



BASELINE STUDY REPORT

INTEGRATED FLOOD RESILIENCE PROGRAM





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Ministry of Foreign Affairs
Republic of Korea



International Federation
of Red Cross and Red Crescent Societies

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Message from BDRCS

Secretary General

Bangladesh Red Crescent Society (BDRCS)

Bangladesh Red Crescent Society is proud to closely work with IFRC and KOICA to bring the resilience capacity of the community people across Bangladesh. We are glad to implement the Integrated Flood Resilience Program (IFRP) that is technically supported by IFRC and funded by KOICA. The baseline study of IFRP has been conducted at four flood-prone communities of Nilphamari and Lalmonirhat and the study report has documented the scenario of the communities by identifying different issues of climate change, disaster risk, resilience, WASH, health, shelter and livelihood. The findings of the baseline study report will be helpful to measure the progress of IFRP as well as to successfully implement the program.

Earlier, the common approach of BDRCS was to support the disaster-affected people on emergency basis. But during last few years, BDRCS has also initiated the implementation of development programs considering the contemporary paradigm shift. In this regard, BDRCS has been working with government and development partners centring disaster risk reduction and resilience issues. BDRCS always makes the community people closely engaged in its program intervention. Under IFRP, different stakeholders at community level, Upazila and District, and educational institutions, government departments and other organizations have also been involved to achieve the outcomes and success of the program. It is highly expected that the program will help the targeted communities and stakeholders to attain the resilience capacity to respond to disasters. The program will also help to improve community people's knowledge, attitude and practice on climate change, resilience and disaster risk reduction through different types of community mobilization events, IEC materials, trainings, meetings and workshops, and other supports and service delivery. For this, the publication of baseline study report will remain as one of the visible documents of IFRP.

Finally, I am hopeful to keep the continuation of partnership with IFRC and KOICA with implementing different community-based disaster risk reduction programs for the people of Bangladesh.

Md. Feroz Salah Uddin
Secretary General
Bangladesh Red Crescent Society (BDRCS)



Message from KOICA

Country Director

Korea International Cooperation Agency (KOICA)

I would like to acknowledge that we have received the baseline study report of Integrated Flood Resilience Programme (IFRP), supported by Ministry of Foreign Affairs (Republic of Korea) and Korea International Cooperation Agency (KOICA).

In addition, I would like to extend my appreciation for your monitoring role to IFRP in output and outcome level.

In fact, it is my pleasure to convey my appreciation to the entire programme team including Planning, Monitoring, Evaluation and Reporting (PMER) team of BDRCS for their direct involvement in completing the baseline study, as a part of the project activity, on time and preparing the report in an efficient way.

On behalf of KOICA, I look forward to a long-term partnership with IFRC.

A handwritten signature in black ink, appearing to read 'Joe Hyun Gue'. The signature is fluid and cursive, with a long horizontal stroke at the end.

Joe Hyun Gue
Country Director
KOICA Bangladesh Office



 International Federation
of Red Cross and Red Crescent Societies

Message from IFRC

Head of Delegation

International Federation of Red Cross and Red Crescent Societies (IFRC) Bangladesh

It is my pleasure to announce that the International Federation of Red Cross and Red Crescent Societies (IFRC) and Bangladesh Red Crescent Society (BDRCS) have jointly conducted a baseline study on the Integrated Flood Resilience Program (IFRP) through the Community Based Disaster Risk Reduction (CBDRR) supported by Ministry of Foreign Affairs (MoFA), Government of the Republic of Korea (ROK) and Korea International Cooperation Agency (KOICA). The program is currently being implemented at four flood-prone and vulnerable communities of Nilphamari and Lalmonirhat districts. The report of the baseline study will help all who are concerned with planning, implementation, monitoring and evaluation of this program. The outcomes and recommendations of the report will be essential towards a clear guidance to achieve the targets of the program.

We know that Bangladesh is a highly disaster-prone country and it is one of the most vulnerable countries in the face of climate change. In the past, the country has experienced many small-and large-scale disasters in different parts of it including the last mega flood of 2017 which affected more than 6 million people. Achieving community resilience is the key towards prevention and mitigation of losses resulting from such disasters. In this regard, IFRC has the commitment to work closely with the national Red Cross/Red Crescent Societies to reduce the impacts of disasters through its different community-based disaster risk reduction programs. In November 2014, IFRC introduced the “One Billion Coalition for Resilience”, an initiative to scale-up community-based action on resilience across the globe. This is IFRC’s voluntary commitment toward the post-2015 framework for disaster risk reduction and to contribute in achieving Sustainable Development Goals (SDGs). This intervention will bring greater learning through the sharing of knowledge, experiences and ideas to address common problems on disasters. I hope that the implementation of IFRP will be recognized as one of the successful interventions under BDRCS and IFRC’s resilience initiatives. This baseline study report will be used to measure the program success during mid-term and end line evaluation.

We, the IFRC, always focus on the betterment of community people through the resilience interventions by emphasizing on localization. I would like to express our profound gratitude to MoFA, ROK and KOICA for their support in this IFRP initiative.

Azmat Ulla
Head of Delegation
IFRC Bangladesh

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Acknowledgement

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Acronyms

Acronyms

APO	Assistant Program Officer
BDRCS	Bangladesh Red Crescent Society
BDT	Bangladeshi Taka
BRAC	Building Resources Across Communities
CBDRR	Community Based Disaster Risk Reduction
CCA	Climate Change Adaptation
CDMC	Community Disaster Management Committee
CDRT	Community Disaster Response Team
CO	Community Organizer
CPD	Centre for Policy Dialogue
CRM	Complaints Response Mechanism
DREF	Disaster Response Emergency Fund
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ESCAP	Economic and Social Commission for Asia and the Pacific
FGD	Focus Group Discussion
GoB	Government of Bangladesh
H.S.C	Higher School Certificate
IEC	Information, Education and Communication
IFRC	International Federation of Red Cross and Red Crescent Societies
IFRP	Integrated Flood Resilience Program
IPCC	Intergovernmental Panel on Climate Change
ISDR	International Strategy for Disaster Reduction
IUCN	International Union for Conservation of Nature
KOICA	Korea International Cooperation Agency
KII	Key Informant Interview
LGED	Local Government and Engineering Department
LGI	Local Government Institution
MoFA	Ministry of Foreign Affairs

NGO	Non-Governmental Organization
NS	National Society
PASSA	Participatory Approach to Safe Shelter Awareness
PCM	Program Management Cycle
PP	Program Proposal
PWD	People with Disabilities
RCRC	Red Cross and Red Crescent
RCY	Red Crescent Youth
ROK	Republic of Korea
SDG	Sustainable Development Goal
SPSS	Statistical Package for Social Science
S.S.C	Secondary School Certificate
TV	Television
ULO	Unit Level Officer
UN	United Nations
UNISDR	United Nations Office for Disaster Risk Reduction
UP	Union Parishad
USA	United States of America
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WB	World Bank
WFP	World Food Program

Glossary and Terms

Glossary and Terms

Adaptation	Adaptation is practical steps to protect countries and communities from the likely disruption and damage that will result from effects of climate change
Char	<i>Chars</i> in Bangladesh are considered a ‘by-product’ of the hydro-morphological dynamics of its rivers. In the dynamics of erosion and accretion in the rivers of Bangladesh, the sand bars emerging as islands within the river channel
Climate Change	Climate change refers to any change in climate over time because of both natural variability and human activity
Dharla River	The Dharla River is one of Bangladesh’s trans-boundary rivers. It originates in the Himalayas where it is known as the Jaldhaka River, and then it flows through the Jalpaiguri and Cooch Behar districts of West Bengal, India, one of the seven main rivers to do so. Here the river enters Bangladesh through the Lalmonirhat district and joins with the Jaldhaka River and flows as the Dharla River until it empties into the Brahmaputra River near the Kurigram district. Near Patgram Upazila, it again flows east back into India. It then moves south and enters Bangladesh again through Phulbari Upazila of Kurigram district and continues a slow meandering course
Financial Capital	Cash, debt, savings and other economic assets which are essential for the pursuit of any livelihood strategy
First Aid	First Aid is the assistance given to any person suffering a sudden illness or injury, with care provided to preserve life, prevent the condition from worsening, or to promote recovery
Haor	A <i>haor</i> , is a wetland ecosystem in the north eastern part of Bangladesh which physically is a bowl or saucer shaped shallow depression, also known as a back swamp. During monsoon haors receive surface runoff water from rivers and canals to become vast stretches of turbulent water
Hazard	Hazard is a physical event (natural hazard) that can pose a threat to a system if the system is vulnerable to the hazard
Human Capital	The skills, knowledge, ability to labor, good health and physical capability important for the successful pursuit of different livelihood strategies
Hut	A hut is a primitive dwelling, which may be constructed of various local materials
Impacts	Impacts refer to the way in which human or natural systems are affected by climate change
Jamuna River	The Jamuna River is one of the three main rivers of Bangladesh. It is the main distributary channel of the Brahmaputra River as it flows from India to Bangladesh. The Jamuna flows south and joins the Padma River (Podda), near Goalundo Ghat, before meeting the Meghna River near Chandpur. It then flows into the Bay of Bengal as the Meghna River. It is the National river of Bangladesh

Kobiraj	<i>Kobiraj</i> is an occupational title found in persons of India or Indian origin. In old days the people practicing “Ayurveda” in India were also called <i>Kabi (Vaidhya)</i> . Many of them were attached to Royal courts to treat kings and the royal family. As such they were given title of Kobiraj
KoBo Toolbox	KoBo Toolbox is a free open-source tool for mobile data collection, available to all. It allows us to collect data in the field using mobile devices such as mobile phones tablets or computers
Kaccha House	Houses made from mud, thatch, or other low-quality materials are called <i>kaccha</i> houses
Khas land	<i>Khas</i> land means government owned fallow land, where nobody has property rights. It is land which is deemed to be owned by government and available for allocation according to government priorities
Livelihood	A livelihood comprises the capabilities, assets, and activities required for a means of living. It is deemed sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities, assets, and activities both now and in the future, while not undermining the natural resource base
Logical Framework	The logical framework or log frame is a document that gives an overview of the objectives, activities and resources of a program. It also provides information about external elements that may influence the program, called assumptions.
Natural Capital	The natural resource stocks and environmental services from which resource flows and services useful for livelihoods are derived
One Billion Coalition for Resilience	In November 2014, the IFRC introduced the “One Billion Coalition for Resilience,” an initiative designed to scale-up community and civic action on resilience. Within the next 10 years, the goal is to engage at least one billion people in every household around the world in active steps towards strengthening their resilience. This is the IFRC’s voluntary commitment toward the post-2015 framework for disaster risk reduction and Sustainable Development Goals. The coalition will improve the flow of resources to programs and initiatives on the ground and will bring greater learning through the sharing of knowledge, experience and ideas to address common problems on disasters
PASSA	Participatory Approach for Safe Shelter Awareness (PASSA) is a participatory method of disaster risk reduction (DRR) related to shelter safety. The aim of PASSA is to develop local capacity to reduce shelter related risk by raising awareness and developing skills in joint analysis, learning and decision-making at community level
Pucca House	Pucca house refers to dwellings that are designed to be solid and permanent
Physical Capital	Physical assets comprise capital that is created by economic production processes

Resilience	Resilience refers to absorb stresses and maintain function in the face of external stresses imposed upon it by climate change and adapt, reorganize, and evolve into more desirable configurations that improve the sustainability of the system, leaving it better prepared for future climate change impacts
Semi-pucca house	Semi-pucca house that has fixed walls made up of pucca material, but roof is made up of the material other than those used for pucca house
SDGs	Sustainable Development Goals (SDGs) are a collection of 17 global goals set by the United Nations General Assembly in 2015. The SDGs are part of Resolution 70/1 of the United Nations General Assembly “Transforming our World: the 2030 Agenda for Sustainable Development.” That has been shortened to “2030 Agenda.” The goals are broad and interdependent, yet each has a separate list of targets to achieve. Achieving all 169 targets would signal accomplishing all 17 goals. The SDGs cover social and economic development issues including poverty, hunger, health, education, global warming, gender equality, water, sanitation, energy, urbanization, environment and social justice
Social Capital	The social resources like networks, social claims, social relations, affiliations, associations by which people draw when pursuing different livelihood strategies requiring coordinated actions
Teesta River	The Teesta River is a 309 km (192 mi) long river flowing through the Indian states of West Bengal and Sikkim through Bangladesh. It carves out from the verdant Himalayas and Singalila in temperate and tropical river Valleys and forms the border between Sikkim and West Bengal. It flows through the cities of Rangpo, Jalpaiguri and Kalimpong and joins the Jamuna (Brahmaputra) in Bangladesh. It drains an area of 12,540 km ² (4,840 sq mi)
Topography	Topography is the study of the shape and features of land surfaces. The topography of an area could refer to the surface shapes and features themselves, or a description (especially their depiction in maps)
Union Parishad	Union Parishad is the smallest rural administrative and local government unit in Bangladesh
Upazila	The Upazila is the second lowest tier of regional administration in Bangladesh
Vulnerability	Vulnerability has become a key concept in the climate change literature. It is defined as the susceptibility of groups or individuals to harm because of climatic changes.

EXECUTIVE SUMMARY

Integrated Flood Resilience Program (IFRP) through Community Based Disaster Risk Reduction (CBDRR) is being implemented in Nilphamari and Lalmonirhat districts by BDRCS supported by ROK, MoFA and KOICA. It is a comprehensive DRR program to enhance community resilience through reducing the vulnerability of highly exposed people to floods of four communities of Nilphamari and Lalmonirhat. IFRC is providing guidance and technical support to implement the program while Ministry of Foreign Affairs (MoFA), Republic of Korea is providing fund. Beside this, KOICA is working as the liaison and monitoring partner of this program. The goal of the program is to strengthen community resilience for effective and efficient response to multi-hazards and climate-induced phenomena of the targeted community people. The objectives of the program are to build the capacity of community to reduce the loss of life, livelihood and wellbeing in recurrent disaster and climate change risks through community-based approach. The program includes components like disaster risk reduction, climate change adaptation, livelihood, shelter, water, sanitation and hygiene, health and capacity enhancement of the targeted communities. The delivery of program intervention targets to increase the capacity to reduce life and livelihood risk of the vulnerable community people including women, children, elder people and people with disability. The program approach ensures participation of stakeholders in every aspect of program management cycle including planning, implementation, monitoring and evaluation.

BDRCS and IFRC Program Team jointly conducted the baseline study at the four communities of Nilphamari and Lalmonirhat districts. The objectives of the baseline study were to identify and document the existing situation of communities regarding DRR, WASH, livelihood, health, shelter and climate change; identify the current practices and needs of targeted communities in order to implement the program activities effectively and efficiently and provide a key reference to the mid-term evaluation and end line study/evaluation to assess and monitor the change of program results. The study was conducted from both qualitative and quantitative perspectives. A total 1,668 households were interviewed by using portable electronic device and the digital data collection software called KOBO Toolbox with a structured questionnaire. Beside the household survey, 16 FGDs and 8 KIIs were also conducted under the baseline study. The study identified overall community status following the goals, objectives, components and indicators of the program. The findings of the study will remain helpful as existing situation of communities regarding DRR, climate change, resilience, WASH, livelihood, health and shelter were identified by data collection. The study also identified the socio-economic condition of community people; community people's knowledge on climate change, DRR and resilience; impacts of flood on community's life and livelihood; community's preparedness for flood; community people's knowledge on flood early warning system, risk profile, contingency plan; safe drinking and improved sanitation status of community during usual and flood period; hygiene practices by the community people like knowledge about proper hand washing technique, maintaining foods at households in hygienic way, respondent's idea about hygiene management during menstrual period; access to health services, livelihood and shelter status of the four communities.

The study revealed that flood is the main disaster, which occurs every year at the communities of Nilphamari and Lalmonirhat. The frequency of other types disasters is less comparing to flood. However, people of those communities are experienced severe to mild cold waves during winter season. Community people had less knowledge on disaster response and preparedness. Only 9% of the respondents had idea or knowledge about climate change, resilience and disaster risk reduction. About 33%, 67% and 77% of the households took actions before, during and after

flood. At the community level, they had no contingency plan and emergency fund to respond disasters.

At all communities, people mostly depend on tube-well for drinking water. In total, 79% of the households had their own tube-well while about 19% of the households had improved tube-well. It was evident that most of the tube-wells were not constructed by the households considering the flood risk level. About 22% of the households had to drink water from contaminated tube-well during the flood period. In 94% cases, female members used to collect water for drinking. About 42% of the households did not treat water before drinking during flood. The households mainly use tube-well, river and pond water for their domestic purposes like bathing, washing, cattle nurturing etc. Only 27% of the respondents and their household members had proper knowledge about safe drinking water.

Both in Nilphamari and Lalmonirhat, most of the households (71%) used Kacca latrines while 20% of the households had no latrine. Only 5% of the households had improved latrines and only 8% of the latrines were protected from flood. Open defecation was found at the communities, where 3% of the household's members had the habit. Hygiene practices at the communities were found less i.e. about 9% of the households had not the habit to use sandal while defecation, 31% of the households did not cover foods or water, only 38% of the respondents had idea about good menstrual hygiene management. Hand washing with soap at critical times were also less i.e. 31% of the households had not the habit to practice of washing hands with soap in critical times.

The health services at the communities were very poor. About 49% and 34% of the households used to take treatment from local paramedic and adjacent pharmacy. About 44% of the households had suffered from diseases like fever, diarrhoea, cold-influences, scabies, dysentery, cholera, hepatitis etc during the last flood. About 32% and 29% of the respondents did not have any knowledge on caring pregnant women and new born babies. About 98% of the respondents or their household members never received any type of health-related training or orientation.

In all communities, most of the households used to lead their livelihood depending on labouring (66%) and agriculture (21%). The average monthly income and expenditure of the households was BDT 5,000. About 62% of the household's livelihood was hampered due to the last flood. Only 1% of the respondents and their household's members received skill development training to improve livelihood or income generating option in recent times/years.

The community people had less knowledge on safe shelter. About 90% of the respondent's houses were found Kaccha. Only 2% of the respondent's houses were found Pucca while 6% of the households were Semi-pucca. Only 11% of the respondent's houses were resilient to flood or any type of disaster. Only 1% of the respondents and their household members received shelter improvement or house preparing training.

A lot of significant recommendations were identified from the study so that the implementation team can make their decision to implement the program effectively and efficiently to achieve the goals and outcomes of the program. Major recommendations are: community people's knowledge, attitude and practice on climate change, resilience and disaster risk reduction should

be increased through different types of community mobilization events, IEC materials, trainings, meetings and workshops. Contingency plans for communities should be prepared and shared among CDMC and CDRT and other community people for responding future disasters and flood risk reduction. Disaster Relief Emergency Fund (DREF) should be formed at communities to respond flood and other disasters. Community people's knowledge on safe water, improved sanitation and good hygiene practices should be enhanced. Livelihood support should be given based on the detailed analysis as per need. Safe shelter awareness should be provided through implementing PASSA tools. Communities should be disseminated knowledge on health issues and linked with relevant facilities. Finally, the capacity of BDRCS staffs and volunteers should be increased on resilience and DRR aspects for future programming and sustainability.

CHAPTER 1

Introduction and Background

1.1 Context of Integrated Flood Resilience Program (IFRP) with Bangladesh Perspective

In last two decades, Bangladesh have seen progress in poverty reduction and demonstrated positive results in core areas of development such as agriculture, health, and emergency planning. However, these positive outcomes have been insufficient in terms of geographic coverage, impact on different economic groups, effects on men versus women, and different vulnerable groups. Moreover, the sustainability of impacts is continually threatened given Bangladesh's increasingly complex risk environment and disasters. Population growth, climate change, changing global markets, inadequate governance mechanisms and human resource capacity to manage these risks are major challenges of current development strategies. Given Bangladesh's topography; long and complex coastline, high population, and increasing urbanization, concern on climatic events i.e. more frequent and intense drought, flood, rainfall, sea-level rise, and cyclones are the challenges. These recurring shocks and stresses, already a substantial part of Bangladesh's risk profile, will demand significant resilience from Bangladeshi's households, communities, and systems to prevent declines in development outcomes such as backsliding into poverty. (USAID, Bangladesh Comprehensive Risk and Resilience Assessment, 2016).

“Bangladesh has experienced two floods, one after the other in 2017; flash flood, during April, affected people living in the *haor* and low-lying areas of North-Eastern region and monsoon flood, beginning from late June, affected 32 districts of Bangladesh. The two floods despite their distinctive features, have caused significant damage to affected areas. Damage was incurred in the form of: loss of lives, dwelling houses and livelihood, crop damage and physical infrastructure damage. The two rounds of floods have caused serious miseries for people in affected areas, particularly for the lowest income groups”. (CPD, 2017).

“Over the last few years, resilience has emerged as the new preferred paradigm among development organizations, including both non-governmental organizations and donors, to meet a future world of uncertainty and change. The growth of the popularity of resilience within the development discourse, and the adoption of resilience widely across programmatic pillars within NGOs and donor agencies, has led to an explosion of resilience-focused frameworks.” (Overseas Development Institute, July 2015).

Enhancing community resilience is very important to make people capable to cope with disasters and ensuring sustainable livelihood for future. Day by day, the impact of disasters is increasing caused by climate change and other natural induces. The development practitioners are tending to initiate resilience programs as the solution of these types of threats to the community people that hamper their usual life and destroy their livelihood capital. Enhancing resilience of the community people will be the solution as the community people can come back in their previous usual situation within very short period after any type of disaster. IFRC has the plans to implement different types of programs under its “One Billion Coalition for Resilience” around the world considering the vulnerability of the community people. In November 2014, the IFRC introduced the “One Billion Coalition for Resilience,” an initiative designed to scale-up community and civic action on resilience. Within the next 10 years, the goal is to engage at least one billion people in the world in active steps towards strengthening their resilience. This is the IFRC's voluntary commitment toward the post-2015 framework for disaster risk reduction and SDGs. The coalition will improve the flow of resources to programs and initiatives on the ground and will bring greater learning

through the sharing of knowledge, experience and ideas to address common problems. As a part of the global coalition of IFRC, initiating resilience programs in different countries have already been started. Bangladesh will be one of the countries that has the utility to be comprehended as example of applying such model under this global coalition centring resilience programs. Though; from the last few years, different types of programs and interventions have been undertaken by the Government and non-governmental organizations on climate change, adaptation and in some cases mitigation but intervention on resilience have not much taken in the country. But, resilience is mandatory and demand of time to cope with the frequent disasters of the community people.

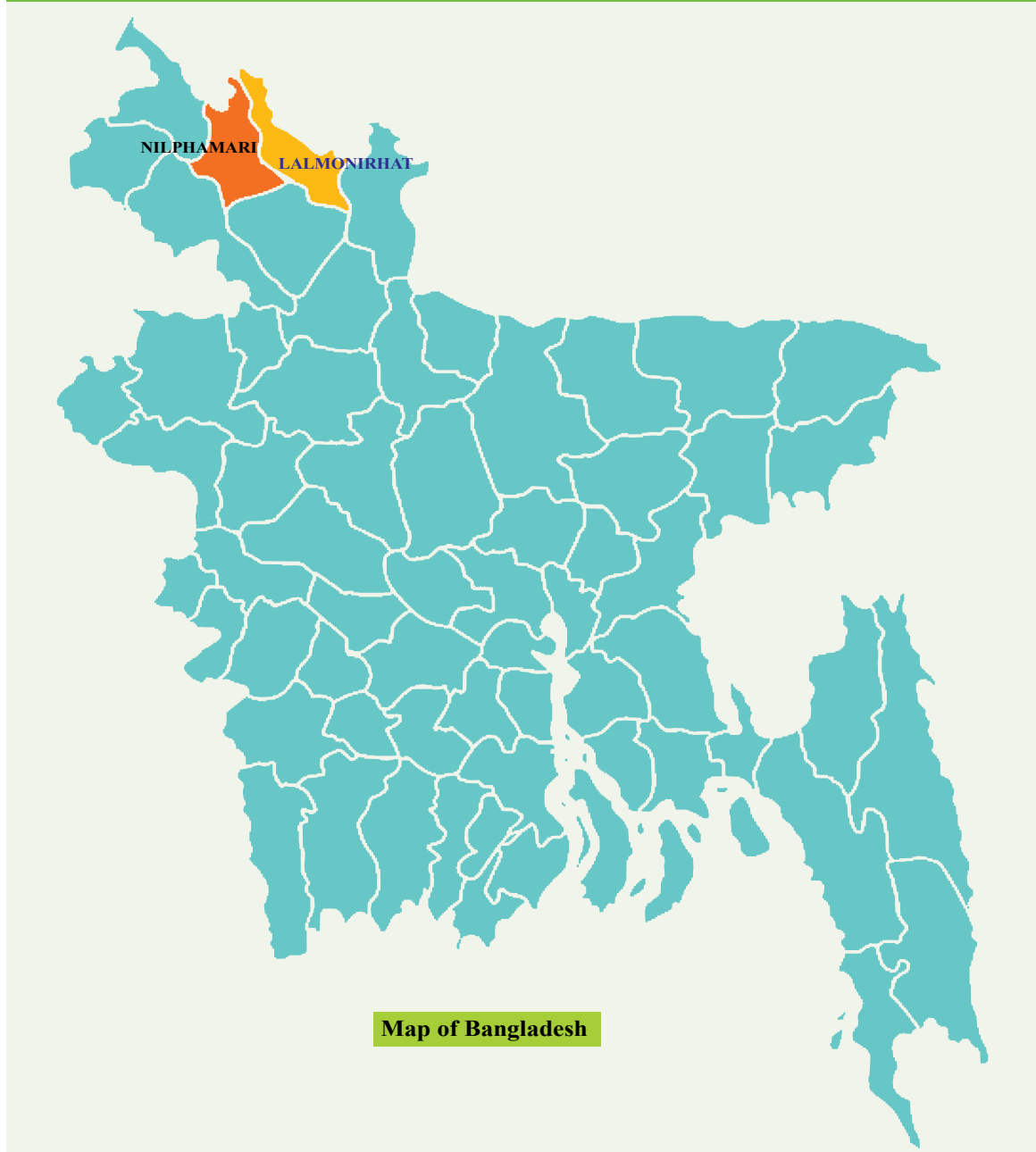
Integrated Flood Resilience Program (IFRP) through Community Based Disaster Risk Reduction (CBDRR) is being implemented at the four communities of Nilphamari and Lalmonirhat districts by BDRCS. It is a comprehensive DRR program to enhance community resilience through reducing the vulnerability of highly exposed people to floods of 4 communities in Nilphamari and Lalmonirhat districts. IFRC is providing guidance and technical support to implement the program whether Ministry of Foreign Affairs (MoFA), Republic of Korea is providing its fund. Beside this, KOICA is working as the monitoring and liaison partner of this program. The goal of the program is to strengthen community resilience for effective and efficient response to multi-hazards and climate-induced phenomena. The objective of the program is to build capacity of community to reduce the loss of life, livelihood and well-being in recurrent disasters and climate change risks through Community Based Approach.

The program has following four outcomes:

- Communities are capable to effectively respond to flood and adapt to climate change
- Most vulnerable households have improved livelihood and shelter to withstand small scale flood
- Community people have increased access to appropriate and sustainable water, sanitation and hygiene practice
- BDRCS capacity is enhanced to deliver scaled up DRR programs for disaster risk reduction

The program includes components like disaster risk reduction, climate change adaptation, livelihood, shelter, water, sanitation and hygiene, health and capacity enhancement of the targeted communities. The delivery of program intervention targets to increase the capacity to reduce life and livelihood risk of the vulnerable community people including women, children, elder people and people with disabilities. The program will scale up the community's resilience via a community-based disaster risk reduction approach with various measures considering targeted communities' needs and context. The program approach also includes change agents in every aspect of program management cycle including planning, implementation, monitoring and evaluation.

Figure 1: Location map of Nilphamari and Lalmonirhat district



The program will establish a strategic linkage with UNISDR, RCRC movement partners, national DRR platform, by profiling community/DRR/CCA initiatives, success stories, best practices, etc. The program will also supplement the IFRC campaign for one billion coalitions for resilience. Through this program, BDRCS other DRR practitioners in the country and sister NSs will complement each other in efforts of DRR. The program will sustain with its gradual vertical and horizontal expansion

through replication and scaling up of best practices in the country as well as other NSs in region. Community organizations are in the driving seat for implementation of the program, they are elected from micro- groups formed from each circle of the community to represent their own constituency, they have good command in facilitating and expanding program benefit to an individual household to other vulnerable people. Over the implementation of the program, community people will generate contingency fund by the contribution of every households with the provision of using the fund in their common purpose of continuing dissemination of flood early warning, responding to disaster emergencies, small scale mitigation works. The women empowered with feasible livelihood opportunities will significantly contribute in improving socio-economic condition and social safety net. The regular investment in family and community level DRR actions will promote and sustain the culture of resilience of DRR (PP, IFRP).

1.2 Literature Review

It has been the demand of time to take interventions and programs to achieve the community resilience of the people that are affected with frequent flood in recent years. In this regard, BDRCS and IFRC has already started working for community resilience. The necessity of achieving resilience for ensuring decent livelihood and capacity building has strongly been recommended in many research and policy papers to keep the continuation of advancement for Bangladesh. The IFRP was undertaken in Nilphamari and Lalmonirhat districts so that the targeted community people can achieve resilience capacity to cope with the flood situation. The baseline was conducted to get the data that will be helpful for implementing the program till February 2021. In this regard, a lot of literatures were examined before conducting the baseline study. The literatures review become helpful to understand about the flood vulnerability and community resilience in context of locally and globally.

