enhanced Role of Women in Adaptation and Social Conflicts Management & Transformation**

The adaptive capacity of impoverished women and the most vulnerable groups is significantly influenced by factors such as their awareness levels, access to climate information, and available resources that empower actions at family and community levels. Further determinants include their societal mobility, engagement in local adaptation, and disaster risk reduction planning by Union Parishads and Wards. Their ability to sway decisions that benefit women, individuals with disabilities, and the most vulnerable groups is also pivotal. To facilitate the effective involvement of women, capacity enhancement in adaptation planning, locally-led adaptation (LLA), and women's empowerment are indispensable. Currently, the involvement of women, community members, and civil society organizations in advancing gender-sensitive, inclusive adaptation, and conflict resolution is limited. This is primarily attributed to knowledge deficits, prevalent societal structures, and a palpable mistrust between local communities and duty bearers. However, it is noteworthy that members of NGO-affiliated beneficiary groups, such as PORIBESH and TECSAI, seem better positioned to embrace gender-sensitive adaptation measures and mediate conflicts, leveraging the support of relevant stakeholders.

Notably, the Coastal Area manifests a substantial need for legal support in addressing social conflicts, with a striking 93% of the population expressing this requirement. This contrasts with the Northern River Basin and High Barind regions, where only 33% and 51%, respectively, have voiced a similar need. The High Barind region shows a moderate demand across all categories. Knowledge and capacity building emerge as crucial in the Northern River Basin, evident from the 81% who identified this as a priority. In summation, while all regions seek a mix of legal, knowledge-based, and financial support to navigate social conflicts, the Coastal Area distinctly leans towards legal avenues. Meanwhile, the Northern River Basin emphasizes knowledge and capacity strengthening, and High Barind displays a balanced approach but with a notable inclination towards legal assistance (cf. Table 6.8 for a detailed breakdown of these findings).

**Table 6.8: The Support Required for the Community & Family to Address Social Conflict**

| <b>Types of Conflicts</b>     | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=426)</b> |
|-------------------------------|-------------------------|------------------------|---------------------------------|------------------------|
| <b>Legal support</b>          | 93.2                    | 50.7                   | 33.3                            | 57.7                   |
| <b>Knowledge and capacity</b> | 65.9                    | 45.1                   | 80.7                            | 64.1                   |
| <b>Financial support</b>      | 45.5                    | 22.2                   | 31.3                            | 32.6                   |
| <b>Others</b>                 | 4.5                     | 0.7                    | 2.0                             | 2.3                    |

The analysis of the role of local government and village committees in conflict management across Bangladesh, as depicted in Table 6.9, reveals some overarching trends. Across all regions, local mediation (70%) emerges as the most favoured approach, indicating a strong preference for community-driven conflict resolution mechanisms. This is followed by the strategy of fostering mutual understanding through dialogue (40%), which, though less prevalent than local mediation, still plays a significant role in managing conflicts. Legal measures are also employed to a noticeable extent, pointing to a reliance on formal legal frameworks (26%) in certain contexts. Additionally, the initiative by elected representatives and local leaders (47%) in conflict resolution is evident, reflecting the importance of leadership-driven strategies across various communities.

In conclusion, the data underscores regional differences in conflict management approaches in the context of climate change in Bangladesh. The Coastal Area's distinct preference for dialogue and legal measures suggests unique conflict resolution dynamics, likely influenced by its specific environmental and socio-economic conditions. The consistent importance of local leaders across regions underscores their crucial role in managing conflicts, especially in the face of climate change-induced vulnerabilities.

In conclusion, while local mediation emerges as a preferred method across all regions, the Coastal Area distinctly favors both dialogue and legal measures significantly more than its counterparts. The High Barind, on the other hand, has a noticeably reduced inclination towards legal measures and mutual dialogue, possibly indicating an existing trust in more traditional or community-led conflict resolutions. Meanwhile, the Northern River Basin showcases a balanced preference, with both local mediation and initiatives by elected representatives achieving similar prominence (cf. Table 6.9).

