

Unraveling the Nexus of Climate-Induced Displacement
and Rural-to-Urban Migration in Bangladesh: Impacts,
Adaptation Strategies, and Policy Responses

STUDY REPORT 2026



Knowledge Management and Development Department

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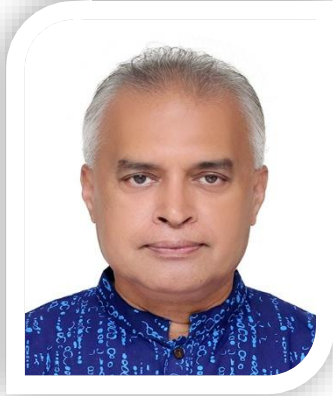
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Message from Founder and Chief Executive of YPSA



Climate change has become a reality for millions of people living in Bangladesh. Bangladesh is one of the world's most climate vulnerable countries, and it is a place that is plagued with the multifaceted issues of environmental degradation and climate induced displacement. This report, *Unravelling the Nexus of Climate-Induced Displacement and Rural-to-Urban Migration in Bangladesh: Impacts, Adaptation Strategies, And Policy Responses*, reflects YPSA's commitment to understanding this crisis and promoting evidence-based solutions.

Based on our research, we estimate that 30-40% of the population in the slums of Chattogram is climate-induced migrants with major drivers of displacement being river erosion and flooding. While important to the city's informal economy, many families have lost their homes, land, and livelihoods before they even got to the city and now must deal with additional hardships in the city, such as insecure housing, restricted access to civic services, healthcare, education, and social protection. It is important to highlight that 85% of respondents did not know about climate change, another indicator of a need for awareness, capacity development, and inclusive adaptation efforts.

Thanks to the hard work of the YPSA research team, field investigators, KM4D colleagues, editor, Technical Advisor team, and everyone that participated in this study. I am grateful to the Climate Justice Resilience Fund (CJRF) for its support, as well as government institutions, Chattogram City Corporation, ward councilors, community leaders, civil society organizations, development partners, and other stakeholders for their valuable contributions.

I thank the communities of climate-induced migrants and the study participants whose experiences and aspirations are central to this research above all. These are not just beneficiaries but also rights-holders and key stakeholders in building inclusive, resilient and sustainable urban futures.

I hope this study will support evidence-informed policies and actions that not only acknowledge, protect and meaningfully incorporate climate-induced migrants in Bangladesh's climate adaptation and sustainable urban development agenda, but also contribute to the ongoing research on the topic.

A handwritten signature in black ink, consisting of a stylized 'A' followed by a series of horizontal strokes.

Dr. Md. Arifur Rahman
Founder and Chief Executive
Young Power in Social Action (YPSA)

EXECUTIVE SUMMARY

Bangladesh stands at a critical crossroads in the global climate crisis. Bangladesh is highly vulnerable to climate change and extreme weather events and is facing the challenge of climate induced displacement. The Bangladesh situation is dire, as it comes in at 7th place in the list of extreme disaster risk prone countries. The Intergovernmental Panel on Climate Change (IPCC) has highlighted the impact of human migration as a result of climate change, noting that it could be a blow to communities in an instant. While it may be challenging to establish a direct causal link between climate change and displacement, various interrelated factors influenced by climate change can compel individuals to migrate. The salinity of soil could push farmers to urban areas in search of better livelihoods, for instance. Likewise, a reduction in groundwater in hilly areas could encourage movements to other areas.

People living in coastal areas, such as Chattogram, are the most vulnerable to climate-induced displacement due to river erosion, cyclones, floods and salinity intrusion etc. Climate induced displacement in Bangladesh is largely in the form of rural-urban migration, resulting from factors such as tidal inundation, river erosion, agricultural land becoming infertile, and jobs being lost. This migration pattern is important for socio-economic, environmental and demographic reasons, especially in urban areas. As of 2022, more than 7.1 million people in Bangladesh were displaced internally due to climatic events and this figure is projected to reach 13.3 million by 2050. This displacement puts a strain on urbanization where climate migrants can be found in slums, increasing environmental degradation, health risks and security concerns. The lack of access to healthcare, food security and protection places women at a higher risk of vulnerability in these contexts.

