USAID's SHOUHARDO III DRR Activity

In-depth Baseline and Scoping Assessment for USAID's SHOUHARDO III DRR Activity

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Prepared By

Professor Dr. Khandakar Hasan Mahmud

Department of Geography and Environment, Jahangirnagar University

[+880 1819423668] | [+880 1730099399]

[khmmahmud@juniv.edu] | [khmmahmud@geography-juniv.edu.bd]

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LIST OF ACRONYMS

BDP	:	Bangladesh Delta Plan
BDRCS	:	Bangladesh Red Crescent Society
BHA	:	Bureau of Humanitarian Assistance
CCA	:	Climate Change Adaptation
CVCA	:	Climate Vulnerability and Capacity Assessment
DC	:	District Commissioner
DRR	:	Disaster Risk Reduction
DRRO	:	District Relief and Rehabilitation Officer
DRRPP	:	Disaster Risk Reduction and Preparedness Plan
FGD	:	Focus Group Discussion
GoB	:	Government of Bangladesh
HH	:	Household
INFORM	:	Index for Risk Management
INGO	:	International Non-Governmental Organization
ITT	:	Indicator Tracking Table
KII	:	Key Informants Interview
NGO	:	Non-Governmental Organization
PIC	:	Project Implementation Committee
PIO	:	Project Implementation Officer
SHOUHARDO	:	Strengthening Household Ability to Respond to Development Opportunities
SMC	:	Shelter Management Committee
SRH		Sexual Reproductive Health
UEO	:	Upazila Education Officer
UNO	:	Upazila Nirbahi Officer
UP	:	Union Parishad
USAID	:	The United States Agency for International Development
WASH		Water Sanitation and Hygiene

EXECUTIVE SUMMARY

In Global Disaster Risk Index 2022, Bangladesh is ranked 9th most vulnerable country in the world (Statista, 2023). With changing climatic scenarios, the increasing magnitude and erratic frequency of hazards is continuously putting pressure on the life and livelihood of the peoples at risk. To deal with these changing scenarios and ease the ongoing crisis of the peoples of Bangladesh, the USAID funded SHOUHARDO III DRR activity is being implemented to foster locally led, gender-inclusive, and policy-informed community resilience in Bangladesh with special focus on vulnerable and flood-prone areas. The project has three main objectives related to agriculture, disaster risk reduction, and shelter and settlements. To measure the status of the project, a baseline study has been conducted, which aims to collect baseline values of key indicators in selected study areas. The study utilized a multi-method approach, including both quantitative and qualitative research. The indicators for the baseline were aligned with specific sectors of the project, and prioritized households were targeted for quantitative and qualitative analysis. Overall, the baseline study provides a situational overview and indicators' base value to measure project impact and outcomes during the final evaluation.

The study found that more than half of the respondents have agricultural land, and a sizable proportion of households engage in crop production for their own consumption and income generation. Rice is the most produced crop, followed by maize and potato. However, hazards, especially floods, have a significant impact on agriculture in the project areas. While majority of the households are agriculture depended, there are households (40%) who used at least one improved agricultural practice (such as certified seed, improved seedling production and transplantation, integrated pest management, improved/environment-friendly insecticides and pesticides, and integrated biopesticides management practices. However, there is no BHA assistance yet provided in the project area and SHOUHARDO III DRR working areas are not overlapped with SHOUHARRDO III[1] except the char land areas of two unions at Gaibandha district. Among the agriculture dependent households, almost 92% of the agricultural farmers usually get their seeds from the market. Although seeds are available in the market but the quality of the seeds available in the market are not at satisfactory level to the farmers (only 46.5% farmers are satisfied with the quality). Typically, households use chemical pesticides to control pests or diseases in their crops (only 1.5% studied households use more environmentally friendly measures like botanical pesticide). Safety measures and proper disposal of pesticide waste materials are also a concern. Lack of knowledge and training on appropriate pest management practices are identified as one of the key issues. Hence, the study recommends a need for more awareness and education on safe pesticide practices to promote environmentally friendly pest management practices in the project area. After agriculture activities the studied households show that livestock and poultry rearing is the second most important sector and a customary practice in the study area, with poultry being the most reared type of animal.

However, the households were found vulnerable to disasters, and many households reported losses in their crops and livestock due to disasters. There is dire need for more targeted and effective training programs to improve the disaster resilience of livestock and poultry, as well as the need for better governmental support for disaster resilient livestock practices.

Evaluation of the disaster risk reduction (DRR) practices and capacities of households in a flood-prone community shows there is lack of alternative livelihood opportunities during disasters which creates households susceptible to social and economic vulnerabilities. About 72% of the households reported

[1] Which also worked to improve agriculture practices among the poor and extreme poor households in the char and haor region.

that they had limited or no access to governmental and public resources during and after a natural disaster. The social capital index reveals that approximately 62% of individuals acknowledged that they actively unite and aid one another, both within their community and beyond, when faced with disasters. This highlights the significance of community support during times of crisis. However, the effectiveness of community-based organizations (CBOs) emerges as a critical factor in this context. Different community-based organizations like in 'federation', 'cooperative society', 'NGO's volunteer groups etc. working in the project area. Usually during disaster these CBOs are supposed to provide service to the community people. However, only 14% of households among the studied households reported positive experiences with CBOs, indicating their limited ability to aid before, during, and after a disaster. This underscores the need for further attention and improvement in the performance of these organizations to ensure more robust support systems for communities in times of adversity.

The report highlights the need for improved physical and social support with collaboration during disaster events to enhance the resilience capacity of the community. The key informants emphasized the need for collaboration and coordination between different actors to strengthen disaster preparedness and response efforts.

The baseline study also investigates the housing status of the flood-prone community, focusing on ownership of homestead land, flood impact on houses, and converting to disaster-resilient housing. Findings show that most of the people of the study area own their own homestead land but face severe flood impact where a significant percentage of households being submersed each year. The most admired and so far, proven successful disaster risk reduction measure among households is raising the plinth of their houses, but lack of economic capacity is a major obstacle. The community is willing to share raised or disaster-protected households with other members during disasters which will feed in to ensure community resilient. These findings highlight the need for effective disaster-resilient housing measures for vulnerable communities in flood-prone areas.

The comparative analysis between the char/floodplain and haor regions reveals distinct challenges. The haor region of Sunamganj district faces severe agricultural devastation due to early floods in every alternative year, which sought for necessity of improved harvesting methods. Livestock in this region also suffer from food scarcity and illnesses during floods which require developing alternative supporting mechanisms. In contrast to this, the char region experiences prolonged house submersion of monsoon flooding. On the other hand, the haor region also faces erosion of hati (small island shaped cluster village, a common settlement structure in haor region), highlighting the need for protective measures for both house through plinth raising and slope strengthening of hati.

Gender dynamics and integration in disaster risk reduction (DRR) in the community of the project areas shows some critical aspects of gender inequalities toward women. All three major sectors are vulnerable and there is a lack of sufficient initiative in DRR activities and mostly women's special needs or participation is rare. Men predominantly make decisions for agricultural activities, and women cannot find alternative work during disaster. On top of that women have low access to feminine hygiene products during disaster and WASH facilities and sexual reproductive health services during disasters are critically limited.

The prevalence of violence against women and girls in the context of disasters is very distressing concern. Approximately 64% of respondents reported instances of violence targeting women and girls during such events, with 12% describing the prevalence rate as high or moderate. This alarming statistic underscores the urgent need for interventions and support systems to address this issue. Furthermore, women remain significantly underrepresented, comprising only 14% of community-based organizations and decision-making platforms involved in disaster risk reduction (DRR). This lack

of representation hinders the ability to address gender-specific challenges and perspectives adequately. To address this disparity, the qualitative study recommends the integration of gender perspectives within DRR policies and planning measures. By doing so, women's participation and representation in all aspects of disaster management can be ensured, fostering a more inclusive and effective approach to protecting and supporting women and girls during and after disasters.

Finally, recommendations for interventions and advocacy efforts based on quantitative and qualitative data shows that the agriculture sector needs disaster risk reduction plans through improve agriculture practices such as promoting of environmentally friendly pest control practices, and providing safe shelter for livestock during disasters. In terms of disaster risk reduction policy and practice, the study recommends more support and capacity for disaster preparedness, DRR practice and policy governances, and promoting knowledge sharing among individuals and communities. Household needs and recommendations prioritized as plinth raising, most suitable interventions along with management guidelines for resilient homestead infrastructure management. Overall, there is a need for effective measures for vulnerable communities in flood-prone areas and the importance of integrating gender dynamics into DRR activities while ensuring community engaged collaborative efforts of government and non-government organizations.

KEY FINDINGS

The main purpose of conducting this baseline survey were – i) to gather the baseline value of the key project indicators; ii) identify and explore the outcomes/results; and iii) document them in the Indicator Tracking Table (ITT). In addition to the indicator's base value, the survey also collects contextual information (non-indicator) that describes the prevailing conditions of the target communities or population in line with specific sectors as outlined in USAID's BHA Emergency Application Guidelines.

The following sections provide a brief overview of sector wise key findings from the baseline survey:

Sector 1: Agriculture and Livestock

Over half of the households surveyed have agricultural land, with over two-thirds engaged in agricultural production in the last year, having an average land area of 34.7 decimals. Rice was the most produced crop, followed by maize, bottle guard, chilli, and sweet guard. The primary purpose of these crop production was to consume and fulfil personal needs, however, a smaller percentage of producers also engaged in commercial production. Household specific estimations of crop loss due to natural disasters were reported by 69% of households, with an average value of crop loss of BDT 17,554 (USD 164) in accordance with their reported amount of loss.

In the agriculture sector, decision-making positions were largely occupied by males, indicating a gender disparity. While there has been no assistance provided by BHA (Bureau of Humanitarian Assistance) thus far, approximately 40% of households have implemented at least one improved technology or management practice, albeit without proper knowledge or guidance. When it came to seed collection, the majority of households relied on purchasing seeds from the market, with only a minimal percentage (1.5%) using their own stored seeds. Livestock ownership was relatively low, with an average of one cattle or buffalo, one goat or sheep, and three chickens or ducks per household. Routine vaccination for livestock was practiced by less than 10% of households, indicating limited awareness of its importance. Moreover, a mere 2% of respondents had received training on appropriate crop protection practices, indicating a lack of access to relevant knowledge and skills in this regard. The findings related to environmental management are concerning. Most households (66.3%) rely on chemical pesticides for pest control, indicating a heavy reliance on potentially harmful substances. In contrast, a mere 1.47% of households adopted improved pest management practices, covering only 0.63% of agricultural land. This highlights the need for greater adoption of sustainable and eco-friendly pest control methods. Moreover, the usage of personal protective equipment (PPE) during pesticide spraying is low, with only 4.5% of households employing such measures. The disposal of used pesticide containers poses a significant issue, as 48% of farmers discard them in open spaces, leading to environmental contamination. Furthermore, only 23.47% of households practice safe management of pesticides and related waste materials, indicating a lack of awareness and adherence to proper disposal practices. Gender disparities are evident in safe pesticide management, with 26.47% of males practicing safe methods compared to only 12.31% of females, suggesting the need for targeted interventions to address this gap.

In contrast to the char region, the haor region, particularly Sunamganj district, faces more significant agricultural devastation caused by sudden flash floods, resulting in complete crop loss. These flash floods also lead to a shortage of livestock food and an increase in illnesses among livestock and poultry. However, the disrupted communication systems hinder the proper treatment and care of the affected animals.

Sector 2: Disaster Risk Reduction Policy and Practice

Disaster Prevalence in the community:

The survey found that the highest percentage of households surveyed were affected by flood disasters, with more than 96% impacted, followed by drought disasters and nor 'westers. The majority (77.5) of households were being evacuated and/or displaced during the flood.

Disaster Impacts on Livelihood:

98% of households in the project areas do not have alternative livelihood opportunities during or after disasters. Gender inequality in wages was also prevalent, with 59.8% of households reporting that women never receive similar wages as men for the same job. The lack of disaster-induced livelihood opportunities has significant implications for affected households, as they face difficulties in meeting their basic needs and recovering from the disaster.

Resilience Capacity

Physical capital

Physical capital for resilience during and after disasters is limited: only 0.3% of households reported highly accessible critical infrastructure services, and the majority (69%)reported low accessibility. Similarly, few households reported highly accessible infrastructural planning and implementation (5%) and government/public resources (0.3%), with most reporting low accessibility.

There is a gap in access to key infrastructure. Key informant interviews suggest that the government and NGOs provide sufficient help during disasters, including arranging shelters and providing food and medical supplies. However, this contradicts the low levels of physical capital reported by households, indicating a gap between service providers and the community.

Social capital

The mean social index value is 62% which refer that more than half of the households actively bridge and create bonds with community and outside the community through networks, norms, and trust that facilitate cooperation and coordination among the individual for better disaster preparedness and support. Most households reported a moderate to low level of engagement in seeking or receiving support related to disaster preparedness and response. Community-based organizations also did not perform well in providing support during disasters, with more than half of respondents reporting low or no support from these organizations. Emotional support from within or beyond the community was insufficient for more than 80% of households. However, more than 90% of households were willing to provide support to others, although this was limited to relatives and same ethnic/caste groups. The focus group discussions showed a more positive picture, with people in the community helping each other by providing shelter and financial support, and everyone being cooperative and willing to help, although capacity constraints may limit their ability to do so.

Human capital

The vast majority of respondents (99%) have not received any training on disaster preparedness, DRR, and/or DRM. Only 12% of households strongly agreed that their community had the capacity and practice to mitigate risks, while 36% were undecided. Just 1% of households received training on disaster preparedness, DRR, and/or DRM, with limited reach from both government and non-governmental organizations.

Sector 3 : Shelter and Settlements

The vast majority of households (99%) in the surveyed area possess their own homestead land, with a significant portion owning plots larger than 5 decimals. Flooding emerges as a significant issue, impacting nearly all households (96.7%), with 34.4% experiencing complete submergence and 65.6% facing partial submergence on an annual basis. To mitigate the risks associated with floods, a considerable 92.8% of respondents have opted to raise the plinth level of their homesteads. However, economic constraints and limited technical capacity pose significant challenges in implementing this measure effectively. Nonetheless, a promising aspect is that 95.9% of households have access to sufficient earth cubes or soil required for raising their homesteads. Furthermore, an overwhelming 99.7% of respondents expressed willingness to share their raised or disaster-protected households with other community members during times of disasters, highlighting an intense sense of community support and solidarity.

In Sunamganj district of the haor region, flash floods occur swiftly and unpredictably, resulting in rapid devastation. Unlike the char region where houses experience prolonged submersion, the haor region has houses located on elevated clusters known as "hati." However, the erosion of these hati and the bases of houses during flash floods leaves them susceptible to small storms and regular floods, increasing vulnerability over time. There is a lack of flood protection measures for shelters in the haor region, emphasizing the urgent need for initiatives to safeguard these houses.

Gender Dynamics and Integration

Women's participation in decision-making and livelihood is very low and sporadic. Only 24.2% of households have female participation in decision making for agricultural activities, and 66.5% of households report low-level representation of women in community-based organizations with 18.5% reporting no representation of women.

WASH facilities and Sexual Reproductive health support are scarce during disasters. 59.8% have low access to feminine hygiene products during disasters, and 15% of women never get feminine hygiene products. Additionally, 20.5% of households have pregnant or lactating mothers and 18.3% have chronically sick children, but there are no services or facilities in disaster shelters (mostly temporary shelters) for them. The study also reveals that even there are no safe wash facilities in the shelter, which women in FGDs state as a severe problem.

Women and girls are at risk of violence and abuse during disasters. Additionally, the disaster work as a catalyst for child marriage, the insecurities of women and adolescent girls.

1. INTRODUCTION AND BACKGROUND

The geographical position of Bangladesh makes it the most vulnerable country with high exposure of communities and resources to hazards. The frequency and intensity of natural disasters in Bangladesh have been increasing in recent years due to climate change, deforestation, and population growth which shoved Bangladesh to rank 9th position in Global Disaster Risk Index 2022[2]. These disasters have significant impacts on the economy, infrastructure, and the lives of people in the country. Hence, the country has invested in early warning systems, cyclone shelters and flood-resistant infrastructure to minimize the damage caused by natural disasters[3]. The government and non-governmental organizations have also launched various programs combinedly to raise awareness, build capacity, and ensure food security among communities to prepare for disasters. However, not all areas are equally affected but there are spatial concentrations of disaster impacts. According to INFORM Sub-national Risk Index 2022, 24 among 64 districts have high to very high disaster risk[4]. To be more precise, there are several remote areas in Bangladesh where people are under severe natural, social, and economic stress. These vulnerability aspects are multi-folded and can be explained through the rational theory of changes. Challenges include exceptionally low coping capacity and very high vulnerability in comparison to the national scale, which makes them more susceptible to hazards and dictates fragile infrastructure and institutional setup for resilience. Anticipated interventions are improvements in agricultural production, safe management of pests and pesticides, protection of livestock, building community awareness, capacity-building training, and safe access to shelter.

The SHOUHARDO III DRR project concentrated on these most vulnerable flood-prone areas in the northern and northeastern parts of the country intending to foster locally led, gender-inclusive, and policy-informed community resilience in Bangladesh. The broader goal is to foster locally led, gender-inclusive and policy-informed community resilience in Bangladesh, with a particular focus on the most vulnerable and flood-prone areas.

To serve the purpose of the project goal three major objectives are identified from three broad sectors (e.g., Agriculture, Disaster Risk Reduction and Practice, Shelter and Settlements):

- to build capacity for adaptive, productive, equitable and resilient agriculture through improved agricultural,
- to increase the capacity of HH, communities and institutions to anticipate, prepare for, and respond to disasters or risks to reduce the loss of lives, livelihoods, and assets,
- to strengthen household and community structures for safe access to shelter during natural disasters.