**Table 6.9: % Distribution of Responses on the Role of Local Government and Village Committees in Conflict Management**

| <b>Types of Response</b>                                       | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=426)</b> |
|--|-------------------------|------------------------|---------------------------------|------------------------|
| <b>Local mediation</b>   | 86.5                    | 62.6                   | 61.6                            | 69.7                   |
| <b>Mutual understanding through dialogue</b>                   | 65.4                    | 23.1                   | 32.2                            | 39.4                   |
| <b>Legal measures</b>  | 55.6                    | 6.8                    | 17.8                            | 25.8                   |
| <b>Initiative by elected representatives and local leaders</b> | 51.1                    | 40.1                   | 51.4                            | 47.4                   |

Regarding the primary obstacles hindering the resolution of livelihood-related conflicts in the study areas, a majority of respondents (61%) identified the vested interests of local political dynamics. This was closely followed by a lack of trust, cited by 58% of participants, and competition for scarce resources at 49%.

Focus group discussions (FGDs) and key informant interviews (KIIs) further reveal that individuals living in poverty, especially women, often receive minimal assistance from Local Government Institutions (LGIs) and influential elites in addressing conflicts and seeking social justice. Instead, these marginalized groups frequently find themselves embroiled in heightened competition and disputes over limited natural assets such as land, water, fisheries, forests, and essential ecosystem services (ESS). Relevant case studies detailing social conflicts and associated resolution mechanisms can be found in the appendix.

# Chapter- 7: Institutional Responsiveness and Governance for Climate Justice

This chapter examines the extent of institutional accountability and its responsiveness to impoverished individuals and women in the context of climate justice at both local and regional levels. Through both survey methods and Participatory Research (PR) tools, insights and information on these issues were gathered. The research aimed to discern: Are impoverished individuals, with a focus on women, able to assert their rights? Do they receive timely disaster responses? Are they acquiring the necessary assistance and services from local governments and relevant agencies? If gaps are identified, what are the societal and institutional barriers, and how might these groups access climate information and enhance Social Safety Net (SSN) support for climate change adaptation and the resilience of their livelihoods?

## 7.1 Assessing Access and Social Support Mechanisms in Bangladesh

In examining the responses concerning the extent to which communities voice their rights and demands to Local Government Institutions (LGIs) and other actors for disaster responses, there are evident regional differences. In the Coastal Area, a significant 64.9% of respondents felt they could not place their rights and demands, whereas only 34.3% sometimes managed to do so. In stark contrast, the Northern River Basin showed the highest inclination, with 68% of participants sometimes voicing their demands, while only 24% felt they couldn't. The High Barind region portrayed a balanced scenario with 51% sometimes placing their demands and 40% feeling unable to do so. Noteworthy, across all regions, only a small percentage felt they could consistently place their demands, ranging from a minimal 1% in the Coastal Area to 9% in the High Barind. Overall, the findings indicate that while some regions might have slightly improved avenues for placing demands, significant barriers remain across all studied regions, especially in the Coastal Area where the majority feel unheard or unsupported in the face of disasters (cf. Table 7.1).

**Table 7.1: % Distribution of the Responses Regarding Placing Their Rights and Demands to LGIs and Other Actors for Disaster Responses**

| <b>Response</b>  | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=434)</b> |
|------------------|-------------------------|------------------------|---------------------------------|------------------------|
| <b>Sometimes</b> | 34.3                    | 50.7                   | 68.0                            | 51.6                   |
| <b>Cannot</b>    | 64.9                    | 40.0                   | 24.0                            | 42.2                   |
| <b>They can</b>  | 0.7                     | 9.3                    | 8.0                             | 6.2                    |
| <b>All</b>       | 100.0                   | 100.0                  | 100.0                           | 100.0                  |

In the three regions under study, impoverished and marginalized communities experience limited accessibility to duty bearers and Local Government Institutions (LGIs). Focus Group Discussion (FGD) findings indicate several reasons for this disconnect. These encompass the fragile socio-economic standing of these communities, entrenched local power dynamics, precarious livelihoods, and a lack

of insight and understanding about the roles and obligations of duty bearers and LGIs. Data from field surveys pinpoints specific hindrances to accessing institutional supports, such as nepotism (70%), the adverse effects of local power dynamics (61%) on impoverished individuals, especially women, corruption (46%), and insufficient resource allocation at the Union Parishad (UP) level (44%) (cf. Appendix 6, Table 7.1).