This study's purpose is driven by the critical need to gain understanding and take necessary measures to mitigate the impacts, strategies and policy responses to displacement and rural-urban migration in the context of climate change, especially in Chattogram. Even though it has a very important coastal location, the population migrated due to climatic change in Chattogram has not been studied in detail. To fill this gap, this study was undertaken by the leading Non- Governmental Organization (NGO) working in the field of Chattogram, 'Young Power in Social Action (YPSA)', since 1985. Chattogram is a geographic hotspot due to its vulnerability, second largest city status and being a key port city, making it a hotspot for climate induced migration. The study is designed to explore the influences of climate induced displacement on migration trends, adaptation and policy responses in Chattogram.

The study has multiple goals: to analyze migration trends, to evaluate socio-economic impacts of migration, to analyze adaptation strategies, and to analyze policy frameworks regarding climate induced displacement and rural-urban migration. The study aims to explore these factors and offers insights into the multifaceted nature of climate induced migration in Chattogram. The key research questions are: What are patterns of displacement and what are the drivers of displacement? What are the effects on the origin and destination area? What are adaptation strategies and how effective are they? What are the effects of policy and the role of stakeholders? In conclusion, the study seeks to contribute to understanding the complex nature of displacement and rural-urban mobility in response to climate change in Chattogram, providing insights for policymakers, practitioners and community stakeholders. These complexities can be understood by designing and implementing

more specific interventions to meet the needs and rights of migrants and to further sustainable urban development in Chattogram and beyond.

Methodologically, this research employed a mixed-method approach, combining qualitative (Focus Group Discussions and Key Informant Interviews) and quantitative survey findings analysis to comprehensively study climate-induced migration in Chattogram, Bangladesh. The methodology began with an extensive literature review to inform the research framework, followed by consultation meetings with various stakeholders, including ward councilors, *sardars* (a group leader at the Slum), and community leaders, to identify 'Climate Induced Migrants' (CIMs) hot spots within the city corporation wards. A source list was compiled based on these consultations to pinpoint CIM hotspots. Subsequent field visits were conducted to these identified areas, where transect work and rapport building with community gatekeepers facilitated data collection. The research team then developed a structured questionnaire for household surveys, which covered key research objectives and was uploaded onto Kobo Tools for data collection. Additionally, key informant interviews (KII) and focus group discussions (FGD) checklists were prepared for qualitative data collection. Sampling was determined based on the density of CIMs within slum clusters, with slums selected randomly from these clusters. The developed survey tools were rigorously tested before finalization and deployment, ensuring alignment with research objectives. Overall, the methodological framework facilitated a comprehensive exploration of climate-induced migration patterns, impacts, adaptation strategies, and policy responses in Chattogram, Bangladesh with ethical consideration and required confidentiality.

The study surveyed 540 climate migrant respondents in Chattogram's slum areas, revealing key demographic features and socioeconomic conditions among 297 females and 243 males. Seemingly, females constituted 55% of the total respondents. Most respondents were married (88.7%), with abandonment or divorce more common among females. Occupation patterns showed gender disparities, with females often homemakers and males engaged in labor-intensive work. Family income and expenditure fell within the range of 10,001 to 15,000 taka monthly, with many struggling to save due to daily living expenses. Housing conditions varied, with a substantial proportion residing in government lands or rented houses. Educational attainment was strikingly low: 36.6 percent were illiterate, and another 32.8 percent could only sign their names. Limited education severely restricts entry into formal employment sectors and constrains upward mobility in urban labor markets. Economic precarity is widespread. More than 62 percent reported having no savings, while an additional 29.6 percent indicated they had no surplus income to save. In effect, more than nine out of ten households lack meaningful financial buffers against further shocks.

The findings provide comprehensive insights into the patterns, drivers, and consequences of rural-to-urban migration among climate migrants in Chattogram City. A significant proportion of respondents migrated before 2010, with Chattogram City being the primary destination for around 26.3% of respondents, reflecting a trend of urbanization driven by climate-induced migration. The findings make clear that displacement is rarely a single catastrophic moment. For most respondents, it is a gradual unraveling. River erosion emerged as the dominant trigger, cited by 70.4 percent of households surveyed. Many families described watching agricultural land collapse into rivers,

homesteads swallowed by water, and crop yields decline due to salinity intrusion. Although 85.3 percent of respondents reported limited familiarity with the formal concept of “climate change,” their experiences reflect acute environmental transformations. Climate change, in their narratives, is not an abstract global phenomenon; it is the disappearance of land beneath their feet.