2. BASELINE STUDY OBJECTIVES

The broader aim of this consultancy service is to deliver a Baseline and Scoping Assessment of the SHOUHARDO III DRR project to collect the baseline value of the key project indicators outcomes in the Indicator Tracking Table (ITT) along with the climate vulnerability and capacity analysis of selected union. To reach this goal the following objectives have been identified which will guide the consultancy tasks-

[2] https://weltrisikobericht.de/wp-content/uploads/2022/09/WorldRiskReport-2022_Online.pdf
[3] https://climateknowledgeportal.worldbank.org/sites/default/files/country-profiles/15502-WB_Bangladesh%20Country%20Profile-WEB.pdf
[4] https://bangladesh.un.org/sites/default/files/2022-12/INFORM%20Sub%20National%20Risk%20Index_2022_Bangaldesh_Final.pd_.pdf

Objective(s)	Key Issue(s) to identify
To provide situation analysis on the Physical Capital and Social capital of the vulnerable households and the community with respect to shelter and settlement status for flood preparedness	WHAT, WHEN and WHERE
To provide situation analysis on Human Capital and Infrastructure with respect to overall disaster risk reduction planning and execution in the targeted unions	WHAT, WHY, WHERE and HOW
To establish baseline information against SHOUHARDO III DRR's log frame indicators at the community level which will be used as a threshold to assess outcomes and impact	WHAT and WHERE

This report serves as a baseline to measure the project impact along with the project indicators' outcomes during the final evaluation.

3. METHODOLOGY AND BASELINE STUDY DESIGN

3.1 Scope of the Study

The baseline study for SHOUHARDO III DRR project has focused on the project specific thematic areas aligning the objectives and objective based indicators. The study focused on providing a concurrent situation overview of selected indicators, enabling monitor and evaluate the impact of the project. A multi-method research approach has been implemented. While concentrating on comparative research strategies for individual unions, both quantitative and qualitative research approaches were utilized.

3.2 Indicators for the Baseline

First, the literature review was done to determine the framework, indicators, analysis, and reporting of the survey outputs. Then, the key sectoral aspects were evaluated to understand the pre-project status of the community. The indicators for the baseline were aligned with the specific sectors of the planned project as per the Indicator Handbook of USAID's BHA Emergency Application Guidelines. Additionally, context-based information about the community and institution has been added as additional indicators to understand the scenarios.

Figure 3.1. : Key indicators selection framework for baseline

3.3 Quantitative Approach

The methodology employed for the research consisted of a combination of quantitative household surveys and qualitative surveys targeting specific households. The quantitative household survey utilized a statistical method known as stratified random sampling with a 95% confidence level, and it is stratified by upazila among poor households. This approach ensured a representative sample of households for data collection and analysis. However, considering the need for a more effective assessment of quantitative data, the research suggested conducting a slightly larger household survey. Therefore, while the statistical sample analysis indicated the need for 380 households, the study ultimately surveyed 400 households to achieve broader geographic coverage.

Sample size

Total Population (Number of total beneficiaries)	31760
Confidence level	95%
Response Distribution	50%
Probable Margin of Error	5%
Recommended Minimum Sample Size	380
Calculation Formula where N is the population size, r is the fraction of responses that you are interested in, and $Z(c/100)$ is the critical value for the confidence level c.	$x=Z(^{c}/_{100})^{2}r(100-r)$ $n=^{Nx}/_{((N-1)E^{2}+x)}$ $E=\mathrm{Sqrt}[^{(N-n)x}/_{n(N-1)}]$

3.4 Qualitative Approach

In addition to the quantitative survey, a qualitative survey was conducted, targeting demographic and social groups based on predetermined key criteria. These criteria were established to prioritize specific households for in-depth qualitative analysis. Both KII and FGD have been conducted throughout the survey. For FGD in each district one female group, one combined group and one PIC and SMC member group were consulted and for KII different key personnel has been interviewed, showed in table 3.1. Importantly throughout the survey and analysis process, all relevant questions were examined through the lens of gendered roles and the existing gender dynamics within the community. This approach aimed to capture and analyze the gender-specific aspects and perspectives of the households, enhancing the overall understanding of the research findings.

The principal subject matter of the qualitative data collection was the DRR setup, which aimed to improve the capacity of HH, communities, and institutions to anticipate, prepare for, and respond to disasters or hazards to minimize the loss of lives, livelihoods, and assets.

Table 3.1 : Methods and extent of qualitative study

District	Upazila	FGD	KII with DRR volunteer groups	KII with UP Body	KII with PIO/Education Officer/Agriculture officer/BDRCS volunteer/ NGO/ INGO representative	KII with UNO/DRRO/ DC
Gaibandha	Fulchhari	3	1	2	1	1
	Gaibandha Sadar		1	2		
Kurigram	Kurigram Sadar	3		4		1
	Ulipur		1	2	1	
Jamalpur	Islampur	3	1	3	2	1
	Dewanganj		1	1		
Lalmonirhat	Lalmonirhat Sadar	3	1	1	1	1
	Hatibandha		1	2	2	
Sunamganj	Dowarabazar	3	1	4	2	
	Tahirpur	3	1	2	2	1
Total		18	10	23	11	5

3.5 Limitations of the Study

The study was designed to incorporate both quantitative and qualitative methodologies, which proved to be an effective approach for gaining comprehensive insights into the project area's dynamics and characteristics. While the combination of these approaches provided valuable insights into the project area, qualitative research requires additional time for effective triangulation and synchronization of information to enrich the study findings. Due to the time constraint, there were limitations in fully exploring certain areas and ensuring better alignment between the quantitative and qualitative findings.

4. KEY FINDINGS: SOCIO-ECONOMIC STATUS AND DEMOGRAPHY

In this section, a summary of the overall findings of socio-economic conditions and demography of the households has been analyzed and interpreted in relevance to the project.

4.1 Socio-Economic and Demographic Status

The basic socio-economic status investigates the household's size, gender ratio, key health issues, livelihood, and income patterns of the respondent in the project areas. The finding shows that the average household size of the project area is 4.33, which is higher than the national average 4.06[5]. Among the respondents, 50.8 % is male 49.2% is female. In terms of occupation, a significant proportion of households (79.8%) primarily rely on agricultural or non-agricultural wage labor for their livelihoods. The average monthly income of the households also gives an alarming scenario about the economic condition. About 90.25% of households (Annex table 3.8) have monthly income below the upper poverty line (HH income is less than $109.5 per month, World Bank 2022) and among those 49.25% of households (Annex table 3.8) are living under the extreme poverty line (HH income is less than $64.5 per month, World Bank 2022), While looking into per capita income, it is only 56.3 BDT (equivalent to 0.53 USD) (Annex table 3.8) which is far below the extreme poverty line. Thus reflect the income is insufficient to cover their household expenses and leaves them unable to save for emergencies or cope with shocks. As a result, many households resort to taking loans to meet their basic needs. This socioeconomic assessment underscores the challenging circumstances faced by the majority of households, who find themselves living in marginal conditions. Additionally, it reveals that some households are experiencing extreme poverty, further exacerbated by existing demographic vulnerabilities.

Key Demographic and Socio-Economic Status	
4.33	Average HH size
50.8 % and 49.2%	Male and female
79.8%	Agri/Non-Agri wage based HH
7325 BDT	Average HH Income
15%	Households have a differently able population

5. BASELINE STUDY INDICATORS

Data for the baseline study were collected through a household survey both quantitative and qualitative study in April 2023). Table 5.1 provides a summary of all Baseline Indicator Tracking Table (ITT) extracted from the study and the details data table added in **Annex 3**.

Table 5.1: Base value result for Indicator Tracking Table (ITT)

Indicator No.	Indicator Title	Disaggregates	Baseline Value
Agriculture			
A02	Number of hectares under improved management practices or technologies with BHA assistance (Required)	Overall	0
A03	Number of individuals (beneficiaries) who have applied improved management practices or technologies with BHA assistance (Required)	Overall	0
A04	Number of beneficiary households using improved post-harvest storage practices (Required)	Overall	0

[5] HIES 2022

Indicator No.	Indicator Title	Disaggregates	Baseline Value
A05	Percent of households with access to sufficient seed to plant (optional/Required)	Overall	46.52%
A10	Number and percent of hectares protected against disease or pest attacks (Required)	Overall	0
C01	Percent of participants practiced safe management of pesticides and pesticide related waste materials using Mission/ Bangladesh PERSUAP permitted pesticides.	Overall	0
A15	Number of animals owned per individual.	Cattle and buffalo	1.1
		Goats and sheep	1.0
		Poultry (e.g., chickens, ducks)	3.1
C02	Number and Percent of people of all genders that have applied at least 3 practices to protect their livelihoods from negative impacts of climate related shocks and stresses. (CJ-27.1)	Overall	0
Disaster Risk Reduction Policy and Practice			
D05	Percent of individuals perceiving/recognizing a high likelihood of being severely affected by specific hazard (RiA)	Overall	95%
Shelter and Settlements			
C04	Number and Percent of people of all genders that took at least 3 steps to protect their dwellings and direct surroundings from the negative impacts of climate related shocks and stresses (CJ-27.4).	Overall	0

For agriculture and livestock sectors, there are several indicators including the number of hectares under improved management practices or technologies with BHA assistance, the number of individuals who have applied improved management practices or technologies with BHA assistance, the number of beneficiary households using improved post-harvest storage practices, percentage of households with access to sufficient seed to plant, and number and percentage of hectares protected against disease or pest attacks. For the safe management of pesticides and pesticide-related waste materials, the indicator targeted to increase the percentage of participants who practiced safe management using Mission/Bangladesh PERSUAP permitted pesticides. Though the key findings section has found some practices in the project areas of the improved agricultural practices, which are initiated by the community and not related to the BHA assistance, so the baseline values for all these indicators are kept zero.

Regarding livestock ownership, the ITT table showed analyzed values of the number of animals owned per individual, including cattle and buffalo (1.1), goats and sheep (1.0), and poultry (e.g., chickens, ducks) (3.1).

For disaster risk reduction policy and practice, the table presents only one indicator which is the percentage of individuals perceiving/recognizing a high likelihood of being severely affected by a specific hazard (for this case flood). The quantitative findings depict that the baseline value is 95%.

Lastly, for shelter and settlements, the table presents one indicator which is the number and percentage of people of all genders that took at least three steps to protect their dwellings and direct surroundings from the negative impacts of climate related shocks and stresses. The quantitative findings depict that the baseline value is zero.

6. SECTORAL FINDINGS

SHOUHARDO III DRR Activity project of CRAE Bangladesh has been awarded by the Bureau of Humanitarian Assistance (BHA) of USAID. The USAID's SHOUHARDO III DRR directly links to DO-4 of the United States Agency's Bangladesh Country Development Cooperation Strategy (CDCS) 2020-27, which refers that resilience to natural hazards is critical for Bangladesh's social, economic, and political stability. To know the present status of "Agriculture", "Disaster Risk Reduction Policy and Practice (DRRPP)" and "Shelter & Settlements in its 22 targeted unions in Gaibandha, Jamalpur, Lalmonirhat, Kurigram, and Sunamganj and to gather baseline against indicators specified in ITT this baseline study has evaluated for SHOUHARDO III DRR along with the key relevant dimensions of sectoral social, human and physical capital. Aligning the project objectives, three major sectoral (Agriculture, DRR and Shelter) findings have been analyzed here chronologically to get the current scenarios of the selected sectors.

6.1 Agriculture and Livestock

The agricultural aspects have been evaluated in three dimensions. The first one for looking into agricultural practices, the second one is the generic impact scenarios of disaster on agriculture and the third one is focused on agricultural practices with recommendations.

6.1.1 Agricultural Resources and Practices

Baseline studies show that 54.5% of households have agricultural land beyond their homestead, while 45.5% of households have no agricultural land (Annex table 3.17). In the area, 68.3% of HH engaged in agricultural production during the last 12 months (Annex Table 3.30). That prevails that households in this area are vastly agricultural dependent. The crop production pattern shows rice was the most produced crop, with 77.3% of households producing it, followed by maze (40.7%), potato (10.3%), and wheat (5.9%). Among the vegetable crops, bottle gourd was the most produced crop, with 14.7% of individuals producing it, followed by chilli (12.5%), sweet gourd (10.6%), and tomato (2.6%) (Annex table 3.33). Other vegetables, such as bitter gourd, cucumber, soybean, legumes, and oil seeds, were produced by a smaller proportion of individuals. The interesting finding was households (94.9%) produced crops for their own consumption as well as a significant proportion of HHs produced crops for both sale and consumption (Annex table 3.37), suggesting that crop production is an important food source and at the same time source of income for households in the area. While the char region has above diversified agricultural production the qualitative findings reveal that the Haor region's agricultural production is dominated by rice with only some homestead base vegetables.

6.1.2 Disaster Impacts on Agricultural

The baseline survey reveals that almost every year disasters, especially floods, take their toll on agriculture in the project areas. In the project area, 69% of households have experienced crop loss due to disaster in the last five years (Chart 6.1) which is almost every household that produces crops. Since rice is the most produced crop, it is the most damaged as 86.6% of households reported, followed by Potato at 8.3%, Maize at 6.2%, and Wheat at only 0.7%. Other crops and fruits were also damaged and destroyed (Annex table 3.4). The descriptive statistics for the approximate value of the lost crops is on average 17,554 BDT (164.85 USD) for each household in each year (Annex table 3.5).

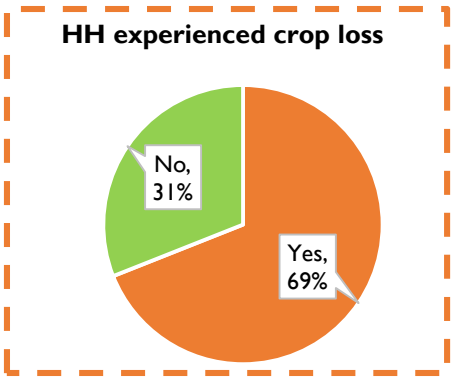


Figure 6.1: HH experienced crop loss due to disaster in last five years

The findings from focus group discussions indicate that agricultural production is affected in all areas studied. However, the haor region, specifically the Sunamganj district, faces significantly worse scenarios due to flash floods. Unlike the char and floodplain regions, where crop damage is occasionally observed, the haor region experiences total devastation of agricultural production if flash floods occur before the harvest period. To address this issue, support for improved harvesting methods is recommended, particularly in the haor region.

Key Summary: Agricultural Practices and Resources

The Qualitative study also reveals the same scenarios on the findings on agricultural practices that most households in the area are agricultural-dependent and more than half of the HHS own agricultural land, with a significant proportion engaged in crop production for their own consumption and income generation. The most produced crop is rice, followed by maize and potato, while bottle gourd is the most produced vegetable crop. However, disasters have had a significant impact on agriculture in the area. Therefore, disaster risk reduction measures need to be implemented to mitigate the impact of disasters on agriculture and the livelihoods of the people.

6.1.3 Improved Agricultural Practices

The known improved agricultural practices and technologies for Bangladesh includes different modern and localized technologies for climate smart agriculture by the community. For this baseline study, improved technologies have been investigated for common agricultural practices, seed quality and storage of the cultivated products. The findings depict in chart 6.2 shows that very few households reported using the improved/certified seeds, improved seedling production and transplantation, integrated pest management, improved/environment-friendly insecticides and pesticides, and integrated biopesticides management practices. Mulching was the most adopted practice, with 19.8% of households reported its usage, followed by compost use at 11.7%. The usage of minimum tillage practices, crop rotation, drought, and flood-resistant varieties, and raised beds were relatively low.

In terms of area coverage, the mean technologies applied to land among total agricultural land in the last year is 6 hectares, indicating that some HHs applied technologies to their lands. This suggests a wide variability in the extent to which less portion of farmers are adopting and applying these technologies to their agricultural land. However, these improved practices are mostly community driven and not sufficient to make them disaster resilient. On the other note, these practices are not associated with the BHA assistance so the baseline values (Indicators A02, A03) for improved agriculture practices should remain zero.

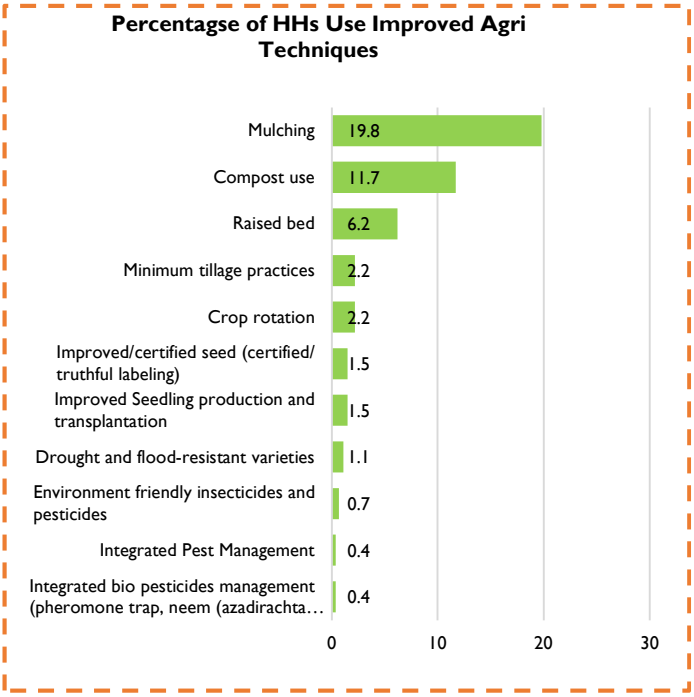


Figure 6.2:Type and status of improved agricultural practices by community

Investigation on the storage aspect of the cultivation showed that households only consume produce crops for consumption and selling and they do not store any cultivated products. The qualitative findings show that the

households don't have any disaster resilient storage, so they prefer to sell them during cultivation. Thus, depict base value for the storage issues is zero.