“On an average, every year, floods engulf roughly 20.5% of Bangladesh, or about 3.03 million hectares (around 30,000 km). In extreme cases, such as the huge floods of 1988 and 1998 inundated as much as 70% of Bangladesh. A combination of geo-graphical locations (as the drainage area for three huge river systems with their origins in China, India and Nepal), high rainfall, flat topography with very low elevation and extreme climate variability, make Bangladesh vulnerable to floods. In addition; high population density, poverty and a predominantly agrarian economy make Bangladeshi communities less resilient to climatic shocks” (The Fletcher School, USA, May 2016).

“Bangladesh is one of the most at-risk countries to climate change with cyclones, flooding, salt water intrusion and river erosion expected to increase in frequency and severity over the coming decades. People living in the southern coastal belt and north-west flood plains of Bangladesh are particularly vulnerable” (WFP, 2013).

“In resilience thinking or social-ecological system thinking, adaptability or adaptive capacity is a social component, which is like the idea of collective agency. Several factors that help place-based community to foster resilience and to respond to shocks and stresses. These factors are: “people-place connections; values and beliefs; knowledge, skills and learning; social network; engaged governance (including collaborative institutions); a diverse and innovative economy; community infrastructure; leadership; and positive outlook, including readiness to accept change” (Berkes and Ross, 2013).

Climate change aggravates Bangladesh's vulnerability to these extreme weather events: higher temperatures and melting glaciers are intensifying the occurrence and severity of cyclones, floods, and drought. Rising sea levels, increasing temperatures and melting glaciers are creating more erratic and unpredictable natural hazards that contribute to overall vulnerability. Large climate shocks create massive damage and loss of assets that can place stress on household incomes and on national economic growth and stability. In addition; natural shocks have downstream health and economic consequences, forcing significant livelihood changes (USAID, 2016)

Bangladesh is exposed to many natural hazards. It has been found that among 40 districts are vulnerable to (primarily) one of four broad types of disasters – salinity, flood, drought and flash flood. Those exposed to flash floods in the northeast of the country had the highest livelihood vulnerability due to high reliance on rice farming and limited alternative livelihood opportunities. Other factors that increase vulnerability in the flash flood zone are poor roads, insufficient public health services, poor sanitary conditions and long periods of food insecurity (Toufique and Islam, 2014).

The geo-graphic location and geo-morphological conditions of Bangladesh have made it one of the most vulnerable to climate change and variability. Two-thirds of its territory are less than five meters above sea level. The combination of frequent natural disasters, high population density and growth, and low resilience to economic shocks makes Bangladesh particularly vulnerable to these climatic risks. Flooding is a recurrent event in Bangladesh. Most of its land mass consists of floodplains and up to 30% of the country experiences annual flooding during the monsoon season, while extreme flood events tend to spread over 60% of the country. Almost 80% of the annual rainfall occurs during the monsoon period (between June and September) across the river basins. The monsoon rains cause the rivers to overflow and spread vital nutrient rich sediment across the low-lying agricultural and char (sediment created lands within the river systems) lands (Majumdar, S. 2013).

“Natural disasters are the current burning issues in the world and the greatest threat to the mankind. Its challenges are multi-dimensional, multi-sectoral and have immediate as well as long term effects. Every year, Bangladesh faces many natural disasters like drought, flood, water-logging, cyclone and tidal surge, tornado, thunderstorm, river/coastal erosion, landslides, salinity intrusion, hailstorm, extreme weather events etc. These factors have shown Bangladesh one of the most vulnerable with high exposure to and its risk” (Asia Pacific Disaster Report 2015, UN-ESCAP).

As an impact of climate change; flood has become a common fact of Bangladesh, which occurs almost every year during monsoon after continuous and heavy rainfall. The northern Bangladesh is situated in Teesta, Dharla and Brahmaputra river basin along with other 30 rivers, where community people face flash flood every year. Normally; the flood affected areas are inundated for about 1-2 weeks causing severe damage to the crops, properties and livelihoods. Every year, loss on life and livelihood leads people in insecurity in northern Bangladesh (BRAC, 2017).

The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events (UNISDR, 2009).

Disaster risk to be a function of hazard, exposure and vulnerability. Hazard refers to the hazardous phenomena itself, such as a flood event, including its characteristics and probability of occurrence; exposure refers to the location of economic assets or people in a hazard-prone area; and vulnerability

refers to the susceptibility of those assets or people to suffer damage and loss such due to unsafe housing and living conditions, or lack of early warning procedures (UNISDR, 2011).

Flood damage constitutes about a third of the economic losses inflicted by natural hazards worldwide and floods are, together with windstorms, the most frequent natural disasters (UNISDR, 2009).

“The Teesta is the fourth largest transboundary river in Bangladesh, flowing through the five northern districts of Gaibandha, Kurigram, Lalmonirhat, Nilphamari, and Rangpur (Rangpur Division), comprising 9,667 square kilometres, 35 Upazilas, and 5,427 villages, with an estimated population in 2011 of 9.15 26 million. According to one estimate, 21 million people in Bangladesh are directly or indirectly dependent on the river for their livelihoods. In total, the Teesta flood plain covers nearly 14 percent of the total cultivated area of Bangladesh and provides livelihood opportunities directly to approximately 7.3 percent 27 of the population, 9.15 million people, in five districts of Rangpur Division” (The Asia Foundation, 2013).

A resilience approach, in which systems become the unit of analysis and policy prescription, tends to ignore the people within these systems and their different capacities to cope with shocks and adapt to change. How much a given disturbance affects a person’s livelihood depends on several interrelated factors; such as resource access, power structure, risk management and social capital. The imbalance of these factors plays an important role in determining how big the loss and suffering will be in relation to the environmental stress (Tanner, 2015).

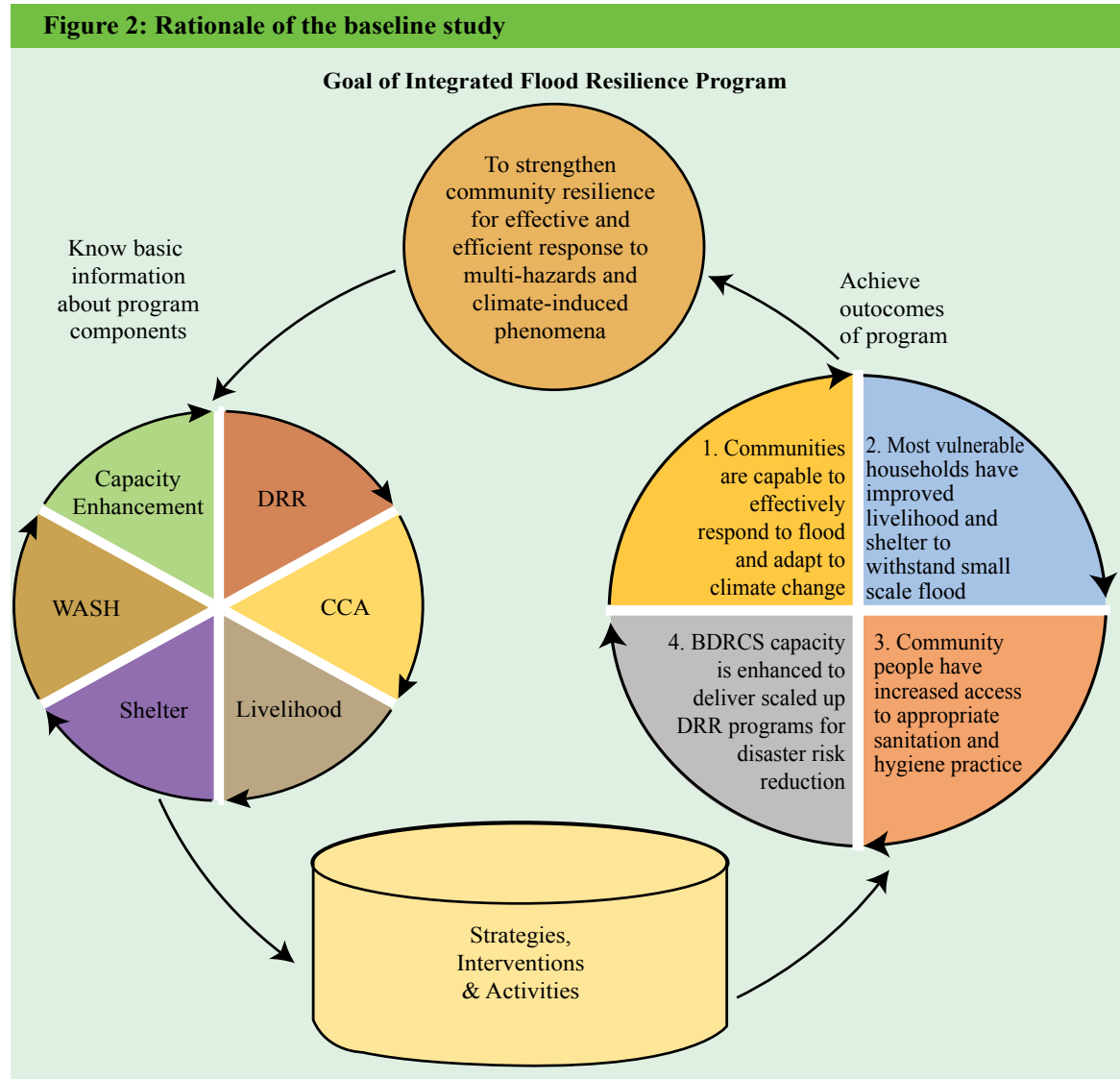
A resilient system is one that can retain core structures and functions in the face of significant disturbances, while still retaining the ability to change and develop (Nelson et al. 2010). The resilience concept has proved popular as a way of thinking beyond coping strategies and moving towards adaptation to changing environmental conditions that entail the capacity to cooperate, learn and further enhance resilience under future conditions (Moser, 2008).

Livelihood systems are an essential framework for human organization. They include social and economic networks, maintain cultural practices and enable upward socio-economic mobility over generations. Livelihoods are sustainable when they enhance the wellbeing of current and future generations without degrading the environment or depleting resource bases (Chambers and Conway 1992). Livelihood shocks, whether economic, environmental, socio-cultural or health-related, can undermine long-term development prospects and push people into cycles of poverty and unhealthy living conditions (Wilkinson and Peters 2015).

Climate change increases the pressure on already vulnerable livelihoods, and particularly those that depend on natural resources. It also prolongs already existing poverty loops, expands inequalities, heightens food-insecurity and inhibits economic growth, poverty reduction and sustainable development. Recovery from losses and damages is more difficult for the most vulnerable people whose livelihood security depends on land and other natural resources. Disaster risk reduction, access and control of local resources, social safety nets, diverse livelihood opportunities and secure income assets are key priorities that should be included in a sustainable development model. Cooperation between individuals and governments, and between national and sub-national levels, is crucial in ensuring effective adaptation responses to climatic stress. Poor planning which only focuses on short-term solutions or which is incapable to assess longer-term consequences, will likely result in maladaptation, which in turn will increase the vulnerability of already vulnerable groups, and limit future choices by locking vulnerable people into cycles of dependence (IPCC, WG2 AR5 2014).

1.3 Rationale of the Baseline Study

It is important to achieve the goals and outcomes of the programs. For that, it was essential to know about the basic information of the components of IFRP like DRR, CCA, livelihood, shelter, WASH and capacity of community people. Based on the basic data of these components, further strategies, interventions and activities may be designed to achieve the four outcomes of the program. For this, the baseline study was significant from its rationale point of view.



1.4 Objectives of the Study

The objective of the baseline study was to collect primary and secondary data based on the indicators of the IFRP from four communities of Nilphamari and Lalmonirhat districts. The baseline study accumulated data and information of the selected communities on what the community people know and do practice in relation to climate change, resilience and DRR; water, sanitation and hygiene; livelihood; health and shelter. The major objectives of the baseline study were in the following:

- √ To identify and document the existing situation of communities regarding DRR, climate change, WASH, health, livelihood and shelter
- √ To identify the current practices and needs of targeted communities to implement the program activities effectively and efficiently
- √ To provide a key reference to the mid-term evaluation and end line study to assess and monitor the change of the program results.

CHAPTER 2

Research

Methodology

2.1 Research Design

The study was conducted from both qualitative and quantitative perspectives. It was very important to know about the present status of the community and knowledge, attitudes and practices of community people. In this regard, secondary data sources were reviewed for conceptualizing the issues. Different national and international research documents, policy papers, books, articles, related websites and other peer viewed documents on resilience, climate change, adaptation, flood vulnerability and livelihood were properly reviewed to enrich the secondary sources for the study.

2.2 Study Area

The baseline study was conducted at 4 communities of Nilphamari and Lalmonirhat districts:

- Dighir Par (Tepa Kharibari UP) and Garain Para (Khalisa Chapani UP) communities of Dimla Upazila of Nilphamari district
- Shiber Kuti (Kulaghat UP) and Sheikh Para (Khuniagachh UP) communities of Lalmonirhat Sadar Upazila of Lalmonirhat district.

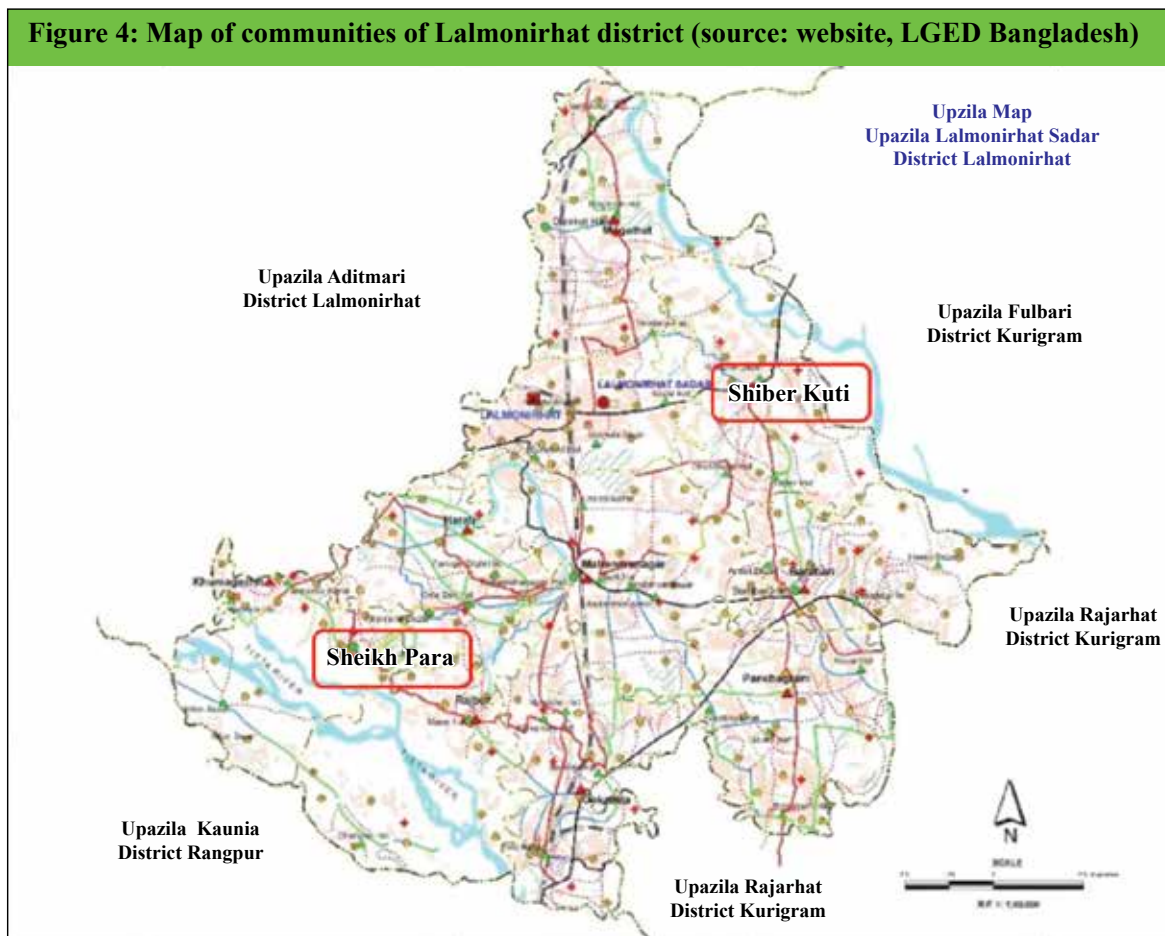
Figure 3: Map of communities of Nilphamari district (source: website, LGED Bangladesh)



The figure 3 shows the community's location of Nilphamari district in the map. The Dighir Par community is located at Tepa Kharibari UP of Dimla Upazila which 56 kilometers is far from Nilphamari district Sadar. The community is located at the edge of Teesta river. Telir bazar, Gayabari

UP and the embankment is situated at the north, south and east part of the community. The Garain Para community of Khalisha Chapani UP is 2 kilometers far from Dighir Par community. Almost every year, the community people face the impacts of flood as Teesta river inundates.

Figure 4: Map of communities of Lalmonirhat district (source: website, LGED Bangladesh)



The figure 4 shows the position of two communities of Lalmonirhat district in the map. The Sheikh Para community is located at Khuniagachh UP which is 12 kilometers far to south from Lalmonirhat district Sadar. The community is located at the edge of Teesta river. The community people are experienced with flood and river erosion since 1970. For tackling river erosion, an embankment of stone was made at the south part of the community at the edge of Teesta River. The community was rescued after establishing this embankment and the community people can also use it for walking and communicating with the other communities. On the other hand, the Shiber Kutti community is located at east-south part of Kulaghat which 13 kilometers is far from Lalmonirhat Sadar. The community is located at the middle point of two-rivers. One river is Dharla which flows at the east part and another river is Ratnay which flows at south-west part of the community. Almost every year, the community people get the experience of flood. These two rivers inundate and create flood and destroy community's livelihoods and infrastructure.



2.3 Sources of Data

Data were collected from both primary and secondary sources for conducting the study. Primary source of data includes face-to-face interview by using structured questionnaire, Focus Group Discussions, Key Informant Interviews and direct observation. The secondary source of data includes project proposal, different national and international documents, policy papers, books and articles, related websites, peer-viewed documents and documents on resilience, disaster, climate change, adaptation, flood vulnerability and livelihood.

2.4 Sampling

Data were collected from all the targeted households. The total sample size was 1,668 (841 households from Nilphamari district and 827 households from Lalmonirhat district).

Table 1: Sample size of the baseline study

Sl no.	Name of District	Name of Upazila	Name of Union	Name of the community	Sample size (household numbers)
01	Nilphamari	Dimla	Tepa Kharibari	Dighir Par	467
02	Nilphamari	Dimla	Khalisa Chapani	Garain Para	374
03	Lalmonirhat	Lalmonirhat Sadar	Khuniagachh	Sheikh Para	425
04	Lalmonirhat	Lalmonirhat Sadar	Kulaghat	Shiber Kuti	402
Total					1,668

The table 1 shows the household size of the study. Data were collected from households of four communities of two districts namely Nilphamari and Lalmonirhat. In Nilphamari, 467 and 374 households were selected from Dighir Par and Garain Para community respectively. On the other hand; in Lalmonirhat, 425 and 402 household's respondents from Sheikh Para and Shiber Kuti community provided information.

A structured questionnaire for household survey was developed and used to collect data to know the existing situation of the communities on the following cross-cutting issues:

- Socio-economic condition
- Knowledge about climate change/resilience/DRR
- Impact of disaster/flood on community's life and livelihood
- Measurement taken before, during and after disaster/flood
- Understanding on the flood early warning message by the community people
- Safe water, improved sanitation and health condition
- Scope of livelihood
- Shelter status

2.5 Data Collection Team

The data collection team was led by BDRCS and IFRC representatives who guided and trained the enumerators and monitored and managed the entire process. A total 20 enumerators (10 enumerators in each district) subsequently collected data at household level. Assistant Program Officers, Unit Level Officers and Community Organizers provided necessary supports in this regard.



2.6 Training to the Enumerators

Two separate trainings were held for the enumerators at two stages:

- Firstly, the enumerators of Nilphamari were trained from 21 to 22 October 2018
- Secondly, the enumerators of Lalmonirhat were trained from 28 to 29 October 2018.

Training was provided on the survey procedure and proper understanding on questionnaire. As a result, all enumerators were able to understand the questionnaire uniformly. Details of the IFRP and its goals and objectives, interview technique, rapport building with community people, etc. were also explained during training session.



2.7 Focus Group Discussion (FGD) and Key Informant Interview (KII)

A total of 16 FGDs with a structure questionnaire were conducted at 4 communities. The FGDs mainly focused on the issues of the communities like overall socio-economic condition, climate change, disaster risk and resilience approaches, WASH and health situation and livelihood and shelter. A total of 8 Key Informant Interviews with a semi-structure questionnaire were also conducted at four communities.

Table 2: Design of FGD and KII conduction

Sl no.	Name of community	Name of Union	Upazila	District	No. of FGDs	No. of KII	Stakeholders
01	Dighir Par	Tepa Kharibari	Dimla	Nilphamari	4	2	<ul style="list-style-type: none">▪ Vulnerable poor male group▪ Vulnerable poor female group▪ Local group of targeted people (UP representative, doctor, religious leader, businessmen etc.)▪ Teachers▪ Elderly people
02	Garain Para	Khalisa Chapani	Dimla	Nilphamari	4	2	
03	Sheikh Para	Kulaghat	Lalmonirhat Sadar	Lalmonirhat	4	2	
04	Shiber Kuti	Khuniagachh	Lalmonirhat Sadar	Lalmonirhat	4	2	
Total					16	8	

The table 2 shows the design of the FGDs and KIIs that were conducted during the baseline study. At each community, 4 FGDs and 2 KIIs were conducted targeting the vulnerable poor male and female group, local people like UP representatives, doctors, religious leaders, businessmen, teachers and elderly people.





2.8 Data Quality

To maintain the data quality, the following actions were taken:

- The data manager conducted spot checking during the survey time and reviewed the collected data every day, and the feedbacks were provided to enumerators as and when needed
- The coordinator revisited the interviewed households to do cross-checking of the data collected by the enumerators
- Data accuracy were checked before analyzing.

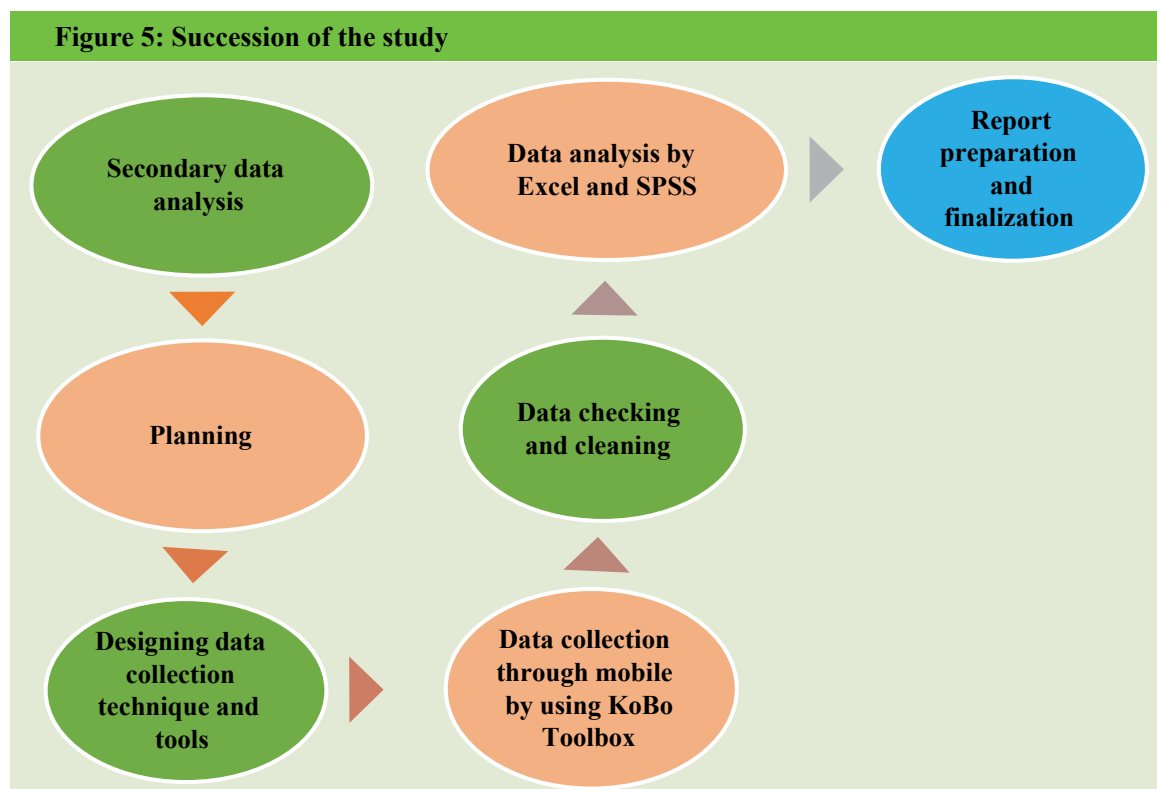
2.9 Data Processing and Analysis

Household data were imported from KoBo toolbox in excel version. Then MS Excel and SPSS were used for analysing the data. Data were displayed through different tables and graphs based on nature of information. Collected data from the survey were also correlated with research objectives and interpreted descriptively.

2.10 Report Preparation and Finalization

Analysing the primary and secondary data, the draft report was prepared and shared with IFRC and BDRCS project management team. The team reviewed and provided their feedbacks. Finally, the report was finalised in consultation with IFRC and BDRCS program team.

Figure 5: Succession of the study



The figure 5 shows the succession of the baseline study. It shows all the process that were used for the completion of the study. Firstly, the secondary data were analysed for conducting the study. Then the planning was designed that how the whole study can be done. After that, data collection technique was designed to collect data through mobile by using KoBo Toolbox. The data were collected from four communities of two districts. These data were checked, cleaned and analysed. Finally, the report was produced based on the primary and secondary data.

2.11 Ethical Issues

Ethical issues were kept in mind by the baseline coordinator and data enumerators. All the respondents were given clear idea about the objectives and purposes of the baseline study before asking any question. The culture and perception of the communities were prioritized from highest admiration point of view.

2.12 Limitation of the Study

The limitations of the study were as follows:

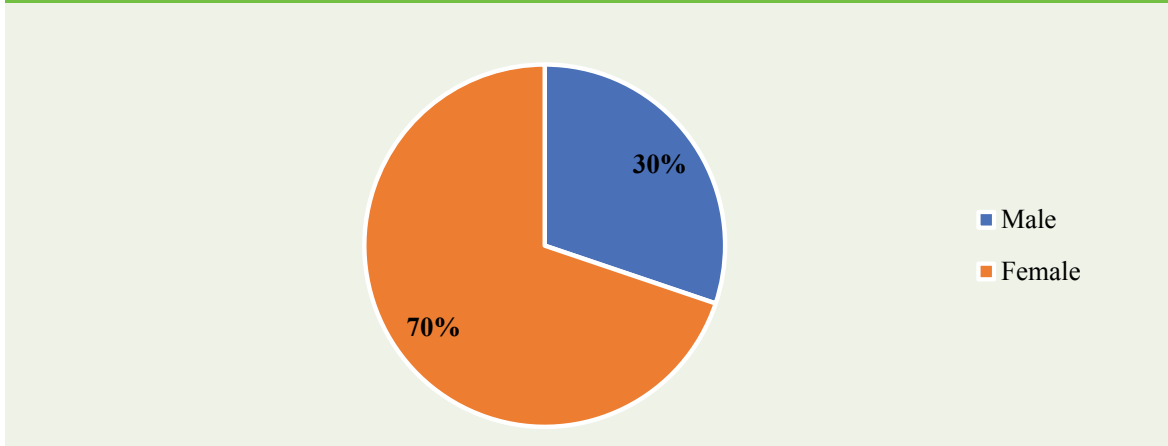
- Data were collected from the available members of the households during the household survey. In most of the cases, the household's heads were busy with their regular activity. It would be better if more household heads provided information
- In some cases, houses were far from one to another. The enumerators had to walk long distance to collect data from those households. So, it took extra time than expected.