According to slum-wise household data, Key Informant Interview (KII) findings, and Focus Group Discussion (FGD) outputs, the research team estimates that 30% to 40% of the slum population in Chattogram city are climate-induced migrants individuals who migrated from rural to urban areas due to disasters or climate-related events.

Displacement often occurred more than once. Over 41 percent of respondents had already experienced at least one prior relocation before arriving in Chattogram, with some reporting multiple moves across districts. Financial losses commonly ranged between BDT 100,000 and 500,000 – an enormous sum for households whose monthly income now typically falls between BDT 10,001 and 15,000. These losses represent the erosion of productive assets, savings, livestock, and social stability accumulated over years. Migration, therefore, is not a pathway of advancement but a strategy of last resort. About 42.6% of the respondents were found having made decision to move from the village to their present location, influenced by their relatives. Their purposes for such migration mostly drove towards making more income (34.5%) and seeking safe habitat (29.8%).

Upon arrival in Chattogram, vulnerability shifts rather than disappears. In leaving environmentally fragile rural zones, migrants often relocate to environmentally and legally insecure urban spaces. They often faced unhealthy living conditions in city areas full of malodor and garbage filled than their rural ones that they left. Thus, satisfaction level was found poor in case of their city settlements (‘very good’ and ‘good’, overall, 33.8%) compared to the village (‘very good’ and ‘good’, overall, 86.5%).

Satisfaction levels with urban monthly family income (‘not very satisfied’ corresponds to 41.6%) were lower than in rural areas, indicating potential challenges in adjusting to the higher cost of living in cities. Many male migrants engage in informal day labor, rickshaw pulling, construction work, or small-scale trading. Women are primarily homemakers, though some participate in domestic work or informal income-generating activities. While certain households reported modest increases in nominal income compared to rural earnings, urban living costs – rent, utilities, transport, and food – absorb much of these gains. Economic satisfaction remains low, and employment is typically unstable and unprotected. Nevertheless, 62.4 percent of respondents expressed a strong desire for vocational training and skill development, indicating latent aspirations for economic advancement that remain largely unmet.

The respondents were mostly found living in the colony (57.5%) or single one room (41.6%) in the city areas. About 63.1% of them do not even know about the disaster resilience of their current residence. Concerning health-related adaptability, access to medical care remains a challenge, with limited formal healthcare facilities in both rural and urban settings while comparing. About 80.1% of the respondents said to have not received any healthcare related assistance from the city

corporation. High medical costs, long waiting times, and distance to healthcare facilities are major barriers, compounded by increased drug prices.

Access to basic services reveals uneven adaptation. Child education-related adaptability reveals gaps in educational infrastructure in slum areas, with financial barriers hindering access to education. High education costs, poverty, and children's engagement in income-generating activities are primary obstacles. Strategies proposed to address these barriers include reducing education costs, enhancing children's interest in education, and increasing parental involvement in children's education. Although urban areas offer piped water access to 43.6 percent of respondents, overall satisfaction with drinking water quality is lower in the city. About 62.6% respondents stated to use joint latrine in the city areas, including 70.9% female indicating lesser privacy for the females regarding latrine use.

Gender disparities intensify in the urban context. Women reported restricted mobility, exposure to harassment, and limited access to independent income opportunities. Incidents of marital instability and domestic stress were noted, particularly among economically strained households. Despite forming the majority of respondents, women remain underrepresented in decision-making and livelihood training opportunities. The gendered dimensions of climate displacement remain insufficiently addressed in urban policy frameworks. Violent adolescents (29.3%), drug users (26.3%), political goons (17.5%) are the groups involved in illegal activities in the slum areas who posed great safety threats to the respondents, stated by them.