Regarding the adequacy of government Social Safety Net (SSN) support, a significant 62% of participants relayed that people living in poverty, particularly women, do not receive sufficient support. A mere 21% affirmed that they do, whilst 17% noted they receive this support occasionally. A flawed distribution mechanism and insufficient allocation of SSN supports can potentially incite social conflicts. In this context, a staggering 92% of participants concurred that disputes may emerge if impoverished individuals confront UP members regarding the misallocation of SSN and relief materials. Such confrontations can lead to threats or even physical harm from adherents of the influential elites, escalating to severe social conflicts in some instances. Additional data is provided in Appendix 6, Table 7.2.

Furthermore, only 20% of participants expressed that they actively advocate for their demands, and 40% occasionally do so. Notably, the remaining 40% abstain from any such efforts to assert their rights (cf. Appendix 6, Table 7.3). Within these regions, 72% identified local political dynamics as the predominant barrier to accessing SSN support. This is followed by elitism (63%) and an overarching lack of awareness (36%). Surprisingly, only 17% pinpointed resource limitations as a significant challenge (cf. Appendix 6, Table 7.4). In general, 92% of the respondents believe that shortcomings regarding SSN and institutional support contribute at least sometimes to creating social conflicts (cf. Appendix 6, Table 7.5).

## **7.2 Advocacy for Government and Non-governmental Actors on Gender Responsive Adaptation and Conflict Resolution**

In the exploration of whether individuals living in poverty, particularly women, work collectively in developing and implementing adaptation strategies as well as conflict resolution, findings from different regions reveal distinct patterns. In the Coastal Area and the Northern River Basin, nearly half the respondents, at 46% and 47% respectively, indicate that collective action occurs occasionally. The High Barind presents a slightly different picture, with a majority (48%) indicating that there's no collective work in these areas. Across all regions, the consensus of constant collective work is relatively low, with the Northern River Basin standing out at 29%, suggesting a more frequent engagement in collective actions compared to the Coastal Area's 15% and High Barind's 16%. Overall, 20% of the total respondents affirmed that they regularly engage in collective efforts. This data suggests that while there is some level of collaboration amongst impoverished individuals and women in these regions, it is not consistently practiced, pointing to possible barriers or challenges in fostering sustained collective action in the domains of climate adaptation and conflict resolution (refer to Table 7.2).

**Table 7.2: Do the People Living in Poverty and Women in Particular Work Collectively in Developing and Implementing Adaptation Strategies as Well as Conflict Resolution?**

| <b>Response</b>  | <b>Coastal Area (%)</b> | <b>High Barind (%)</b> | <b>Northern River Basin (%)</b> | <b>All (%) (N=434)</b> |
|------------------|-------------------------|------------------------|---------------------------------|------------------------|
| <b>Sometimes</b> | 46.3                    | 36.0                   | 46.7                            | 42.9                   |
| <b>No</b>        | 38.8                    | 48.0                   | 24.0                            | 36.9                   |
| <b>Yes</b>       | 14.9                    | 16.0                   | 29.3                            | 20.3                   |

The data offers an insightful glimpse into the dynamics surrounding the organization of women, particularly those living in poverty, when it comes to advocating for their rights and demands to the relevant authorities and duty bearers across different regions. In the Coastal Area, a majority, 52%, do not organize themselves for such purposes, followed closely by 46% who occasionally do. The scenario in High Barind is somewhat divided, with 45% not organizing, and a notable 20% frequently advocating for their rights. The Northern River Basin displays the most proactive tendencies, with a significant 35% consistently organizing themselves and only 25% never doing so. On aggregating the responses, 40% across all regions do not actively organize to place their demands, nearly equal to the 40% who sometimes do. Meanwhile, a consistent 20% across all regions are proactive in voicing their demands. These findings underscore the variations in advocacy dynamics across regions and the need for interventions to encourage greater self-advocacy among impoverished women, especially in areas where active engagement is less prevalent (refer to Appendix, Table 7.3).