CHAPTER 3

Findings of the Study

3.1 Respondent's and Household's Profile

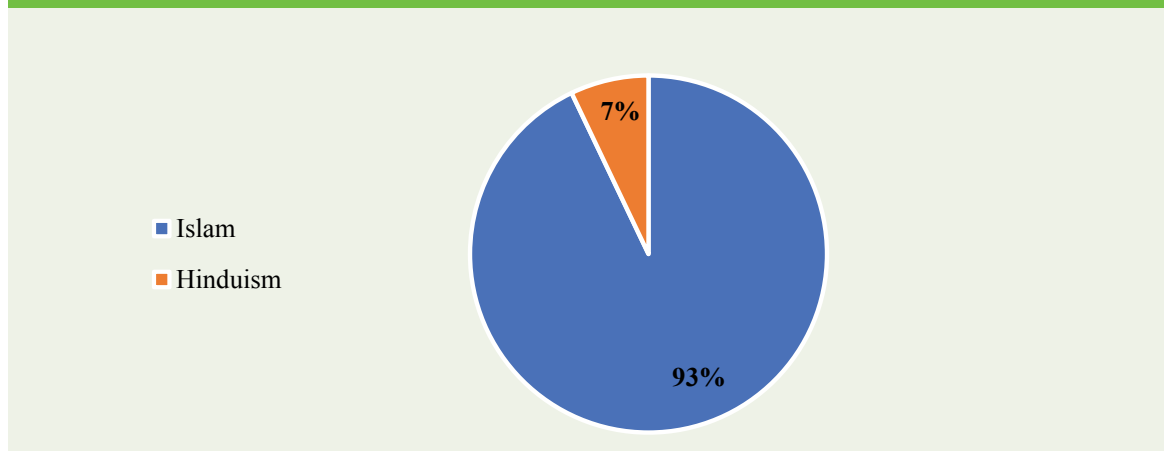
Figure 6: Gender of respondents



The figure 6 shows the gender distribution of the respondents. Majority of the respondents of the surveyed population were female. It was found that about 70% of total respondents were female and 30% were male. The baseline data were collected at day time and that time the presence of male was comparatively less as they were engaged in different types of works at outside of households for income generating activities. For this, most of the respondents were female.

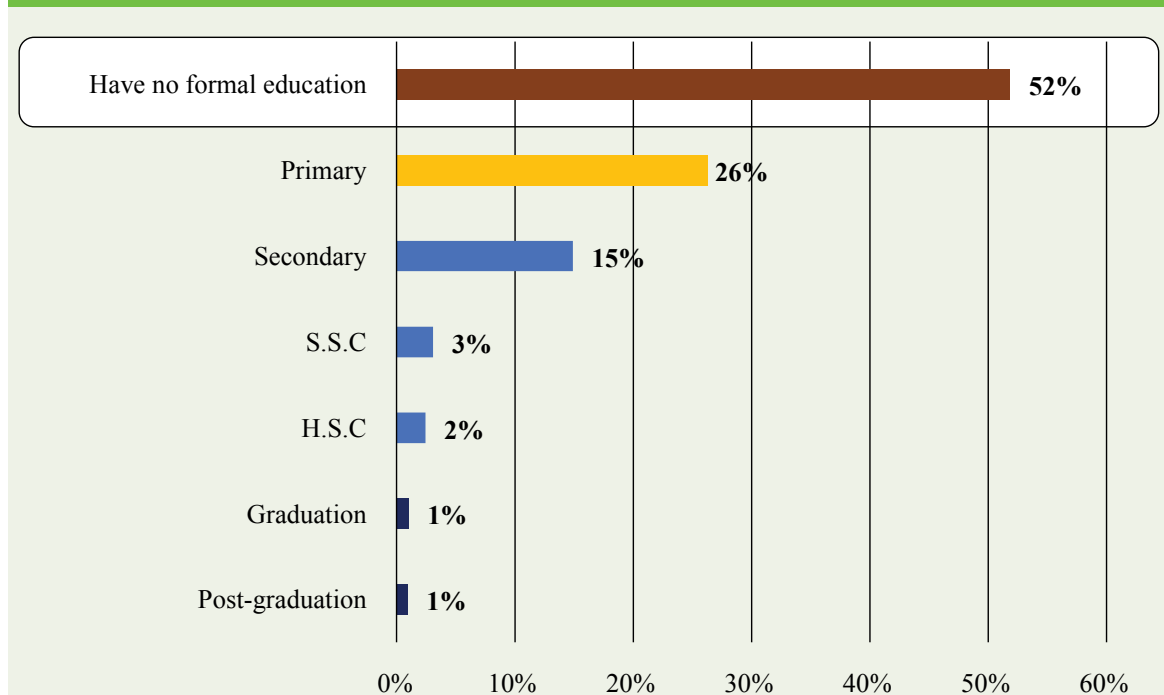


Figure 7: Religion of respondents



The figure 7 shows that about 93% of the respondents were Muslim and about 7% were the followers of Hindu religion. No respondent from other religion was found in the baseline study. It was found that there was communal harmony among the people at all communities. They were very peace loving and had been living together since many years.

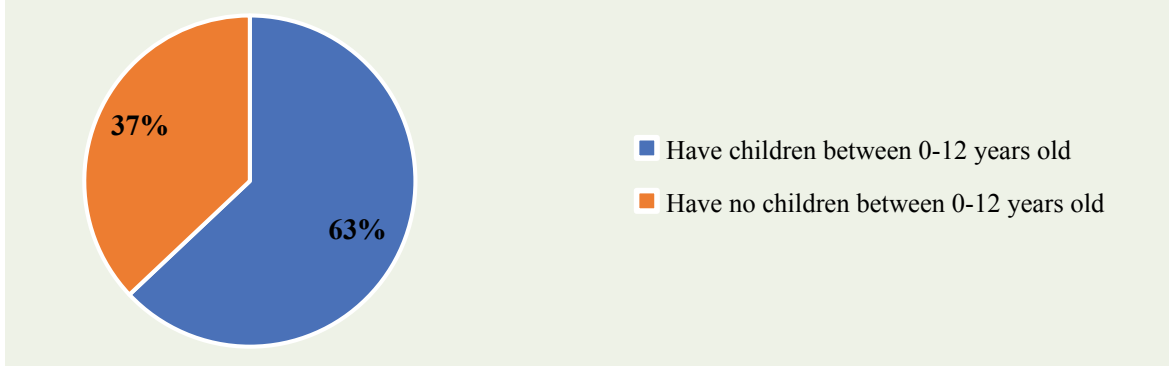
Figure 8: Educational qualification of respondents



The figure 8 shows that about 52% of the respondents had no formal education. On the other hand, about 26% and 15% of the respondents provided information who had primary and secondary education respectively. But, a few numbers of respondents were found with having S.S.C, H.S.C, graduation and post-graduation. There was no respondent with having above post-graduation degree. Beside this, the overall community education was limited within primary level in most of the cases.

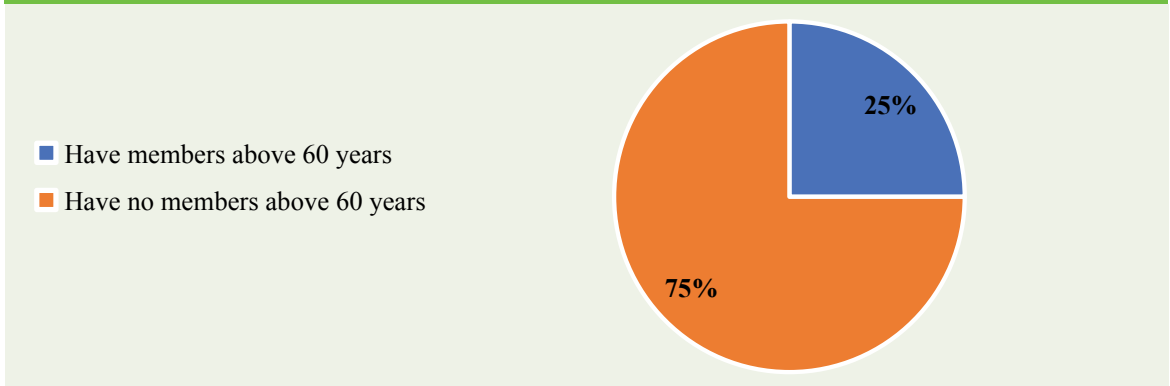
It was found that the children helped their parents for income generating activities after completing primary level education. The socio-economic condition was responsible for less education rate in the communities. Poverty and socio-economic factors pushed the male members of the communities to earn from very early age of life. That's why, their opportunity to acquire education became narrow. It was found that there were apathy and financial limitations among the community people to invest on education for female members.

Figure 9: Households have children (between 0-12 years old)



The figure 9 shows that about 63% of the households had children between 0-12 years old. On the other hand, about 37% of the households had no children between at this range of age.

Figure 10: Households have members above 60 years old



Under the program, the adult people were prioritized to reduce their vulnerability during disaster (flood) and achieve their resilience capability. According to data from World Population Prospects the 2,017 Revision, the number of older persons those aged 60 years or over is expected to more than double by 2,050 and to more than triple by 2,100, rising from 962 million globally in 2,017 to 2.1 billion in 2,050 and 3.1 billion in 2,100. (UN report). The data of the adult people (above 60 years old) were collected. The figure 10 shows that about 25% of the surveyed households at four communities had members above 60 years old.

Figure 11: Households have differently-able people



The figure 11 shows that about 5% of the respondents informed that they had differently-able members or people with disabilities at their households. In the baseline study, 96 people with disabilities were identified. 58 people were found with having physical and 20 people were found with having mental disability. 18 people were identified with having both disabilities. It was found that these people with disabilities were unable to do anything or earn for households. They had to depend on other household members for survival. Special care and consideration are essential for these differently-able people those have physical and mobility limitations.

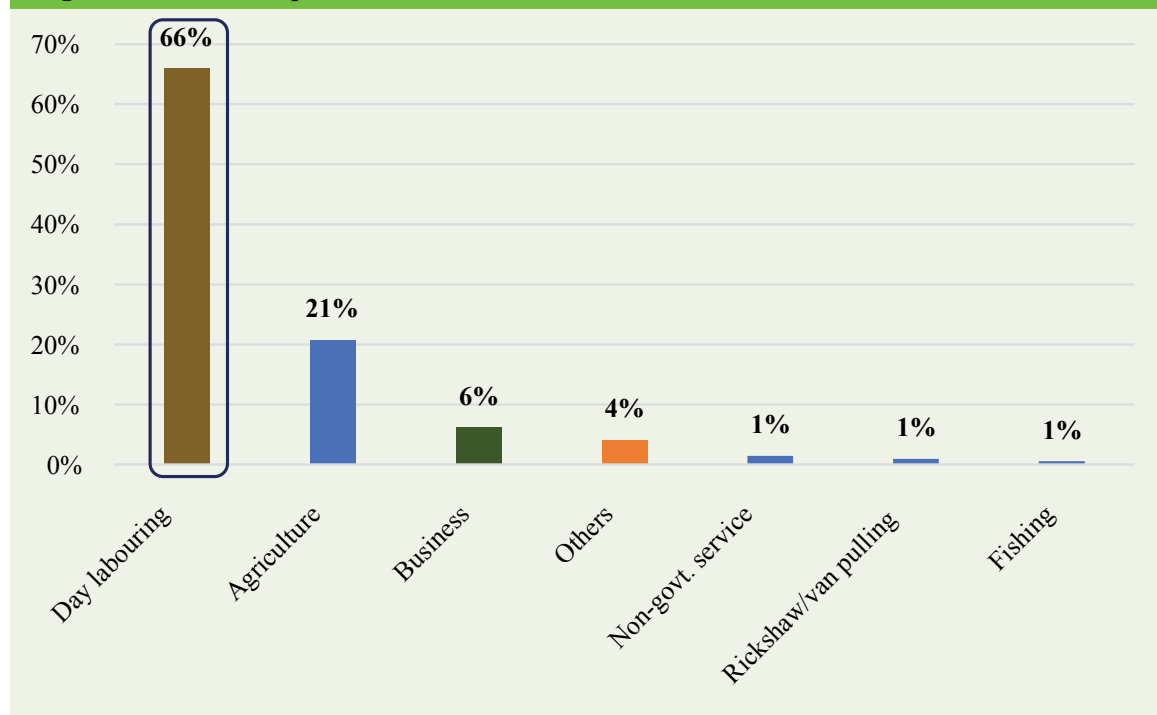
Table 3: Community-wise status of the population

Sl. no	Description	Community-wise status				Total
		Nilphamari		Lalmonirhat		
		Dighir Par	Garain Para	Sheikh Para	Shiber Kuti	
01	Number of male	892	771	937	760	3,360
02	Number of female	913	743	919	746	3,321
03	Children between age 0-12 years	463	379	437	355	1,634
04	Household members above 60 years old	262	112	144	103	621
05	People with disability	16	23	28	29	96

The table 3 shows the community-wise status of the population of the baseline study. It was found that there were total 6,681 people at 1,668 households. Among them; 3,360 were male and 3,321 were female. There were 1,634 children between 0-12 years and 621 members above 60 years old. A total 96 people with disabilities were also identified.

3.2 Socio-economic Information

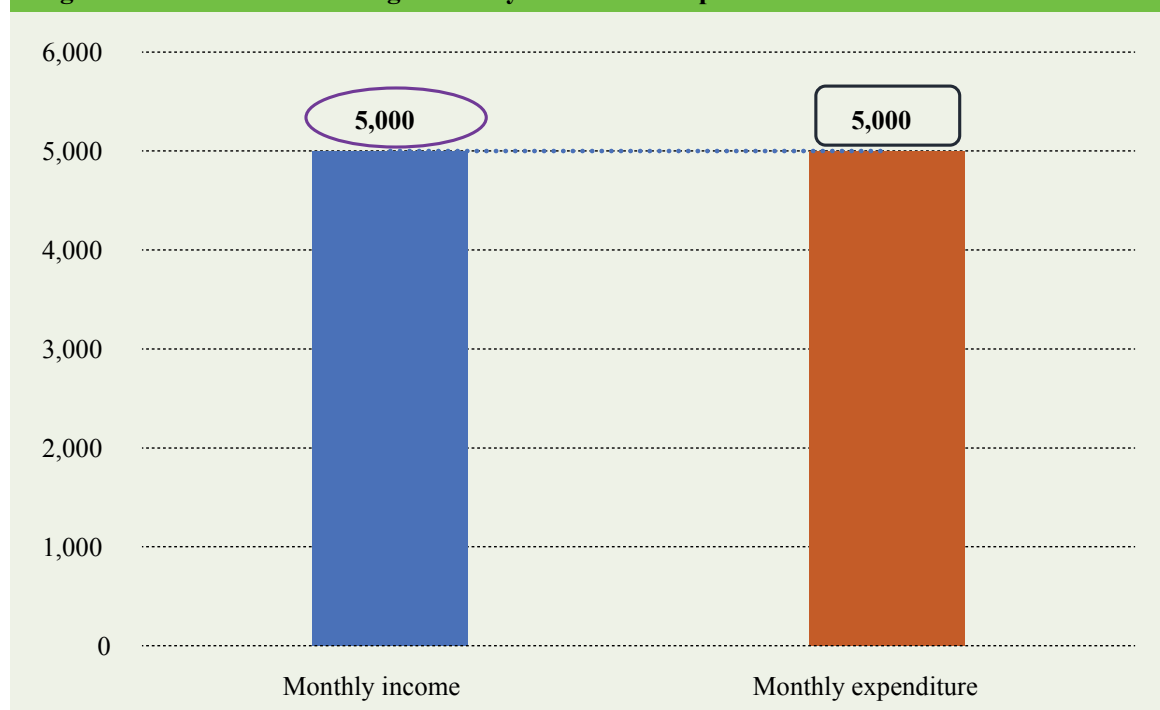
Figure 12: Main occupation of household heads



The figure 12 shows the occupational condition of the household heads of the communities. About 66% of the respondents mentioned that day labouring was the main occupation of their household heads whether about 21% and 6% of the respondents mentioned that agriculture and business was the main occupation of their household heads. Three communities among the four communities under the program are located at the bank of Teesta river. One community is located between Dharla and Ratnay river. Hence, most of the community peoples' occupation was river-centric and they had limited opportunities to livelihood options. But, in a specific period of the year they could cultivate different types of crops at river chest. Beside this, they had different types of small business. At the communities of Nilphamari, some of the households had business of lifting stone but at present the stone business is prohibited as the Government has restriction on this business. About 1% of the respondents mentioned that their household head's profession was non-govt. service and rickshaw/van pulling. Beside this, a few of the household heads were found as housewife, beggar, street retailer, floating businessman, barber, electrician, blacksmith, worker at small cottage etc. It was found that some of the household head's earning was dependent on fishing in the river. But, it was also found that the other households also caught fish in river though it was not their profession. They did it for the fulfilment of demand of protein.



Figure 13: Household's average monthly income and expenditure



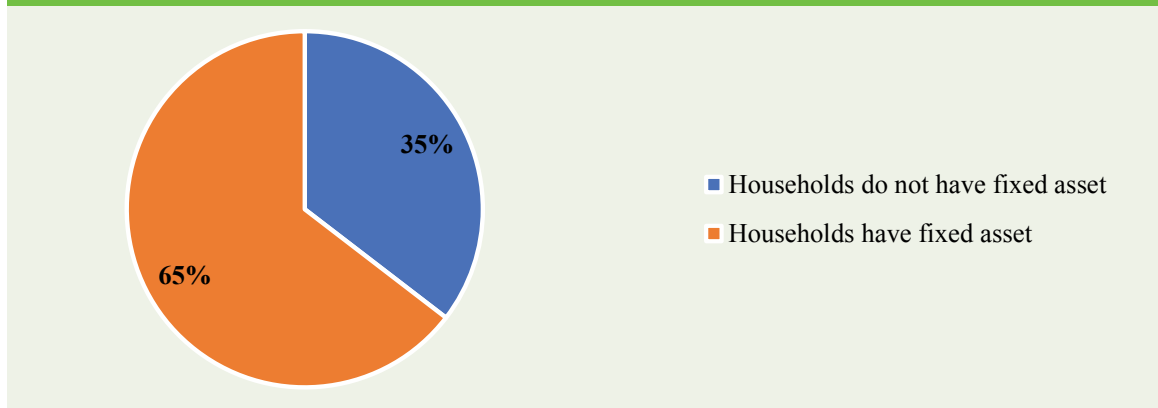
The figure 13 shows that the average monthly income and expenditure of the surveyed households. It was found that each of the household had average income 5,000 BDT per month. The expenditure of each household was also found 5,000 BDT per month. Most of the household's heads income opportunity was dependent on agriculture and day-labouring. So, their income was found less. The level of income of the communities indicates that living standard of the community people was not so high. It was found that the less working opportunity for income was one of the reasons that the community people could earn less. It was also found that there was no industrial working opportunity for the community people of Nilphamari district. There were some local industries near to Sheikh Para community of Lalmonirhat. But the community people did not get the access to work there in greater scale as they were not skilled and for other socio-economic factors.

Table 4: Community-wise status of household's income

Sl no.	Income range between (BDT)	Community-wise status (number of households)			
		Nilphamari		Lalmonirhat	
		Dighir Par	Garain Para	Sheikh Para	Shiber Kuti
01	Have no income	4	2	1	0
02	1-2,000	82	58	16	24
03	2,001-4,000	102	114	129	135
04	4,001-6,000	144	103	198	190
05	6,001-8,000	104	65	44	41
06	8,001-10,000	21	19	26	08
07	Above 10,000	10	13	11	04
Total number of households		467	374	425	402

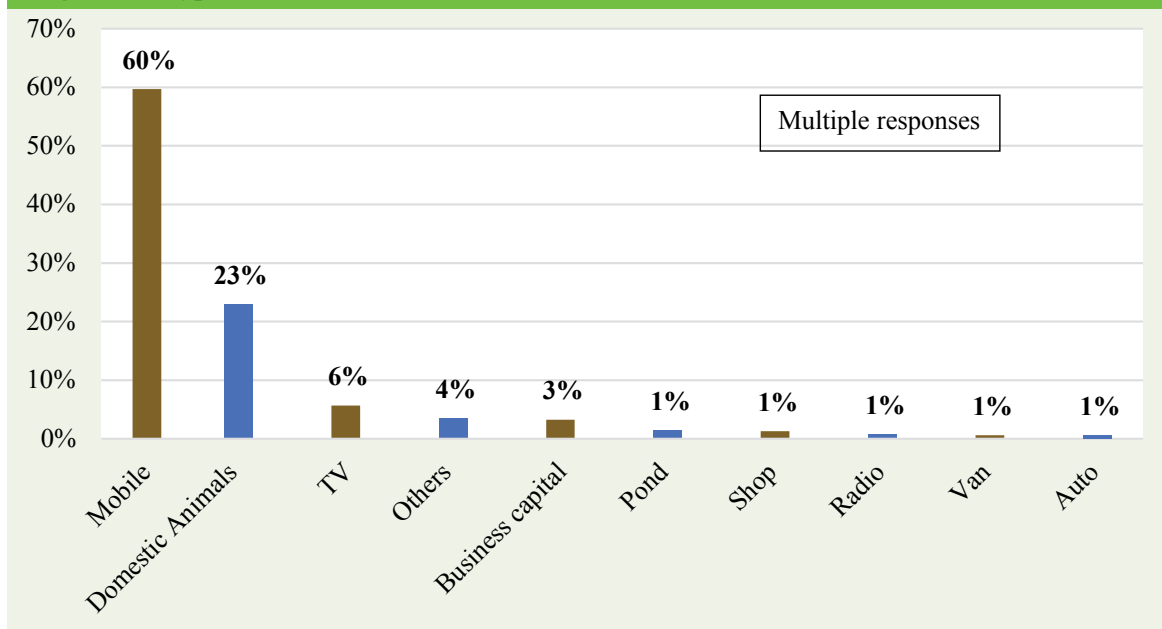
The table 3 shows that about 7 households from four communities were identified that had no income. Some households were identified that had income within 2,000 BDT. Most of the households were identified that had income from 2,001 to 8,000 BDT. Beside these, few households were also found that had income between 8,001-10,000 BDT or above 10,000 BDT.

Figure 14: Household's fixed asset



The figure 14 shows that about 65% of the households had some fixed assets. On the other hand, about 35% of the households had no fixed assets. It was considered about the fixed assets that owned by the households which have the financial values in market. Here the owing land was not considered, as the information of land was taken in other part of questionnaire of the study.

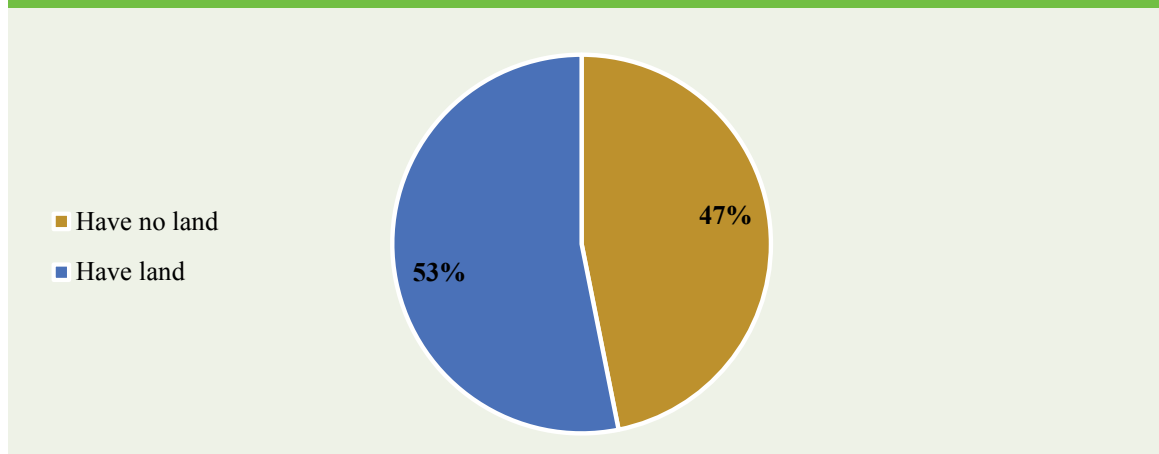
Figure 15: Types of fixed asset of households



The figure 14 showed the fixed asset status of the households. The figure 15 shows the types of fixed assets that the households had. It was found that about 60%, 23% and 6% of the households had fixed assets like mobile, domestic animals and TV respectively. Beside these, some of the households had

business capital, pond, shop, radio, van, auto cycle, motor-cycle, power-tiller, solar machine, boat, tree, gold, sewing machine etc. These fixed assets helped the household members to increase income for their livelihood purposes.

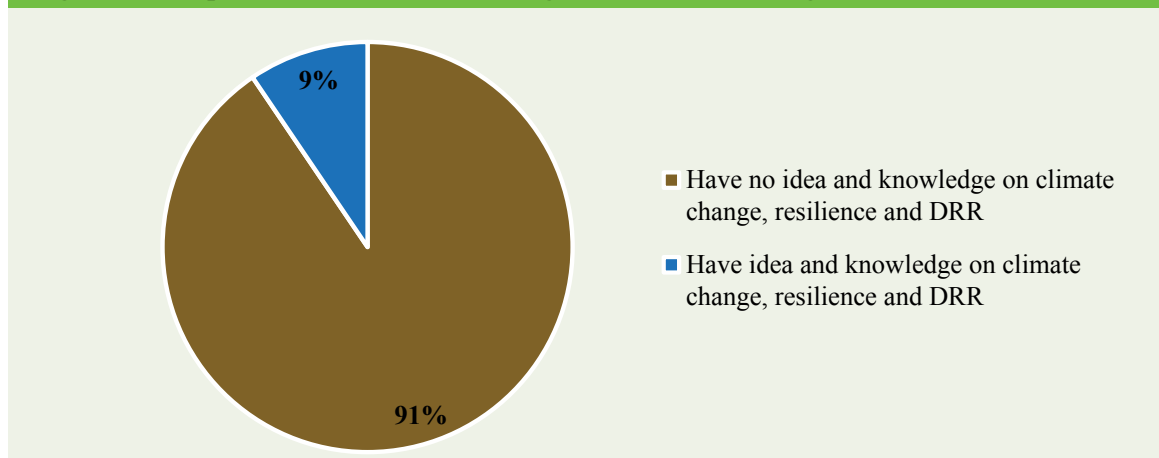
Figure 16: Household's own land



The figure 16 shows that about 53% of the surveyed households had land. On contrast, about 47% of the households had no own land. It was found that many of the households became landless due to river erosion and were living beside the embankment. Beside this, many of the households were living in some of the lands that were not in the name of their household heads. These were the lands of their fathers or *Khas* lands.

3.3 Climate Change, Resilience and Disaster Risk Reduction Section

Figure 17: Respondent's idea and knowledge about climate change, resilience and DRR



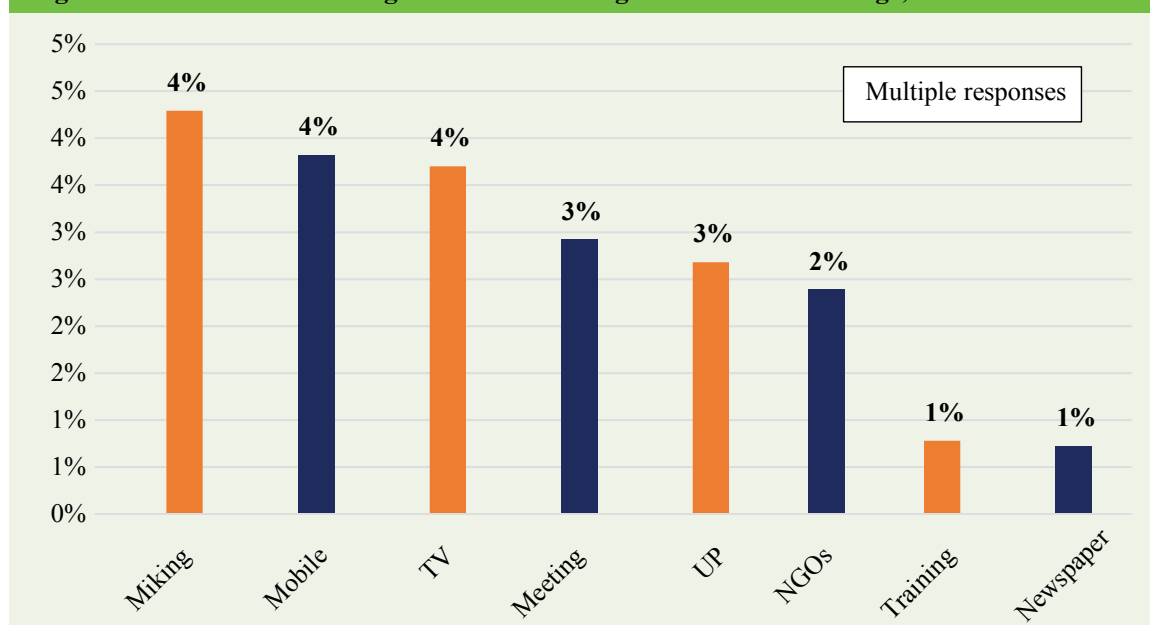
The figure 17 shows that only 9% of the respondents had idea or knowledge about climate change, resilience and disaster risk reduction. But, the other 91% of the respondents had no idea about these. So, the community people had very limited idea about climate change, resilience, DRR and adaptation. Though the community people have been living with disasters and facing flood since a long, but it was also found that the community people had a very little idea about the vulnerability aspects and ways to cope with the hazards and disasters specially the flood.