Additionally, the roles of various stakeholders in facilitating adaptation and resilience among climate-induced migrants reveal systemic challenges in attaining civil rights, accessing social welfare provisions, and receiving support from government and non-governmental organizations. The participants voiced concerns about citizenship rights, access to vital services and the lack of support systems, calling for comprehensive support measures. 64.2% of respondents also noted that none of the public, private or community based organizations involved in improving the adaptation process in slums. Proposed solutions include rehabilitation in preferred areas, legal assistance, and awareness campaigns to address issues such as early marriage and fear of eviction. Moreover, findings from the focus group discussions highlight the complicated process of migration, and the fact that many migrants are keen to return to their places of origin if they are offered permanent housing and livelihood opportunities. The attitudes towards satisfaction with income and lifestyles preferences have mixed views and thus affect village and city perception, which calls for a multi-segment need and expectation approach. Finally, a coordinated approach between government, NGOs and community-based organizations (CBOs) will be needed to address the various problems faced by climate-induced migrants in urban areas. Through partnership efforts, stakeholders can improve adaptation and resilience, foster social integration and inclusive and sustainable urban development for climate-induced migrants.

Key informant interviews (KIIs) offer useful insights into the dynamics of climate induced migration (CIM) in Chattogram City. The main sources of CIMs are areas affected by river erosion, coastal hazards, sea level rise, frequent cyclones and floods etc. in Barisal, Bhola, Comilla and Noakhali etc. regions. The impact of CIMs is significant within the city, where there are different settlements: in

the hill forest lands, in empty spaces in the vicinity of the railway lines, in alluvial areas, affecting the environment and the economy. CIMs add to the workforce particularly in industries like Ready Made Garments, but their presence puts a strain on urban resources and on security systems. The issues that CIMs are facing are substandard living conditions, insufficient infrastructure, poor access to education and healthcare. To adapt CIMs to adapt city life, the respondents in KII recommend the following: Awareness programs; Alternative income generation training. There were a number of limitations in the study that should be noted. First, although the project tried to create a comprehensive questionnaire to collect various aspects of climate induced migration (CIM), it had taken longer time than usual for the survey process, which caused the availability problem for the participants in Chattogram City and compared with Village Life. Also, it was difficult to find participants during the day because they are involved in their livelihoods, which are mobile. The study's other constraint is that it focused on CIMs in urban areas and did not include IDPs who made the decision to stay in their villages of origin, which requires further study. Moreover, some CIM respondents requested money or assistance after interviews, deviating from the study's objectives. In addition, some of the respondents of the pilot survey were displaced within the city and therefore were not found in the subsequent follow-up.

Based on the study results, policy making for short-term and long-term sustainable solutions for addressing the challenges of the climate induced migrants (CIMs) in Chattogram should focus on short-term and long-term solutions. Immediate assistance is crucial to alleviate pressing needs such as housing, food security, and healthcare. Temporary shelters provide basic facilities and are put in place, while food distribution and medical aid programs are put in place to alleviate immediate hardship. Long-term policies should include adaptation strategies for building and planning infrastructure that are resilient to climate change and lessening the vulnerability of climate-stratified communities. This involves enhancing coastal protection measures, investing in flood risk management infrastructure, and providing livelihood support and skills training. Land tenure issues have to be addressed to ensure secure land rights for CIMs to ensure non-conflict over land ownership and fear of eviction. It is essential that collective action is taken by the government, NGO and the community to implement the policy effectively. Public awareness campaigns should be able to help communities protect their livelihoods and environment proactively, through the raising of awareness on climate change adaptation strategies. The challenges of climate-induced migration in Chattogram and elsewhere are complex and regional cooperation and international partnerships are essential in mobilizing resources and expertise. These include detailed recommendations for support to the CIMs, and sustainable solutions such as financial literacy training, housing adaptability measures, healthcare provision and gender-based policies.

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Acronyms

BBS	Bangladesh Bureau of Statistics
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BDT	Bangladeshi Taka
BEZA	Bangladesh Economic Zones Authority
CDMP	Comprehensive Disaster Management Programm
CIM	Climate Induced Migrants
DDMC	District Disaster Management Committee
DRRO	District Relief and Rehabilitation Officer
EEC	Exclusive Economic Zone
EZ	Economic Zone
FGD	Focus Group Discussion
Govt.	Government
GPS	Government Primary Schools
IDMC	Internal Displacement Monitoring Centre
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
JICA	Japan International Cooperation Agency
KII	Key Informant Interview
KM4D, D	Knowledge Management for Development Department
LGI	Local Government Institution
MoEF	Ministry of Environment, Forest and Climate Change
MPCS	Multi-Purpose Cyclone Shelter
MRC	Migrant Resource Centers
NGO	Non-Governmental Organization
PIO	Project Implementation Officer
PROKAS	Promoting Knowledge for Accountable System
PSV	Primary School in the Village
QDA	Qualitative Data Analysis
SLR	Sea Level Rise
SPSS	Statistical Package for the Social Sciences
sq.km	Square Kilometer
UHC	Upazilla Health Complexes
UHC	Upazilla Health Complex
UNHCR	United Nations High Commissioner for Refugees
UNO	Upazila Nirbahi Officer
UP	Union Parishads
UzDMC	Upazila Disaster Management Committee
VGD	Vulnerable Group Development
VGf	Vulnerable Group Feeding
YPSA	Young Power in Social Action