Seeds always play a critical role in the overall cultivation system. A large portion of HHs whose livelihood is mainly agriculture based and involved with agricultural activities has been inspected for understanding the source of seeds, represented in chart 5.3. The majority (92.3%) indicated that they usually get their seeds from the market. 14.3% of HHs reported that they get their seeds from within the community. Agri-dependent households have access to seeds but in most of the cases they are not sufficient, and 46.9% of households mentioned the seeds they collect are not sufficient for proper cultivation. Even with the limited access to seeds, the seed quality is not satisfactory to most of the agriculture dependent households. More than 70% of the household are not entirely satisfied with the seed quality though 46.52 are somehow or at a minimal level satisfied with the seed's quality (Annex table 3.40). Though overall 53.1% HHs (Annex table 3.39) have access to seeds, but based on the above satisfaction analysis it prevails that only 46.52% HHs (table 5.1) have access to sufficient seeds (Indicator 05) with satisfaction. However, based on the sources of the seeds the satisfaction level varies. Firstly, farmers sourcing seeds from the market demonstrated a relatively high satisfaction level, with the majority (57.55%) falling into the "Somewhat Happy" category. However, a notable proportion (10.20%) Secondly, farmers acquiring expressed dissatisfaction, indicating room for improvement in meeting farmer expectations

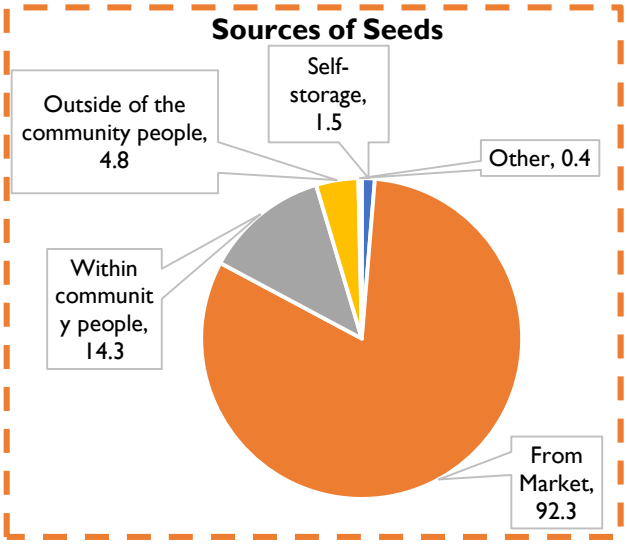


Chart 6.3: Sources of seeds for the cultivation

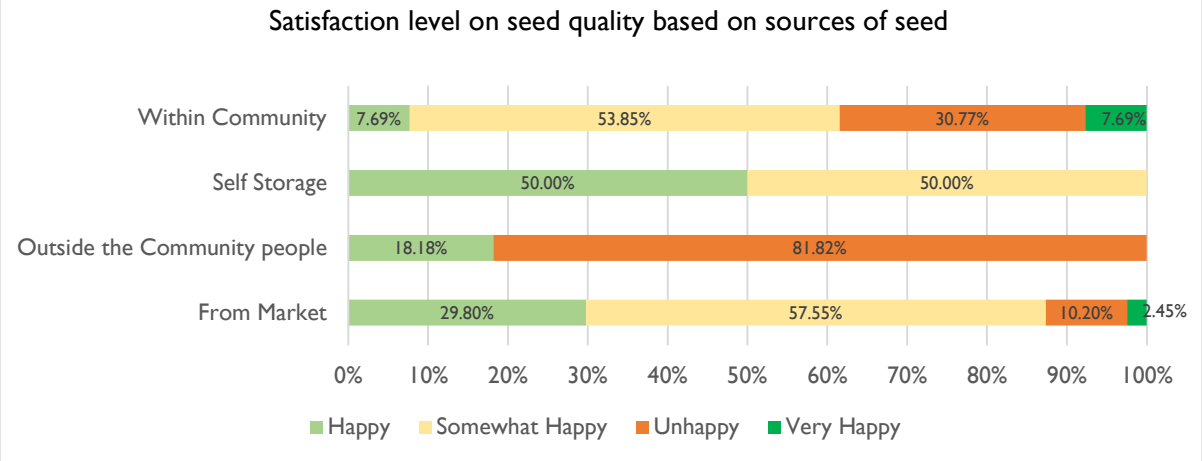


Figure 6.4: Satisfaction level of farmers regarding seed quality based on sources of seed.

and needs. seeds from outside the community displayed the highest level of dissatisfaction, with a significant majority (81.82%). This highlights the pressing issue of inadequate seed quality or compatibility from external suppliers, necessitating attention and improvements to enhance farmer satisfaction. Thirdly, farmers who utilized self-storage for seeds reported a balanced satisfaction level, with 50% falling into both the "Happy" and "Somewhat Happy" categories. Importantly, none expressed unhappiness. This suggests that farmers who store and use their own seeds generally experience a positive satisfaction level, likely due to factors such as quality control and familiarity with stored seeds.

Lastly, farmers relying on seed sources within their own community demonstrated a relatively high level of satisfaction, with more than half (53.85%) falling into the "Somewhat Happy" category. This underscores the benefits of community-based seed sources, likely driven by factors such as local knowledge, support, and adaptability to regional conditions.

Since the quantitative survey result showed moderate to low adoption of the technology and improved agricultural practices with BHA assistance and as well as the seed sources are not sustainably satisfying, the qualitative result showed the farmers are somehow keen to use advanced technologies such as fast-growing cultivars, cultivation of tolerant varieties, use of pesticides, and improved fertilizers. They also try to use hybrid seeds, but most often they cannot use them as they are costly.

Comparative insight on the char region and haor region shows that though the adoption of improved technology for agriculture is low in the char region, these practice in the haor region is almost nothing. Additionally, the haor region prioritizes the need for access to affordable agricultural inputs, including seeds, fertilizers, and machinery, which can support farmers in adopting modern agricultural practices and technologies. Proper training and extension services can also play a crucial role in promoting the use of appropriate agricultural technologies for sustainable and resilient farming practices.

Key Summary: Improve Agricultural Practices

The adoption of improved technologies, such as certified seeds, integrated pest management, and environment-friendly pesticides, is relatively low with some level of utilization of mulching and compost use. The key informants also highlight the gender gap in the adoption of improved agricultural technologies, with male decision makers being more likely to use such technologies than their female counterparts. The storage of cultivated crops is a critical issue for food security. While modern machinery and improved seeds are utilized at some level, climate-tolerant varieties are not yet common in the area. It is important to promote the use of disaster-resistant crops, climate-tolerant seeds, and good fertilizers to enhance agricultural productivity and resilience to environmental challenges, such as floods. The summary findings show that while most households get their seeds from the market, but the quality of the seed is an issue. Overall, the recommendation came as there is a need for greater adoption of improved agricultural technologies and practices in the area to increase agricultural productivity and food security.

6.1.4 Environmental management using Pest and Pesticide

Regarding the uses of pesticides, the investigation was done to see the practices of farmers and agricultural producers. Results analyzed in chart 6.4 from the survey show the practices of farmers or agricultural producers in dealing with disease or pest-attack on their crops. From the result it shows from Agri-dependent households, 66.3% of the HHs use chemical pesticides to control pests or diseases in their crops 31.8% of households reported that they don't practice any agricultural activity to control disease or pest attack. Only 1.0% of the HHs reported using botanical pesticides, which are derived from plants and considered a more natural alternative to chemical pesticides. None of the respondents reported using Integrated Pest Management (IPM) methods, which is a key indicator (C01) of the project as a service for the sustainable approach that involves combining different pest-control methods to reduce the use of chemical pesticides. These findings show similar scenarios for both the char and haor regions. Since comprehensive pest management and protection is not in place

the indicator value for the number and percent of hectares protected against disease or pest attacks (Indicator A10) remains zero.

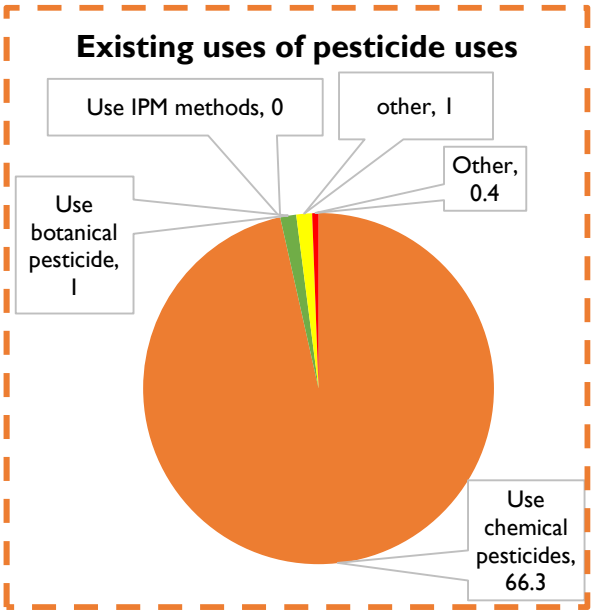


Chart 6.5: Types of pesticides used by households.

The results on the measures that farmers or agriculturally based households take to protect themselves from exposure to pesticides when using them show that the most reported safety measure was spraying the pesticides towards the wind direction (27.1% HH), reporting this measure. A smaller proportion, 6.6% of the HHs reported using an apron when spraying pesticides, while only 2.6% of households reported using hand gloves (Annex table 3.44). Similar scenarios have been identified in the disposal of waste materials of pesticides and findings show they were not aware of the environmentally friendly disposal as 48.0% of HHs throw the used containers of pesticides in the open space (Annex table 3.45). This is concerning as it can lead to environmental contamination and pose a risk to human health. Overall, the findings show the comprehensive safe management of pesticides and pesticide related waste materials using is absence in the community, relevant indicator value (Indicator C01) remains zero.

Lack of training and perceived knowledge regarding the pests and pesticides focused safety and waste management could be the reason for these unhealthy and critically dangerous practices. The findings show only 1.8% received training on appropriate protection and management practices of pesticides (Annex table 3.42).

Key Summary: Management of Pests and Safe Pesticides

Most of the HHs use chemical pesticides to control pests or diseases in their crops, and few use more natural alternatives like botanical pesticides or Integrated Pest Management methods. Safety measures and proper disposal of pesticide waste materials is a concern. The community has a lack of knowledge and training on appropriate seed protection and management practices are limited. There is also a low adoption rate of improved pest management practices in the area and the need for more awareness and education on safe pesticide practices.

6.1.5 Livestock and Poultry

Household engagement of households in livestock and poultry rearing is considered as one of the key resources of a rural household. The baseline study findings reveal that 80.5% of households are engaged in livestock and poultry rearing (Annex Table 3.46). The high percentage of households engaged in livestock and poultry rearing suggests that this is a common practice in the project area. Qualitative study shows that this could be due to the economic benefits associated with livestock and poultry rearing, such as providing a source of income and food for the household.

Later the study focused on the number and types of livestock and poultry reared by households shown in chart 6.5. The most reared type of livestock was poultry, such as chickens and ducks, with on an average household having only one cattle or buffalo, one goat or sheep, and three chickens or ducks. Being a disaster-prone area, the livestock and poultry also show a high risk to disasters. A high percentage of households, around 70.3% reported losses due to disasters, which suggests that disasters can have significant impacts on the livestock and poultry sector at the household level shown in chart

6.6. These losses can lead to reduced income and food security for the affected households, as well as other social and economic impacts. Being affected by frequent natural disasters almost every year, communities also took some initiatives to save their livestock and poultry during disasters shown in chart 6.7. The most popular method, selected by 57.3% of the respondents, is to keep livestock and poultry in a safe shelter. This is followed by using raised platforms for goats, sheep, and poultry, which is practiced by 15.3% of the Households. Routine vaccination is extremely limited and covers 9.8% HHs only and 8.0% of the HHs do not take any measures to protect their livestock and poultry from disasters.

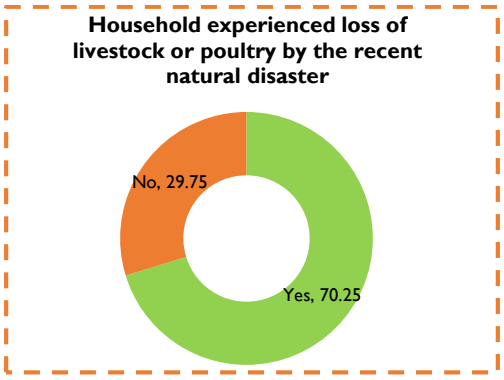


Chart 6.6: HH loss of livestock and poultry

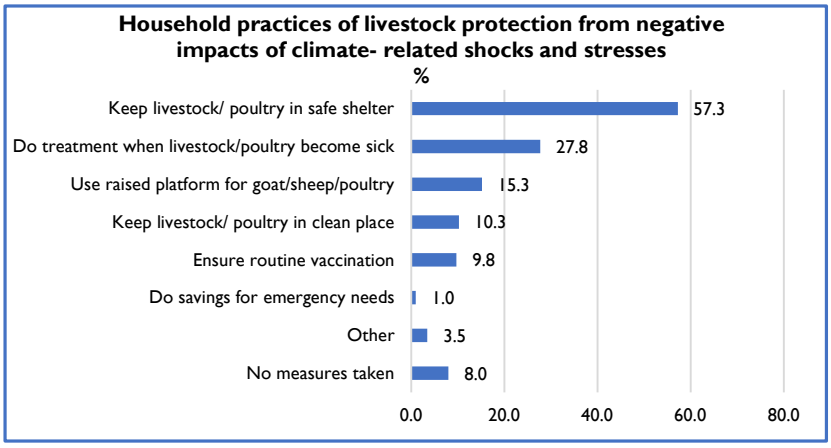


Chart 6.7: HH practices of different protection measures to save livestock from climate related shocks.

"Livestock and poultry in flood-affected areas are often exposed to various health risks after a disaster, including waterborne diseases, infections, and other ailments due to prolonged exposure to floodwaters and unsanitary conditions. Providing vaccines once a year may not be sufficient, especially during disasters like floods" (Key Informants, Aminur Rahman Rinku, UP Chairman, Ghagoya Union, Gaibandha Sadar Upazila, Gaibandha)

"In relation to full damage of the agricultural land and inundation of grazing land during flash flood in haor region, the most of the HHs face severe scarcity of livestock food and Livestock poultry are afflicted with a variety of illnesses during flood and most of the cases they didn't get proper treatment as the communication systems are disrupted. (Md Johirul Islam, Lakshmipur Union, Dowarabazar Upazila, Sunamganj)".

Information on the training received by households on livestock and poultry rearing and protecting them from disasters depicts the issue of less preparatory measures to save livestock by households. Evidence shows that 3.3% of HHs received training on livestock and poultry rearing and protecting them from disasters (Annex table 3.50). The low percentage of households that received training on livestock and poultry rearing and protecting them from disasters suggests that there is a need for more targeted and effective training programs for households engaged in this sector.

On another note, qualitative findings on the household level preparedness for livestock protection during disasters show the lack of alternative livestock feed is an issue. Especially in the char and haor region the cows, buffalo and goats depend on low-lying grassland which become inundated during flood. Thus, creating a severe crisis of livestock feed. Both FGD and KII participants prioritized Support for alternative livestock food and fodder is dire needs of the community. To investigate the comparative picture between the haor and char region, findings show that the scarcity of livestock food during early flash flood in the haor area is more severe though there is some government assistance in providing cow fodder for cattle once a year. However, it may be necessary to explore additional measures to ensure adequate fodder supply for livestock during emergencies, such as stockpiling fodder in strategic locations, promoting sustainable and climate-resilient fodder production practices, and facilitating access to alternative sources of fodder during times of crisis.

Key Summary: Livestock

Livestock and poultry rearing are a customary practice among households in the project area. However, the livestock and poultry sectors are vulnerable to disasters, and many households reported losses due to disasters. To protect their livestock and poultry, the community takes some measures, however, those are not sufficient and mainly do not really make them disaster resilient. Even many households don't have enough financial capacity or knowledge to take measures to protect their livestock from disasters. The knowledge-based capacity or training support on livestock and poultry rearing and protecting them from disasters is also limited to the upazila level which indicates the need for more targeted and effective training programs.

6.2. Disaster Risk Reduction Policy and Practice

Disaster Risk Reduction and policy sections investigate the access to climate and weather-related information, capacity of the community as well existing support mechanism along with the goal to evaluate the needs.