Table 5: Community-wise respondent's idea and knowledge about climate change, resilience and DRR

Name of community	Name of District	Respondents have idea and knowledge about climate change, resilience and DRR (%)
Dighir Par	Nilphamari	8.35%
Garain Para	Nilphamari	5.88%
Sheikh Para	Lalmonirhat	18.12%
Shiber Kuti	Lalmonirhat	3.48%

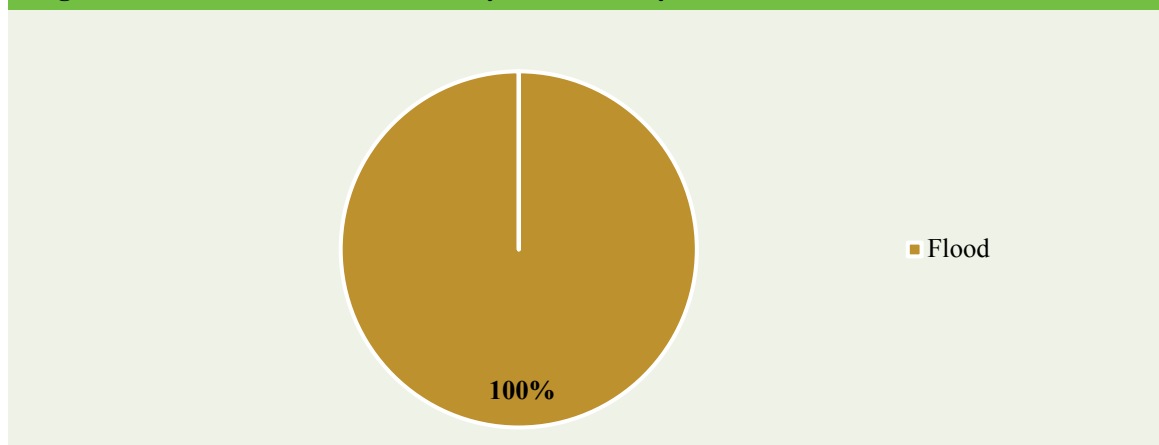
The table 5 shows the community-wise status of respondent's idea and knowledge about climate change, resilience and DRR. It was found that the respondents of Shiber Kuti community of Lalmonirhat had less idea and knowledge on climate change, resilience and DRR. Only 3.48% of the respondents of this community had idea in this regard. On the other hand, about 18.12% of the respondents of Sheikh Para community of Lalmonirhat had idea on these issues. Though most of the respondents of the four communities did not have knowledge in this regard but they could understand that there became a change in the climatic situation from last couple of years. They informed that there were seasonal variations and the disaster intensity had increased from last few years.

Figure 18: Sources of receiving idea and knowledge about climate change, resilience and DRR



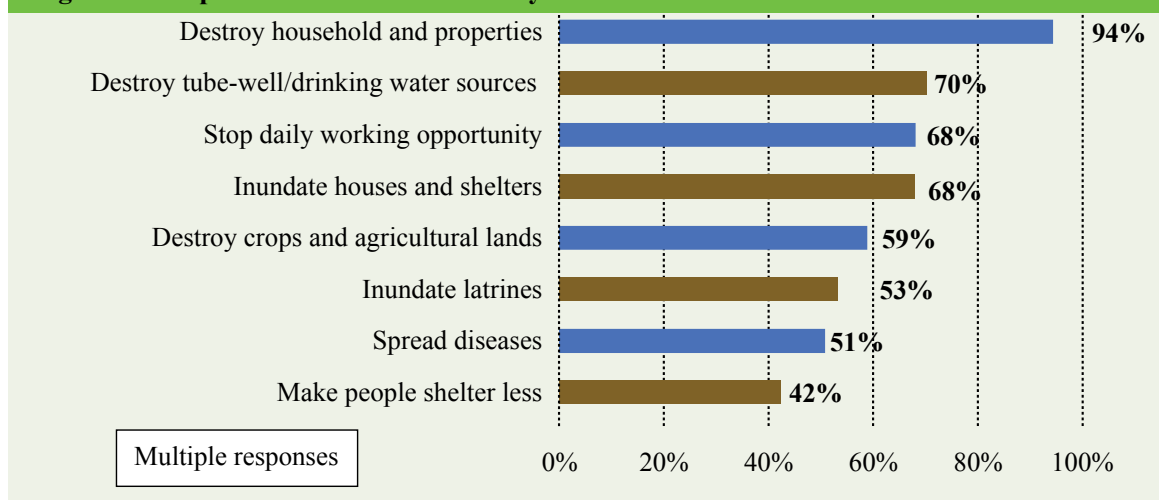
In the figure 17, it was shown that only 9% of the respondents had idea and knowledge about climate change, resilience and disaster risk reduction. The figure 18 shows the sources of receiving idea and knowledge about climate change, resilience and disaster risk reduction by the respondents. About 4% of the respondents knew and got knowledge about climate change, resilience and DRR from miking, mobile and TV. Some of other respondents became familiar with these ideas by attending meeting and receiving training from NGOs, UP and reading newspaper. Beside these, some of the respondents knew about the concepts from cultural program, poster, leaflet, radio, teachers, Upazila/district Parishad, signboard and billboard.

Figure 19: Main disaster at community from last 20 years



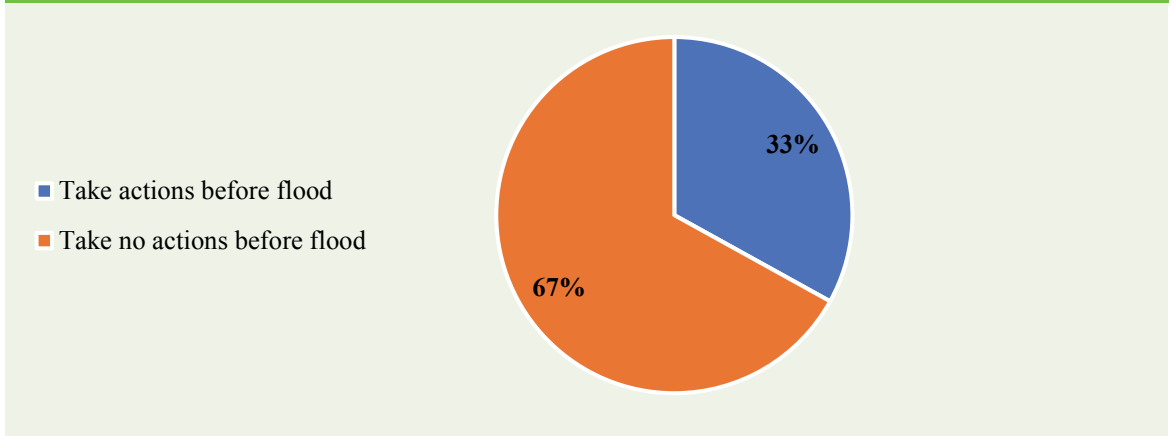
The figure 19 shows that the flood was the main disaster at the four communities. The respondents informed that they had been suffering from flood since last 20 years. Though river erosion, cold wave, storm and drought also affected the households of the communities, but the impacts of flood were greater than the other disasters. The respondents mentioned that flood used to occur almost every year at these communities, destroyed their properties and made community people shelter less and stopped working opportunity for a certain period. Among the four communities, three communities namely Dighir Par, Garain Para and Sheikh Para were located at the edge of Teesta river. Every year, the Teesta river inundates and occurs flood. On the other hand, the Shiberkuti community was located between Dharla and Ratnay river. The Dharla river was comparatively bigger than Ratnay river but both rivers used to overflow during the monsoon and in some cases of heavy rain. So, the Shiberkuti community people had been facing the flood since last 20 years. So, it was identified that the flood was the main disaster for the four communities. It was found that climate change was seen than the previous time according to the respondent's information. The respondents informed that weather had been comparatively warmer than the previous years. The rainfall and winter duration had reduced but coldness and frequency of flood increased than the previous period. It was found that heavy rainfall was also seen within very short period at the communities.

Figure 20: Impacts of flood on community's life and livelihoods



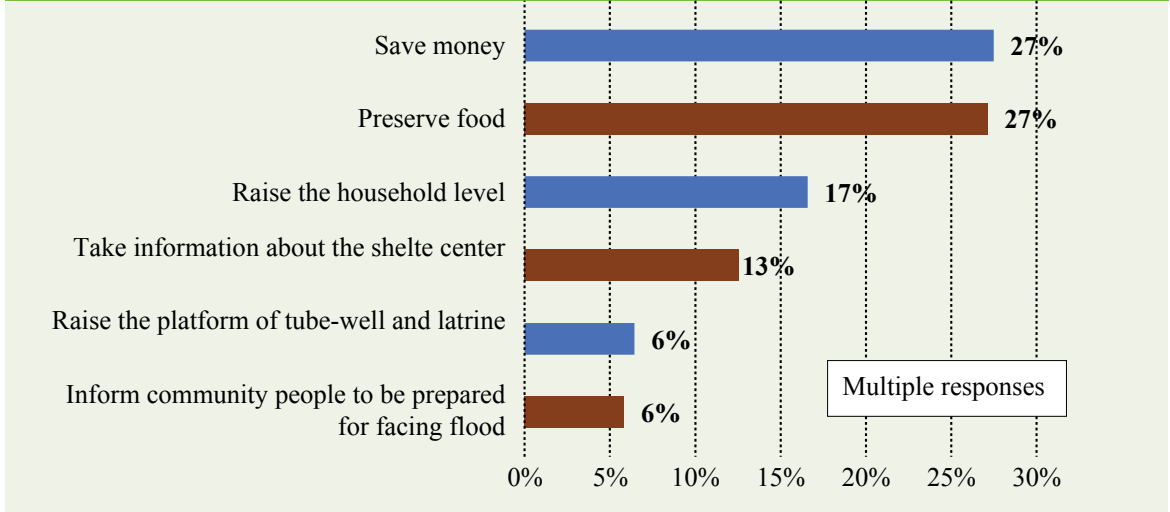
It was identified by the respondents that flood was the main disaster for the communities. The figure 20 shows the multiple impacts of flood on the life and livelihoods of the households of the surveyed communities. About 94% of the respondents mentioned that flood destroyed their households and properties. About 70% of the respondents informed that flood destroyed tube-wells and drinking water sources whether about 68% of the respondents mentioned that flood stopped their daily working opportunity and inundated houses and shelters at communities. Beside these; about 59%, 53%, 51% and 42% of the respondents respectively mentioned that flood destroyed crops and agricultural lands, inundated latrines, spread diseases and made people shelter less. It was identified that flood was the main barrier for the community people to have smooth livelihood practices. Due to impacts of flood, many of the cultivatable lands went into river. Many households of the communities were previously experienced with these types of situation.

Figure 21: Taking actions before flood by the households



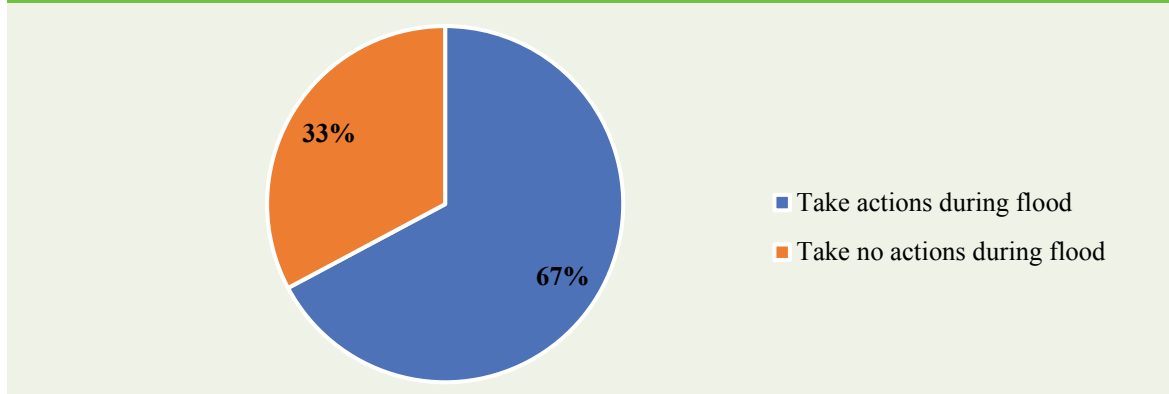
The figure 21 shows that about 33% of the households took actions before flood. This information indicates that only one-third households took preparation before flood and were aware that flood may occur. The rest of the households were inactive in this regard to take any type of preparedness before flood.

Figure 22: Types of actions taken by the households before flood



The figure 22 shows that about 27% of the households saved money and preserved food while they had perceived that the flood may hit at their community. About 17% and 13% of the households raised their household level and collected information about the shelter centre before the flood. Beside this, about 6% of the households were found who raised the platform of tube-well and latrine and informed the community people to be prepared for facing flood. Though the preparedness tendency among the community found less comparing to their vulnerability to flood. If they take more preparedness actions before the flood, then they would be able to reduce the losses of flood.

Figure 23: Taking actions during flood by the households

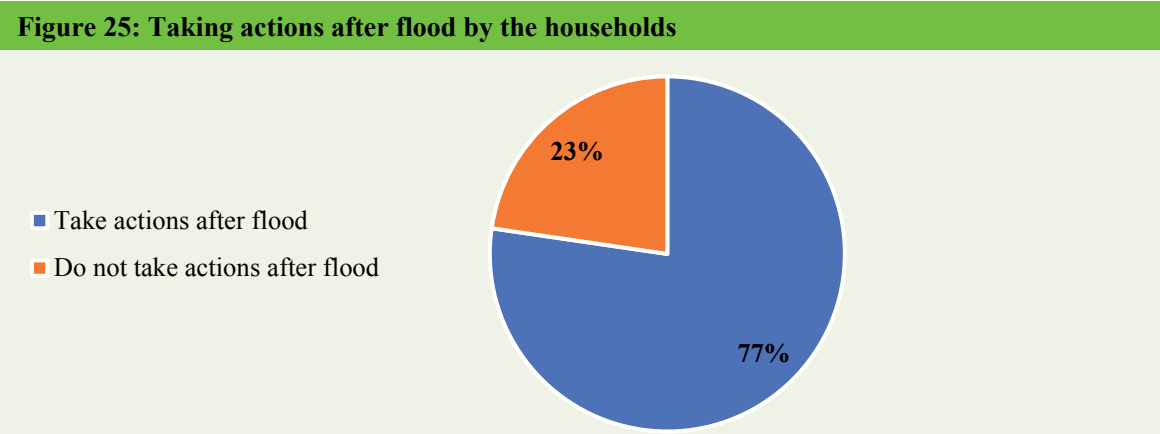


The figure 23 shows that about 67% of the households took actions during flood. The households had taken further actions than the other households that were more affected. When the flood occurred, then they had to take actions during this period for their survival.

Figure 24: Types of actions taken by the households during flood

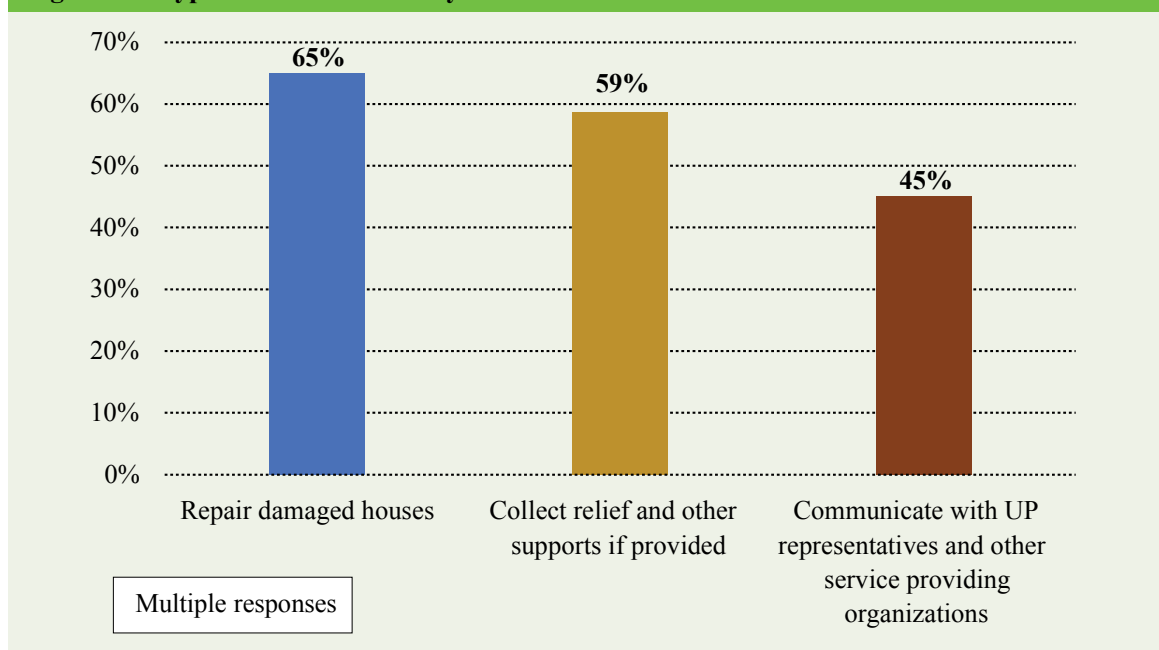


The figure 24 shows that about 50% of the households shifted their properties and materials at safe places whereas about 48% of the households took shelter on roads or at shelter centres. Though there was found no ideal shelter centre near the communities. But the schools and other educational institutions were used as the shelter centres during flood. The Upazila Administration and the local government tier (UP) coordinated the process and assisted the affected people to take shelter in these places. On the other hand, about 45% of the households collected relief. Beside these actions, some numbers of households boiled water before drinking, worked together to reduce the loss of flood and advised others to be shifted at safer places as well as to take safe shelter. It was found that during the flood period, access to any facility for the community people became limited. For that, it became tough for them to take necessary actions during flood.



The figure 25 shows that about 77% of the households were identified that took some actions after flood. The identified households tried to come back their normal life through these initiatives after the flood period. Taking actions after the flood period was dependent on some factors and financial capability of the households. Here, it was found that many of the households did not retain those types of capabilities. So, they could not take sufficient actions after the flood and had to bear the losses of flood like carrying with dilapidated houses, damaged properties and crops, affected tube-well, latrines etc.

Figure 26: Types of actions taken by the households after flood



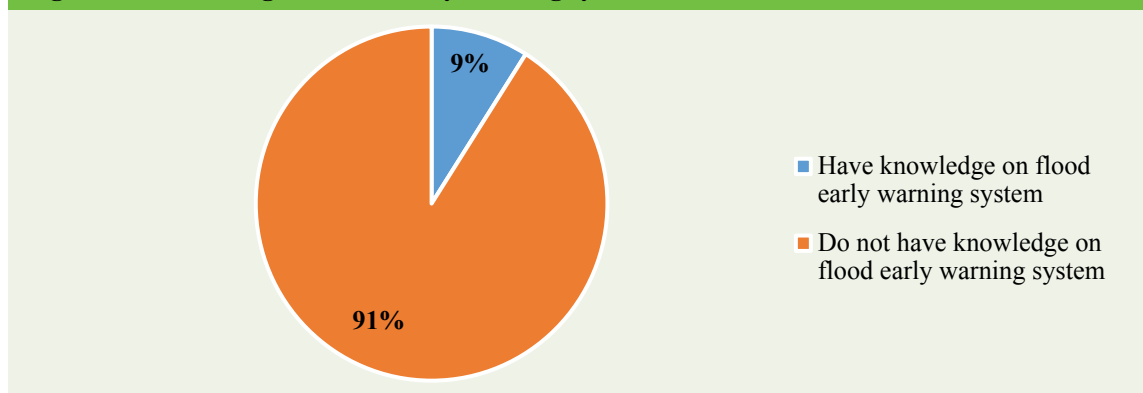
It was found that the community people came back at their home after flood and tried to start usual daily life by taking some of the actions. The figure 26 shows the households usually took three types of actions after the flood. About 65% and 59% of the households were found that repaired houses and collected relief and other supports if provided. About 45% of the households communicated with UP representatives and other service providing organizations to get relief and other support after the flood period.

Table 6: Community-wise action taking scenario before, during and after flood

Name of community	Name of District	Households take actions before flood (%)	Households take actions during flood (%)	Households take actions after flood (%)
Dighir Par	Nilphamari	35.48%	58.89%	81.16%
Garain Para	Nilphamari	34.49%	68.98%	86.10%
Sheikh Para	Lalmonirhat	31.71%	68.71%	27.29%
Shiber Kuti	Lalmonirhat	29.10%	73.73%	27.39%

The table 6 demonstrates the community-wise actions scenario before, during and after flood by the households. The initiating actions before, during and after flood among the two communities of Nilphamari district were gradually improving. But taking actions before and after flood was comparatively less than the flood period at the two communities of Lalmonirhat. So, all the four communities' people need to be more aware so that they can take sufficient actions and preparedness steps before, during and after flood.

Figure 27: Knowledge on flood early warning system



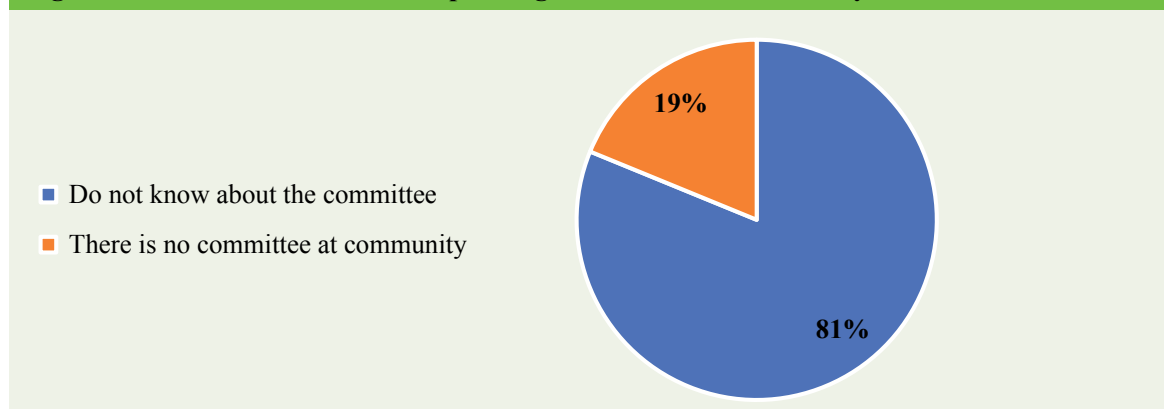
The figure 27 shows that only 9% of the respondents informed that they had knowledge on flood early warning system. Among the 9% of the respondents, about 7% of the respondents previously received message on flood from Union Parisad and local NGOs. Sometimes, they also got the early warning message though radio and TV. The rest 91% of the respondents and their household members did not have any knowledge on flood early warning system. So, the knowledge level on flood early warning system was found very less. This indicates that most of the community people did not have the understanding on the time of flood.

Table 7: Community-wise respondent's knowledge on flood early warning system and message

Name of community	Name of District	Respondents have knowledge on flood early warning system (%)	Respondents ever received flood early warning message (%)
Dighir Par	Nilphamari	6.21%	5.35%
Garain Para	Nilphamari	2.67%	0.27%
Sheikh Para	Lalmonirhat	17.41%	13.88%
Shiber Kuti	Lalmonirhat	7.46%	6.72%

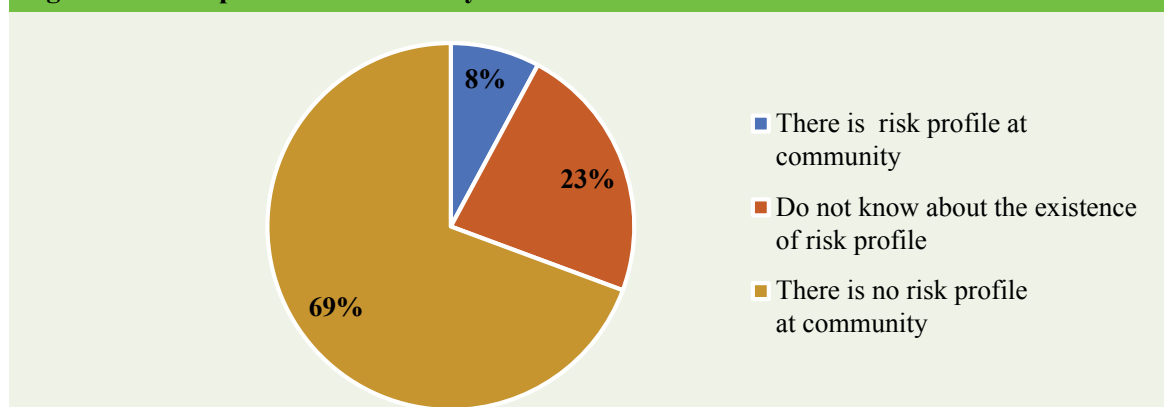
The table 7 shows that the community-wise respondent's knowledge on receiving flood early warning system and message. The respondents of Garain Para community of Nilphamari had very limited knowledge about this and they also had received very insignificant message on flood early warning. In this regard, some of the respondents of Sheikh Para of Lalmonirhat community were advanced, and they had idea about this and received flood early warning information.

Figure 28: Committee work for responding to flood at the community



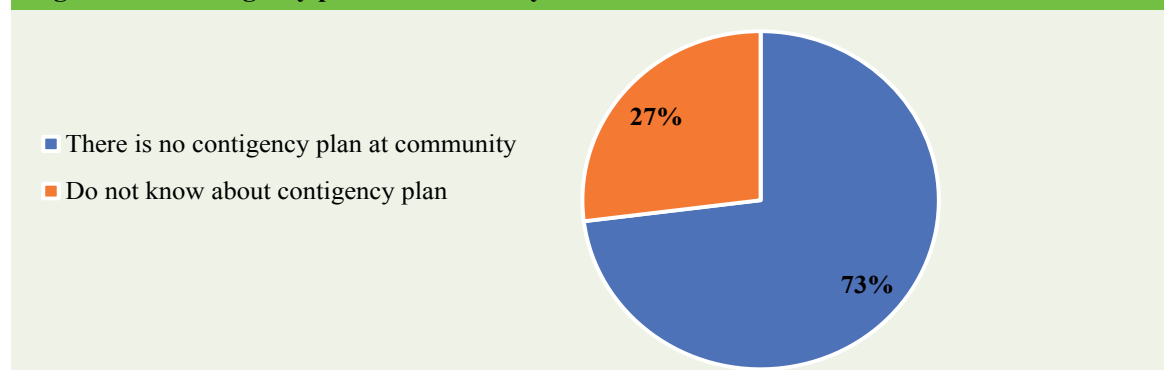
The figure 28 shows that about 19% of the respondents mentioned that there was no committee at the community that could work to respond during flood. On the other hand, about 81% of the respondents informed that did not know about that there was any committee at the community or whether this type of committee ever worked to respond flood or disasters.

Figure 29: Risk profile at community



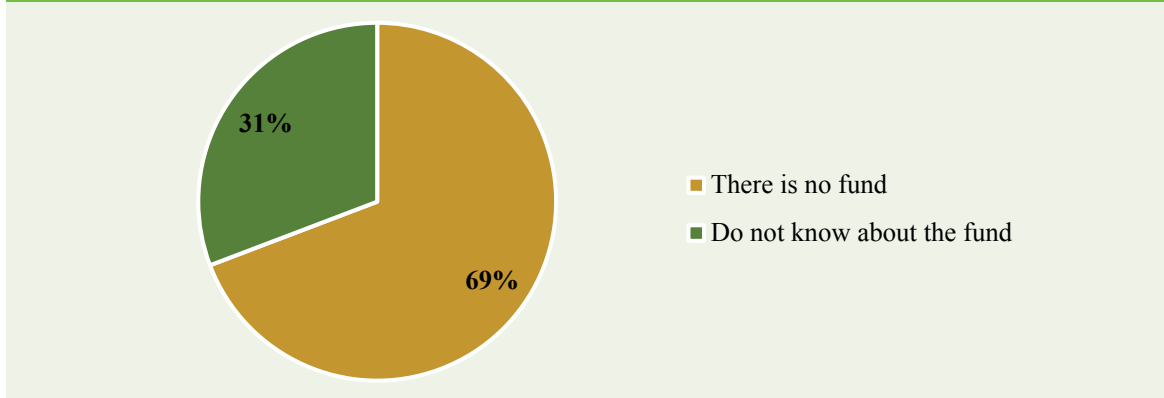
The figure 29 shows that about 69% of the respondents mentioned that there was no risk profile in the communities and about 23% of the respondents did not know in this regard. Only 8% of the respondents informed that there was risk profile at the community. The respondents mentioned that some NGOs and UP had developed the risk profile.

Figure 30: Contingency plan at community



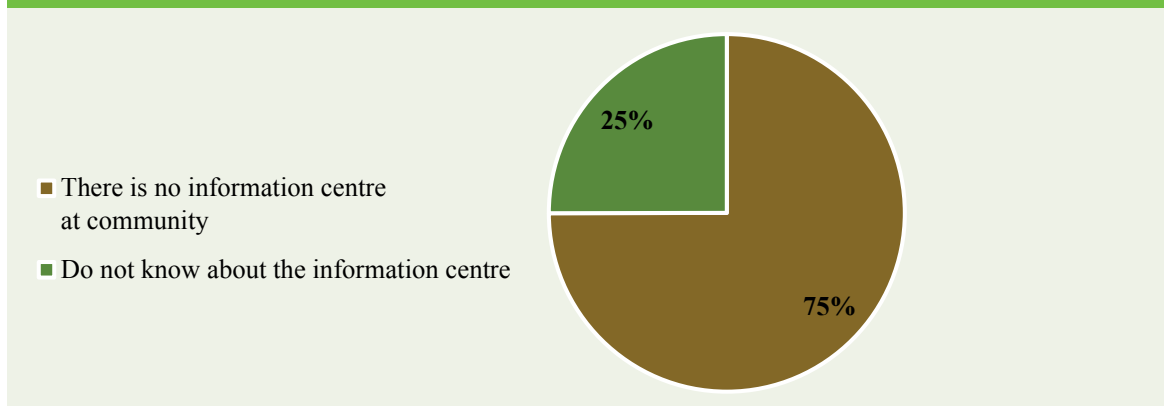
The figure 30 shows that about 73% of the respondents mentioned that there was no contingency plan at the communities to respond to the impacts of sudden flood or any type of disaster. On the other hand, about 27% of the respondents informed that they did not know whether there was any contingency plan. So, contingency plan was absent at four communities. Most of the respondents heard for first time the word “contingency plan” during the baseline study.