The study, drawing insights from the survey, KIs, and FGDs, has pinpointed key advocacy issues that can foster climate justice by empowering people living in poverty, with a special focus on women, and by amplifying the responsiveness of the LGIs and duty bearers. For local associates of NETZ, as well as rights-oriented local organizations and NGOs, the following climate-related actions and advocacies for justice should be prioritized:

- Programs heightening awareness of the impacts of climate change, associated vulnerabilities, and gender-attuned adaptation measures.
- Initiatives promoting social mobilization, specifically tailored for people living in poverty, women, and indigenous communities, encouraging group formations.
- Endeavors that focus on building capacities, honing skills, and motivating impoverished individuals and women, particularly to foster connections with LGIs and duty bearers, allowing them to vocalize their demands.
- Creation of alternative income avenues for communities that are marginalized and living in poverty within their local spheres.
- Ensuring the participation of impoverished women and marginalized groups in local decision-making frameworks such as UDMC.
- Comprehensive rehabilitation initiatives for land-dispossessed individuals.
- Financial assistance tailored for communities that are marginalized and live in poverty.

- Provisions for food assistance to impoverished and marginalized communities during periods of scarcity.
- Digital documentation and maintenance of records for families that migrate, ensuring they receive appropriate services upon arrival at their destinations.
- Strengthening of disaster readiness through the incorporation of gender-considerate programs.
- Development and maintenance of facilities that cater specifically to women and children during cyclones and floods.
- Establishment of community-based sanitation facilities and potable water sources.
- Legal backing for individuals from marginal communities who are victims of unjust legal accusations.
- Ongoing dialogues, lobbying efforts, and networking with duty bearers and policymakers, ensuring that concerns pertaining to marginalized and impoverished communities are seamlessly integrated into policy formulations and subsequent actions.

### **7.3 Enhancing the Role of State and Non-state Actors and Stakeholders**

The NETZ partners and project field officers are well-acquainted with local government entities such as the DAE, ULO, Water Development Board, BMDA, LGRD, ULO, DWA, DSS, and Union Parishads. They have also fostered strong relationships with NGOs and civil society. Through their dialogues with these local government institutions, they have emphasized the increasing vulnerabilities faced due to climate change and highlighted the pressing need for locally led adaptation (LLA) strategies, especially focusing on women living in poverty. While their existing relationships and program activities have been effective, there is potential to further expand these to better serve women in impoverished conditions and the broader community. Insights and viewpoints from these stakeholders and actors have been primarily obtained through Key Informant Interviews (KIIs). The following Table 7.3 provides a detailed overview of various organizations' roles in addressing climate change vulnerabilities across three distinct regions: the Coastal Area, High Barind, and the Northern River Basin. Each organization, ranging from local governmental institutions to NGOs, has specialized responsibilities tailored to the unique climatic challenges of each region. The actions include disaster forecast dissemination, support for affected communities, promotion of climate-resilient agricultural practices, infrastructure development, and gender-focused interventions. The table underscores the comprehensive and collaborative efforts required to promote climate resilience and justice in the face of diverse regional challenges.

**Table-7.3: Organizations' Roles in Addressing Climate Vulnerabilities and Promoting Climate Justice**

| Organization / Institution                         | Role of the organization / institution in relation to CCA & DRR, Sectoral Development and Women Empowerment   |   |   |
|--|---|---|---|
|  | Coastal Area  | High Barind   | Northern River Basin  |
| <b>LGI (Union Parishad)</b>                        | <ul style="list-style-type: none"> <li>- Distribution of disaster predictions via Cyclone Preparedness Programme (CPP) volunteers</li> <li>- Rehabilitation aid for the landless populations</li> <li>- Assistance for disaster-impacted small-scale farmers and fishers</li> <li>- Mediation of local community disputes</li> <li>- Provision of sustenance aid to vulnerable groups during disasters</li> <li>- Employment opportunities via short-term employment programs (e.g., 4 daysjob-generating programme)</li> <li>- Social safety net (SSN) support for at-risk groups</li> </ul> | <ul style="list-style-type: none"> <li>- Distribution of seeds and fertilizers to disaster affected farmers</li> <li>- Climate disaster impact education through UDMC and NGO initiatives</li> <li>- Collaboration with Barendra Multipurpose Authority (BMDA) for boro paddy irrigation</li> <li>- Warm clothing distribution for small ethnic groups and female-led households in winter</li> <li>- Social safety net programs (SSNP) for marginal communities</li> </ul> | <ul style="list-style-type: none"> <li>- Distribution of disaster predictions via community volunteers and Local administration and LGIs</li> <li>- Rehabilitation aid for the landless populations</li> <li>- Assistance for disaster-impacted small-scale farmers and fishers</li> <li>- Mediation of local community disputes</li> <li>- Food provision to at-risk groups during calamities</li> </ul> |
| <b>Union Health Family Welfare Centers (UHFWC)</b> | <ul style="list-style-type: none"> <li>- Providing family planning services to the community people</li> <li>- Menstruation awareness program for girls</li> </ul>  | Consistent with Coastal Area  | Consistent with Coastal Area  |