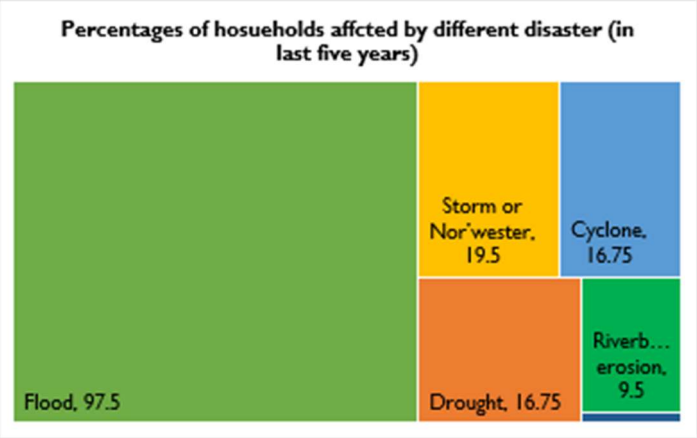


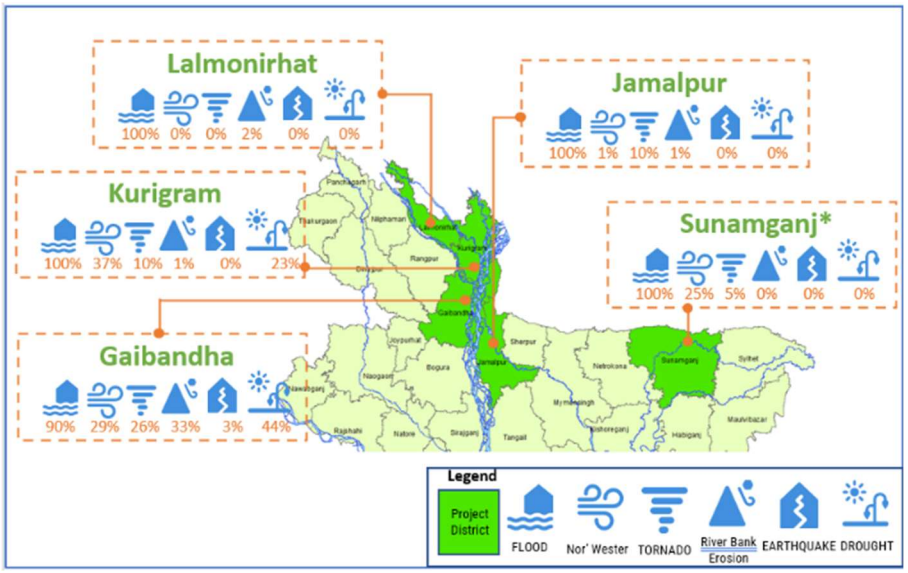
Figure 6.8: Disaster affected HHs in Last five Years

6.2.1 Disaster Impact on Households

Disaster Impact Scenarios have been evaluated through the household survey by focusing on the last five years impacts as well as recent disaster impacts. Figure 6.8 shows the diverse types of disasters that were experienced by the respondents in the last 5 years from the selected districts. The most frequent disaster was flood, which affected 97.5% of households. Storms (Nor 'wester) were the second most common disaster type with 19.5% affected households. Besides, cyclones and droughts were the third most common disaster type reported by 16.8% of households. Riverbank has impacted 9.5% of households and earthquakes were the least common disaster type, accounting for only 0.8% of households. Overall, floods were by far the most common disaster type that respondents experienced in the last 5 years.

The last five years disaster scenario by districts of the project areas also gave the geographical aspects of disaster type and impact. The last five years annual disaster prevalence shows that flood is the most common disaster for all districts as more than 90% to 100% of households have been affected by flood. According to the multi hazard risk analysis of climate related disaster 2014-2021 study it has also found the monsoon flood and flash flood are also very much common in haor areas and the peoples are more or less equally vulnerable to natural disasters as in Char areas. Despite the flood being pre

dominantly impacting communities in all areas, Sunamganj district in the haor region faces sudden flash flood which is often unpredictable and causes swift devastation.



Map 6.1: Disaster perceptions and prevalence by districts in last five years from HH survey and FGDs

In summary, the project area and the households (at least 97.5%) are fully susceptible to flood disaster and they are being affected by either one or multiple disasters, more specifically frequent disasters (Annex Table 3.1). This frequent disaster is making them more and more vulnerable and hindering the regular prospects and development of the area.

6.2.2 Disaster Impact on Livelihoods

Livelihood is the key for household and if the livelihood is disrupted, the coping capacity of the households become very low to none. The analysis of the livelihood opportunities during and after disaster shows a challenging dimension in the project areas. The findings show 98% of households don't have alternative livelihood opportunities during or after disasters (Annex table 3.71). Further gender specific livelihood opportunities for women during disaster periods show that 25% of households reported that livelihood opportunities were sometimes available, and 75% of households reported its very rare and mostly never available for women (Annex Table 3.72). While livelihood opportunities are rare for women but another nail on this coffin of gender inequality in wages as women usually receive less wages than men. Most of the households which is 239 (59.8%), reported that women never receive similar wages as men for the same job. (Annex Table 3.73).

"There is a huge lack of alternative livelihood opportunities for households during a disaster period. This has significant implications for the affected households, as they face difficulties in meeting their basic needs and recovering from the disaster." (Mst. Monowara Begum, Female group FGD in Ulipur Upazila, Kurigram District)

On the contrary, the qualitative findings show that during flood the haor region community has a greater ratio of alternative livelihood. At least one-fourth of the households do fishing or work as labor of fishing boat during flood. However, if the flash flood happened before the harvest season, thus could totally disrupt the main livelihood of the haor area as agricultural producer and laborer is the main livelihood of almost 90% of households in that area.

Considering these risks and vulnerabilities with low coping capacities directed that the lack of disaster induced livelihood opportunities makes them more susceptible to fall in a vicious cycle of social and economic vulnerability.

6.3. Resilience Capacity

6.3.1 Physical Capital

The physical capacity for resilience of the community has been evaluated with the goal to understand the community can utilize and access to the key infrastructure. The evaluation covers information on access to infrastructure attributes during and after a natural disaster, such as a flood with the level of access and utilization from high to never. Findings show in chart 6.8, only 0.3% of the HHs reported having highly accessible critical infrastructure services, such as shelters and roads, during the disaster period. The majority (69%) have low accessibility to these services. Regarding access to infrastructural planning and implementation, only 5% of HHs have highly accessible facilities, while almost half (47.3%) have moderate accessibility. However, approximately 20% reported low accessibility to these facilities. In terms of accessibility of shelters for differently abled people, none of the HHs reported highly accessible facilities, while only 20.8% reported moderate accessibility. The majority (65.3%) have low accessibility to these facilities. Finally, when it comes to the accessibility of government and public resources during and after a flood, only 0.3% of HHs have high level access to resources. Most (66.5%) HHs have low or no accessibility to these resources.

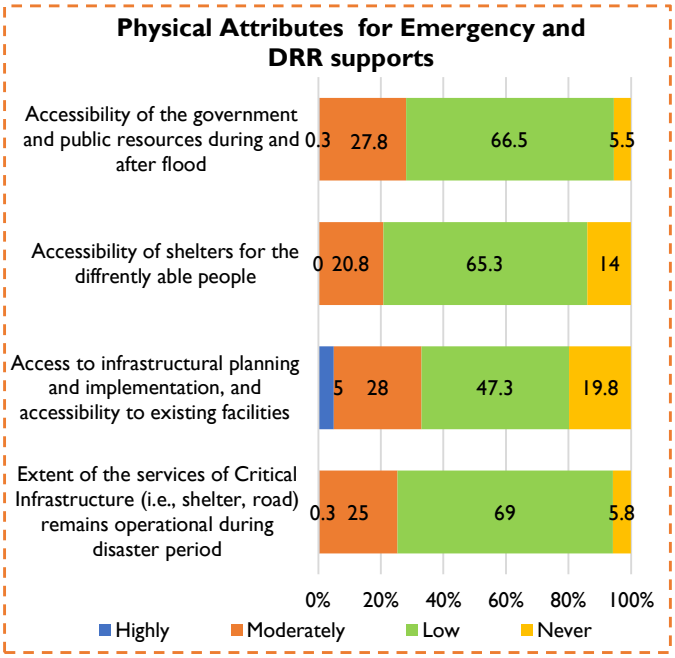


Chart 6.8: Level of physical attribute for emergency and DRR support

While the quantitative findings show that there is a very minimum level of physical capital in the community during and after disaster, KII findings show different results. With the contradictory findings on the status of the physical capital for resilience, it seems there is a huge gap between the service provider and the community. It may hinder the whole disaster management and DRR actions in the community.

"During disasters, GoB arranged shelter for all disaster affected people. GoB and NGOs provide sufficient direct help to transfer people to shelters and supplies of dry food and medicines. GoB coordinate volunteers to assist in logistics support, including boats and rafts for quick transportation, food arrangements, and emergency medical facilities." (Rashedul Hasan, UNO, Kurigram Sadar)

Looking into financial accessibility and access to financial institutes through qualitative survey shows a similar scenario for char and haor region. The majority of the households don't have enough financial literacy and all the financial institutes are not easily accessible during floods.

"Community don't usually use bank for financial transaction. Though we have some mobile banking agents in the community. But there are two challenges one is most of the people, especially women don't know how to use mobile banking on their mobile and another challenge is that during flood season mobile banking agents are not operationalized. ." (Mst. Rehana Begum, Female UP member, Hatibhanga, Dewanganj, Jamalpur)

Thus underscore the need to strengthen and extend the physical network of the financial institute and at the same time develop capacity of financial literacy through a comprehensive assessment.

6.3.2 Social Capital

The evaluation of the social capital mainly focused on the different social attributes and levels of support within the community during or after disaster. Chart 6.9 provides investigates results on various social attributes related to natural disasters and shows the supports related to social attributes are mostly moderate to a low level. This table presents the levels of social attributes related to disaster preparedness and response, but the results are predominantly negative. Only 1.3% of HHs reported highly engaging in seeking or getting shelter support from relatives, and a small percentage of 2% received financial support or advice from their relatives. And a low percentage of people (9.5%) helped each other in taking shelter, the majority of HHs (53.5%) only moderately engaged in this behavior. Additionally, a meager 1.3% reported actively sharing resources and collaborating with others during disaster events. The table also indicates that community-based organizations (CBOs) did not perform well in terms of support during disaster events, with a high percentage of respondents reporting low (51.5%) or never (34.8%) receiving support from these organizations.

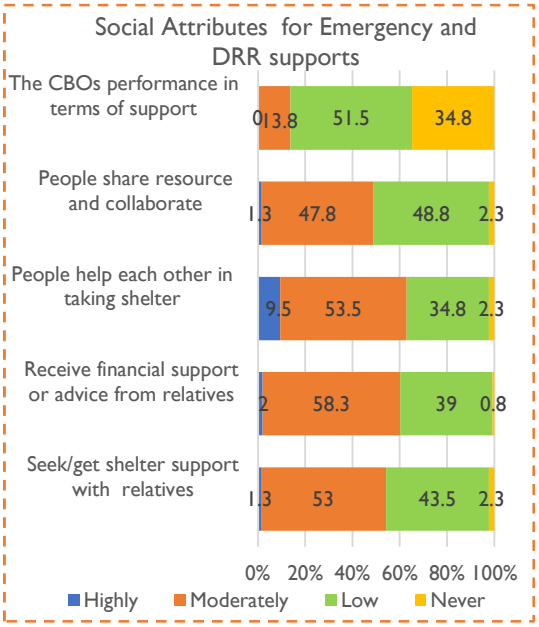


Chart 6.9: Status of social attributes for emergency and DRR issues

Overall, the table highlights the need for improved social support and collaboration during disaster events, particularly in terms of CBOs. The low percentages suggest that there is a significant gap in the community's ability to come together and support each other during disasters. Focusing on the CBO the qualitative findings, more specifically the interview of the DRR volunteers revels that the capacity of the DRR volunteer is limited also they are not being supported institutionally thus creating challenges to provide more effective services in an efficient way.

The investigation on the emotional support from their relatives or neighbor reveals a high number (more than 80%) HHs don't receive sufficient emotional support during or after disaster from within or beyond the community (Annex Table 3.57). On the other note, more than 90% HHs are willing to provide support to others, however, those are limited to relatives and the same ethnic/caste group only. (Annex Table 3.55)

Based on the social attributes an Index value for social index has been calculated. The mean social index value for this community is 62.06 (Annex table 3.56) which refer that more than half of the households actively bridge and create bonds through networks, norms, and trust that facilitate cooperation and coordination among the individual for better disaster preparedness and support. Participant households in the target area draw on social networks to get support to reduce the impact of shocks and stresses on their households. It measured both the degree of bonding among households within their communities and the degree of bridging between households in the area to households outside their community. The higher mean of social index value here reflects that they have reciprocal, mutually reinforcing, relationships through which they could receive and provide support during times of need, they are considered to have social capital.

However, the summary of the FGDs on this issue shows a totally different picture. As per the findings of FGDs, during natural disasters, people in the community help each other by providing shelter to

their neighbors who lost their households. Financially well-off families come forward to provide financial and other support to less well-off families. Everyone helps each other and everyone is cooperative. While the support level within the community is moderate to low but willingness is high. This may be justified by the evidence that they may not have the capacity to support while they are already impacted by disaster.

6.3.3 Human Capital

Community Human capital on resilience is evaluated through human capacity and status of the knowledge and perception as well as institution level capacity support. DRR practices and scenarios evaluate the capacity and practice to identify, prepare, and execute an action plan to mitigate risks shown in chart 6.10. Only 12% of Households strongly agreed that their community had the capacity and practice to identify, prepare, and execute an action plan to mitigate risks. A larger group of households, 36% of total households, were undecided, which suggests that they may not have enough information or experience to form a strong opinion on the matter. And 8% of households disagreed with the statement, indicating that they do not believe their community has the capacity or practice to mitigate risks effectively. This group may have concerns about the community's preparedness or may have experienced situations in the past where the community was unable to manage risks effectively.

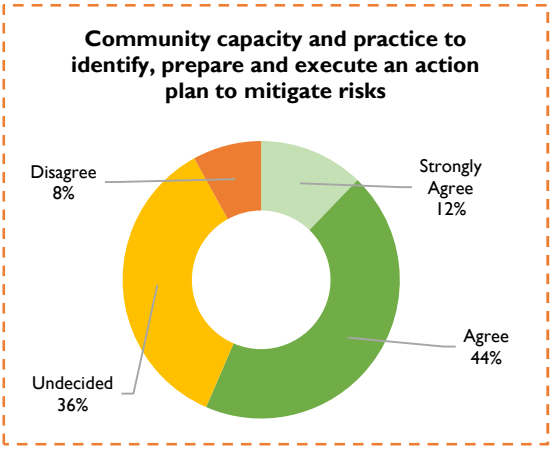


Chart 6.10: HH status of having community capacity and practice to identify, prepare and execute an action plan to mitigate risks

The findings on the support and services show only 12% of households know about the government and non-government support (Annex table 3.70). The results suggest that there is a lack of specific interventions to increase disaster preparedness, such as training, by the government and other stakeholders. This could have significant implications for the community's ability to cope with the impact of disasters. The findings on the individuals who received training on disaster preparedness, disaster risk reduction (DRR), and/or disaster risk management (DRM) shows, only 4 households (1%) have received training on disaster preparedness, DRR, and/or DRM (Annex table 3.14). At the same time out of these four households, two households received training from the government, and the other two households received training from a non-government organization (Annex table 3.15).

Along with findings from the quantitative study of the char areas, qualitative findings in haor region show much worst scenarios. Community in the haor region never received training on the preparedness or DRR and the community-based organization and DRR volunteers are mostly absent in the haor areas.

This finding suggests that both government and non-governmental organizations are playing a role in providing training on disaster preparedness, DRR, and DRM but the reach is very limited. This underscores the need for collaboration and coordination between different actors to strengthen disaster preparedness and response efforts. Qualitative findings also echoed that the human capital for resilience is limited in the project areas. The summary findings of KII show-

"It's important to ensure that the knowledge and skills should be transferred through training and workshops are effectively integrated in real-life situations. Regular updates and refresher training should be reinforcing the knowledge and skills of key stakeholders involved in disaster risk reduction efforts."(Findings from KII)

Key summary: Resilience Capacity

Based on the evaluation of the community's resilience capacity, it is evident that the community has a low level of physical, social, and human capital to cope with natural disasters. The community's physical capital in terms of accessibility to infrastructure during and after disasters is minimal, with a majority of households reporting low accessibility. While there are contradictory findings regarding the status of physical capital, the gap between service providers and the community remains evident. Similarly, the social capital of the community is also low, with low levels of social support and collaboration during disaster events. While the willingness to provide support is high, the ability to do so is limited, leading to a significant gap in the community's ability to support each other. Finally, the community's human capital in terms of capacity and practice to identify, prepare, and execute an action plan to mitigate risks is also low, with a majority of households being undecided about their community's capacity and practice. The lack of specific interventions to increase disaster preparedness, such as training, could have significant implications for the community's ability to cope with the impact of disasters.

6.4 Shelter and Settlements

The shelter and settlement part of the baseline study investigates the status of the dwelling of individual households, the impact of disaster, mainly flood and the prospect for disaster resilient housing through plinth raising.

6.4.1 Housing Status of the Community

To investigate the housing status, the first approach was the ownership of homestead land, which refers to the land where a family's home is located, along with any surrounding land used for household purposes like gardening or livestock. The Result shows that 99% households own their own homestead land, while a small percentage of households do not (Annex table 3.20). Further findings on the distribution of homestead land sizes among the households show that 0.8% of the households surveyed reported having homestead land less than 3 decimals in size, 18.9% reported having homestead land between 3 and 5 decimals in size, and most households (80.3%) reported having homestead land greater than 5 decimals in size (Annex table 3.17).

6.4.2 Flood Impact on the Houses

The project area is mostly flood prone, the findings on disaster impact echoed the same situation with 96.7% households submerged during every flood (Annex table 3.10). Out of the flood affected households 34.4% houses were totally submerged and other 65.6% households partially submerged during flood on an average every year (Annex table 3.12). While it's being submerged that forcing the household members to move to a makeshift or temporary shelter. At the same time, about 20.2% houses are being totally damaged, and 79.8% households are being partially damaged (Annex table 3.13).

The comparative geographic analysis based on qualitative findings reveals distinct challenges in the char and haor regions. In the char region (Lalmonirhat, Kurigram, Gaibandha, Jamalpur), houses are submerged for longer periods during floods, directly damaging and destroying them. In contrast, the haor region (Sunamganj district) faces a different issue. The houses in this region are primarily located on elevated clusters called "hati," providing some protection. However, the erosion of these hati during flash floods leaves the bases of the houses exposed and vulnerable to small storms and regular floods. This complex situation increases the vulnerability of houses in the haor region over time.

6.4.3 Protection of Shelter and Feasibility of DRR for Housing

Since the houses are being submerged and damaged mostly each year due to flood, the baseline studies seek to identify common preferable practices for reducing the impact of disaster on houses. Chart

6.11 derives from the baseline study derived that the most popular protection and DRR measure among households is Raising Plinth, with preferences by 92.8% HHs. The second most popular measure is Regular maintenance/soil filling after flood events, with 33.8% HHs. Keeping valuables in a safe place is the third most popular measure, with 28.3% of the total responses.