Figure 31: Community has fund to respond flood and other disasters



The figure 31 shows that about 69% of the respondents mentioned that there was no fund at the communities to be used for responding or tackling any flood or disaster. And about 31% of the respondents informed that they had no idea about the existence of such kind of fund that could be useful for the community people whether any types of flood or disasters happen at the communities.

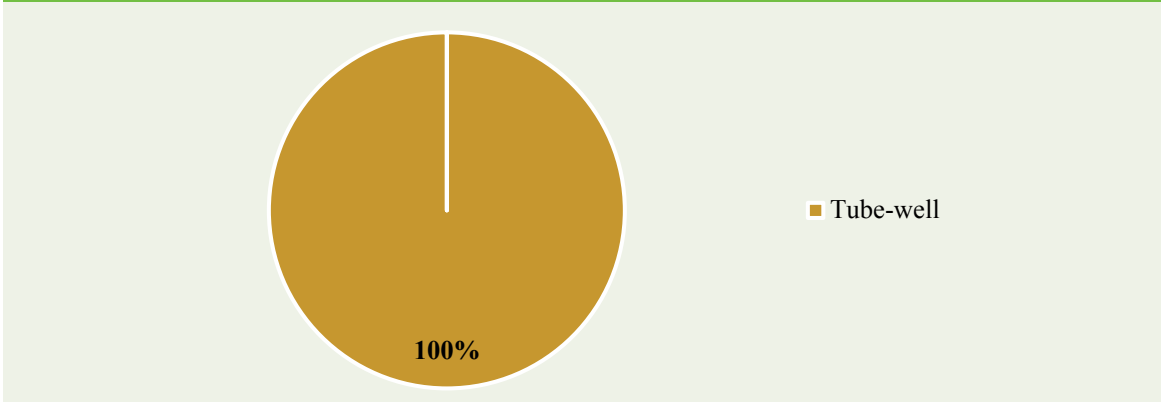
Figure 32: Information centre at community that provides disaster and flood related information



The figure 32 shows that about 75% of the respondents mentioned that there was no information centre at the communities and about 25% do not know anything in this regard. Here, it was found that the respondents had ignorance about the information centre like community risk profile, contingency plan and fund to tackle the impacts of flood and other disasters.

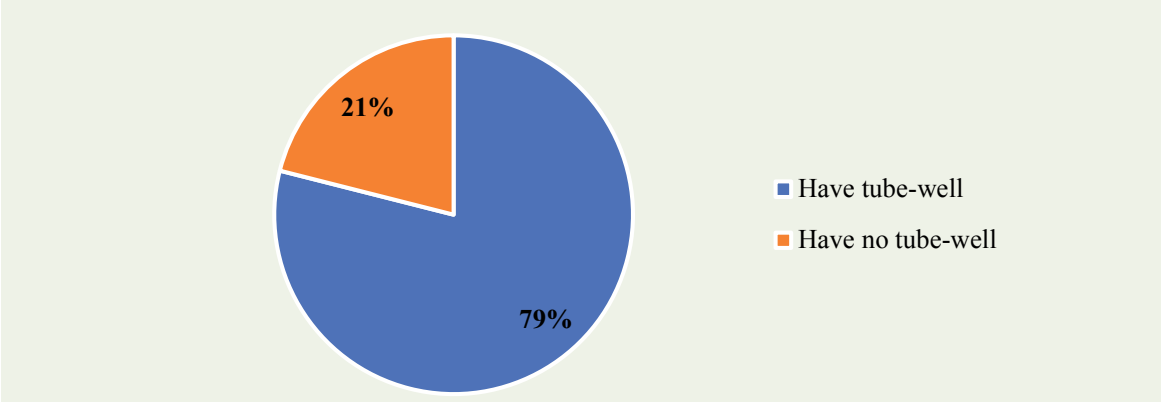
3.4 Water and Sanitation Section

Figure 33: Major sources of drinking water



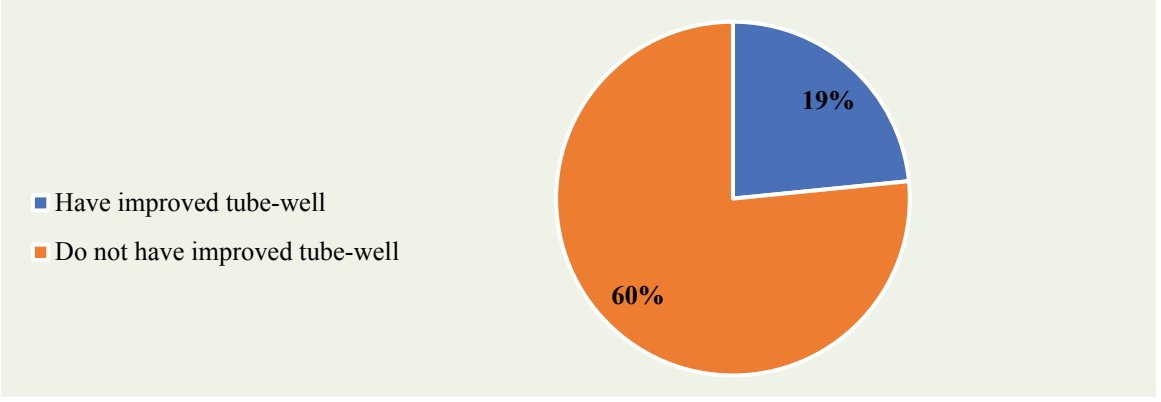
It was identified that all households of the four communities used tube-well as the major source of drinking water. If the households installed tube-well, then they could easily get water for drinking at any time.

Figure 34: Household’s own tube-well for drinking water



The figure 34 shows that about 79% of the households had own tube-wells for drinking water. On the other hand, about 21% of the households did not have tube-wells for drinking water.

Figure 35: Household’s improved tube-wells for drinking water



In the earlier figure 34, it was mentioned that about 79% of the households had their own tube-wells for drinking water. The figure 35 shows that among them, about 19% of the households had improved tube-wells whereas the rest 60% of the households did not have improved tube-wells. The tube-wells which had raised plinth, good water quality and safer distance from latrines were considered as the improved tube-wells.

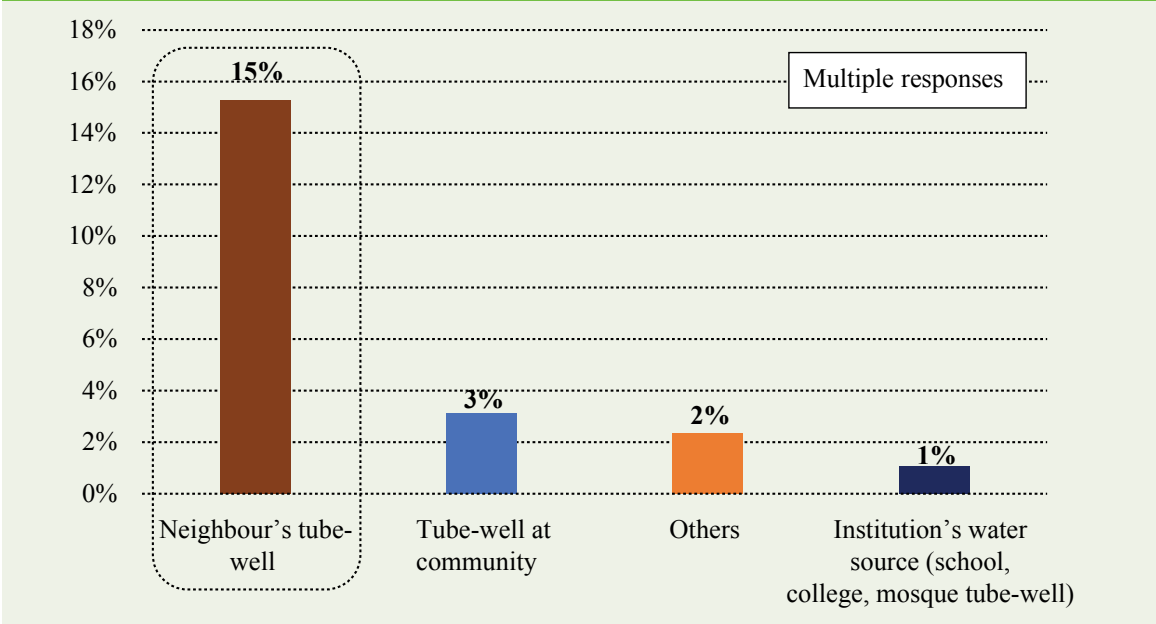


Table 8: Community-wise status of the tube-wells

Name of community	Name of District	Total number of households	Households have own tube-wells	Households have not own tube-wells	Households have improved tube-wells
Dighir Par	Nilphamari	467	362	105	84
Garain Para	Nilphamari	374	270	104	88
Sheikh Para	Lalmonirhat	425	351	74	68
Shiber Kutu	Lalmonirhat	402	332	70	72
Total		1,668	1,315	353	312

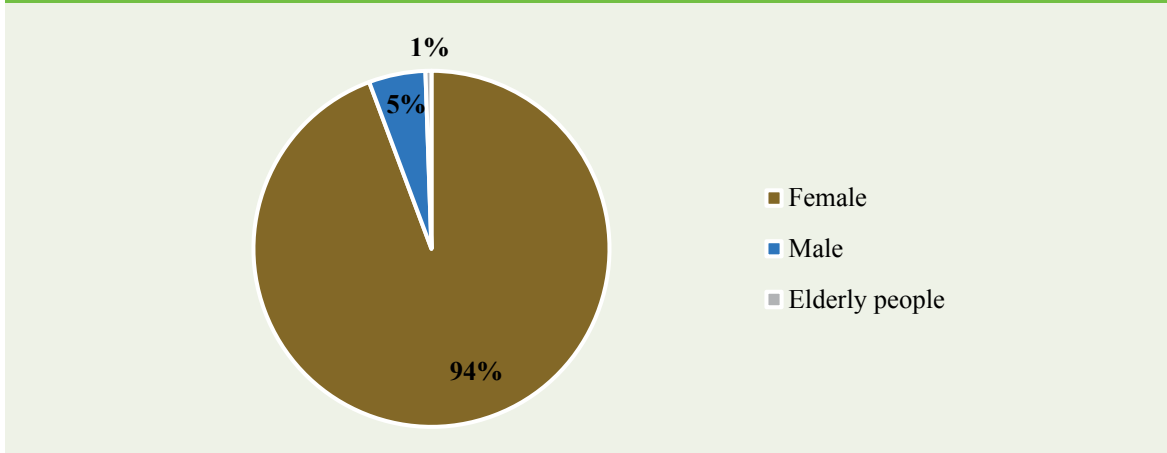
The table 8 demonstrates the community-wise scenario of tube-wells. Among the total households, 1,315 households had own tube-wells and the rest 353 households did not have any tube-well for drinking water. But, only 312 households were found that had improved tube-wells.

Figure 36: Sources of drinking water those households have no tube-well



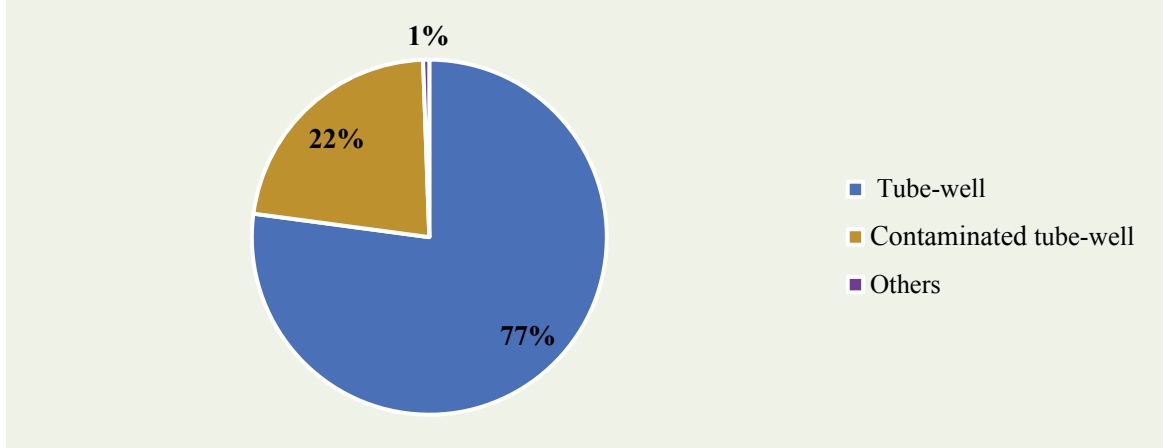
In figure 34, it was shown that about 21% of the households did not have own tube-well for drinking water. Among these households, about 15% of the households used to drink water from neighbours' tube-well. About 3% of the households used to drink water from the community tube-well. Beside these, some of the households were found that had used institution's water source like school, college, mosque etc. Some of the households had also tendency to drink water from other sources like shared tube-well, NGO's tube-well, Govt. tube-well etc.

Figure 37: Drinking water collector



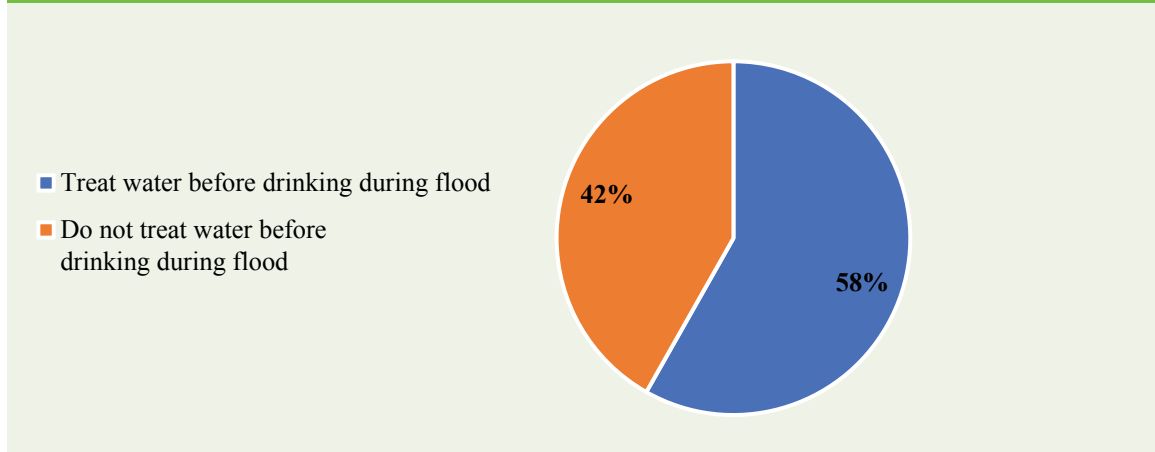
The figure 37 shows that the female members of 94% of the households usually collected drinking water whereas only 5% of the male members collected drinking water. It was also found that, a very few elderly people of the households collected drinking water.

Figure 38: Main source of drinking water during flood period



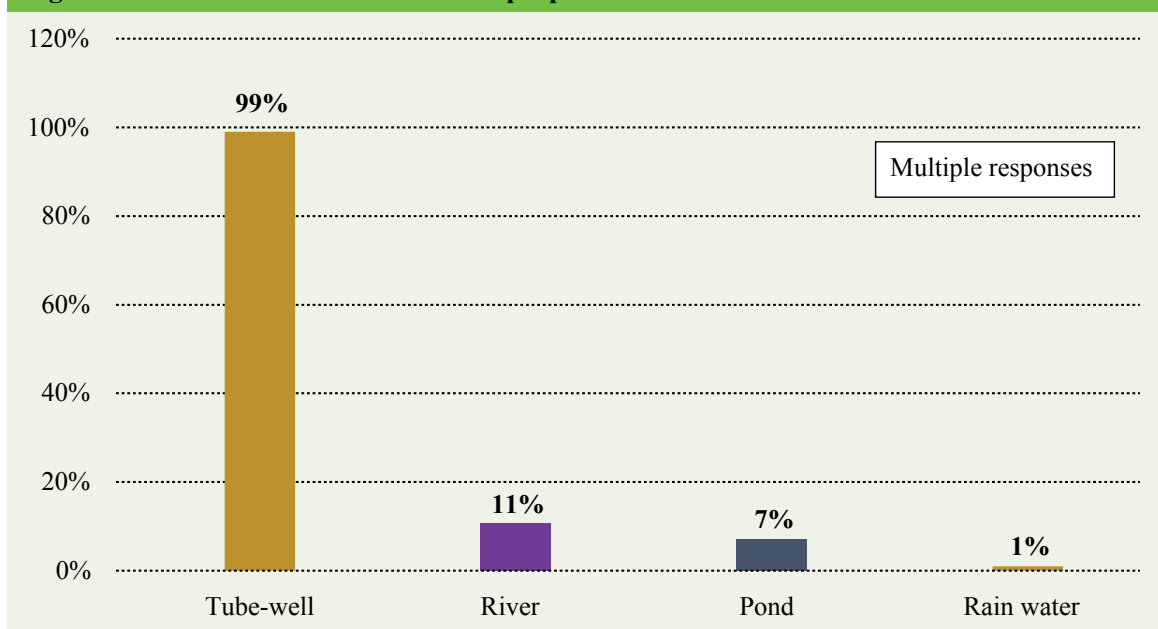
The figure 38 shows that about 22% of the households had to drink water from contaminated tube-wells during the flood period. It was found that a few households were bound to drink water from other sources like pond or river water.

Figure 39: Treating water before drinking during flood



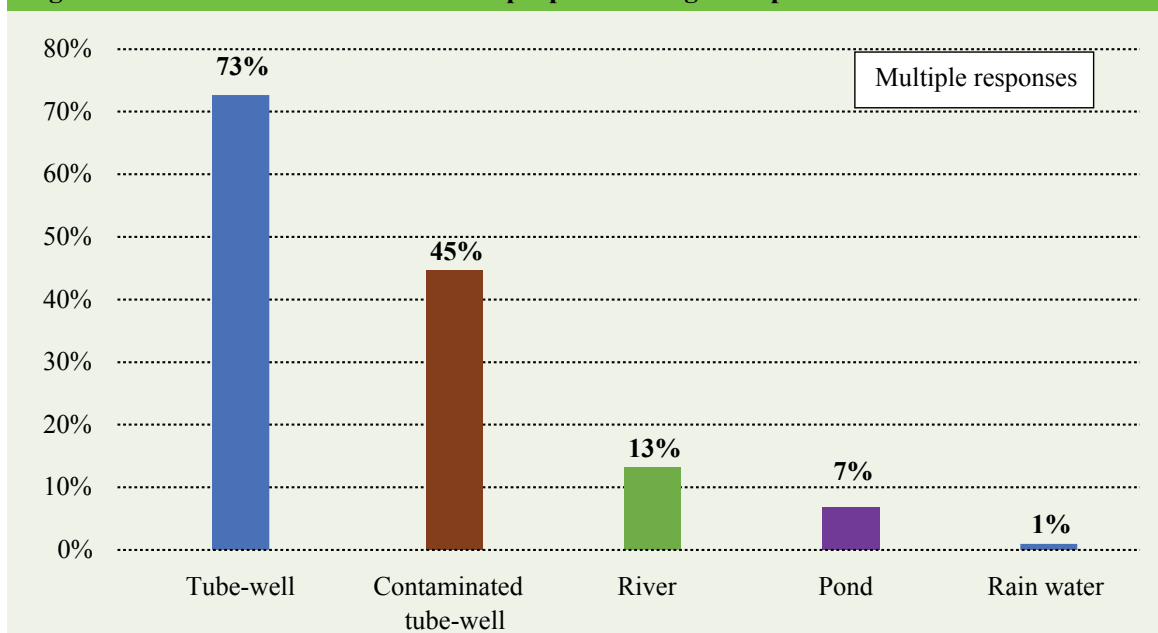
The figure 39 shows that about 42% of the households did not treat water before drinking during the flood period. In this period, they faced huge problems along with the capacity of ensuring fuel or cooking equipment. For this, they were compelled to drink untreated water from tube-well and contaminated tube-well.

Figure 40: Sources of water for domestic purposes



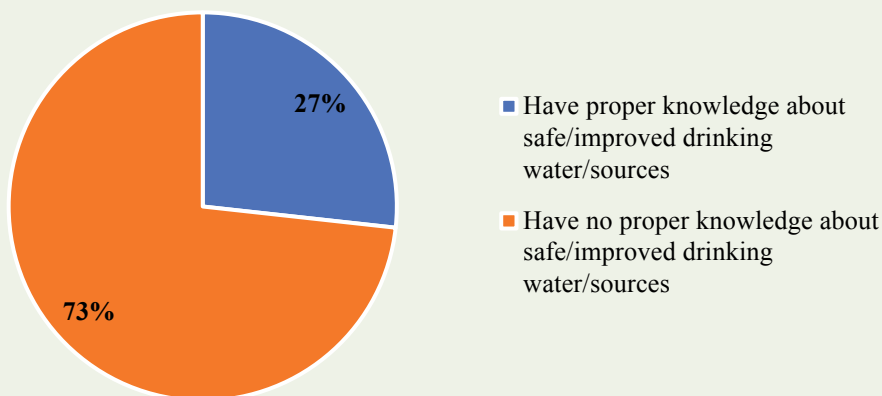
The figure 40 shows that almost all households used tube-well water for their domestic purposes like bathing, washing, cattle nurturing etc. Beside this, about 11% and 7% of the households were identified that used river and pond water for domestic purposes.

Figure 41: Sources of water for domestic purposes during flood period



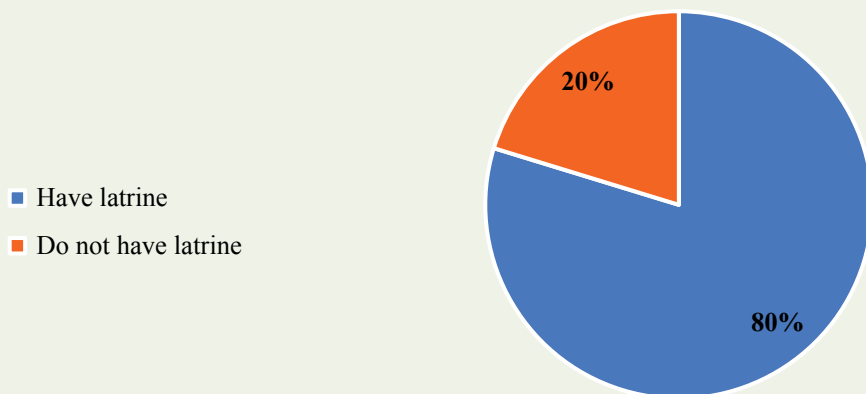
The figure 41 shows that about 73% of the households used tube-well water while about 45% of the households used contaminated tube-well water for domestic purposes during flood period. Beside this; about 13%, 7% and 1% of the households were identified that used river, pond and rain water during the flood period respectively.

Figure 42: Respondent's knowledge about improved drinking water sources



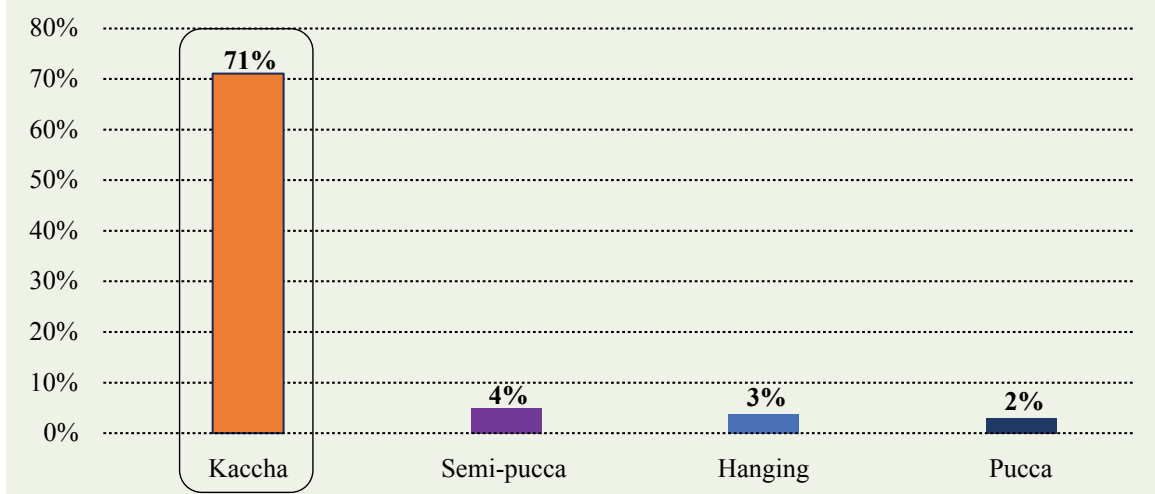
The figure 42 shows that only 27% of the respondents and its household members had proper knowledge about safe drinking water and its sources. The rest 73% of the of the respondents and its household members did not have proper knowledge about safe and improved drinking water sources.

Figure 43: Households have latrine



The figure 43 shows that about 80% of the households had their own latrines. But, the rest 20% of the households had no latrine. That means, about one-fifth of the households did not have latrine for defecation.

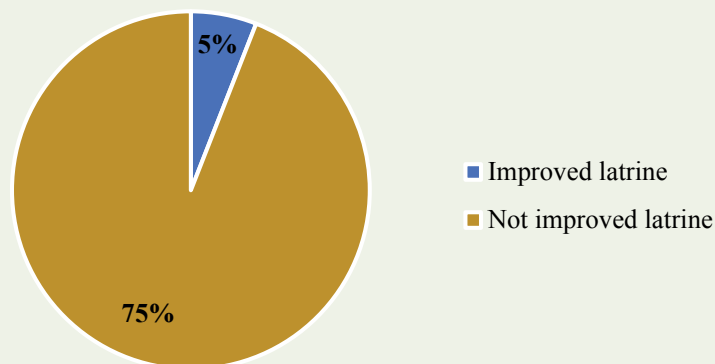
Figure 44: Household's latrine types



In the previous figure 43, it was revealed that about 80% of the households had their own latrine. The figure 44 shows that among these households, only 2% of the households were found that had Pucca latrines. On the other hand, about 71% of the households had Kaccha latrines. Beside these, households were also identified that had Semi-pucca and hanging latrines. About 4% and 3% of the households had Semi-pucca and hanging latrines respectively. Along with these, only 5% of the households were identified that had improved or hygienic latrines.

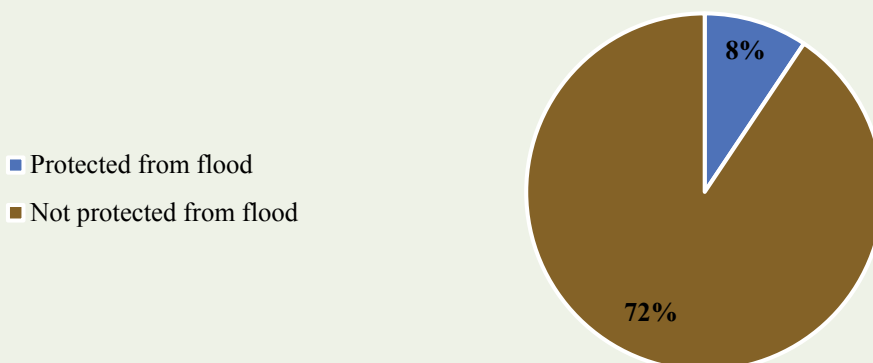


Figure 45: Household have improved latrines or not



The figure 45 shows that only 5% of the latrines were found as improved at the communities. The rest 75% latrines of the communities were not improved. The latrines which had been found with having water seal, raised plinth and pit with slab were considered as the improved latrines.

Figure 46: Latrines are protected from flood or not



The figure 46 shows that only 8% of the latrines at the communities were protected from flood. The rest 72% of the latrines were not protected from flood. That means, most of the latrines were inundated while any type of flood had occurred at the communities.