| Organization / Institution             | Role of the organization / institution in relation to CCA & DRR, Sectoral Development and Women Empowerment   |   |   |
|--|---|---|---|
|  | Coastal Area  | High Barind   | Northern River Basin  |
| <b>Forest Department</b>               | <ul style="list-style-type: none"> <li>- Protecting forest resources</li> <li>- Conservation project implementation alongside NGOs, development agencies, and local stakeholders</li> <li>- Access permissions for forest-dependent populations to gather forestry and fishery resources</li> </ul> | N/A   | N/A   |
| <b>Department of Agriculture (DAE)</b> | <ul style="list-style-type: none"> <li>- Dissemination of salt-resistant rice varieties and associated agricultural methods through demonstration plots</li> <li>- Post-disaster support for marginalized farmers</li> </ul>  | <ul style="list-style-type: none"> <li>- Dissemination of drought, cold and storm-resilient rice and associated agricultural methods</li> <li>- Irrigation assistance for farmers</li> <li>- Advocacy for catch crop (e.g., mustard) cultivation post-flood for crop loss recovery</li> <li>- Encouragement of low-water irrigation crop cultivation</li> </ul>   | <ul style="list-style-type: none"> <li>- Dissemination of agriculture forecast</li> <li>- Demonstration of climate- resilient (flood, drought and cold) crops at village levels</li> <li>- Guidance and technical support for organic fertilization, specifically vermicomposting, under the Integrated Agriculture Plant Production (IAPP) initiative</li> </ul> |
| <b>Upazila Livestock Office (ULO)</b>  | <ul style="list-style-type: none"> <li>- Providing advisories and treatment services for livestock and poultry</li> </ul>   | <ul style="list-style-type: none"> <li>- Vaccination, deworming and treatment services for livestock and poultry</li> <li>- Technical support and supply of resources for improved grass/fodder farming</li> <li>- Monetary support for dairy farmers affected during CORONA outbreaks</li> <li>- Advisories and material support for small-scale farmers via the Livestock and Dairy Development Project (LDDP)</li> </ul> | <ul style="list-style-type: none"> <li>- Compensation for flood-impacted farmers</li> <li>- Livestock vaccination and health services</li> <li>- Technical collaboration with NGO-driven vaccinator enhancement projects</li> </ul>   |

| Organization / Institution                         | Role of the organization / institution in relation to CCA & DRR, Sectoral Development and Women Empowerment  |  |  |
|--|--|--|--|
|  | Coastal Area   | High Barind  | Northern River Basin   |
| <b>Barendra Multipurpose Development Authority</b> | N/A  | <ul style="list-style-type: none"> <li>- Irrigation support to the farmers</li> <li>- Promotion of surface water irrigation and low groundwater-use crop cultivation</li> </ul>  | N/A  |
| <b>Water Development Board (WDB)</b>               | <ul style="list-style-type: none"> <li>- Embankment construction and maintenance for cyclone and tidal surge protection</li> </ul>   | <ul style="list-style-type: none"> <li>- Embankment construction and maintenance for flood protection</li> </ul>   | <ul style="list-style-type: none"> <li>- Embankment construction and maintenance for flood protection</li> <li>- Farmer irrigation support under the Teesta Barrage initiative</li> </ul>  |
| <b>LGED</b>  | <ul style="list-style-type: none"> <li>- Construction of Cyclone shelters</li> <li>- Construction of Roads</li> </ul>  | <ul style="list-style-type: none"> <li>- Construction of flood shelter</li> <li>- Construction of Roads</li> </ul>   | <ul style="list-style-type: none"> <li>- Construction of flood shelter</li> <li>- Construction of Roads</li> </ul>   |
| <b>Department of women Affairs</b>                 | <ul style="list-style-type: none"> <li>- Female entrepreneurship development and resource provision for marginalized and impoverished families</li> <li>- Counselling against Gender- Based Violence (GBV)</li> </ul>  | Consistent with Coastal Area   | Consistent with Coastal Area   |
| <b>NGOs</b>  | <p>LEDARS, Prerona, Nakshikatha and BARCIK</p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Economic and social empowerment of marginalized women, including those affected by wildlife (e.g., tiger widows)</li> <li>- Biodiversity conservation initiatives</li> <li>- Promoting organic farming techniques</li> </ul> | <p>CCDB, ADRA, DIPSHIKHA, World Vision, DASCOH, Pollisree</p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Poverty reduction of small ethnic communities by ensuring their basic rights</li> <li>- Climate change impact mitigation via awareness campaigns and resilient livelihood approaches</li> </ul> | <p>AFAD, SOLIDARITY, RDRS, Gram Unnyon Kendro, Eco Social Development Organization (ESDO)</p> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>- Risk mitigation for flood and river erosion victims through humanitarian support</li> <li>- Resilience-building for vulnerable groups via education, skill enhancement, and sustainable livelihood approaches.</li> </ul> |