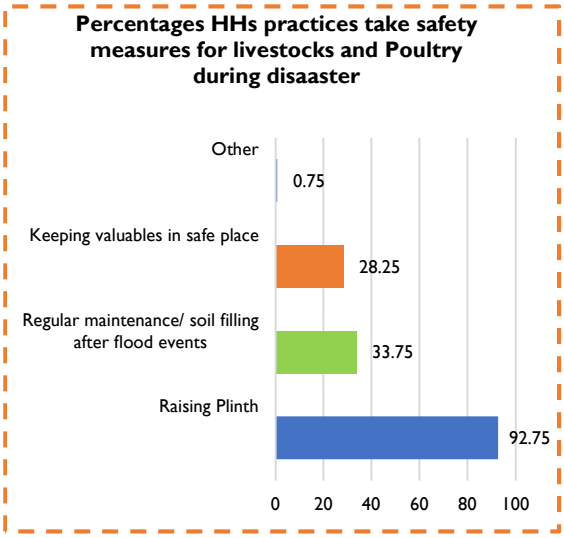


Chart 6.11: Common preferred modalities by communities for disaster resilient livestock

Investigation on community interest in the raising plinth of the household shows 99.5% of households are keen to raise the plinth out of flood affected households (Annex table 3.22). However, lack of economic and technical capacity prevailed as obstacles to doing so (FGD findings). Plinth raising also needed to be considered the dismantling of the houses and as well as housing related infrastructures (i.e. wash infrastructures). Relevant information interest in raising the plinth of their houses, 98.5% of households agree to dismantle their houses (Annex table 3.23). At the same time 97.7% of households agree to disassemble their tube-well (Annex table 3.24) and 97.2% of households agree to disassemble their toilet and reassemble it after homestead plinth raising (Annex table 3.25).

The next evaluation was based on the availability of the earth cube and soil for plinth raises which shows prominent positive aspects as 95.9% households have access to sufficient earth cube/soil sufficiency to raise homestead land (Annex table 3.29). Finally, the community cooperation focused aspects of sharing the raised or disaster protected household showed that the plinth raising could be a potential DRR option as 99.7% households were eager to give accessibility to other community people during disaster (Annex table 3.27).

The qualitative findings also echoed with the quantitative findings on the shelter and settlement issues. The summary of qualitative findings suggests that raising the plinth of homesteads is the most popular flood protection measure, already being practiced by the community. Despite of some practices of flood protection measures for shelter (plinth raising) in char areas, the haor area has no to minimum level practices of flood protection measure for shelter, so the community would be beneficial through the initiative on the protection of the shelter. However, the poor household need in kind and financial support to do so. Households are willing to make necessary adjustments, such as disassembling and reassembling their house and other structures, to raise their homestead plinth. Additionally, maintaining the side slope of the raised homestead plinth and sharing it with neighbors during a flood are also popular among the community. On the other hand, along with the homestead raising, community in haor region prioritized the strengthening of hati and wash infrastructures.

> *"I would be very happy if plinth of my houses ae raised, so I don't have to leave my house during disaster. My wife and kids will be safe, and I could save my HH items."*
>
> ---
>
> *Md. Mojid Mia (FGD Participant), Day Labor, Fulchhari Upazila, Gaibandha District*

Key Summary: Shelter and Settlements

Most households own their own homestead land, houses are severely flood-prone, with a large percentage of households being submersed during floods each year. As a result, households are forced to move to makeshift or temporary shelters. The most popular disaster risk reduction measure among households is raising the plinth of their houses. But,

lack of economic capacity is a major obstacle to plinth raising, as it requires the dismantling of houses and related infrastructures. Despite different government and non-government initiatives the houses remain vulnerable to flood as the frequency and intensity of floods has increased recently. At the same time the rising population also pushes the households to live in low lying floodplain and char areas which increase the vulnerable population. As this community has min community is also willing to share raised or disaster-protected households with other community members during disasters.

7. Gender Dynamics and Integration In DRR

The above sectional findings show that all three major sectors are vulnerable and its visible that there is a lack of sufficient initiative and DRR activities are not coherent in a manner. On top of that the gendered role and gender participation in regular activities show that holistic gender sensitive action is urgent for building the resilience of the community.

7.1 Women's Participation in Decision Making and Livelihood

The first gendered role has been evaluated through the gender specific decision-making role for agricultural activities. According to the findings presented in chart 7.1, there are only 24.2% of households, where females also take participation in decision making.

Status of the gender balanced decision making in community-based organizations also depicts a similar imbalance in women's participation. With 66.5% of households reported the low-level representation CBOs and 18.5% of households reported that women are never represented on local CBOs and decision-making platforms (Annex table 3.66)

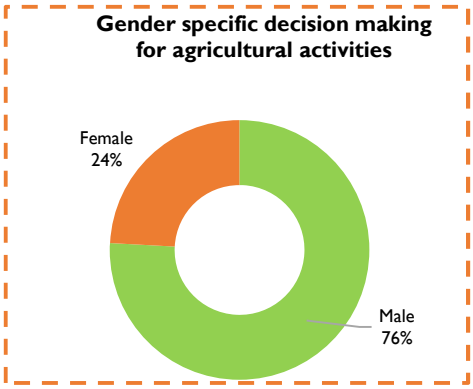


Chart 7.1 : Women's Participation in decision making for agricultural activities.

7.2 Feminine Hygiene and SRH in Disaster

Further, the study scopes the investigation of women's access to feminine hygiene products during the onset of a disaster. Women from 24.8% HHs have moderate access and women from 59.8% HHs have low access to feminine hygiene products during the onset of a disaster. Additionally, 15% of women never get feminine hygiene products (Annex table 3.64). From another perspective, the study shows that 20.5% have a pregnant or lactating mother and 18.3% of households have chronically sick children (Annex table 3.8). The women group FGDs shows that there are no services or facilities in the disaster shelter for this large group of pregnant and lactating mothers during disaster. There are even no safe wash facilities in the shelter. They state this issue is a severe problem for women.

However, the findings on the key informant interviews of government officials state a totally different situation. Providing proper healthcare and health-related knowledge is prioritized by GoB and NGOs, along with the provision of hygiene kits to maintain hygiene standards. Temporary shelter centers are set up and managed efficiently to ensure that adolescents and women have proper WASH facilities. This reveals there is still a lack of coordination among key critical service providers and the community.

7.3 Gender Based Violence

In the gender aspect, the study also finds the prevalence of violence and abuse against women and girls during disaster periods, as well as the community's efforts to mediate such incidences. The findings show that 0.8% of households believe that violence and abuse against women and girls during disaster periods are highly prevalent and 11.3% HHs reported that such incidences are moderately prevalent (Annex table 3.67). In relation to this, the community's active efforts to mediate incidences of violence

and abuse against women and girls during disaster periods are investigated and the majority of the households (53.1%) reported that the community sometimes makes efforts to mediate such incidences, while most other half (42.6%) households reported that the community rarely makes efforts (Annex table 3.68).

While the gender-based findings and analyses show the critical condition of women in comparison to men, safety and security become a concern. Like the women's WASH issue, the GBV during disasters is appeared as a grave concern from the women who participated FGDs though quantitative findings show less. Findings show there are security and GBV risks of women associated with disasters. In some cases, the length of the disaster can also have an impact on the education of children and adolescent girls which lead to child marriages.

Key Summary: Gender dynamics in decision making and Key Issue related to protection

Gender dynamics play a critical role in the community's resilience-building, as seen in the low participation of women in decision-making and the inadequate access to feminine hygiene products and services during disasters. Violence and abuse against women and girls during disasters are also prevalent, with community efforts to mediate such incidents being inadequate. Overall, the study underscores the urgent need for a holistic gender-sensitive approach in disaster risk reduction activities.

8. Recommendations

Based on sectoral findings the advocacy focused collaborated recommendations are identified from quantitative and qualitative data.

- Despite the potential benefits of improved technology, a minimum number of farmers are utilizing these approaches. Therefore, there is an opportunity to enhance and build farmers' capacity to apply improved management practices or technologies from production to storage for sustainable disaster resilient agriculture systems, high-yield production, income generation, and balanced nutritional status of households.
- Since the agriculture dependent households are vastly using chemical, promoting integrated pest management (IPM) methods which can reduce the use of chemical pesticides and promote environmentally friendly pest control practices. At the same time providing education and awareness-raising campaigns on the risks associated with pesticide use and the benefits of environmentally friendly pest control practices can help households to make more informed decisions.
- Increase awareness and knowledge of households engaged in livestock and poultry production about the risks and impacts of disasters and provide training and capacity-building support to improve their ability to protect their animals during disasters. This can be achieved through gender-focused awareness-raising campaigns and by strengthening local veterinary and volunteer groups to provide timely and effective animal health and emergency response services.
- Provide training and education for farmers on disaster-resilient agricultural practices, seed management, livestock safety and care, and storage of cultivation. This can help farmers better prepare for natural disasters and reduce their impact on agriculture.
- Address the lack of alternative livelihood opportunities, especially gender-specific livelihood opportunities for women during and after disasters to support affected households in meeting

their basic needs and recovering from the disaster. Resilient livelihood could contribute to human, social and physical capital of overall resilience.

- Both the Char and Haor regions face similar disasters and socio-economic vulnerabilities. However, the haor region requires additional measures due to the unique nature of impacts. Recommendations include improving agricultural practices, supporting alternative livestock food and fodder, implementing flood protection measures for houses, and enhancing early warning systems and disaster preparedness. Community participation and inclusive decision-making are also crucial for effective response and resilience in both regions.
- Strengthen community-based disaster preparedness and response, including increasing the accessibility to critical infrastructure and enhancing social support and collaboration.
- Increase awareness and education on disaster preparedness, DRR approaches including measures that individuals and communities can take to reduce their vulnerability and increase their resilience. At the same time promote knowledge sharing and peer-to-peer learning among individuals and communities to enhance disaster preparedness and response.
- Improve the accessibility and responsiveness of government and public resources during and after disasters, including in terms of providing financial support and advice to affected populations.
- The findings suggest that while some communities may have the capacity and practice to identify and mitigate risks, there is a need for more support and investment in DRR practices, including alternative livelihood opportunities, disaster preparedness interventions, and government initiatives to mitigate flood risks. The qualitative findings also suggest that there is a need for effective integration of knowledge and skills through training and workshops, as well as regular updates and refresher training for key stakeholders involved in disaster risk reduction efforts.
- Prioritize raising the plinth of homesteads as an effective flood protection measure and develop policies and programs to support individuals in disassembling and reassembling their house, tube-well, and toilet during homestead plinth raising. Efforts should also be made to ensure gender equality in disaster management by promoting the representation of both genders in decision-making processes and plinth raising processes that include both men and women.
- Promote accessibility of homesteads to community people in disaster-resilient housing and encourage the sharing of raised homestead plinths with neighbors during floods to improve community resilience.
- Develop and implement gender-sensitive disaster management plans that address women's specific needs such as access to feminine hygiene products and sexual reproductive health and establish community-based awareness and support systems to address violence and abuse against women and girls during disasters. Additionally, enhance the skills of women and sensitize men to ensure the participation of women in decision-making processes at the community level.
- Focusing on geographic disparity, the haor region face more devastation in case of early flash flood as they lose their whole year's agricultural production due to early flash flood. All programme components should be extended with emphasizing on improving agricultural practices, shelter, and DRR capacity for community resilience.

8.1 Recommendations to integrate and collaborate for coherent DRR action

The above advocacy and disaster resilient focused intervention needed evidence to plan and execute. The Key informant's interview and focus group discussion analysis shows very interesting portraits of needs beyond the sectoral aspects of the project. Those can be summarised as some level of participatory assessment and local level planning. Those recommendations are elaborated on below-

- **Localized Climate Vulnerability and Capacity Assessment**: To develop a climate smart DRR plan, the participatory climate vulnerability and capacity assessment is recommended. This work is already ongoing under this consultancy, expected to contribute to the effective and efficient planning at the local level and follow-up impact monitoring of the project on reducing disaster risk and climate vulnerability.
- **Detailed capacity assessment of the DMC capacity**: Local disaster management committees (DMCs) play a critical role in DRR and humanitarian response. Their role and responsibilities are already included in the standing order on the disaster (SOD) of the government of Bangladesh. However, the effectiveness of DMC's DRR activities does not particularly reach the community. So, to further enhance the DMC's roles, a detailed capacity assessment (both financial and technical) is recommended.
- **Institutionalization of different volunteer groups**: The community capacity remains at large for different aspects. Considering the nature of the action recommended, the initiatives should be mobilized through community participation and thus should be a continuous process. For this type of action, community volunteering can be an effective medium. A proper guideline for DRR volunteers is recommended to be further institutionalized.
- **Guidelines for Disaster Resilient Housing:** Since the area is flood prone and most of the houses are submerged due to flooding every year. Considering the community preferences of plinth raising as resilient housing, a comprehensive guideline to plinth raising including the technical issues of dismantling of houses and other infrastructure in homestead land (i.e., wash infrastructure, livestock shed).
- **Assessment on livestock fodder and alternative solutions**: Livestock is the integrated part of the communities in the project area. This livestock is mainly an economic capital for those disaster vulnerable communities. Disaster and livestock loss are highly interrelated. Thus, an in-depth assessment of the livestock food (fodder) and alternative solutions to reduce the disaster risk of the livestock is recommended.
- **Access to finance for char and haor dwellers**: The project area (char and haor) is mostly hard to reach area. The qualitative findings show that the community has constraints in terms of physical and financial accessibility. During disaster the challenge increases a lot. A detailed assessment of the status of financial accessibility could lead to the appropriate action to ensure financial access of the communities in the project areas.

9. Conclusion

To conclude, the project areas face the highest vulnerability to natural disasters primarily due to three main factors: their geographical location derived susceptibility to natural hazards, the impact of climate change, and their poor socio-economic status. These combined factors create a challenging environment for the communities residing in these areas, making them more susceptible to the devastating effects of natural disasters. The socio-economic status of households in the project areas is characterized by a high average household size, with 50.8% male and 49.2% female. Most households rely on Agri/non-Agri wage labor, and the average monthly income to less than minimum income for poor households shows that they don't have enough economic capacity to save for future shocks or stress. On top of that being a disaster-prone area, the main livelihood, agriculture is regularly damaged or destroyed by frequent disasters as the adoption of improved technologies is currently low, with only a few households using improved/certified seeds, improved seedling production and transplantation. Evidence shows thar most households use chemical pesticides to control pests or diseases in their crops while safety measures and proper disposal of pesticide waste materials are also a concern, with many households not following appropriate practices. While livestock and poultry rearing are a common practice in the project area and provide a source of income and food for the household. However, the livestock and poultry sectors are vulnerable to disasters, and many households reported losses due to disasters. To protect their livestock and poultry, the community takes some measures, but those are not sufficient, and routine vaccination is limited.

Project areas and households are highly susceptible to disasters, with floods being the most common disaster type experienced in the last five years. Livelihoods are severely impacted during and after disasters, with a lack of alternative opportunities available, particularly for women who also face gender inequality in wages. These vulnerabilities with low coping capacities highlight the urgent need for disaster risk reduction policies and practices to address the lack of livelihood opportunities, which can lead to a brutal cycle of social and economic vulnerability.

The community has a significant gap in physical, social, and human capital in terms of resilience capacity. The physical infrastructure and facilities are inadequate, with very low accessibility to critical services such as shelters, roads, and government resources during and after disasters. The social capital of the community is also inadequate, with low levels of support and collaboration during and after disasters. Most households only moderately engaged in seeking or providing shelter support, financial support, or advice from their relatives or neighbors. The community-based organizations did not perform well in terms of support during disaster events. The human capital of the community is also inadequate, with a low percentage of households strongly agreeing that their community had the capacity and practice to mitigate risks. There is a significant gap in the community's ability to come together and support each other during disasters, particularly in terms of community-based organizations.

Shelter and settlements reveal that most households own their own homestead land, but the houses are severely affected by floods, with a large percentage of households being submersed and partially or totally damaged each year. Raising the plinth of houses is the most popular disaster risk reduction measure, but lack of economic and technical capacity is a major obstacle. The low participation of women in decision-making, inadequate access to feminine hygiene products and services, and prevalence of violence and abuse against women and girls during disasters are major concerns in the project areas.

Based on the above information, it is recommended that disaster risk reduction policies and practices should be implemented urgently in the project areas to address the lack of livelihood opportunities and social and economic vulnerabilities. In addition, there is a need to invest in physical, social, and

human capital to enhance resilience capacity and support the community during and after disasters. Specific measures such as raising the plinth of houses, promoting the adoption of improved technologies in agriculture, and improving access to critical services should be prioritized to mitigate the risks of disasters and support the community's recovery in both char/floodplain and haor region. Furthermore, there is a need to address gender inequalities and violence against women and girls during disasters, which can be achieved by promoting women's participation in decision-making and providing access to feminine hygiene products and services. Further more its recommended to adopt implement comprehensive, coordinated, collaborative, and community-participatory approaches for disaster risk reduction initiative focusing on invest in resileince capital, prioritize measures like raising house plinths, adopting improved agriculture technologies, and improving access to critical services.