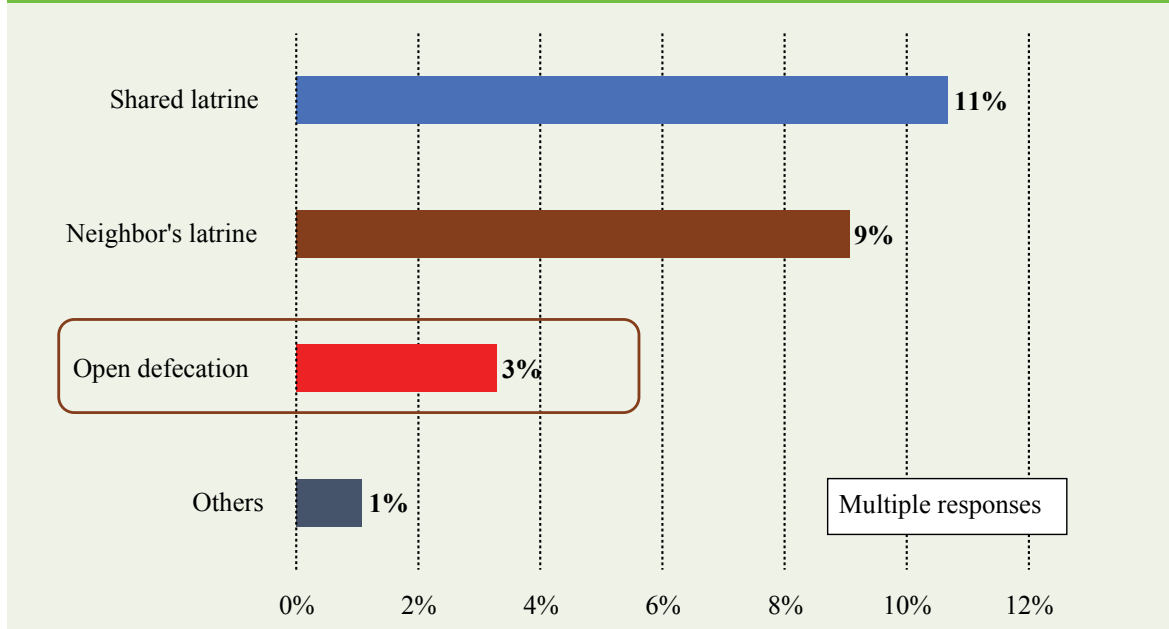
Table 9: Community-wise status of latrines

Name of community	Name of District	Total number of households	Households have latrines	Types of latrine				Households do not have latrines	Households have improved latrines
				Hanging	Kaccha	Pucca	Semi-pucca		
Dighir Par	Nilphamari	467	388	26	355	6	1	79	17
Garain Para	Nilphamari	374	282	18	254	6	4	92	15
Sheikh Para	Lalmonirhat	425	333	2	295	14	22	92	21
Shiber Kuti	Lalmonirhat	402	326	2	277	12	35	76	24
Total		1,668	1,329	48	1,181	38	62	339	77

The table 9 shows the community status of latrines. A total 48, 1,181, 38 and 62 of hanging, Kaccha,

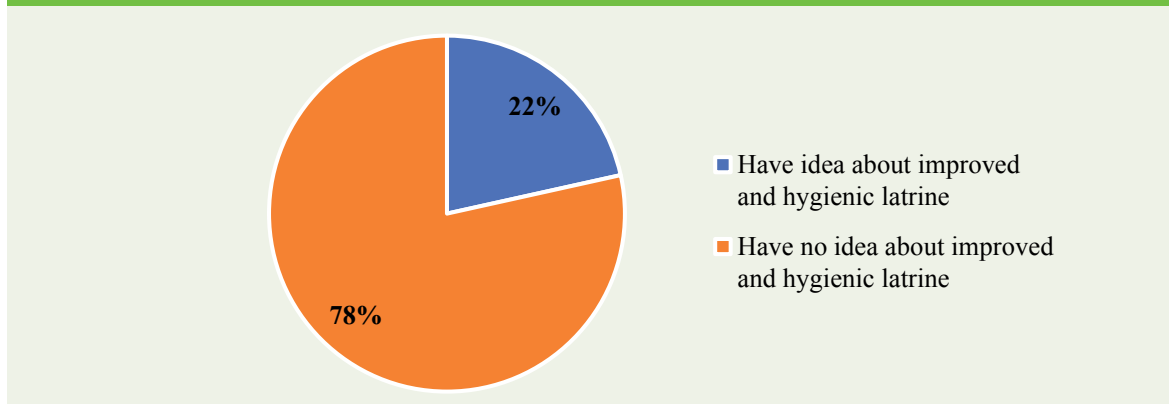
Pucca and Semi-pucca latrines were found at four communities. In total, 339 households did not have any latrine. It was found that only 77 households had improved latrines.

Figure 47: Defecation practices of the households that have no latrine



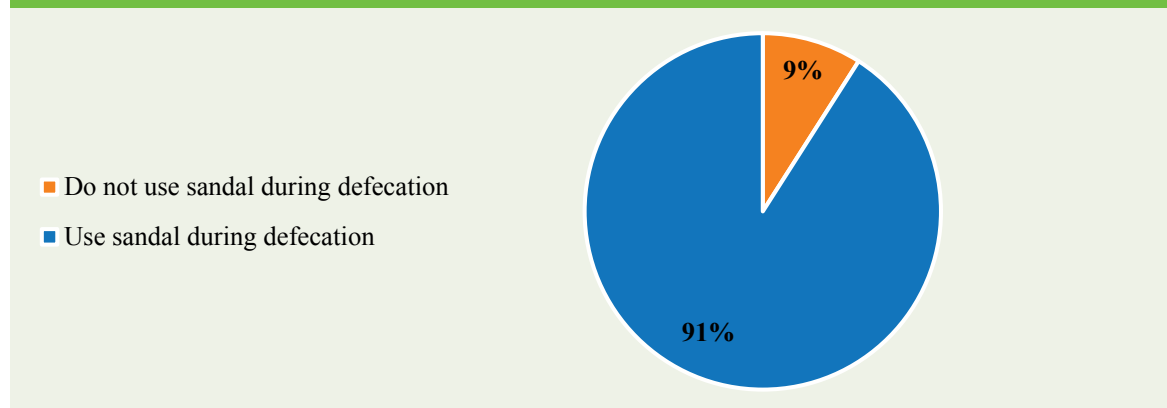
In the previous figure 43, it was indicated that about 20% of the households had no own latrine. The figure 47 shows how the members of these households practised defecation. About 11% of the household's members used shared latrine and about 9% of the household's members used neighbour's latrine for defecation. It was also found that open defecation existed at the communities. About 3% of the household's members did open defecation as they had no own latrine. It was observed that the community people had practices of open defecation at blank places and edge of the river. Beside these, a few of the households were dependent on other ways like using institution's latrine i.e. govt. institutions, mosques etc for defecation.

Figure 48: Respondent's idea about improved and hygienic latrine



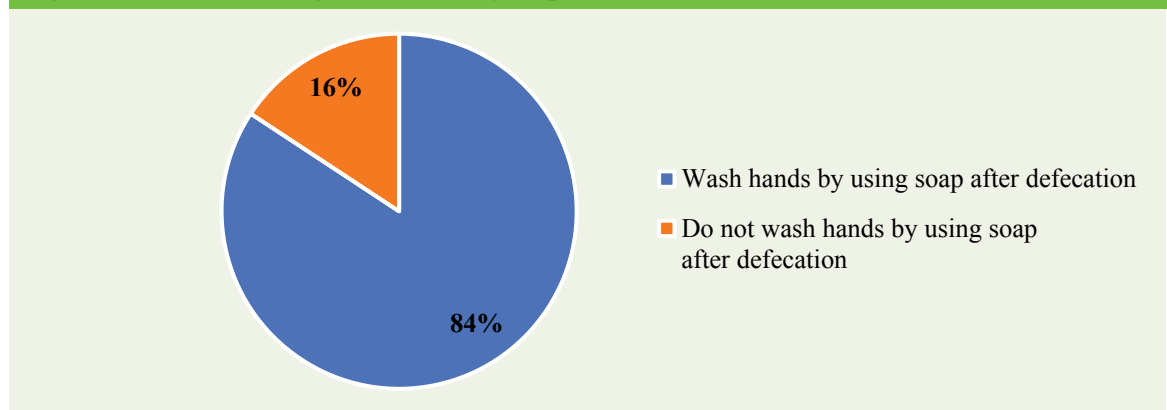
The figure 48 shows that only 22% of the respondents had idea about improved and hygienic latrine and about 78% of the respondents had no idea about this. The community people did not have enough knowledge on the factors which are the reasons for making them vulnerable from hygienic perspective. It is one of the reasons that they had very limited idea about improved and hygiene latrine which is essential for sound health.

Figure 49: Habit of using sandal during defecation



The figure 49 shows that about 91% of the respondents mentioned that they and their household members had the habit to use sandal during defecation. About 9% of the respondents and their household members did not have the habit.

Figure 50: Hand washing habit by using soap after defecation



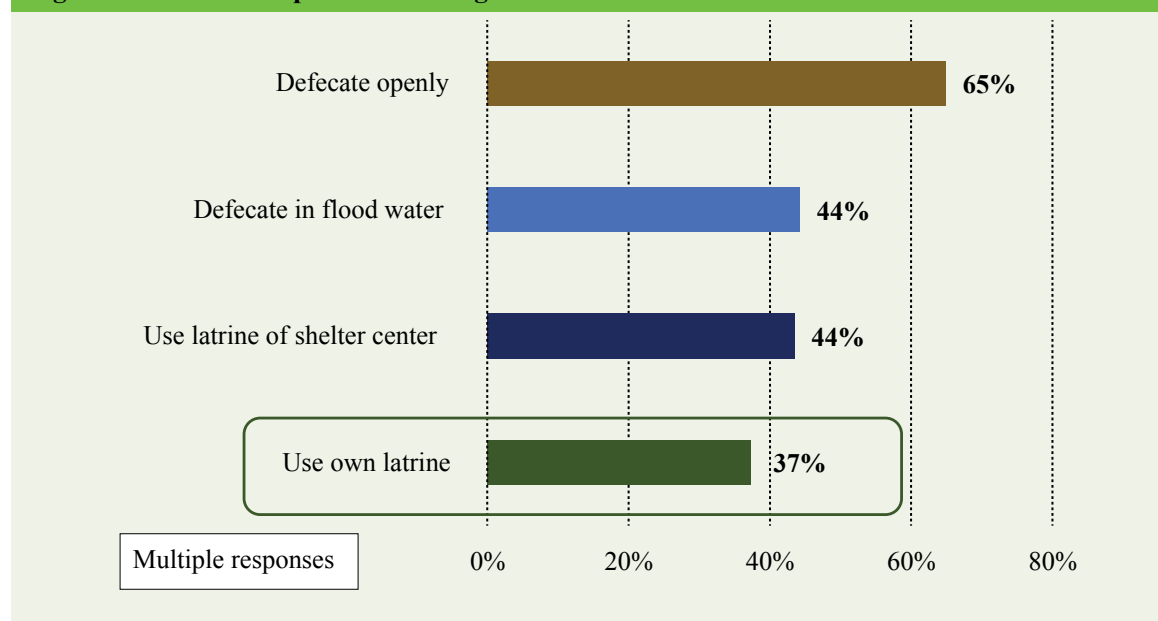
The figure 50 shows the hand washing habit of the respondents and their household members by using soap after defecation. It was found that about 16% of the respondents and their household members did not have hand washing habit by using soap after defecation.

Table 10: Community-wise status of improved and flood protected latrines, respondent's idea about improved and hygienic latrine, habit of using sandal during defecation and hand washing practices after defecation

Name of District	Name of community	Households have improved latrines (%)	Household's latrines are protected from flood (%)	Respondent's idea about improved and hygienic latrine (%)	Respondents and their household members do not use sandal during defecation (%)	Respondents and their household members do not wash hands with soap after defecation (%)
Nilphamari	Dighir Par	3.64%	3.21 %	16.49%	8.35%	11.99%
Nilphamari	Garain Para	4.01%	4.28%	8.02%	5.61%	6.95 %
Lalmonirhat	Sheikh Para	4.94%	10.59%	34.82%	12%	18.12%
Lalmonirhat	Shiber Kuti	5.97%	8.21%	25.62%	11.44%	24.88%

The table 10 shows that most of the latrines of the communities were not improved and protected from flood. It was found that the latrines of Sheikh Para of Lalmonirhat were comparatively protected from flood than the other three communities. The respondents of Sheikh Para and Shiber Kuti of Lalmonirhat had more idea about improved and hygienic latrines than the communities of Nilphamari. The respondents and their household members of Shiber Kuti had the lower habit of not using sandal during defecation and not washing hands with soap after defecation than the other three communities.

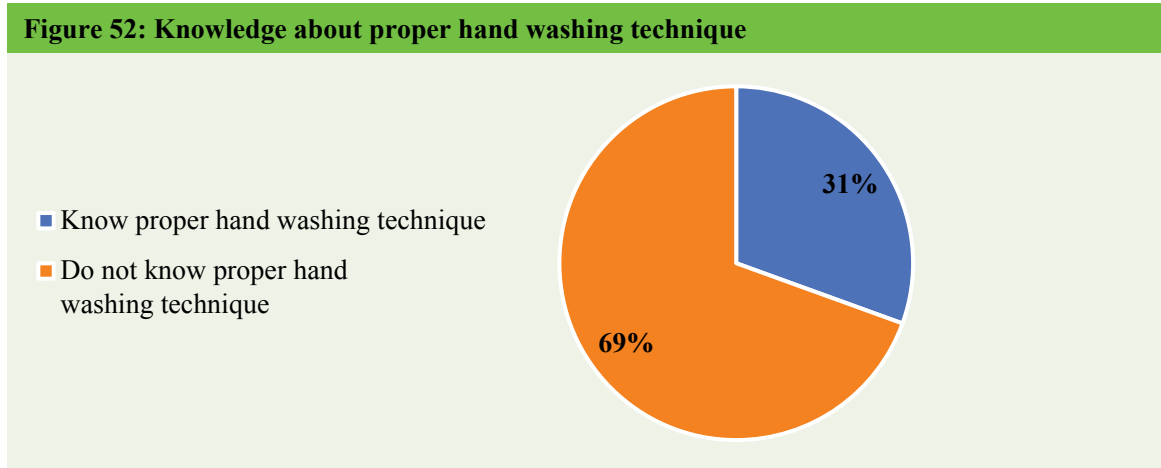
Figure 51: Defecation practices during flood



The figure 51 shows the defecation practices of the households during flood. It was revealed that the people of the community people must leave their houses for a specific period during the flood. They needed to take shelter on roads, open high places or in some cases at the shelter centres. In this period, the latrines of the communities were also inundated. It was found that during flood about 65% of the household members defecated openly. About 44% of the household members defecated in flood water and used latrine of the shelter centres. It was found that about 37% of the households had chance to use their own latrine during the flood period..

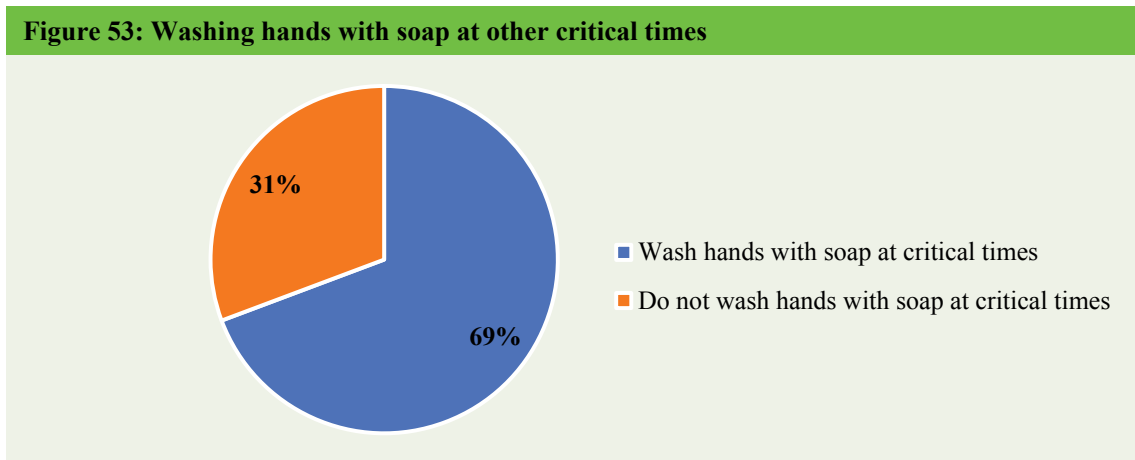
3.5. Hygiene Section

Figure 52: Knowledge about proper hand washing technique



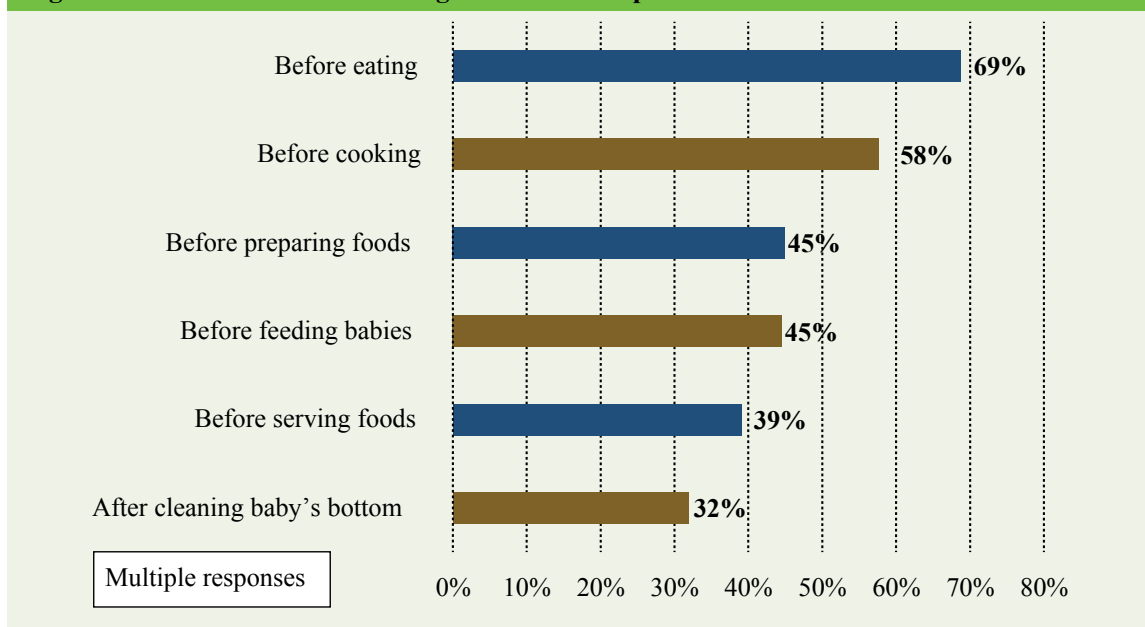
The figure 52 shows that only 31% of the respondents had knowledge about proper hand washing technique. The rest 69% of the respondents answered that they did not know how to wash hands properly. Lack of sufficient wash knowledge among the community people was identified as one of the major reasons for that the respondents had less idea in this regard.

Figure 53: Washing hands with soap at other critical times



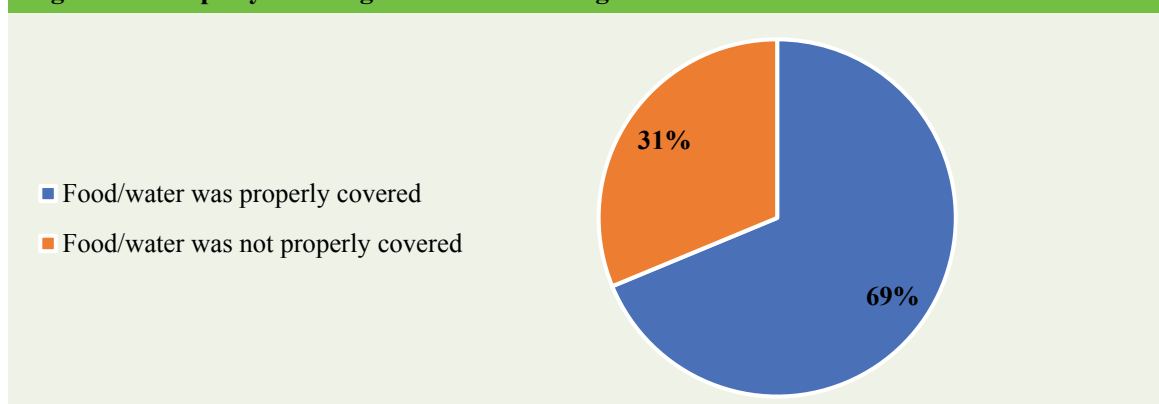
The figure 53 shows about 69% of the respondents mentioned that they and their household members had the habit to practice of washing hands with soap at critical times. On the other hand, about 31% of the respondents informed that they and their household members usually did not wash hands with soap at critical times.

Figure 54: Critical times of washing hands with soap



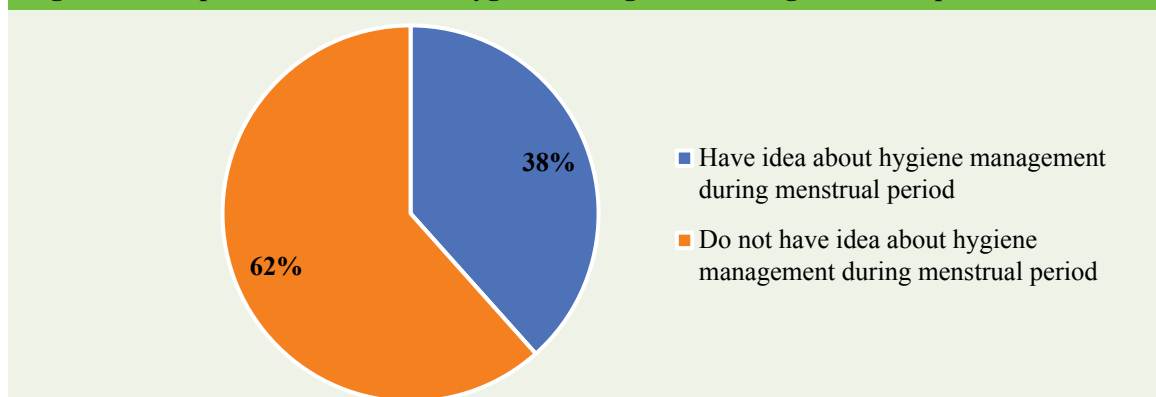
The figure 53 showed that about 69% of the respondents and their household members had the habit to wash hands with soap at critical times. The figure 54 shows among these household members, about 69% washed hands before eating whether 58% wash hands before cooking with soap. About 45% of the respondents and their household members washed hands with soap before preparing foods and before feeding babies. It was also found that about 39% and 32% of the of the respondents and their household members washed hands with soap before serving foods and after cleaning baby's bottom.

Figure 55: Properly covering foods and drinking water at households



The figure 55 shows the status of covering foods and drinking water by the households. About 69% of the households were found that properly covered their foods and drinking water. On the hand, about 31% of the households were found that did not have the practice in this regard.

Figure 56: Respondent's idea about hygiene management during menstrual period



The figure 56 shows that only 38% of the respondents had idea about hygiene management during menstrual period of women. The rest 62% of the respondents did not know that the women need special care at this time so that they could avoid the illness. It was also found that most of the women took conventional measures during this period. It was found that lack of awareness and the socio-cultural factors kept the community people ignorant about this and they had lack of proper idea about menstrual hygiene management.

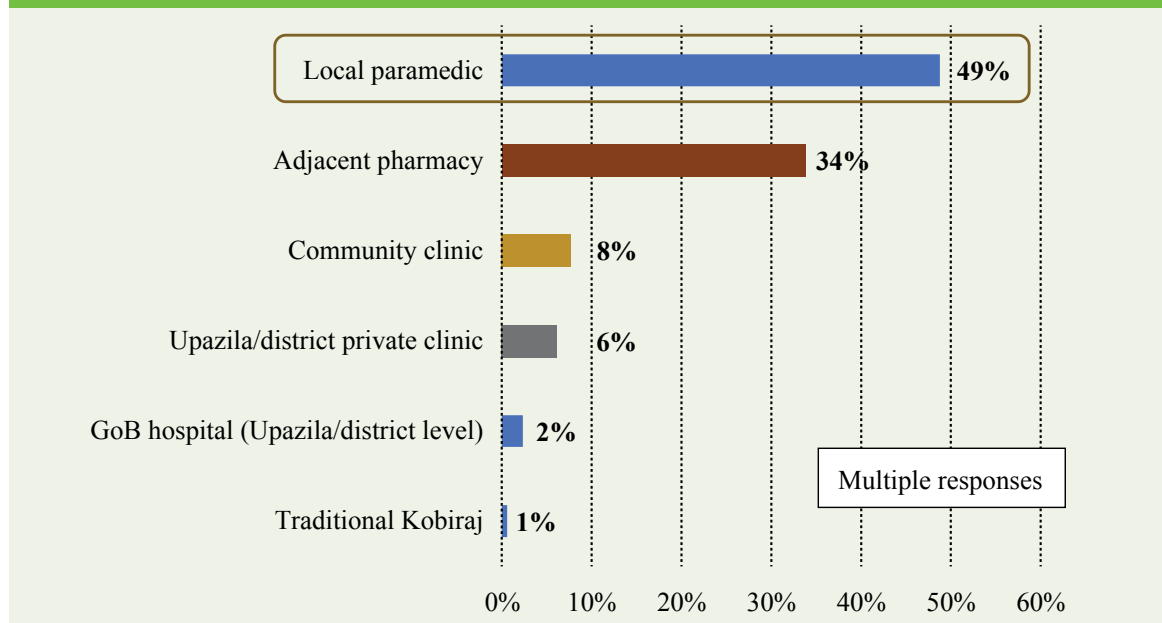
Table 11: Community-wise hygiene status on respondent's idea about proper hand washing technique, hand washing habits with soap at other critical times, properly covering foods and drinking water at households and ideas about hygiene management during menstrual period

Name of District	Name of community	Knowledge about proper hand washing technique (%)	Washing hands with soap at other critical times (%)	Properly covering foods and drinking water at households (%)	Respondent's idea about hygiene management during menstrual period (%)
Nilphamari	Dighir Par	30.6%	69.16%	76.45%	44.97%
Nilphamari	Garain Para	26.74%	72.99%	73.80%	41.71%
Lalmonirhat	Sheikh Para	33.41%	66.35%	67.69%	34.82%
Lalmonirhat	Shiber Kuti	32.59%	67.41%	58.21%	31.59%

The table 11 shows the community-wise respondent's idea about proper hand washing technique, hand washing habits with soap at the other critical times, properly covering foods and drinking water at households and ideas about hygiene management during menstrual period. It was found that all the four communities' people practiced proper hand washing at other critical times and properly covered foods comparing to the other two issues given at the table. But, the community people need the improvement in the case of knowledge about proper hand washing technique and hygiene practice during menstruation.

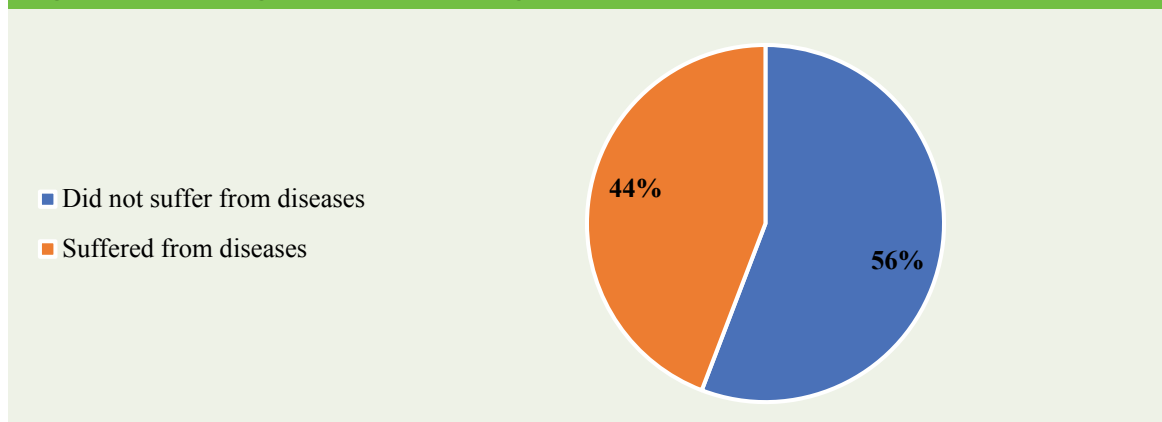
3.6 Health Section

Figure 57: Place of taking treatment and health service



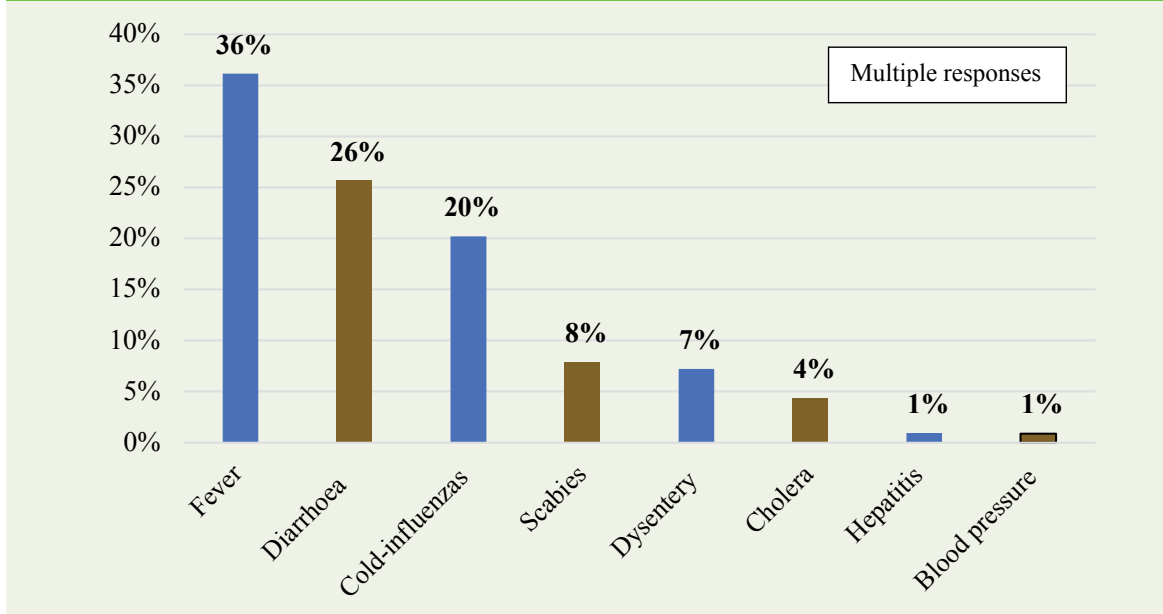
The figure 57 shows that about 49% of the respondents and their household members usually took treatment and health service from local paramedic. On the other hand, about 34% of the respondents and their household members usually took treatment from adjacent pharmacy. The respondents and their household members also took treatment and health service from community clinic, Upazila/district private clinic and Govt. hospital located at Upazila and district. It was also identified that some of the households are still dependent on the traditional Kobiraj for treatment and health services.