# Chapter- 8: Conclusions and Way-ahead

This study comprehensively explored the multifaceted causes of vulnerability, including physical, social, institutional, and gender drivers, and the dynamics of social conflicts exacerbated by climate change impacts in the programme areas of NETZ. Recognizing social conflict dynamics as a new and emerging research area, the study also delved into pro-poor and gender-responsive adaptations to mitigate climate risks and vulnerabilities while developing effective strategies for conflict resolution and transformation in local contexts.

Utilizing both quantitative and qualitative approaches, the study identified the differentiated vulnerabilities of women and men living in poverty across three disaster-prone areas. The research highlighted multiple risk factors, including limited local adaptive capacities and gaps in social and institutional contexts, which hinder the development of appropriate pro-poor and gender-responsive adaptation options. These findings underscore the urgent need to enhance social resilience, empower impoverished women, and reduce gender inequity.

## Key Findings:

### 1. Climate Change and Vulnerability:

- **Disaster Patterns:** The study regions are recurrently affected by climate disasters such as cyclones, tidal surges, salinity, floods, erosion, droughts, and cold waves. These disasters severely impact key livelihood sectors including small-scale agriculture, wage labor, home gardening, livestock, fisheries, housing, water supply, and food security.
- **Vulnerability Factors:** The vulnerability of impoverished families is rooted in the interaction between the physical impacts of climate change and socio-economic conditions such as poverty, gender inequity, social exclusion, lack of institutional responsiveness, unequal power relations, and poor governance.

### 2. Adaptive Capacities and Limitations:

- **Coping Mechanisms:** The adaptive capacities of people living in poverty, especially women, are severely limited. Common coping strategies include taking loans, seeking financial support from relatives, changing occupations, or migrating seasonally. However, these measures are often inadequate and can result in maladaptation.
- **Knowledge and Skills Gaps:** The study revealed significant gaps in climate change awareness, knowledge, and skills, which hinder effective adaptation and disaster risk reduction (DRR). There is a critical need for better orientation, capacity building, resource endowment, and access to information for pro-poor and gender-responsive adaptation.

### 3. Institutional Responsiveness and Governance:

- **Limited Support:** The support provided by Local Government Institutions (LGIs) for adaptation and DRR is limited and inadequate compared to the needs of the most vulnerable groups. Many impoverished women, girls, and elderly people do not receive timely climate and disaster information.
- **Barriers to Access:** Major barriers to accessing institutional support include nepotism, local power dynamics, corruption, and insufficient resource allocation. These challenges exacerbate social conflicts and limit the effectiveness of social safety nets (SSNs).

### 4. Social Conflicts:

- **Conflict Dynamics:** Climate change-induced social conflicts are on the rise in all three study areas, with the Coastal Area being particularly affected. Conflicts often arise over competition for resources such as fuel wood, animal feed, natural resources, and water.
- **Resolution Mechanisms:** Existing conflict resolution mechanisms are weak and often favour the wealthy and powerful elites. There is a need for alternative and transformative conflict resolution strategies that protect the rights and interests of people living in poverty, especially women.