ANNEXURE

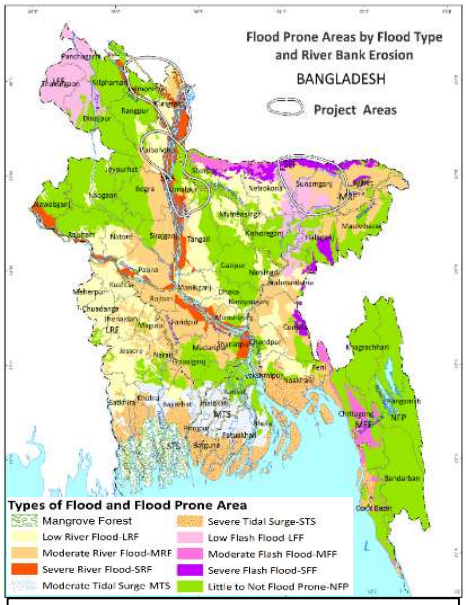
ANNEXURE

Annex 1: Map of the Project Location and Location the HH for Quantitative Survey

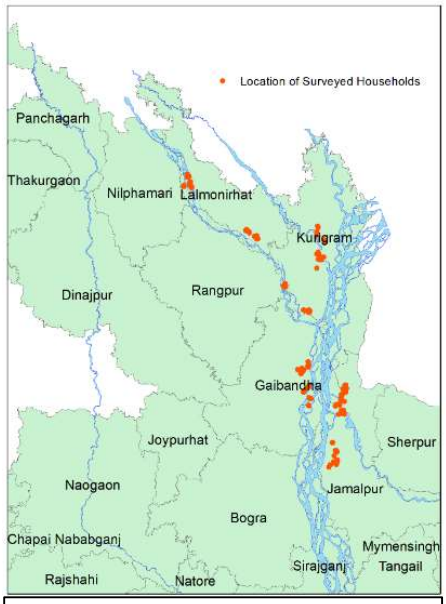
16 unions from 8 upazilas in 5 districts have been identified in the SHOUHARDO III project which would require special attention to strengthen the capacity to withstand any natural shocks.

Figure 1: Scenario of the baseline study area (according to the Bangladesh Delta Plan 2100 and Flood scenario of the Country)

Source: BDP, 2018

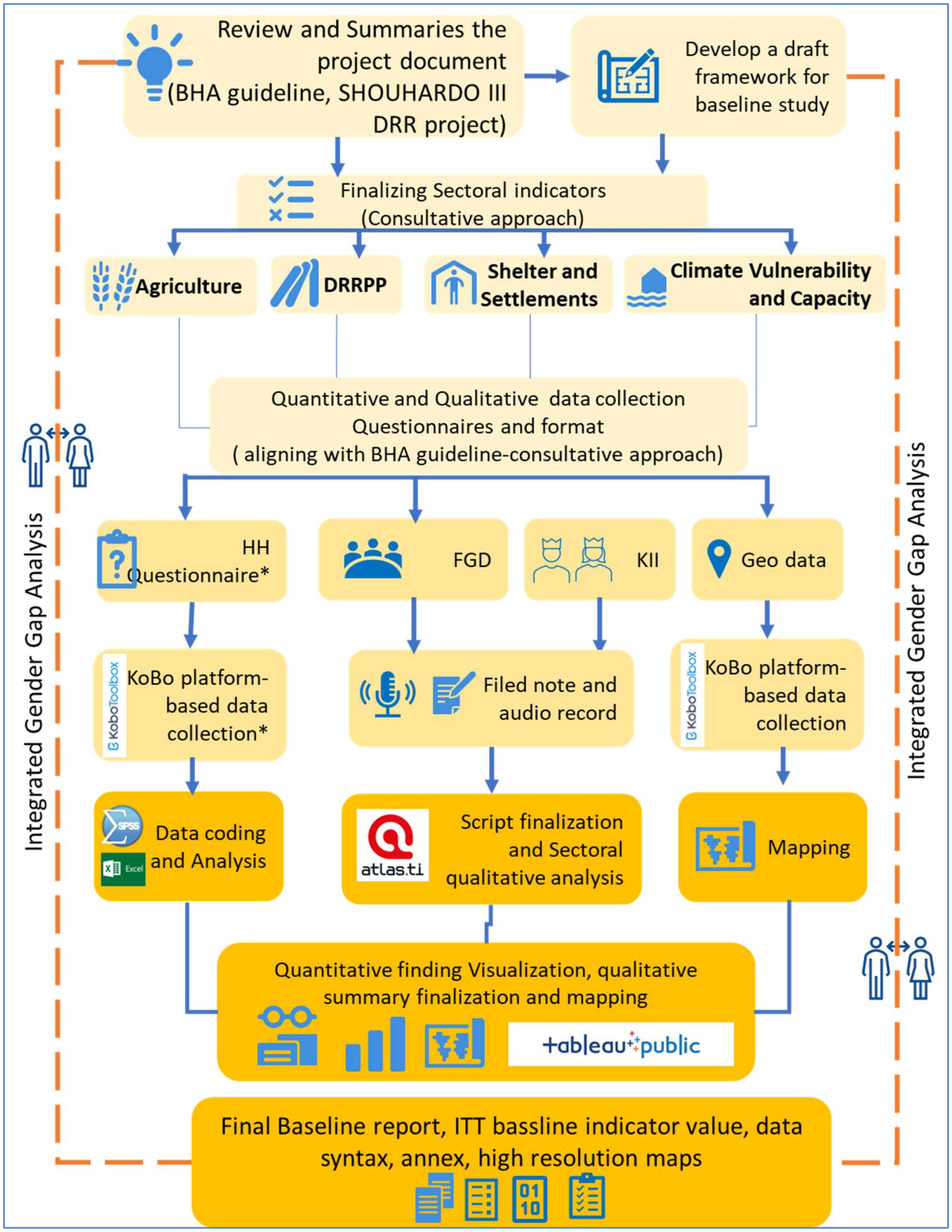


Source: National Atlas of Bangladesh



Source: Kobo Base GPS survey at HH

Annex 2: Empirical methodology and workflow of the baseline study



**The HH level quantitative data collection was supported by CARE Bangladesh and those data has been aligned with collected qualitative data for baseline report*

Annex 3: Quantitative survey result

INDICATORS	RESPONSES	RESULT
Annex Table 3.1: Percent of households experienced natural disaster in last 5 years (N=400)	400	100.0
Flood	390	97.5
Cyclone	67	16.8
Storm	78	19.5
Riverbank erosion	38	9.5
Earthquake	3	0.8
Drought	67	16.8
Annex Table 3.2 : Percent of households recently an experienced natural disaster that (N=400)		
Flood	380	95.0
Cyclone	2	0.5
Storm	2	0.5
Riverbank erosion	16	4.0
Earthquake	0	0.0
Drought	0	0.0
Annex Table 3.3: Percent of households experienced the natural disaster in the recent years		
2019	111	27.8
2020	93	23.3
2021	142	35.5
2022	54	13.5
Total	400	100.0
Annex Table 3.4: Percent of households experienced loss of livelihoods by the recent natural disaster (N=400)		
loss of Livelihoods and Assets	281	70.3
Loss of crops	276	69.0
Type of crops lost [Multiple] (n=276)		
Maize	17	6.2
Chili	22	8.0
Sweet Gourd	32	11.6
Rice	239	86.6
Wheat	2	0.7
Tomato	7	2.5
Bottle gourd	46	16.7
Bitter gourd	12	4.3
Cucumber	7	2.5
Turmeric/Zinger	3	1.1
Legumes (Country bean/Lentil)	5	1.8
Fruits	1	0.4
Potato	23	8.3
Other	59	21.4
Annex Table 3.5 : Average value of the crops lost BDT (n=276)		17,554
Percent of households evacuated and/or displaced (N=400)	310	77.5
Percent of households received to support during natural disaster [Multiple] (N=400)		
Evacuation	13	3.3
Shelter	186	46.5
Food	81	20.3

INDICATORS	RESPONSES	RESULT
Cash	2	0.5
Commodity	11	2.8
No support	152	38.0
Other	2	0.5
Annex Table 3.6: Support providers during natural disaster [Multiple] (n=248)		
UP/GO	94	37.9
NGO	59	23.8
UDMC	24	9.7
Community	108	43.5
Outside of the community	12	4.8
Other	15	6.0
Annex Table 3.7: Percent of households taken shelter during disaster (n=286)		
School/college ground	28	15.5%
Market place	0	0.0%
Mosque	1	0.6%
Road/ embankment	96	53.0%
Flood/cyclone shelter	1	0.6%
Neighbours house	49	27.1%
Outside to the community	6	3.3%
Other	6	3.3%
Annex Table 3.8: HH Income and Expenditure		1733
Annex Table 3.8: Average monthly household income BDT (N=400)		7,325
Households Income Below Lower Poverty Line (BDT 6915.03 or 64.5 USD/month)		49.25%
Households Income Below Upper Poverty Line (BDT 11,739.47 109.5 USD/month)		90.25%
Per Capita Income in USD		56.36 BDT / 0.53 USD
Average monthly household expenditure BDT (N=400)		7,338
Households' socio-demographic characteristics		
Percent of households having pregnant or lactating mother	82	20.5
Percent of households having chronically sick members	73	18.3
Annex Table 3.9: Average distance of household from the river in meter (N=400)		1,919.3
Annex Table 3.10: Percent of households submersed by every flood (n=390)	377	96.7
Annex Table 3.11: Deepness of submerging the homestead land (n=390)		
Less equal 1 feet	106	27.2
1 -2 Feet	133	34.1
Above 2 feet	151	38.7
Annex Table 3.12: Percent of households submersed totally or partially by the recent flood (n=390)		
Totally submersed	134	34.4
Partially submersed	256	65.6
Annex Table 3.13: Percent of households damaged by the recent flood (n=390)	327	83.8
Totally damaged	66	20.2

INDICATORS	RESPONSES	RESULT
Partially damaged	261	79.8
Annex Table 3.14: Percent of households Received training on Disaster preparedness, DRR and/or DRM (N=400)	4	1.0
Annex Table 3.15: Provided training on Disaster preparedness, DRR and/or DRM (N=400)		
Government	2	50.0
Non-Government	2	50.0
National/ International NGO	0	0.0
UN Agency	0	0.0
Annex Table 3.16: Strategies taken to protect dwellings and direct surroundings from the negative impacts of climate-related shocks and stresses (N=400)		
Raising Plinth	371	92.8
Regular maintenance/ soil filling after flood events	135	33.8
Keeping valuables in safe place	113	28.3
Other	3	0.8
Annex Table 3.17: Percent of households have agricultural land (N=400)	218	54.5
Percent of households having own homestead land (N=400)	396	99.0
Less than 3 decimals	3	0.8
3 - 5 decimals	75	18.9
Greater than 5 decimals	318	80.3
Annex Table 3.18: Registration records available	381	96.2
Annex Table 3.19: Registration record not available	15	3.8
Annex Table 3.20: Average size of homestead land in decimal (n=396)		10.2
Average length of homestead land in meter		27.6
Average width of homestead land in meter		18.5
Annex Table 3.21: Percent of households homestead accessible to community people (N=400)	393	98.3
Annex Table 3.22: Want to raise land to protect from the flood (n=393)	388	99.5
Annex Table 3.23: Want to disassemble house and reassemble after homestead plinth raising (n=388)	382	98.5
Annex Table 3.24: Want to disassemble tube-well and reassemble after homestead plinth raising (n=388)	379	97.7
Annex Table 3.25: Want to disassemble toilet and reassemble after homestead plinth raising (n=388)	377	97.2
Annex Table 3.26: Want to maintain side slope of your raised homestead plinth through proper turfing and tree plantation (n=388)	383	98.7
Annex Table 3.27: Want to share raised homestead plinth with your neighbors during flood (n=388)	387	99.7
Annex Table 3.28: Received any training on "homestead plinth raising and maintenance"	20	5.0
Annex Table 3.29: Sources of earth cube/soil to raise homestead land (n=372)		
Non-agricultural fellow land	351	94.4
Agricultural land	3	0.8
Ditches	18	4.8
Annex Table 3.30: Percent of households engage in agricultural production during last 12 months	273	68.3

INDICATORS	RESPONSES	RESULT
Annex Table 3.31: Percent of households where mainly engaged female in agricultural activities	66	24.2
Annex Table 3.32: Percent of households Land use for producing crops in last year (n=273)		
< 10 decimals	12	4.4
10 - 24 decimals	77	28.2
25 - 35 decimals	107	39.2
36 - 50 decimals	27	9.9
> 50 decimals	50	18.3
Annex Table 3.33: Percent of households produced crops in the last year [Multiple] (n=273)		
Maize	111	40.7
Chili	34	12.5
Sweet Gourd	29	10.6
Rice	211	77.3
Wheat	16	5.9
Tomato	7	2.6
Bottle gourd	40	14.7
Bitter gourd	8	2.9
Cucumber	5	1.8
Soybean	1	0.4
Legumes (Country bean/Lentil)	3	1.1
Oil seed (Sunflower, Mustard, Sesame)	12	4.4
Fruits	1	0.4
Potato	28	10.3
Other	43	15.8
Annex Table 3.34: Percent of households used technology for agricultural production [Multiple] (n=273)		
Improved/certified seed (certified/ truthful labeling)	4	1.5
Improved Seedling production and transplantation	4	1.5
Mulching	54	19.8
Integrated Pest Management	1	0.4
Improved/environment friendly insecticides and pesticides	2	0.7
Integrated bio pesticides management (pheromone trap, neem (azadirachta indica) based bio- pesticides)	1	0.4
Compost use	32	11.7
Minimum tillage practices	6	2.2
Crop rotation	6	2.2
Drought and flood resistant varieties	3	1.1
Raised bed	17	6.2
Annex Table 3.35: Percent of households used at least one improved technology in last year	110	40.3
Annex Table 3.36: Average lands where applied at least one improved technology in the last year		17.4
Annex Table 3.37: Use of item/ crops they produced [Multiple] (n=273)		
Consume	259	94.9
Sell	185	67.8
Annex Table 3.38: Collect seeds for cultivation [Multiple] (n=273)		
Self-storage	4	1.5
From Market	252	92.3

INDICATORS	RESPONSES	RESULT
Within community people	39	14.3
Outside of the community people	13	4.8
Other	1	0.4
Annex Table 3.39: Availability of the seeds for cultivation (n=273)		
Sufficient	145	53.1
Not sufficient	128	46.9
Annex Table 3.40: Extent of happiness with the quality of seeds (n=273)		
Very happy	7	2.6
Happy	78	28.6
Somewhat happy	150	54.9
Unhappy	38	13.9
Very unhappy	0	0.0
Annex Table 3.41: Reasons of happiness with the quality of seeds [Multiple] (n=85)		
Germination percentage was higher (more than 80%)	72	84.7
Seed colour was good	32	37.6
No mixing with inert materials	2	2.4
Annex Table 3.42: Received training on appropriate crop protection practices (n=273)	5	1.8
Annex Table 3.43: Applied in agricultural production against disease or pest-attacks (n=273)		
Use chemical pesticides	265	97.1
Use IPM methods	0	0.0
Use botanical pesticide	4	1.5
other	4	1.5
Annex Table 3.44: Types of measures taken during pesticides for protection/safety [Multiple] (n=273)		
Spraying the pesticides towards wind direction,	74	27.1
Use apron when spray pesticide	18	6.6
Use hand gloves	7	2.6
Use face mask	119	43.6
other	55	20.1
Annex Table 3.45: Disposing measures taken for the waste materials of pesticides (n=273)		
Used containers are buried in a safe place	78	28.6
Used containers are through in the open space	192	70.3
other	3	1.1
Annex Table 3.46: Percent of households engaged with livestock and poultry rearing (N=400)	322	80.5
Annex Table 3.47: Average number of Cattle and buffalo household has	439	1.10
Annex Table 3.48: Average number of goats and sheep household has	413	1.03
Annex Table 3.49: Average number of poultry (e.g., chickens, ducks) household has	1251	3.13
Annex Table 3.50: Average number training on livestock/poultry rearing (N=400)	13	3.3
Annex Table 3.51: Percent of Measures taken to protect livestock from negative impacts of climate-related shocks and stresses [Multiple] (N=400)		
Keep livestock/poultry in safe shelter	229	57.3

INDICATORS	RESPONSES	RESULT
Use raised platform for goat/sheep/poultry	61	15.3
Ensure routine vaccination	39	9.8
Keep livestock/poultry in clean place	41	10.3
Do treatment when livestock/poultry become sick	111	27.8
Do savings for emergency needs	4	1.0
No measures taken	32	8.0
Other	14	3.5
Annex Table 3.52: Percent of Received emotional support from relatives during an Hazard (N=400)		
Relatives	287	71.8
Non-relatives within my ethnic/caste group	229	57.3
Non-relatives of other ethnic/caste groups	23	5.8
Annex Table 3.53: Percent of Households had a problem and needed money or food urgently then visit to people of outside of the community (N=400)		
Relatives	268	67.0
Non-relatives within my ethnic/caste group	243	60.8
Non-relatives of other ethnic/caste groups	28	7.0
No one	24	6.0
Annex Table 3.54: Percent of Households had a problem and needed money or food urgently then visit to people of inside the community (N=400)		
Relatives	257	64.3
Non-relatives within my ethnic/caste group	222	55.5
Non-relatives of other ethnic/caste groups	30	7.5
No one	46	11.5
Annex Table 3.55: Percent of Households would help outside the community in needed food or money urgently (N=400)		
Relatives	250	62.5
Non-relatives within my ethnic/caste group	209	52.3
Non-relatives of other ethnic/caste groups	23	5.8
No one	53	13.3
Annex Table 3.56: Social Index Value (N=400)		62.1
Bonding sub-index value		63.1
Bridging sub-index value		61
Annex Table 3.57: Receive emotional support from relatives during an Hazard (N=400)		
Highly	6	1.5
Moderately	238	59.5
Low	151	37.8
Never	5	1.3
Annex Table 3.58: Seek/get shelter support with your relatives in times of hazard (N=400)		
Highly	5	1.3
Moderately	212	53.0
Low	174	43.5
Never	9	2.3
Annex Table 3.59: Received financial support or advice from relatives in the aftermath of disaster (N=400)		
Highly	8	2.0
Moderately	233	58.3