Figure 58: Suffering from diseases during last flood



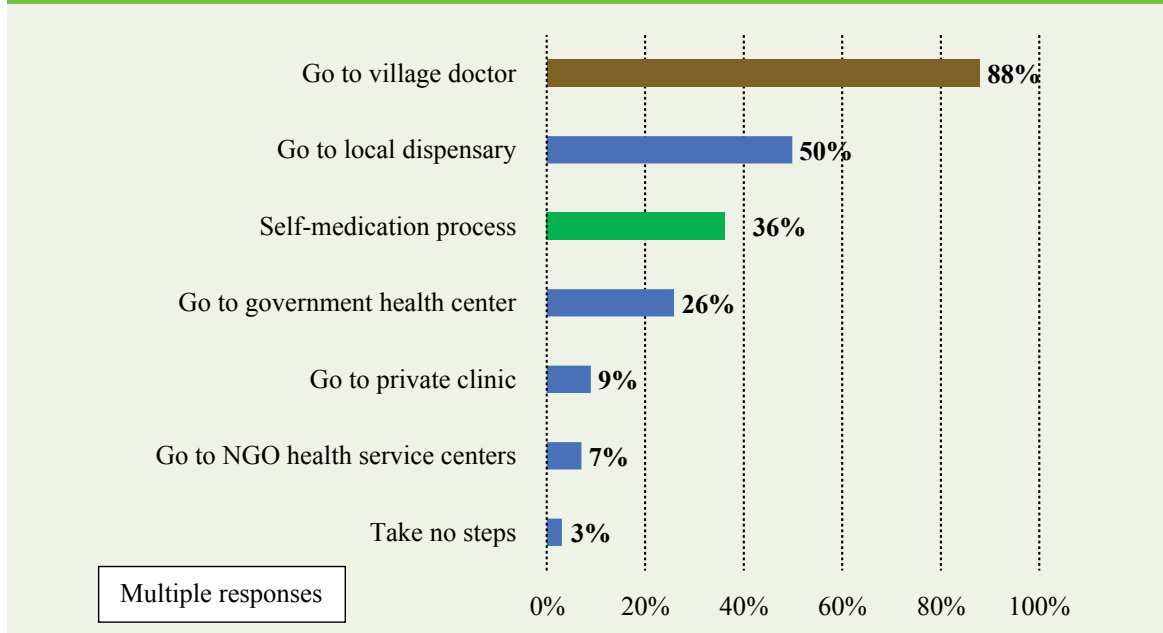
The figure 58 shows that about 44% of the respondents mentioned that their household members had suffered from diseases during the last flood. So, it is obvious when the flood occurs then the prevalence of diseases increases among the people of the affected community.

Figure 59: Types of diseases that affected the community people during last flood



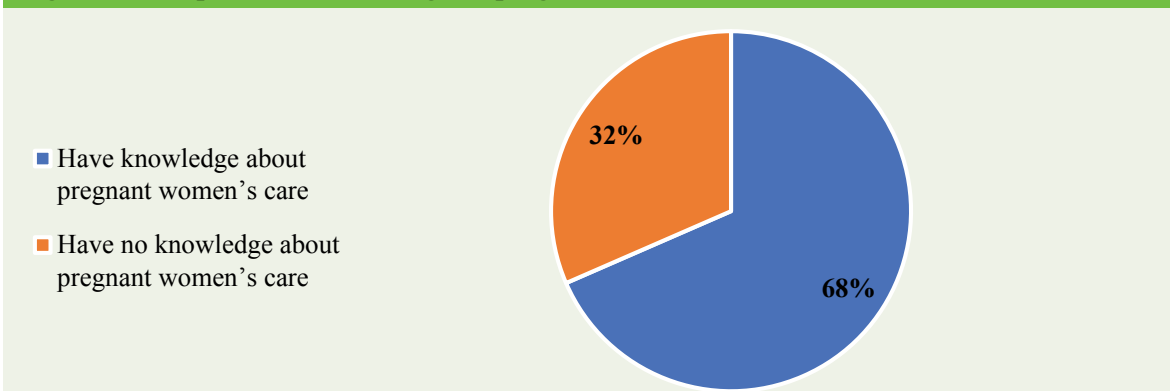
The figure 59 shows that some of the diseases affected the community people during the last flood. Among these, some of the diseases were water-borne. About 36% of the respondents mentioned that their household members had suffered from fever whether about 26% and 20% of the respondents informed that their household members were affected with diarrhoea and cold-influenzas. Beside these; some of the household members also suffered from diseases like scabies, dysentery, cholera, hepatitis and blood pressure.

Figure 60: Types of measures to overcome health problem during and after flood period



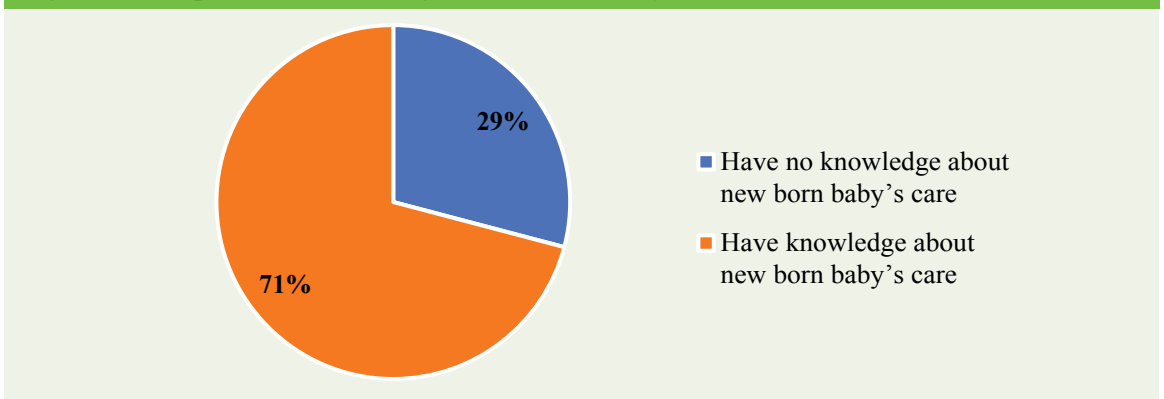
It was found that the community people's access to health support became limited during the flood. In that time, their movement was restricted, and they faced financial problem. So, it became difficult for them to take sufficient health service. The figure 60 shows that the households took different types of measures to overcome health problem during and after flood period. About 88% of the households went to the village doctor to overcome their health challenges. About 50%, 36% and 26% of the households went to local dispensary, take self-medication process and went to government health centre to overcome the health challenges of during and after the flood period. It was also found that some of the households went to private clinic and NGOs health service centres for taking treatment during flood. It was also found that some of the households did not have the capacity to take any treatment also.

Figure 61: Respondent's knowledge on pregnant women's care



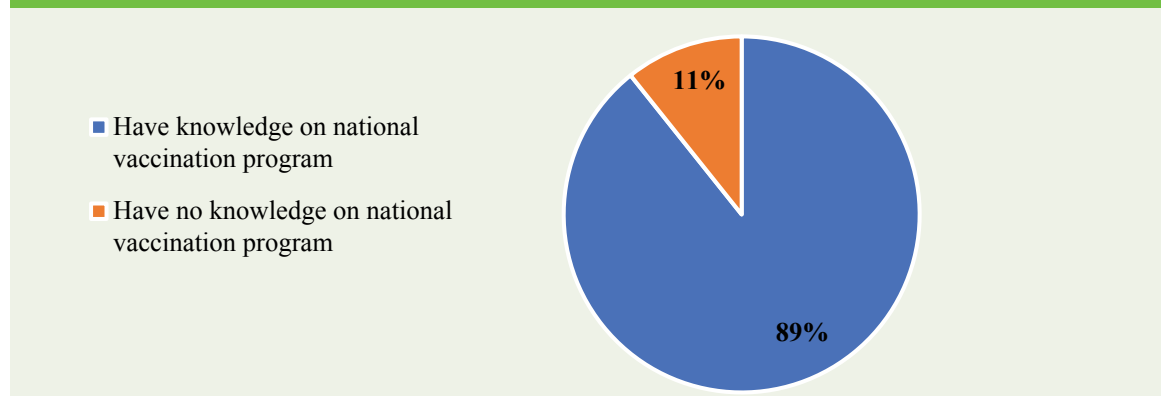
The figure 61 reveals that about 68% of the respondents had knowledge on pregnant women's care. The rest one-third of the respondents did not possess knowledge in this regard. These respondents had no idea that the women should be specially treated and cared, and take nutritious foods, sufficient rest and proper treatment in the period of pregnancy.

Figure 62: Respondent's knowledge on new born baby's care



The figure 62 shows that about 29% of the respondents did not have knowledge about new born baby's care. It indicates that a specific portion of the respondents did not have the idea what types of measures should be taken while a baby was born.

Figure 63: Respondent's knowledge on national vaccination program



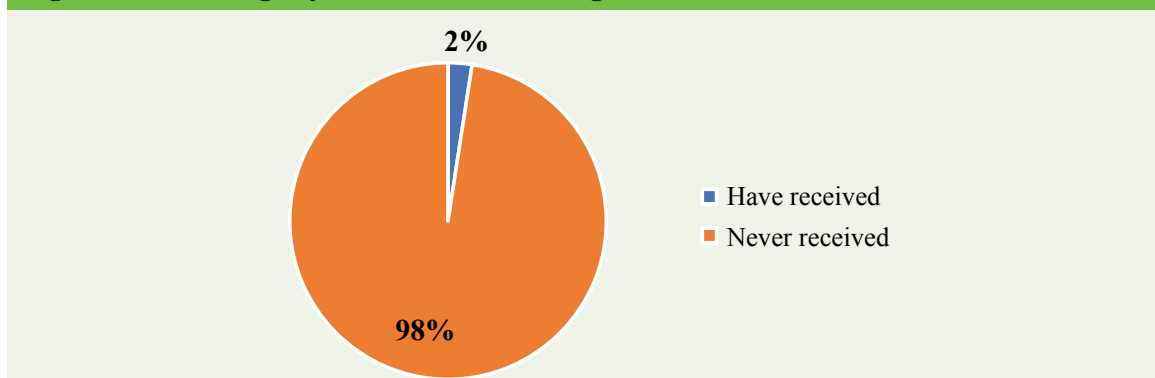
The figure 63 shows that about 89% of the respondents had knowledge on national vaccination program. Though rest 11% of the respondents had no knowledge on this but it was found that the community people brought their children to the vaccination centres while any type of vaccination program was undertaken at adjacent areas. Here, mixing was done while the national vaccination campaign was conducted by the government.

Table 12: Community-wise respondent's knowledge on pregnant women's care, new born baby's care and national vaccination program

Name of community	Name of District	Respondent's knowledge on pregnant women's care (%)	Respondent's knowledge on new born baby's care (%)	Respondent's knowledge on national vaccination program (%)
Dighir Par	Nilphamari	65.10%	67.24%	91.01%
Garain Para	Nilphamari	61.50%	65.51%	89.30%
Sheikh Para	Lalmonirhat	74.59%	76.94%	92.94%
Shiber Kuti	Lalmonirhat	71.89%	73.13%	83.58%

In the previous 61, 62 and 63 figures the overall condition was shown of respondent's knowledge on pregnant women's care, new born baby's care and national vaccination program. The table 12 shows the community-wise scenario of the respondent's knowledge on these issues. In the case of knowledge on pregnant women's care and new born baby's care, the respondents of Sheikh Para and Shiber Kuti of Lalmonirhat had greater knowledge than the respondents of Nilphamari. In the case of knowledge on the national vaccination program, the respondents of the four communities of both districts had more knowledge than the pregnant women's and new baby's care issues.

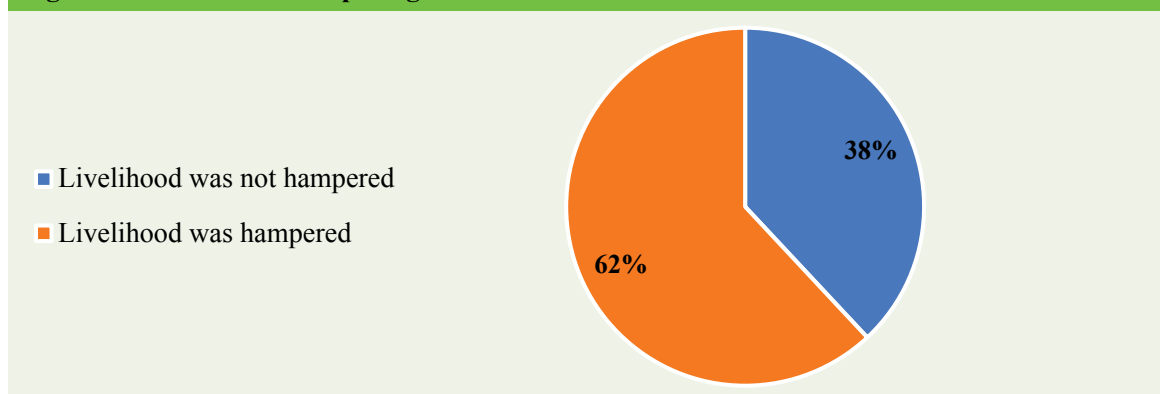
Figure 64: Receiving any health-related training or orientation



The figure 64 shows that about 98% of the respondents and their household members never received any type of health-related training or orientation. So, it is obvious that the community people should be provided sufficient orientation and training in this regard. It was found that there were many ignorance and limitations among the community people for taking proper treatment. There were lack of trained volunteers or members at the community. In this regard, they face a lot of problem while taking any type of health facilities.

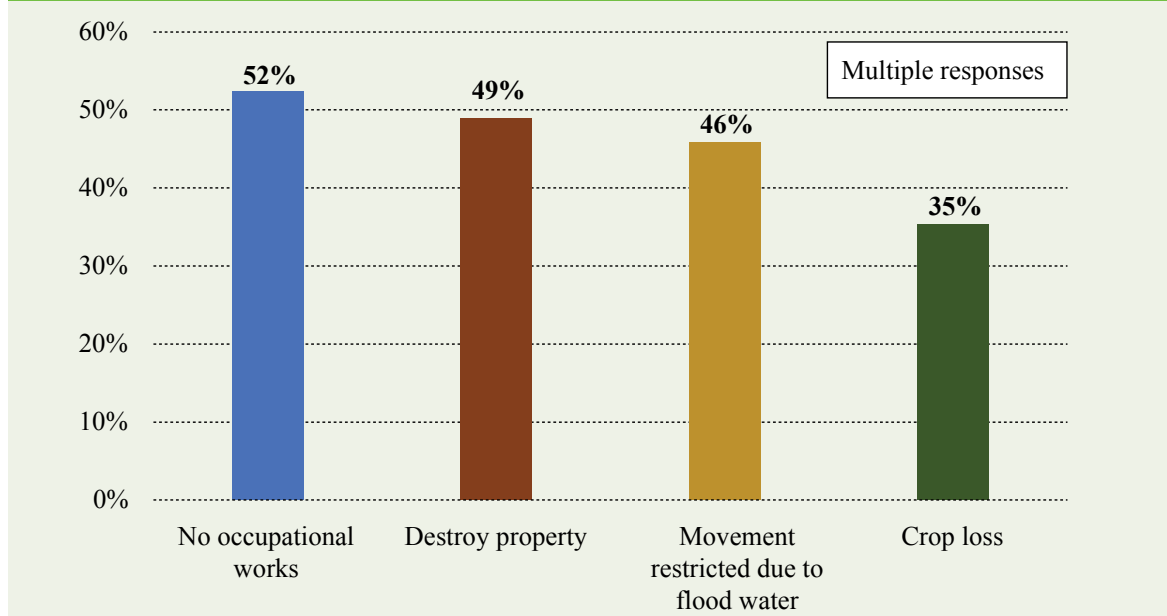
3.7 Livelihood Section

Figure 65: Livelihood hampering due to last flood



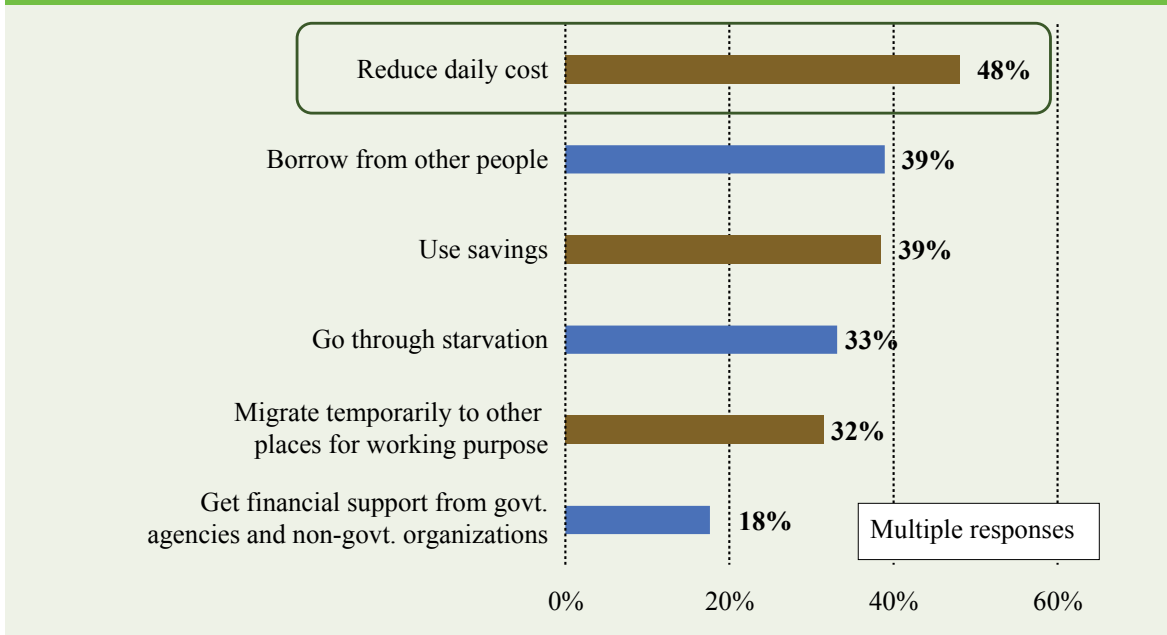
The figure 65 shows that about 62% household's livelihood was hampered during the last flood. According to the respondents, it was usual that the livelihood would be hampered while floods inundated the community areas. The respondents informed that the livelihood of the community people was hampered during any type of flood in past years.

Figure 66: Nature of livelihood hampering during last flood



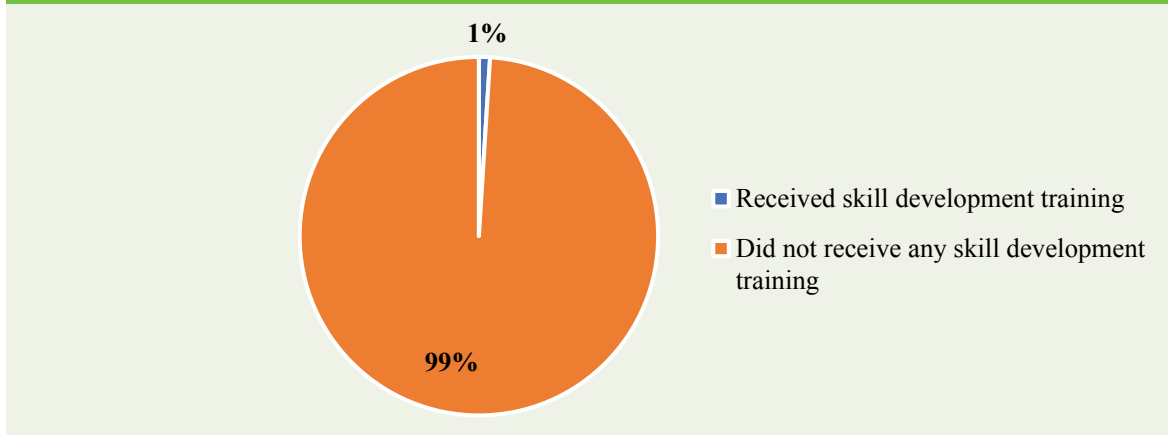
The figure 66 shows that about 52% of the respondents mentioned that their household heads did not have occupational work during last flood. About 49% of the respondents mentioned that their property was destroyed in that time which was one of the causes for livelihood hampering. About 46% of the household member's movement was restricted and about 35% of the respondents mentioned that they got less crop for last flood. So, the flood had multi-impacts on their livelihood.

Figure 67: Coping with the changing situation



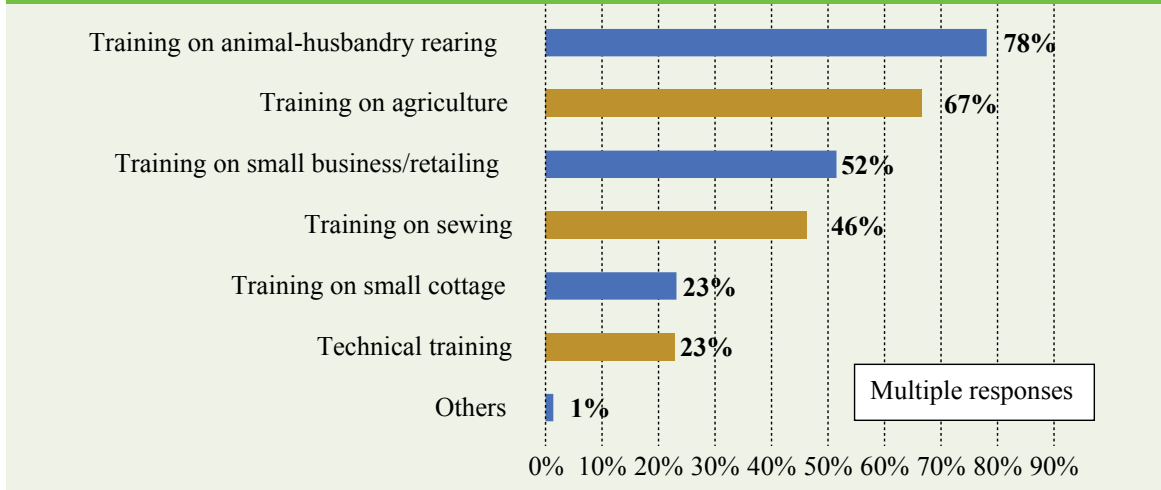
The figure 67 shows that the households took several types of measurements to cope with the situation as their livelihood was hampered during the last flood. About 48% of the households were compelled to reduce their daily cost while 39% of the households used savings. About 33% and 32% of the households had to go through starvation and their members migrated temporary to other places for searching works and to cope with the changing situation. Besides, about 18% of the households got financial support from government agencies and non-governmental organizations to tackle the challenges of that time. It was mentioned by the respondents that the flood had long term effect on their livelihood. Though they coped with the situation by taking such kind of initiatives, but the flood posed a longer impacts on their livelihood and life. The community people needed a relatively longer period to overcome these challenges and effects. Though some of the households had financial capability to overcome such a situation but most of the households did not keep enough strength to come back normal situation. This happened because flood kept negative effects on their financial, human, natural, physical and social capital that were tough to overcome or minimize for them.

Figure 68: Receiving skill development training to improve livelihood/income generating option in recent times/years



The figure 68 shows that only 1% of the respondents or their household members received skill development training to improve livelihood/income generating option in recent times/years. The rest 99% of the respondents or their household members did not get this type of opportunity. The training receivers got training on agriculture, animal rearing, retailing and sewing etc. They received the trainings from UP, local training centre and Upazila and district govt. office. They were informed about the trainings by the neighbours and UP members. In some cases, there were also informed by their relative and NGOs. Though the training module included disaster risk aspects to improve livelihood, but the respondents mentioned that the training did not contribute to improve their livelihood.

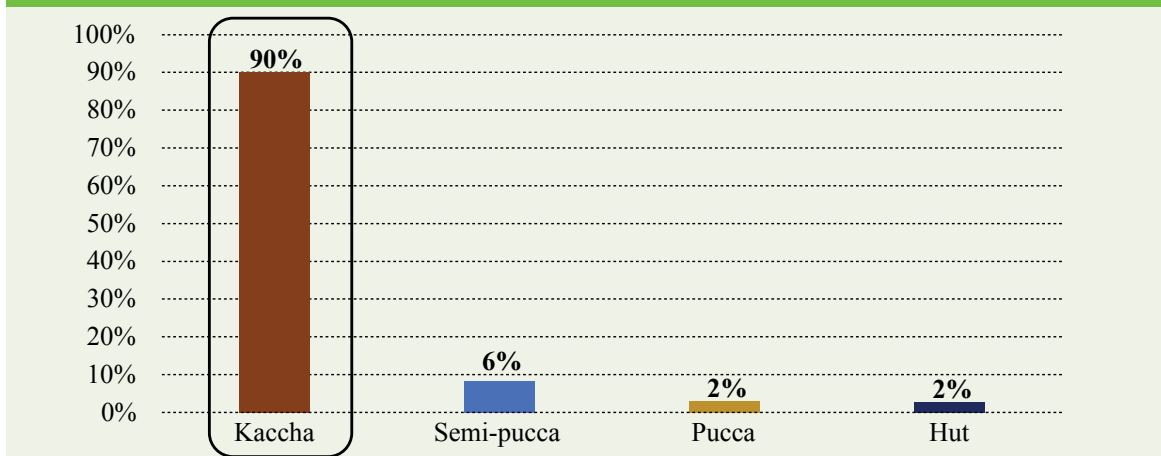
Figure 69: Necessary trainings to improve livelihood and enhance income



The figure 69 describes the types of required trainings that would be helpful to improve livelihood and enhance income of the community people. About 78% of the respondents opined that training on animal husbandry rearing would be helpful for the community people. About 67%, 52% and 46% of the respondents mentioned that training on agriculture, small business or retailing and sewing would be useful to bring positive contributions to their livelihood. Beside these, some of the respondents mentioned that training on small cottage and technical training would be also beneficial. Very few of the respondents mentioned that training on computer and auto vehicle operating would be helpful for the community people of the program areas. So, if any type of training initiative is undertaken to improve the livelihood of the communities then these types of training should be provided to the community people.

3.8 Shelter Section

Figure 70: Pattern of houses of living



The figure 70 shows that about 90% of the respondent's houses were found Kaccha. Only 2% of the respondent's houses were found Pucca while 6% of the houses were Semi-pucca. Beside this, some of the respondents were found who used to live at huts.

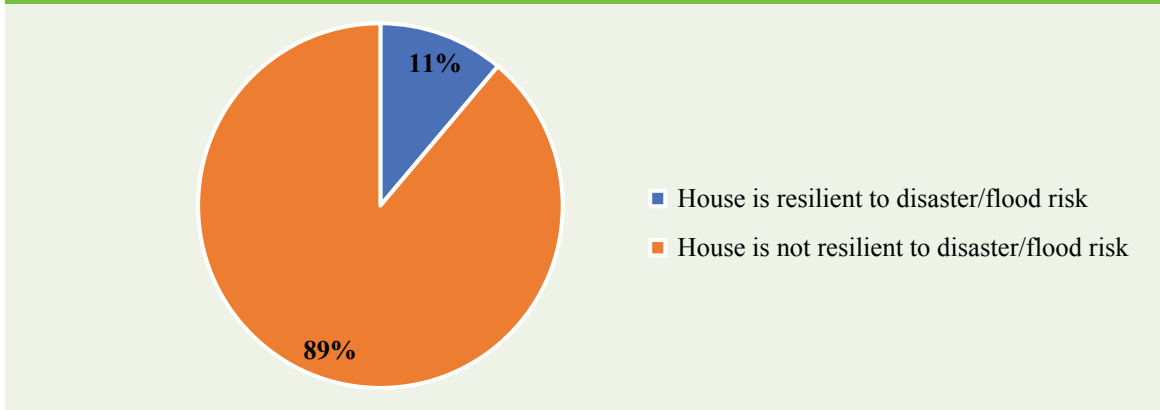


Table 13: Shelter status of the communities

Name of District	Name of community	Total numbers of households	Types of houses for living			
			Kaccha	Semi-pucca	Pucca	Hut
Nilphamari	Dighir Par	467	434	15	13	5
Nilphamari	Garain Para	374	342	18	12	2
Lalmonirhat	Sheikh Para	425	375	21	6	23
Lalmonirhat	Shiber Kuti	402	352	42	4	4
Total		1,668	1,503	96	35	34

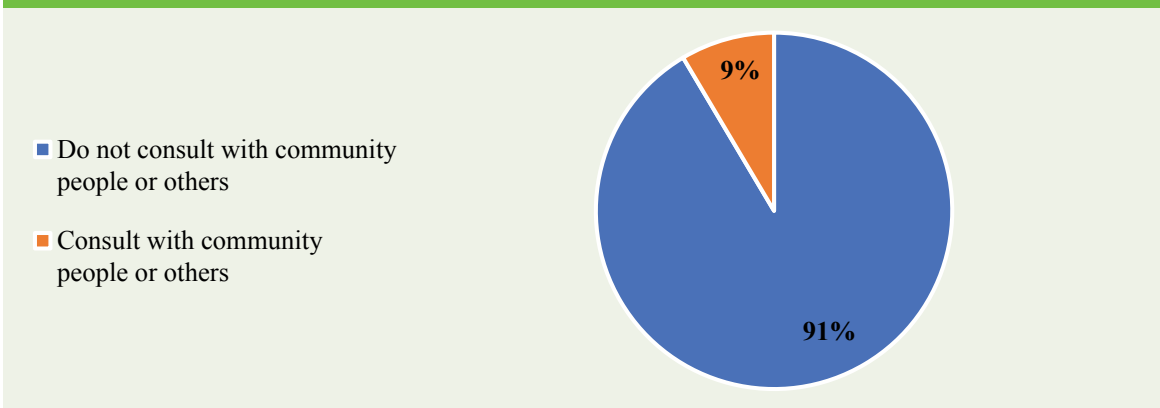
The table 13 shows the status of the households of four communities. The Kaccha houses were comparatively more at all the four communities. At every community; there were Semi-pucca, Pucca houses and huts as well. But, the Pucca houses and huts were less comparing to others. The people who had financial capability used to prepare Pucca houses while some of the people were bound to live at hut as they could not afford making Semi-pucca or Kaccha houses.