#### Way Forward:

To address these challenges, the study offers several recommendations aimed at fostering gender-sensitive climate solutions and promoting climate justice:

1. **Enhance Local Government Responsiveness:** Strengthen the capacity of LGIs to respond to the needs of vulnerable populations, particularly women living in poverty. This includes training local officials on gender sensitivity and climate resilience, and ensuring effective implementation of policies like the National Environment Policy 2018.
2. **Integrate Gender in Climate Adaptation Plans:** Explicitly integrate gender considerations into all stages of climate change adaptation planning and implementation, as outlined in the National Adaptation Plan (NAP) and the Bangladesh Climate Change and Gender Action Plan (BCCGAP).
3. **Promote Inclusive Participation in Decision-Making:** Encourage the active participation of disadvantaged women in local disaster management committees and planning processes. Leverage the Women Development Policy to advocate for equal representation and decision-making power for women in all climate-related forums.

4. **Improve Access to Resources and Services:** Ensure marginalized communities have better access to essential services such as health care and educational programs that are sensitive to the impacts of climate change. Address systemic barriers that prevent these communities from accessing government support.
5. **Build Adaptive Capacity through Locally Led Adaptations (LLA):** Promote locally led adaptations that are pro-poor and gender-responsive. Support community-based organizations in implementing these adaptations and ensure alignment with broader national strategies like those proposed in the Nationally Determined Contributions (NDC).
6. **Address Social and Institutional Barriers:** Tackle underlying social norms and institutional barriers that exacerbate vulnerability, such as patriarchal values and lack of accountability in local governance. Strengthen legal frameworks to protect the rights of marginalized groups and enforce policies that challenge discriminatory practices.
7. **Strengthen Conflict Resolution Mechanisms:** Develop transformative conflict resolution strategies that prioritize the needs of impoverished and marginalized groups. Promote climate justice by aligning these strategies with recommendations from the BCCGAP.
8. **Monitor and Evaluate Climate Policies:** Implement robust monitoring and evaluation mechanisms to assess the effectiveness of climate policies and adaptations. Regular feedback from affected communities is essential to ensure policies remain relevant and effective.
9. **Facilitate Multi-Stakeholder Collaborations:** Foster collaborations between government, civil society, international donors, and the private sector to support scalable and sustainable climate solutions. Leverage the strengths of each sector to address the complex challenges posed by climate change.
10. **Educate and Raise Awareness:** Launch comprehensive awareness campaigns to educate all sectors of society about the impacts of climate change, particularly on vulnerable populations. Highlight the importance of gender equality and inclusive governance in fostering resilience.

In conclusion, the study emphasizes the pressing need for comprehensive and gender-responsive climate action to address the vulnerabilities faced by women living in poverty, marginalized communities, and the most vulnerable in Bangladesh. Effective implementation of these recommendations will contribute to achieving the goals of Bangladesh's National Adaptation Plan (NAP) 2022 and the Bangladesh Climate Change Gender Action Plan (BCCGAP), ensuring long-term resilience and climate justice for all.

## References:

1. IPCC (2022): Summary for the Policy Makers, Assessment Report-6, WMO and UNEP
2. Martin P E., et al (2019): New Insights in Climate Science 2019; in support with the UNFCCC and presented at the UN CoP25, Madrid, Future Earth & The Earth League, Stockholm
3. GED (2019): Bangladesh Delta Plan (BDP) 2100, General Economic Division, Planning Commission, Agargoan, Dhaka
4. IPCC (2014): Impacts, Adaptation and Vulnerability, Section-C on Managing Future Risk and Building Resilience, in AR-5, Working Group-II, WMO and UNEP
5. Mallick et al (2015): Resilient livelihood for the Extreme Poor of the HTR Area and Climate affected Zones of Bangladesh, Working paper of BCAS, Presented at the GOBESHONA Conference of ICCCAD-BCAS, Dhaka
6. MoEFCC (2022): Bangladesh National Adaptation Plan (NAP): 2023-2050, GoB
7. MoEFCC(2023): Bangladesh Climate Change Gender Action Plan (revised in 2023). GoB with the IUCN Bangladesh and UN Women, Dhaka