INDICATORS	RESPONSES	RESULT
Low	156	39.0
Never	3	0.8
Annex Table 3.60: People help each other in taking shelter during flood (N=400)		
Always	38	9.5
Sometimes	214	53.5
Rarely	139	34.8
Never	9	2.3
Annex Table 3.61: Percent of People share resource and collaborate in the community during a disaster (N=400)		
Highly	5	1.3
Moderately	191	47.8
Low	195	48.8
Never	9	2.3
Annex Table 3.62: Accessibility of the government and public resources during and after flood (N=400)		
Highly	1	0.3
Moderately	111	27.8
Low	266	66.5
Never	22	5.5
Annex Table 3.63: Accessible of the shelters for the disable (N=400)		
Highly	0	0.0
Moderately	83	20.8
Low	261	65.3
Never	56	14.0
Annex Table 3.64: Accessibility of feminine hygiene products on the onset of a disaster (N=400)		
Highly	2	0.5
Moderately	99	24.8
Low	239	59.8
Never	60	15.0
Annex Table 3.65: Community-based organizations (CBOs) perform in terms of support before, during and after a disaster (N=400)		
Excellent	0	0.0
Good	55	13.8
Poor	206	51.5
Very Poor	139	34.8
Annex Table 3.66: Representatives are women on the local CBOs and decision-making platforms (N=400)		
Highly	1	0.3
Moderately	59	14.8
Low	266	66.5
Never	74	18.5
Annex Table 3.67: Violence and abuse during disaster period on women and girls (N=400)		
Highly	3	0.8
Moderately	45	11.3
Low	208	52.0
Never	144	36.0

INDICATORS	RESPONSES	RESULT
Annex Table 3.68: Community actively tried to mediate incidences like VAW (N=400)		
Always	9	3.5
Sometimes	136	53.1
Rarely	109	42.6
Never	2	0.8
Annex Table 3.69: Community has the capacity and practice to identify, prepare and execute an action plan to mitigate risks (N=400) (%)		
Strongly Agree	49	12.3
Agree	177	44.3
Undecided	142	35.5
Disagree	32	8.0
Annex Table 3.70: specific intervention by the government and other stakeholders to increase disaster preparedness (i.e., training) (N=400)		
Yes	48	12.0
No	352	88.0
Annex Table 3.71: Alternative livelihood opportunities for household during disaster period (N=400)		
Yes	8	2.0
No	392	98.0
Annex Table 3.72: Livelihood opportunities for women, during disaster period (N=400) (%)		
Always	0	0.0
Sometimes	2	25.0
Rarely	3	37.5
Never	3	37.5
Annex Table 3.73: Women get to receive similar wages as men for the same job (N=400) (%)		
Always	0	0.0
Sometimes	58	14.5
Rarely	103	25.8
Never	239	59.8
Annex Table 3.74: Community has any skilled labor with prior plinth raising skills (N=400) (%)		
Yes	196	49.0
No	204	51.0
Annex Table 3.75: Local government initiative in this plinth raising regard (N=400) (%)		
Yes	19	4.8
No	381	95.3
Annex Table 3.76: The services of Critical Infrastructure (i.e., shelter, road) remain operational during disaster period (N=400) (%)		
Highly	1	0.3
Moderately	100	25.0
Low	276	69.0
Never	23	5.8
Annex Table 3.77: Communities' engagement and access to infrastructural planning and implementation, and access to existing facilities (N=400)(%)		

INDICATORS	RESPONSES	RESULT
Excellent	20	5.0
Good	112	28.0
Poor	189	47.3
Very Poor	79	19.8

Annex 4: Households level quantitative questionnaire

USAID's SHOUHARDO III DRR Activity

Baseline Survey 2023

Informed consent
Hello. My name is _____. Thank you for the opportunity to speak with you. We are data collectors team from SHOUHARDO III DRR program, implemented by CARE Bangladesh. We are conducting a survey to learn about some information of your household/individual. Your household has been selected to participate in an interview that includes questions on topics such as [give example from below questionnaire]. This interview will take approximately 30 minutes to complete. Your participation is entirely voluntary. If you agree to participate, you can choose to stop at any time or skip any questions you do not want to answer. Collected data will not be shared with third parties in a way that could reveal your identity. Aggregate results will be presented in reports with anonymously to protect your privacy since it is very important to us. Do you have any questions about the survey or what I have said? If in the future you have any questions regarding the survey or the interview, or concerns or complaints, we welcome you to contact [your organization], by calling [your organization's contact number]; from 9 to 5 during working days]. We will share our organization's complete contact information with you so that you may contact us at any time.
Do you agree to participate in this survey? ☐ **Yes** ☐ **No**
If Yes, then continue to the interview. If No, then Stop the survey and give thanks to the respondent.

Page 1

TO BE FILLED BY INTERVIEWER

Implementing Agency:	**CARE Bangladesh**	Date (DD/MM/YY):	
Interviewer [cell number]:			

A. BASIC INFORMATION

Name of Respondent: *[Respondent should be Household Head/ Spouse of Household Head/ Adult household member]*	[The person who stays in the particular homestead and contributes in the decision making. Please encourage the women counterpart in the homestead to participate in the survey]
Cell Number:	
Father's Name/Husband Name:	
How s/he is relate you?	1) Father's 2) Husband
Mother's Name:	
Do you have NID?	1) Yes 2) No
If Yes? National ID:	
Remarks on Not having National ID	

Division:	District:	Upazila:	Union:	Ward No:	Village:

Ethnic/ Indigenous Household	1) Yes 2) No
Take a photo of the respondent:	*[Please take consent before capturing the photo]*
Take a Photo of the Plinth:	*[Please take consent before capturing the photo]*
GPS (lat./long.):	

B. HOUSEHOLD ROSTER AND DEMOGRAPHICS

[**INSTRUCTION:** The respondent can get help from other household members if it is required]
Please tell me the name and sex of each person who lives in this household. For our purposes, members of a household are adults or children that live together and eat from the "same pot". It should include anyone who lived in your house for at least 6 of the last 12 months, but it does not include anyone who lives here but eat separately.

Household Head's bKash account *[Please confirm bKash number through dialing *247#]*	1) Yes 2) No
bKash number	
Household Size:	

ID	**HH Member's name** (Start with Household Head)	[NAME]'s **Age** (in complete years) Put "0" if age<1 year	[NAME]'s **Sex** 1 = Male 2 = Female 3 = Transgender	What is [NAME]'s **relationship to HH Head** [ENTER CODE]	**IF AGE IS 6 YEARS OR OLDER**	**IF AGE IS 10 YEARS OLDER**			[NAME]'s **Disability Status** [ENTER CODE]
					What is the highest grade [NAME] has completed? [ENTER CODE]	[NAME]'s **Marital status?** [ENTER CODE]	[NAME]'s **Primary Occupation** [ENTER CODE]	Is [NAME] main earning member? **1=Yes 2=No**	
B01	**B02**	**B03**	**B04**	**B05**	**B06**	**B07**	**B08**	**B09**	**B10**
1		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
2		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
3		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
4		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
5		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
6		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
7		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
8		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐

9		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
10		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
11		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
12		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
13		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
14		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐
15		☐☐	☐	☐☐	☐☐	☐	☐☐	☐	☐

C. HOUSEHOLD IMPACT AND VULNERABILITY INFORMATION

SL	Questions	Response		Instruction
1	What type of natural disaster did your household experience in last 5 years? [Multiple responses]	1) Flood 2) Cyclone 3) Storm 4) River bank erosion 5) Earthquake 6) Drought 7) Not experienced 96) Others (Specify)		**7→ Skip to Q13**
2	What type of natural disaster did your household most recently experience?	1) Flood 2) Cyclone 3) Storm 4) River bank erosion 5) Earthquake 6) Drought 96) Others (Specify)		
3	Please mention the recent year your household experienced the natural disaster?	Year……..		
4	Have your HH experienced loss of livestock or poultry by the recent natural disaster?	1) Yes 2) No		**2→ Skip to Q9**
5	**Loss of livestock and poultry (In most recent natural disaster)**	**Loss of livestock (in number)**	**Approximate value of loss (in BDT)**	
	a) Cow			
	b) Buffalo			
	c) Goat			
	d) Sheep			
	e) Duck			
	f) Hen			
	g) Others livestock/ poultry (Specify)			
6	Have your household experienced crops loss due to the recent natural disaster?	1) Yes 2) No		**2→ Skip to Q9**

SL	Questions	Response	Instruction
7	What type of crops lost? [Multiple responses]	1) Maize 2) Chili 3) Sweet Gourd 4) Rice 5) Wheat 6) Tomato 7) Bottle gourd 8) Bitter gourd 9) Cucumber 10) Turmeric/Zinger 11) Soybean 12) Legumes (Country bean/Lentil) 13) Oil seed (Sunflower, Mustard, Sesame) 14) Fruits 15) Potato 96) Others (specify)	
8	Approximate value of the crops loss?	.....BDT	
9	Household having evacuated and/or displaced by the natural disaster?	1) Yes 2) No	
10	What types of support your household received during natural disaster? [Multiple responses]	1) Evacuation 2) Shelter 3) Food 4) Cash 5) Commodity 6) No support 96) Others (Specify)	
11	Who provided you the support(s)? [Multiple responses]	1) UP/GO 2) NGO 3) UDMC 4) Community 5) Outside of the community 96) Others (Specify)	
12	Where did you take shelter?	1) School/college ground 2) Market place 3) Mosque 4) Road/ embankment 5) Flood/cyclone shelter 6) Neighbours house 7) Outside to the community 8) No flood experienced 96) Others (specify)	**Ask only if Q10→ 2**
13	Average monthly household income?	BDT.....	
13_e	Average monthly household expenditure?	BDT.....	
14	HH having pregnant or lactating mother?	1) Yes 2) No	
15	HH having chronically sick children? [Any sickness that is long term and hampers regular activities, e.g. asthma, cancer.]	1) Yes 2) No	
16	Number of HH members attacked with COVID-19	.....Member(s)	

D. SHELTER INFORMATION

SL	Questions	Response	Instruction
17	How far your household from the river?	.....Meter	
18	Is your Household submersed by every flood?	1) Yes 2) No	**Ask only if Q1→ 1**
19	How deeply submerged your homestead land?	..... Feet	**Ask only if Q1→ 1**
20	Is your household submersed totally or partially by the recent flood?	1) **Totally-submersed Household:** Completely submerged under water and the house is not liveable during flood events, potential total loss of structure, more than 50% damage and requires total reconstruction. Example: structure is not safe; family is not living inside the house. 2) **Partially-submersed Household:** The house might be partially submerged under water, where the dwellers can live by raising the bed. However, the yard of the homestead is generally completely submerged.	**Ask only if Q1→ 1**
21	Is your household damaged by the recent flood?	1) Yes 2) No	**Ask only if Q1→ 1 2→Skip to Q23**
22	Is it damaged totally or partially?	1) Totally-damaged Household: Complete destruction, near total loss of structure, more than 50% damage and requires total reconstruction. Example: structure is not safe; family is not living inside the house. **2)** Partially-damaged Household: Minor to moderate damage, main structure is safe, house can be repaired without total reconstruction. Example: wall missing, roof missing, doors and windows missing, no protection from rain.	
23	Did you receive any training on Disaster preparedness, DRR and/or DRM?	1) Yes 2) No	
24	Who provided you the training?	1) Government 2) Non-Government 3) UN Agency 96) Others (Specify)	
25	How do you protect your dwellings and direct surroundings from the negative impacts of climate-related shocks and stresses?	1) Raising Plinth 2) Regular maintenance/ soil filling after flood events 3) Keeping valuables in safe place 96) Others (Specify)	
26	Does your household having any agricultural land except homestead?	1) Yes 2) No	
27	Does your household having own homestead land?	1) Yes 2) No	**2→Skip to Q31**

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SL	Questions	Response	Instruction
28	Size of the homestead land. [As per record]	.....Decimal	
29	Do you have registration of your homestead land? [Please check and confirm]	1) Record available 2) Record not available	
29_ No	Reasons of not showing the land registration		
30	What are the length and width of your homestead land?	a) **Length:** ..... Meter b) **Width:** ..... Meter	
31	Is your homestead accessible to community people?	1) Yes 2) No	
32	Do you want to raise your land to protect from the flood?	1) Yes 2) No	**2→ Skip to Q40**
33	Do you have sufficient earth cube/soil to raise your homestead land?	1) Yes 2) No	**2→ Skip to Q35**
34	What is the source of earth cube/soil to raise your homestead land?	1) Non-agricultural fellow land 2) Agricultural land 3) Ditches 96) Others (Specify)	
35	Do you want to disassemble your house and reassemble after homestead plinth raising?	1) Yes 2) No	
36	Do you want to disassemble your tube-well and reassemble after homestead plinth raising?	1) Yes 2) No 3) Not applicable	
37	Do you want to disassemble your toilet and reassemble after homestead plinth raising?	1) Yes 2) No 3) Not applicable	
38	Do you want to maintain side slope of your raised homestead plinth through proper turfing and tree plantation?	1) Yes 2) No	
39	Do you want to share your raised homestead plinth with your neighbours during flood?	1) Yes 2) No	
40	Did you receive any training on "homestead plinth raising and maintenance"?	1) Yes 2) No	**2→ Skip to Q42**
41	Did you share your learning of the training with others?	1) Yes 2) No	

E. AGRICULTURAL AND LIVESTOCK

SL	Questions	Response	Instruction
42	Did your household engage in agricultural production during last 12 months?	1) Yes 2) No	**2→Skip to Q54**
43	Who mainly engaged (decision maker) with the agricultural activities? [Pick from the roster- Name and Gender]	a) Name: b) Gender:	
44	How many land did you use for producing crops in last year?	.....Decimal	
45	What type of crops did your household produce in the last year? [Multiple responses]	1) Maize	

SL	Questions	Response	Instruction
		2) Chili 3) Sweet Gourd 4) Rice 5) Wheat 6) Tomato 7) Bottle gourd 8) Bitter gourd 9) Cucumber 10) Turmeric/Zinger 11) Soybean 12) Legumes (Country bean/Lentil) 13) Oil seed (Sunflower, Mustard, Sesame) 14) Fruits 15) Potato 96) Others (specify)	
46	What type of technology you used for agricultural production? [Multiple responses]	**1) Crop Genetics:** a) Improved/certified seed (certified/ truthful labeling) **2) Cultural Practices:** a) Improved Seedling production and transplantation b) Mulching **3) Pest Management:** a) Integrated Pest Management b) Improved/environment friendly insecticides and pesticides c) Integrated bio pesticides management (pheromone trap, neem (azadirachta indica) based bio-pesticides) **4) Soil-related Fertility:** a) Compost use **5) Climate Mitigation:** a) Minimum tillage practices b) Crop rotation (efficient crop based nitrogen fertilizer use) **6) Climate Adaptation:** a) Drought and flood resistant varieties b) Raised bed	
47	Among the total agricultural land, on how many lands did you apply any of the technologies (Crop Genetics, Cultural Practices, Pest Management, Soil-related Fertility, Climate Mitigation, Climate Adaptation) in the last year?	.....Decimal	
48	What do you do with your production? [Multiple responses]	1) Consume 2) Sell 3) Store 96) Ohers (Specify)	**3→Ask Q49**
49	How did you store your production?	1) Using gunny bags (in case of cereals)	

SL	Questions	Response		Instruction
	[Multiple responses]	2) Using sealed container (in case of cereals) 3) Using platform (in case of sweet gourd) 96) Others (Specify)		
50	How did you collect seeds for the cultivation? [Multiple responses]	1) Self-storage 2) From Market 3) Within community people 4) Outside of the community people 96) Others (Specify)		
51	Do you think, the amount of seeds you accessed was sufficient for cultivation?	1) Sufficient 2) Not sufficient		
52	What extent are you happy with the quality of seeds?	1) Very happy 2) happy 3) Somewhat happy 4) Unhappy 5) Very unhappy		**1, 2→ Ask Q53**
53	Reasons of your happiness with the quality of seeds? [Multiple responses]	1) Germination percentage was higher (more than 80%) 2) Seed colour was good 3) No mixing with inert materials 96) Others (Specify)		
54	Did you receive any training on appropriate crop protection practices?	1) Yes 2) No		
55	What do you do with your agricultural production against disease or pest-attacks?	1) Use chemical pesticides 2) Use IPM methods 3) Use botanical pesticide 96) Others (Specify)		
56	During using pesticides, what types of measures do you take for protection/safety? [Multiple responses]	1) Spraying the pesticides towards wind direction 2) Use apron when spray pesticide 3) Use hand gloves 4) Use face mask 5) Nothing 96) Others (Specify)		
57	How do you dispose of the waste materials of pesticides?	1) Used containers are buried in a safe place 2) Used containers are through in the open space 3) Nothing 96) Others (Specify)		
58	Are your household engaged with livestock and poultry rearing?	1) Yes 2) No		
59	**Type of livestock/poultry that your household currently have**	**Number of livestock/poultry**	**Approximate value of livestock/poultry (in BDT)**	
	a) Cow			
	b) Buffalo			
	c) Goat			
	d) Sheep			
	e) Duck			

SL	Questions	Response	Instruction
	f) Hen		
60	Did you receive any training on livestock/poultry rearing?	1) Yes 2) No	
61	How do you protect your livestock from negative impacts of climate-related shocks and stresses? [Multiple responses]	1) Keep livestock/poultry in safe shelter 2) Use raised platform for goat/sheep/poultry 3) Ensure routine vaccination 4) Keep livestock/poultry in clean place 5) Do treatment when livestock/poultry become sick 6) Do savings for emergency needs 7) No measures taken 96) Others (Specify)	**Recode: 1-6=1, else 0**
62	Recommendations based on special circumstances/environmental assessment	1) Can be selected for Plinth raising 2) Can be selected for Agricultural input 3) Can be selected for the Livestock Fodder Input 4) None	