Figure 71: Resilient houses to flood and disaster



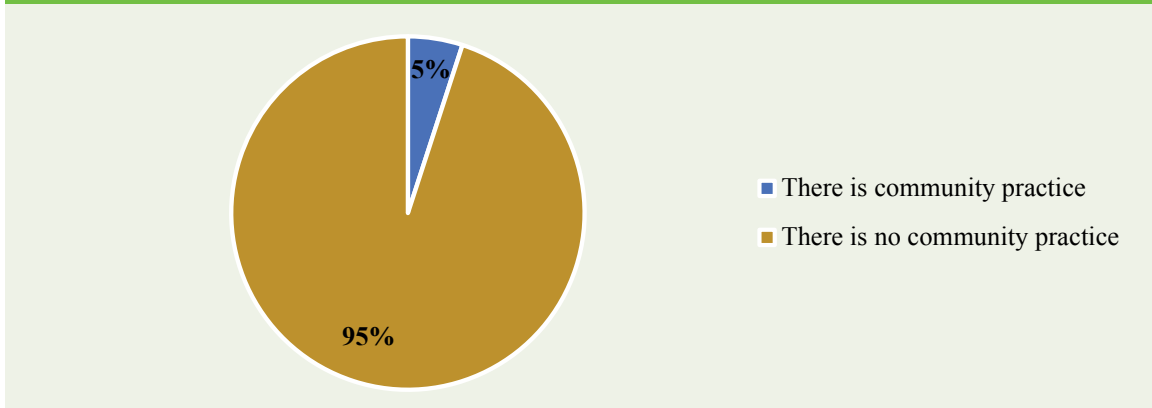
The figure 71 shows that only 11% of the respondents mentioned that their houses were resilient to flood or any type of disaster. But the rest 89% of the respondent's houses were not capable to face the impact of flood or any other disaster. So, most of the houses were affected and destroyed while flood or any type of disaster occurred at the four communities. Here, they provided opinion from their experiences of the period of flood or any other disasters that they had faced.

Figure 72: Preparing houses by consulting with the community people or others



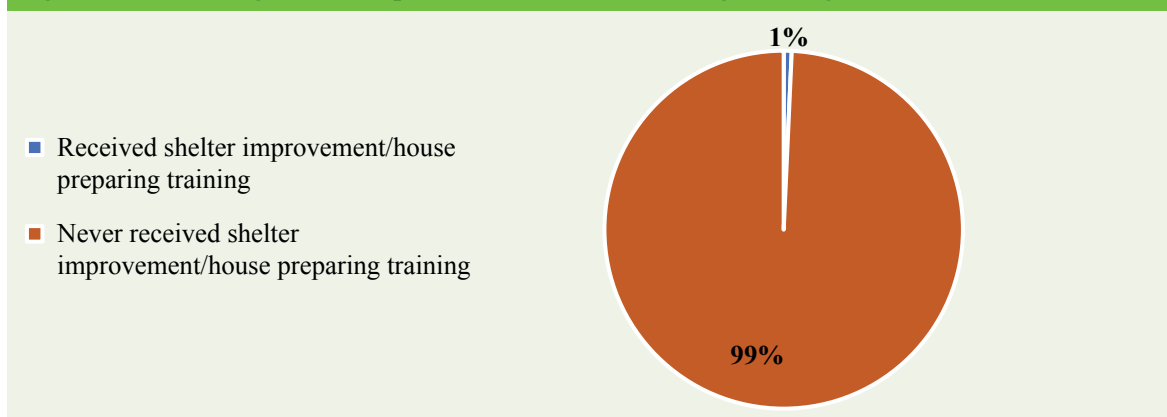
The figure 72 shows that about 91% of the households did not consult with community people or others while preparing houses. It was found that most of the houses were prepared by the community people through individual initiative and discussion.

Figure 73: Any community practice to prepare or renovate houses



The figure 73 shows that about 95% of the respondents mentioned that there was no community practice to prepare or renovate houses. Only 5% of the respondents informed that there was community practice to prepare or renovate houses. The community people took advice from local house making expert and arranged meeting and discussion to help each other for this practice.

Figure 74: Receiving shelter improvement or house making training



The figure 74 shows that about 99% of the respondents mentioned that they and their household members never received any shelter improvement or house preparing training. It was found that most of the living houses were Kaccha. Woods, bamboo and straw were the main materials for preparing the houses. The community people hire local house making expert to prepare the houses for living. So, the community people did not feel the requirement of shelter improvement or house making training.

3.9 Conclusion and Recommendations

Bangladesh is one of the most disaster-prone and vulnerable countries of the world with inadequate resources. It has always become the victim of continuous natural disasters since many years. In recent years, the impacts of flood has become visible and long lasting. The flood has also kept severe impacts on life and livelihoods of the community people of northern Bangladesh. BDRCS and IFRC have initiated to implement flood resilience program in two northern districts of Bangladesh. It is expected that the implementation of IFRP will be helpful to achieve the community resilience of the targeted four communities. In this regard, community resilience was identified as crucial for the communities to minimize the losses of flood and quickly respond to any type of natural disaster. Community resilience is an inclusive approach to reduce a community's vulnerability to disasters, natural calamities and climate change. It is an ability of a system and its component parts to forecast and recover from the effects of a hazardous event in a timely and efficient manner. The IFRP has bestowed the highest importance to enhance resilience capacity of the four communities. The baseline study identified overall community status following the goals, objectives, components and indicators of the program. These findings will be helpful to properly implement the IFRP as well as to achieve the program outcomes. A lot of significant recommendations were identified from the study so that the implementation team can make their decision to implement the program effectively and efficiently to achieve the goals and outcomes. If the recommendations are taken into consideration while implementing different activities of the program, then it would be helpful to significantly contribute to achieve community resilience of the four flood-affected vulnerable communities of Nilphamari and Lalmonirhat districts. The recommendations are described as follows:

- Community people's knowledge, attitude and practice on climate change, resilience and disaster risk reduction should be increased through different types of community mobilization events, IEC materials, trainings, meetings and workshops. In this regard, participatory approach should be applied for greater impacts among the community people
- The community people should be introduced with the vulnerability and capacity assessment in their communities. As such, they will be aware how the flood risk affects their life and livelihood and they will be able to take necessary preparedness options
- Special considerations should be taken for the differently-able members or vision or mobility issues people when supports will be provided under the program
- Initiatives should be taken specifically for the women, younger and adult group to make them aware about flood resilience
- Special sessions at adjacent and targeted schools should be conducted so that the students would be aware about resilience and DRR issues
- Sufficient knowledge on flood early warning system should be disseminated among the targeted communities and its continuation should be ensured
- CDMC and CDRT should be formed and the members of these teams should be well-trained to continue their efforts for responding to flood and other disasters at the communities. They should be made capable and aware by providing disaster management trainings including leadership, search and rescue etc. So that they can take proper actions before, during and after flood as well as can reduce the losses of life and properties

- Risk profile of the four communities should be developed and reviewed to demonstrate properly in front of the stakeholders
- Contingency plans for four communities should be prepared and shared among CDMC and CDRT and other community people for tackling future disasters and flood risk
- Community Information Centers at four communities should be established to provide information on resilience, climate change, DRR, WASH, health, shelter and livelihood for the community people
- Sufficient trainings with necessary equipment should be provided to the community volunteers so that they can facilitate response activities during emergencies
- Disaster Relief Emergency Fund (DREF) should be established at four communities to respond flood and other disasters. The community people should be engaged in this initiative in such a way so that they contribute to raise the fund
- Community people's knowledge on improved water sources and hygienic latrine should be enhanced
- Community people had practice open defecation, which was 3% during the normal period and about 65% during the flood. So, WASH intervention should be implemented considering the needs of the community
- Context-specific (flood resilient) tube-wells and latrines should be provided to the community people with proper need assessment
- Proper information and knowledge to get services and entitlements among the community people should be spread out and linkage should be established between the community people and Upazila and district level service providers. By thus the community people can get better support from Upazila and district level
- Hygiene Promotion activities should be implemented to increase knowledge, attitude and practice on hand washing at critical times and for ensuring personal and food hygiene, and safe menstrual hygiene management etc.
- Special considerations should be given to raise knowledge on pregnant women's care, new born baby's care and national vaccination so that the community people better take care the pregnant and lactating mothers and new born babies to reduce maternal mortality, and infant and neonatal death
- First Aid training should be introduced among the community people and committees under the program
- Proper advocacy should be done for connecting the community people with the service providers and trainings should be conducted to improve community's livelihood
- Trainings and in-kind support on animal husbandry rearing, agriculture, small business and sewing will be useful to bring positive changes to livelihood of the community people. Beside these, training on small cottage and technical training with proper need assessment should be provided to the community people to improve their life and livelihood
- PASSA training should be arranged for the community people to make their houses resilient to flood and disasters

- The capacity of BDRCS staffs and volunteers should be increased through the program activities and different types of trainings so that they can fully contribute to the interventions of the program and achieve a long-term capacity on resilience and DRR aspects for future initiatives
- Community response mechanism should be established at four communities so that the highest participation of the community is ensured, and they can provide their best endeavors to be aware about resilience and make aware others in this regard
- Government, NGOs and other service providing organizations should also take initiatives to reduce vulnerability at these type of communities through taking measurements like establishing river embankment, establishing shelter-centers, initiating small scale mitigation programs, creating more working opportunities for the community people, providing flood-resilience crops to the communities and arranging livelihood improving trainings etc.

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ANNEXES

Annex 1: Community-wise Findings of the Baseline Study

Annex 2: Household Survey Questionnaire of the Baseline Study

Annex 3: Checklist of Focus Group Discussion (FGD)

Annex 4: Checklist of Key Informant Interview (KII)

Annex 1: Community-wise Findings of the Baseline Study

Sl no.	Description	Overall status	Community-wise status			
			Nilphamari		Lalmonirhat	
			Dighir Par	Garain Para	Sheikh Para	Shiber Kuti
01	Respondent's idea and knowledge about climate change, resilience and DRR (%)	9%	8.35%	5.88%	18.12%	3.48%
02	Households take actions before flood (%)	33%	35.48%	34.49%	31.71%	29.10%
03	Households take actions during flood (%)	67%	58.89%	68.98%	68.71%	73.73%
04	Households take actions after flood (%)	77%	81.16%	86.10%	27.29%	27.39%
05	Respondents have knowledge on flood early warning system (%)	9%	6.21%	2.67%	17.41%	7.46%
06	Respondents ever received flood warning message (%)	7%	5.35%	0.27%	13.88%	6.72%
07	Households have own tube-wells (%)	79%	77.51%	72.19%	82.58%	82.58%
08	Households have improved tube-wells (%)	19%	18%	23.52%	16%	17.91%
09	Households have own latrines (%)	80%	83.08%	75.40%	78.35%	81.09%
10	Households have improved latrines (%)	5%	3.64%	4.01%	4.94%	5.97%
11	Household latrines are protected from flood (%)	8%	3.21 %	4.28%	10.59%	8.21%
12	Respondent's idea about improved and hygienic latrine (%)	22%	16.49%	8.02%	34.82%	25.62%
13	Respondents and their household members use sandal during defecation (%)	91%	8.35%	5.61%	12%	11.44%
14	Respondents and their household members do not wash hands with soap after defecation (%)	16%	11.99%	6.95 %	18.12%	24.88%
15	Respondent's knowledge about proper hand washing technique (%)	31%	30.6%	26.74%	33.41%	32.59%
16	Respondents and their household members wash hands with soap at other critical times (%)	69%	69.16%	72.99%	66.35%	67.41%
17	Households properly cover foods and drinking water (%)	69%	76.45%	73.80%	67.69%	58.21%
18	Respondent's idea about hygiene management during menstrual period (%)	38%	44.97%	41.71%	34.82%	31.59%
19	Respondent's knowledge on pregnant women's care (%)	69%	65.1%	61.5%	74.59%	71.89%
20	Respondent's knowledge on new born baby's care (%)	69%	67.24%	65.51%	76.94%	73.13%
21	Respondent's knowledge on national vaccination program (%)	89%	91.01%	89.30%	92.94%	83.58%
22	Households have Kaccha houses and Hut for living (%)	92%	94.93%	91.97%	88.23%	87.56%

Annex 2: Household Survey Questionnaire of the Baseline Study

1. Can the survey be conducted?
 - Yes
 - No
2. Name of Interviewer? -----
3. Name of Supervisor? -----
4. Date of interview: -----
5. Time of interview: -----
6. Name of district:
Choose one response:
 - Nilphamari
 - Lalmonirhat
7. Name of community?
Choose one response:
 - Garain Para of Khalisa Chapani UP
 - Dighir Par of Tapa Kharibari UP
 - Shiber Kuti of Kulaghat UP
 - Sheikh Para of Khuniagachh UP
8. ID number of the household? -----(the ID no. to be placed from the household list)
9. Name of household head? -----
10. Name of respondent? -----
11. Age of respondent? -----
12. Gender of respondent? (observation)
Choose one response:
 - Male
 - Female
13. Religion of respondent?
Choose one response:
 - Islam
 - Hinduism
 - Buddhism
 - Christianity
 - Others (please specify)
14. Educational qualification of respondent?
Choose one response:
 - Primary
 - Secondary
 - S.S.C/equivalent
 - H.S.C/equivalent
 - Graduation
 - Post-graduation
 - Above post-graduation
 - Have no formal education
15. Mobile no. of respondent?
 - Mobile no-----
 - N/A

16. Total number of male household members? -----
17. Total number of female household members? -----
18. Are any of the household members of children between 0-12 years old?
Choose one response:
- Yes
 - No
19. If yes, total numbers of children between 0-12 years old? -----
20. Are any of the household members above 60 years old?
Choose one response:
- Yes
 - No
21. If yes, total numbers of household members above 60 years old? -----
22. Total number of all household members? -----
23. Is any of the household member differently-abled or having vision or mobility issues?
Choose one response:
- Yes
 - No
24. If yes, what is the number of differently-abled people? -----
25. What type of the disability of the member of your households?
Choose one response:
- Physical disability
 - Mental disability
 - Both
26. What is the main occupation of your household head?
Choose one response:
- Agriculture
 - Day laboring
 - Business
 - Govt. service
 - Non-govt. service
 - Rickshaw/van pulling
 - Auto pulling
 - Fishing
 - Study
 - Others (specify)
27. How much (BDT) does your household have monthly income? -----
28. How much (BDT) does your household have monthly expenditure? -----
29. Does your household have any type of fixed asset?
Choose one response:
- Yes
 - No
30. What types of following fixed asset does your household have?
Choose all that apply:
- Pond
 - TV
 - Radio
 - Mobile

- Rickshaw
 - Van
 - Auto
 - Shop
 - Business capital
 - Domestic animal (cow/goat/buffalo)
 - Others (please specify)
31. Does your household have any amount of land?
Choose one response:
- Yes
 - No
32. If yes, how much is the amount of land (decimal)? -----
33. Do you or your household members have idea/know information about climate change/resilience/DRR?
Choose one response:
- Yes
 - No
34. If yes, from where have you or your household members received the idea/known the information?
Choose all that apply:
- TV
 - Radio
 - Mobile
 - Newspaper
 - Meeting
 - Training
 - Mike
 - Union Parishad
 - Upazila/District Parishad
 - Teachers
 - NGOs
 - Signboard/billboard
 - Poster/leaflet
 - Cultural program
35. What is the main disaster in your area from that you have been suffering last 20 years?
Choose one response:
- Flood
 - River erosion
 - Drought
 - Storm
 - Cold wave
 - Others (please specify)
36. How does flood affect the life and livelihood at your community?
Choose all that apply:
- Destroy household and properties
 - Inundate houses and shelters
 - Destroy crops and agricultural lands
 - Spread diseases

- Make people shelter less
 - Stop daily working opportunity
 - Destroy tube-wells/water sources
 - Inundate latrines
37. Does your household take any type of actions before flood?
Choose one response:
- Yes
 - No
38. If yes, what types of actions does your household usually take before flood?
Choose all that apply:
- Raise the household level
 - Preserve food
 - Save money
 - Take information about the shelter center
 - Raise the platform of tube-well and latrine
 - Inform community people to be prepared for flood
 - Others (specify)
39. Does your household take any type of actions during flood?
Choose one response:
- Yes
 - No
40. What types of actions does your household usually take during flood?
Choose all that apply:
- Shift properties and materials in safe places
 - Take shelter on roads or at shelter centers
 - Advise others to shift and take safe shelter
 - Work together to reduce the loss of flood
 - Boil water before drinking
 - Collect relief if provided
 - Others (please specify)
41. Does your household take any type of actions after flood?
Choose one response:
- Yes
 - No
42. What types of actions does your household usually take after flood?
Choose all that apply:
- Back to household
 - Communicate with UP representatives and other service providing organizations
 - Collect relief and other support if provided
 - Repair damaged houses
 - Others (please specify)
43. Do you have any knowledge on understanding of the flood early warning message?
Choose one response:
- Yes
 - No
44. If yes, have you ever received any flood early warning message?
Choose one response:

- Yes
 - No
45. Is there any committee at your community that works for facing disaster/flood?
Choose one response:
- Yes
 - No
 - Don't know
46. If yes, what does the committee do for facing disaster/flood?
Choose all that apply:
- Arrange meeting
 - Make people aware about the disaster/flood
 - Help in rescue during disaster/flood
 - Help community people to come back in normal life after any disaster/flood
 - Others (please specify)
47. Does the committee have any action plan?
Choose one response:
- Yes
 - No
 - Don't know
48. If yes, is any female member involved/working at the committee?
Choose one response:
- Yes
 - No
 - Don't know
49. Does the committee keep communication with Union Parishad?
Choose one response:
- Yes
 - No
 - Don't know
50. Does your community have any risk profile?
Choose one response:
- Yes
 - No
 - Don't know
51. Does your community have any contingency plan to tackle flood losses?
Choose one response:
- Yes
 - No
 - Don't know
52. Does your community have any fund to tackle disaster/flood?
Choose one response:
- Yes
 - No
 - Don't know
53. Is there any Information Centre at your community that provides disaster/flood related information?
Choose one response:

- Yes
 - No
 - Don't know
54. What is the major source of drinking water that your household members are using?
Choose one response:
- Tube-well
 - Pond
 - River
 - Canal
 - Rain water
 - Pipe water
 - Others (please specify)
55. Does your household have any own tube-well?
Choose one response:
- Yes
 - No
56. If yes, is the tube-well improved? (observation)
Choose one response:
- Yes
 - No
57. If not, what sources of water do you and your household members use for drinking?
Choose all that apply:
- Neighbor's tube-well
 - Tube-well at community
 - Institution's water source (school, college, mosque)
 - River water
 - Rain water
 - Others (please specify)
58. Who mainly collects water for drinking at your household?
Choose one response:
- Male
 - Female
 - Children
 - Elderly people
59. How far do you/your household members have to go to collect water (meter)? -----
60. What is the main source of drinking water for your household during flood?
Choose one response:
- Tube-well
 - Contaminated tube-well
 - Pond
 - River
 - Rain water
 - Others (please specify)
61. Does your household treat water before drinking during flood?
Choose one response:
- Yes
 - No

62. What sources of water do your household members use for domestic purposes (bathing, washing, cattle nurturing etc.)?
Choose all that apply:
- Tube-well
 - Pond
 - River
 - Rain water
 - Pipe water
 - Others (please specify)
63. What sources of water do your household members use for domestic purposes during flood?
Choose all that apply:
- Tube-well
 - Contaminated tube-well
 - Pond
 - River
 - Rain water
 - Pipe water
 - Others (please specify)
64. Do you have knowledge about safe/improved drinking water sources?
Choose one response:
- Yes
 - No
65. Does your household have a latrine?
Choose one response:
- Yes
 - No
66. If yes, what is the type of your household latrine? (observation)
Choose one response:
- Pucca
 - Semi-pucca
 - Kaccha
 - Hanging
67. If yes, is the latrine improved? (observation)
Choose one response:
- Yes
 - No
68. Is your household latrine protected from flood?
Choose one response:
- Yes
 - No
69. If your household does not have latrine, where do you and your household members defecate?
Choose all that apply:
- Open defecation
 - Shared latrine
 - Neighbor's latrine
 - Others (please specify)
70. Do you have idea about improved and hygienic latrine?

- Choose one response:
- Yes
 - No
71. Do you/your household members use sandal during defecation?
Choose one response:
- Yes
 - No
72. Do you/your household members wash hands by using soap after defecation?
Choose one response:
- Yes
 - No
73. How do you/your household members defecate during the flood?
Choose all that apply:
- Use latrine
 - Defecate openly
 - Use the latrine of shelter center
 - Defecate in flood water
 - Others (please specify)
74. Do you know proper hand washing technique?
Choose one response:
- Yes
 - No
75. Do you and your household members wash hands with soap at the other critical times?
Choose one response:
- Yes
 - No
76. If yes, when do you and your household members wash hands with soap in the following times?
Choose all that apply:
- Before eating
 - Before cooking
 - Before preparing foods
 - Before serving foods
 - Before feeding bay
 - After cleaning baby's batten
77. Is the food/drinking water properly covered at your household? (observation)
Choose one response:
- Yes
 - No
78. Do you have any idea about hygiene management during menstrual period?
Choose one response:
- Yes
 - No
 - Don't know
79. Where do you and your household members mostly go for taking treatment?
Choose one response:
- Near pharmacy
 - Private clinic

- Local paramedic
 - Upazila/Sadar private clinic
 - GoB hospital (Upazila/district)
 - Traditional Kobiraj
 - Community clinic
 - Don't take treatment/have no capability
80. Have any of your household members suffered from any diseases during last flood?
Choose one response:
- Yes
 - No
81. If yes, from what types of diseases your household members have suffered during last flood?
Choose all that apply:
- Cholera
 - Diarrhoea
 - Dysentery
 - Hepatitis
 - Scabies
 - Cold-influenza
 - Fever
 - Blood pressure
 - Others (please specify)
82. How many of the household members have suffered from those diseases? -----
83. What types of measures do you take to overcome health problem during and after disaster or flood period?
Choose all that apply:
- Self-medication process
 - Go to dispensary
 - Go to the village doctor
 - Go to government health center
 - Go to private clinic
 - Go to the NGO health service centers
 - Take no steps
 - Others (please specify)
84. Do you have any knowledge about pregnant women's care?
Choose one response:
- Yes
 - No
85. Do you have any knowledge about new born baby's care?
Choose one response:
- Yes
 - No
86. Do you have knowledge on national vaccination program?
Choose one response:
- Yes
 - No
87. Have you ever received any health-related training?
Choose one response:

- Yes
 - No
88. Was your livelihood hampered during last flood?
Choose one response:
- Yes
 - No
89. If yes, how did flood hamper your livelihood during last flood?
Choose all that apply:
- Destroy property
 - Crop loss
 - No occupational works
 - Movement restricted due to flood water
 - Others (please specify)
90. How did you cope with the situation?
Choose all that apply:
- Temporary migration to other places for working purpose
 - Use savings
 - Reduce daily cost
 - Get financial support from govt. and non-govt. agencies
 - Borrow from other
 - Go through starvation
 - Others (please specify)
91. Have you or your household members received any skill development training to improve livelihood or income generating options in recent times/years?
Choose one response:
- Yes
 - No
92. If yes, what types of training you/your household members have received to improve livelihood or income generating options?
Choose all that apply:
- Training on agriculture
 - Training on animal-husbandry rearing
 - Training on small business or retailing
 - Training on sewing
 - Training on small cottage
 - Technical training
 - Others (please specify)
93. If yes, from where have you/your household members received the training?
Choose all that apply:
- Local training center
 - Upazila Govt. office
 - District Govt. office
 - Union Parishad
 - From NGOs
 - Others (please specify)
94. If yes, how or from where did you know about the training?
Choose one response:

- Union Parishad
 - Local representatives
 - NGOs
 - Neighbors
 - Relatives
 - Others (please specify)
95. If yes, did the training include disaster risk orientation/aspects to improve livelihood?
Choose one response:
- Yes
 - No
96. If yes, was the training helpful for you to improve your income/livelihood?
Choose one response:
- Yes
 - No
97. Is there any training center adjacent to your community that provides training to improve livelihood or enhance income?
Choose one response:
- Yes
 - No
98. What types of training would be helpful for you/your household members to improve your livelihood/enhance income?
Choose all that apply:
- Training on agriculture
 - Training on animal-husbandry rearing
 - Training on small business/retailing
 - Training on sewing
 - Training on small cottage
 - Technical training
 - Others (please specify)
99. In which type of houses do you reside (observation)?
Choose one response:
- Pucca
 - Semi-pucca
 - Kaccha
 - Others (please specify)
100. Do you consider your house as resilient to disaster/flood?
Choose one response:
- Yes
 - No
101. Do you prepare and renovate your house by consulting with the community people?
Choose one response:
- Yes
 - No
102. Is there any community practice to prepare or renovate houses in your area?
Choose one response:
- Yes
 - No

103. If yes, what types of measures do the community people take while preparing or renovating the houses?

Choose all that apply:

- Do meeting with the community people
- Take advice from the local expert
- Help each other to prepare or renovate house
- Arrange open discussion with the community people
- Others (please specify)

104. Have you or your household members ever received any shelter improvement or house making training?

Choose one response:

- Yes
- No

105. May I take a photo of you? -----

Annex 3: Checklist of Focus Group Discussion (FGD)

Type of participants	
Date	
Time	
Place of FGD	
Village/community name	
Union	
Upazila	
District	

- What are the main occupations of the people of your community?
- What is the educational status of your community?
- What are the natural resources of your community?
- Did you observe any change in weather or climate in your area in last 15 to 30 years? If yes, what is your observation?
- What are the visible impacts of flood on socio-economic condition at your community?
- Do you have any idea about resilience?
- How the community people manage the flood challenges by their own initiative?
- What are the other resilience/adaptation approaches that have been undertaken by GOs, NGOs or other local organizations for your community people?
- Do your community people have access to safe water and hygienic sanitation?
- How does flood keep impact on water and sanitation options at your community?
- How do your community people overcome the present WASH challenges by their own initiatives?
- What types of initiatives should be undertaken to overcome the WASH challenges at your community?
- Which types of livelihood do your community people practise?
- How has flood impacted your livelihoods in recent years?
- At present, what type of livelihood activities and resilience/adaptation approaches have you undertaken to cope with flood?
- What type of measurements are essential for the improvement of livelihoods for your community people?
- What is the overall health status of your community?
- How most of the people of your community take health suggestions and treatment?
- What your community people do to prevent disases during flood?
- Do your community people have any type of common shelter practices?
- How can the community people increase house renovation capacity considering the flood challenges?
- Do you have any recommendation for increasing the resilience capacity of your community people?
- How the initiatives of IFRP could be sustainable in future?

Sl. no	Name of the participant	Age	Gender	Occupation	Contact no (mobile)	Signature
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						

Annex 4: Checklist of Key Informant Interview (KII)

Name of the respondent	
Age	
Profession	
Village/community name	
Union	
Upazila	
District	
Contact no. (mobile)	

- How has flood affected your socio-economic life and livelihood in recent years?
- What are the impacts of flood on shelter, infrastructure, WASH and health at your community?
- What are the current barriers to cope with the flood challenges at your community?
- Have any types of resilience/adaptation approaches been undertaken by the govt. or others at your community to reduce the impacts of flood?
- How the barriers can be removed to cope with the flood situation at your community?
- How the institutions like Union Parishad, schools, Govt. service providing organizations (Upazila and district), social network and other organizations can contribute to reduce the flood impacts?
- What special measures can be taken to reduce the vulnerability of women, children and elderly people in your area?
- Do you suggest some recommendations to overcome the flood challenges and achieve resilience capacity of your community?
- What are the suggestions from your side to make of IFRP's approaches sustainable in future?

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