F. SOCIAL CAPITAL

SL	Questions	Response	Instruction
63	Do you receive emotional support from your relatives during an Hazard?	1) Relatives 2) Non-relatives within my ethnic/caste group 3) Non-relatives of other ethnic/caste groups 4) No one 5) Don't know 96) Other (specify)	
64	If your household had a problem and needed money or food urgently, who OUTSIDE THIS COMMUNITY could you turn to for help?	1) Relatives 2) Non-relatives within my ethnic/caste group 3) Non-relatives of other ethnic/caste groups 4) No one 5) Don't know 96) Other (specify)	
65	Who INSIDE THIS COMMUNITY would you help if they needed food or money urgently?	1) Relatives 2) Non-relatives within my ethnic/caste group 3) Non-relatives of other ethnic/caste groups 4) No one 5) Don't know 96) Other (specify)	
66	Who OUTSIDE THIS COMMUNITY would you help if they needed food or money urgently?	1) Relatives 2) Non-relatives within my ethnic/caste group 3) Non-relatives of other ethnic/caste groups 4) No one 5) Don't know 96) Other (specify)	
67	Do you receive emotional support from your relatives during an Hazard?	1) Highly 2) Moderately	

SL	Questions	Response	Instruction
		3) Low 4) Never	
68	Do you seek/get shelter support with your relatives in times of hazard?	1) Highly 2) Moderately 3) Low 4) Never	
69	Do you receive financial support or advice from your relatives in the aftermath of disaster?	1) Highly 2) Moderately 3) Low 4) Never	
70	Do people help each other in taking shelter during flood?	1) Always 2) Sometimes 3) Rarely 4) Never	
71	How likely is it that people share resource and collaborate in the community during a disaster?	1) Highly 2) Moderately 3) Low 4) Never	
72	How accessible are the government and public resources during and after flood (i.e., community clinic)?	1) Highly 2) Moderately 3) Low 4) Never	
73	How accessible are the shelters for the disable?	1) Highly 2) Moderately 3) Low 4) Never	
74	To what extent do women get access to feminine hygiene products on the onset of a disaster (i.e., flood)?	1) Highly 2) Moderately 3) Low 4) Never	
75	How do the community-based organizations (CBOs) perform in terms of support before, during and after a disaster?	1) Excellent 2) Good 3) Poor 4) Very Poor	
76	How representative are women on the local CBOs and decision making platforms?	3) Highly 4) Moderately 5) Low 6) Never	
77	Do you see any violence and abuse during disaster period on women and girls?	1) Highly 2) Moderately 3) Low 4) Never	**4→ Skip Q78**
78	Do your community actively try to mediate such incidences?	1) Always 2) Sometimes 3) Rarely 4) Never	

G. HUMAN CAPITAL

SL	Questions	Response	Instruction
79	To what extent would you agree to the following? "Your community has the capacity and practice to identify, prepare and execute an action plan to mitigate risks"	1) Strongly Agree 2) Agree 3) Undecided 4) Disagree	

SL	Questions	Response	Instruction
80	Is there any specific intervention by the government and other stakeholders to increase disaster preparedness (i.e., training)?	1) Yes 2) No	
81	Are there any alternative livelihood opportunities for your household during disaster period?	1) Yes 2) No	
82	If yes, are there livelihood opportunities for women, during disaster period?	1) Always 2) Sometimes 3) Rarely 4) Never	
83	Do women get to receive similar wages as men for the same job?	1) Always 2) Sometimes 3) Rarely 4) Never	
84	Do you community have any skilled labor with prior plinth raising skills?	1) Yes 2) No	
85	Is there any local government initiative in this plinth raising regard?	1) Yes 2) No	**1→ Ask Q86**
86	Name the initiative?		

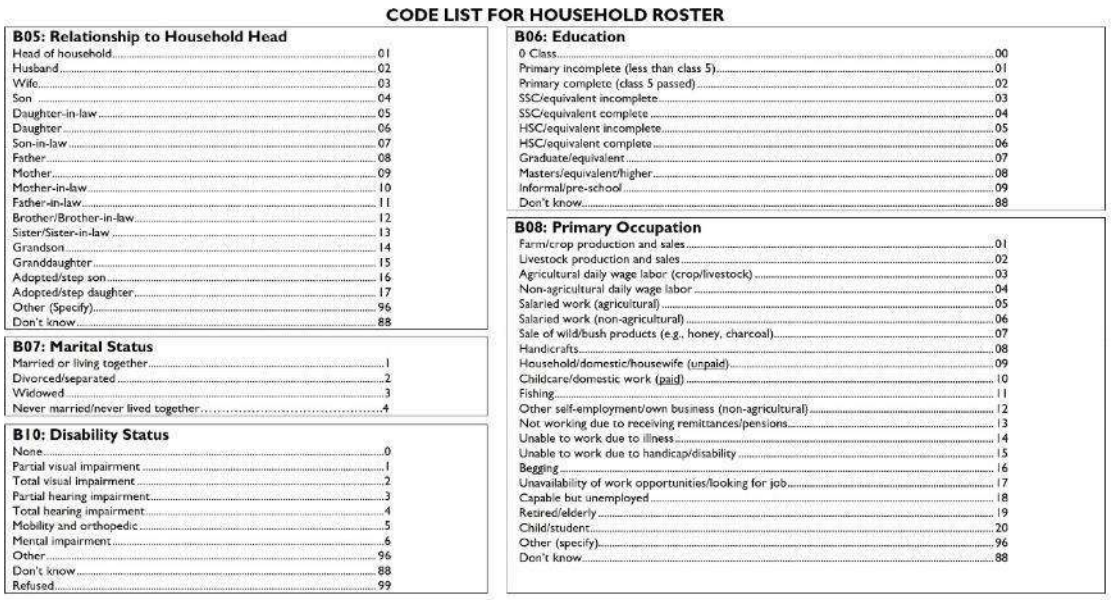
H. INFRASTRUCTURE

SL	Questions	Response	Instruction
87	To what extent does the services of Critical Infrastructure (i.e., shelter, road) remain operational during disaster period?	1) Highly 2) Moderately 3) Low 4) Never	
88	How would you rate your communities engagement and access to infrastructural planning and implementation, and access to existing facilities?	1) Excellent 2) Good 3) Poor 4) Very Poor	

I. OVERALL COMMENTS

89	Do you want to add any remarks/suggestions?		

Many thanks for providing us your valuable time and crucial information



CODE LIST FOR HOUSEHOLD ROSTER

B05: Relationship to Household Head

Head of household	01
Husband	02
Wife	03
Son	04
Daughter-in-law	05
Daughter	06
Son-in-law	07
Father	08
Mother	09
Mother-in-law	10
Father-in-law	11
Brother/Brother-in-law	12
Sister/Sister-in-law	13
Grandson	14
Granddaughter	15
Adopted/step son	16
Adopted/step daughter	17
Other (Specify)	96
Don't know	88

B07: Marital Status

Married or living together	1
Divorced/separated	2
Widowed	3
Never married/never lived together	4

B10: Disability Status

None	0
Partial visual impairment	1
Total visual impairment	2
Partial hearing impairment	3
Total hearing impairment	4
Mobility and orthopedic	5
Mental impairment	6
Other	96
Don't know	88
Refused	99

B06: Education

0 Class	00
Primary incomplete (less than class 5)	01
Primary complete (class 5 passed)	02
SSC/equivalent incomplete	03
SSC/equivalent complete	04
HSC/equivalent incomplete	05
HSC/equivalent complete	06
Graduate/equivalent	07
Masters/equivalent/higher	08
Informal/pre-school	09
Don't know	88

B08: Primary Occupation

Farm/crop production and sales	01
Livestock production and sales	02
Agricultural daily wage labor (crop/livestock)	03
Non-agricultural daily wage labor	04
Salaried work (agricultural)	05
Salaried work (non-agricultural)	06
Sale of wild/bush products (e.g., honey, charcoal)	07
Handicrafts	08
Household/domestic/housewife (unpaid)	09
Childcare/domestic work (paid)	10
Fishing	11
Other self-employment/own business (non-agricultural)	12
Not working due to receiving remittances/pensions	13
Unable to work due to illness	14
Unable to work due to handicap/disability	15
Begging	16
Unavailability of work opportunities/looking for job	17
Capable but unemployed	18
Retired/elderly	19
Child/student	20
Other (specify)	96
Don't know	88

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Annex 5: Topical outline for FGDs of different group

A. Key Discussion Issues:

SL	Issues
Basic Disaster Impact Information	
1.	Do your household frequently affect by climatic disasters? How do you define your household has been affected by disaster?
2.	What are the natural disasters/ hazards your community faced in the last five years?
3.	Among the natural disasters/ hazards which one is the most impactful for the community? washes away everything at a great speed.
4.	Who are the most vulnerable i.e., women, child, pregnant, old aged, adolescent, Youth, school going children...etc.
Assessing adaptive capacity for resilient agriculture	
5.	How was disaster impacted to livelihoods and assets (income source, agriculture production, livestock, poultry, and crops)?
6.	What is your agriculture practice (traditional or technology based improved practice)? How disaster impacts those and how do you cope with that? Is there any specific role or women?

SL	Issues
7.	What type of technology did you use for agricultural production (in terms of Crop Genetics (high yield and climate tolerant), Cultural Practices, Pest Management, Soil-related Fertility, Climate Mitigation, and Climate Adaptation)?
8.	Is there any storage facilities (e.g., silage, seed bank, food bank, cold storage) available for the community?
9.	How do you protect your poultry and livestock during natural shocks and stresses? What are the roles of women and man before and after disaster? Is there any specific role -of women?
10.	How do you protect your seeds and seedlings during natural shocks and stresses? Is there any specific role of women?
11.	How did you cope from negative effects of the natural shocks or stresses (income source diversification, selling livestocks, increasing household earning members, engaging child in work, savings, loan etc.)?
Disaster Risk Reduction Policy and practices	
12.	What types of support (information, service, resource) did your community get from government and non-government during natural disaster? Does Women get as much as information like men.
13.	• Do you get early warning service? • Who provides early warning? How do they provide? • Do you think the early warning is effective? • How and what can be improved? • How Women, child and person with disability get the information and utilize it?
14.	How did the people of your community helped to each other during natural disaster? What are the special measures taken for the marginalized like extreme poor, people with different religion, and ethnic minorities?
15.	What type of support (financial, training, resources) do you need to be resilient? Why do you think these supports are needed? Is there any special need for women?
	Shelter, Settlement and Gender Aspects
16.	What were the impacts of the disaster on houses, roads, water, sanitation and hygiene (WASH), women (pregnant, lactating mother), adolescent, elderly, persons with disability, health, reproductive health, gender-based violence (GBV) etc?
17.	What type of challenges did your community face in getting shelter, and during residing in shelter (specially for the women, adolescent, elderly, persons with disability, women of reproductive health in terms of seeking health services, getting WASH facilities, and GBV)?
18.	Does child and adolescent girls displaced or moved to other areas or separated from their parents? If, where they go and what are the problems they face?
19.	Do you get early warning service? Who provides early warning? How do they provide? Do you think the early warning is effective? How and what can be improved?

SL	Issues
20.	Does the SMC has any specific guidance of preparing shelters for the people taking refuge? Is there any special consideration for women, children, elderly, person with special needs while preparing the shelters.
21.	Do the SMC/PIC/DMCs have training on Shelter management?

Annex 6: Key discussion issues for KIIs

A. General Information:

1. How many consecutive years does this district/upazila/union usually experience disasters?
2. Which upazila/union/ward is most affected by disasters?
3. In this upazila/union, which unions are completely or partially submerged during disasters?
4. Which type of disaster causes the most damage in this upazila/union?

B. Information on assistance to affected communities during disasters:

5. In what ways do you provide advice and assistance to disaster-affected families, and when do you offer this assistance?
6. What initiatives or measures do you take to protect vulnerable communities at risk from the time of disaster anticipation to before they are affected, and to reduce the risk of the disaster?
7. What types of assistance can help reduce the risk and improve the situation of flood-affected communities or better cope with disasters?
8. In terms of evacuating people, relocation, emergency food supply, and healthcare services during a disaster, what kind of voluntary services does your organization provide to the affected people in the local disaster-prone area?
9. What kind of initiatives or steps are necessary to ensure the safety of vulnerable communities during disasters and to mitigate the risks associated with the disaster?

C. Sector-specific information:

10. Agriculture Sector:

- What type of damage do farmers usually face during disasters?
- How do you ensure the availability of seeds or seedlings for crop cultivation or plantation on the exact field affected by local disasters?
- What kind of assistance can your office/department/agency provide in these matters?
- What are the potential risks for women in terms of increasing income through the activities in agriculture sector?
- Is technology used in agriculture in this area? For example, drought-resistant or climate-smart crop cultivation, use of pesticides, improved fertilizer usage, use of agro-climatic technology.
- What type of damage occurs to livestock?
    - Livestock shelter
    - Livestock feed (grass and fodder) and poultry feed
    - Diseases
    - Security
    - Vaccination
    - Proper market preparation
- What types of problems arise with livestock and poultry?

- How is the healthcare service for livestock?
- What actions can be taken by farmers to reduce the risk of livestock loss during disasters?
- What measures can be taken to ensure food security during local disasters?
- What type of assistance can volunteer provide to protect livestock during disasters, or what kind of help is needed in this area to reduce disaster risk?

11. Policy and actions for Disaster Risk Reduction:

- Does the Union Parishad work with any type of policy regarding disaster risk reduction? If not, is there a need for a policy on disaster risk reduction?
- What types of training are available to members of the Union Parishad regarding disaster risk reduction? Is there a need for any specific training or policy?
- What type of training or policy is available to beneficiaries of your project regarding disaster risk reduction? Is there a need for any specific training or policy?
- Does the volunteer group work follow any type of policy regarding disaster risk reduction?
- What types of training or policy are available to the volunteer group regarding disaster risk reduction? Is there a need for any specific training or policy?

12. Infrastructure:

- What types of problems do communities generally face during disasters regarding transportation (such as roads, flood control embankments, etc.)?
- What types of damages occur to houses, schools, madrasas, colleges, offices, and other institutions?
- How many shelters are available in this area, and are they effectively utilized?
- How many schools are used as temporary shelters in this area?
- Do the shelters have special provisions for women, children, adolescent girls, pregnant women, or people with disabilities in terms of transportation or toilet facilities?
- What kind of measures are taken for disaster risk reduction in households residing in disaster-prone areas? What other steps can be taken to reduce their vulnerability to disasters?

13. Gender and Inclusion:

- What types of problems do adolescent girls and women from affected families face during disasters?
- Are there specific initiatives or measures taken for adolescent girls and women in terms of disaster risk reduction?
- In which areas are women involved in disaster risk reduction?

14. In your opinion, what type of policies, training, or programs are appropriate for overall disaster preparedness and resilience-building for vulnerable communities? Specifically, what are your thoughts on disaster-resilience and risk-reduction in agriculture, housing and infrastructure sector, and disaster preparedness, response planning and resilience?

Annex 7: References of Key Documents

- Country Development Cooperation Strategy-Bangladesh, USAID (2021) https://www.usaid.gov/sites/default/files/2022-05/CDCS_Bangladesh-December-2025.pdf
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Annex 8: Baseline Study Team

Core Research Team

- **Dr. Khandakar Hasan Mahmud** (Lead Consultant), Professor, Department of Geography and Environment , Jahangirnagar University, Savar, Dhaka, Bangladesh.
- **Dr. Bibi Hafsa** (Gender and Climate Vulnerability Expert) **,** Professor, Department of Geography and Environment , Jahangirnagar University, Savar, Dhaka Bangladesh.
- **Asikunnaby** (Advisor-Qualitative and Quantitative Research), PhD student, Department of Geography, San Diego State University, United States.
- **Md Jafar Iqbal** (DRR and Assessment Experts), master's degree Student in Environmental Policy and Law, University of Eastern Finland, Finland
- **Jannatun Hussna Tuya** (Documentation and Reporting Officer), MSc. in Geography and Environment, Department of Geography and Environment, Jahangirnagar University, Savar, Dhaka, Bangladesh.
- **Ehsan Reza Anim** (GIS Specialist and Field Coordinator), MSc. in Geography and Environment, Department of Geography and Environment , Jahangirnagar University, Savar, Dhaka, Bangladesh.

Field Research Investigators

- **Sharafat Chowdhury** (Surveyor and Interviewer), MSc. in Geography and Environment Department of Geography and Environment, Jahangirnagar University, Savar, Dhaka, Bangladesh.
- **Ariful Hasan** (Surveyor and Interviewer), MSc. in Geography and Environment Department of Geography and Environment, Jahangirnagar University, Savar, Dhaka, Bangladesh.
- **Abu Tanvir Mohammad Tazrian** (Surveyor and Interviewer), Bachelor (B.Sc. Hons) in Geography and Environment Department of Geography and Environment, Jahangirnagar University, Savar, Dhaka, Bangladesh.
- **Mahadi Adnan** (Surveyor and Interviewer),Bachelor (B.Sc. Hons) in Geography and Environment, Department of Geography and Environment, Jahangirnagar University, Savar, Dhaka, Bangladesh.

- **Sazzadul Islam** (Surveyor and Interviewer), Bachelor (B.Sc. Hons) in Geography and Environment, Department of Geography and Environment, Jahangirnagar University, Savar, Dhaka, Bangladesh.
- **Labiba Tahsin** (Surveyor and Interviewer), Bachelor (B.Sc. Hons) in Geography and Environment, Department of Geography and Environment, Jahangirnagar University, Savar, Dhaka, Bangladesh.
- **Fowzia Mobassira Liza** (Surveyor and Interviewer), Bachelor in Anthropology, Department of Anthropology, Jahangirnagar University, Savar, Dhaka, Bangladesh.