Glossary

Climate Hotspot	An area that is facing particularly high impact from global warming and climate change and is most vulnerable to its deleterious effects.
Climate Resilient	Climate resilience is the ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate.
Non-Climatic Drivers	Non-climatic drivers are understood as key physical and social determinants such as socioeconomic conditions and existing health inequities.
Demographics	Statistical data relating to the population and particular groups within it.
Embankment	A ridge built with earth or rock to contain flood water or to construct a road, railway, and canal.
Environmental pull and push	Factors Environmental pull factors are physical attractors: warm or temperate climates, coastal areas, or mountain views, while environmental push factors usually involve adverse physical conditions. One such push factor would be floods.
Union	The smallest rural administrative and local government units in Bangladesh. Each Union is made up of nine Wards.

Chapter One: Introduction

Climate induced displacement poses a real threat that contributes to the rural-to-urban migration in Bangladesh. According to the Global Climate Risk Index 2021, Bangladesh ranked 7th on the list of extreme disaster risk-prone countries. Not only disaster but also climate change makes Bangladesh highly vulnerable to face climate induced hazards.¹ This coupled scenario created different socio-economic dynamics for both urban and rural communities in Bangladesh.

The Intergovernmental Panel on Climate Change (IPCC) posited in its First Assessment Report that human migration is the severe consequence of climate change because it can even ruin a generation overnight.² Climate change exacerbates the situation of human migration and displacement in such extent that it is a phenomenon worldwide in many countries, internal and/or cross border, including Bangladesh. Even though it is difficult to draw a direct causal link between climate change and displacement, a person may be forced to decide to move or compelled to be displaced due to many inter-related conditions affected by climate change.³ For instance, infertility of lands due to salinity might frustrate farmers and push them from rural and urban areas in search of better livelihood. In the hilly areas where ground water level is decreasing due to climate change may also lead the communities to displace and eventually migrate from rural to urban areas. These long-lasting and pervasive factors are considered in this research.

The pattern of climate-induced displacement in Bangladesh is basically rural to urban where the main causes but not limited to are increasing tidal heights which leads to tidal flooding and riverbank erosion scarcity of livelihood sources due to salinity and agricultural infertility, loss of households in cyclone and so forth. Coastal regions are the primary locations for climate induced displacement. A total of 24 coastal districts out of 64 districts in Bangladesh have climate induced displaced people and Chattogram is one of them.⁴ Bangladesh's geographic location unleashes some primary environmental factors that contribute to the forced displacement within the country, such as river erosions, cyclones, floods, salinity intrusions, droughts, and the lack of agricultural work. Furthermore, climate-driven forced displacement is also driven by economic and social factors such as joblessness, unemployment, social insecurity, poverty, etc. Climate change related events push many people to be displaced because of joblessness or unemployment due to climatic events that occur in their point of origin.⁵

Climate induced displacement in Bangladesh is already responsible for the worsening situation in the urban areas – socio-economically, environmentally, and demographically. Pressing urbanization, growing health risks, and increasing security concerns are some of the major impacts

¹ Local Government Division, Local Government Initiative on Climate Change (LoGIC), UNDP, *Climate Vulnerability Index (CVI)*.

² WMO and UNEP, *Climate Change: The 1990 and 1992 IPCC Assessments*. Published in June 1992

³ Jane McAdam & Ben Saul, *Displacement with Dignity: International Law and Policy Responses to Climate Change Migration and Security in Bangladesh*, University of New South Wales Faculty of Law Research Series. Published in 2010.

⁴ Displacement Solutions, *Climate Displacement in Bangladesh: The Need for Urgent Housing, Land and Property (HLP) Rights Solutions*. Published in May 2012.

⁵ Amjad, K. *Factors of Climate Migration of Poor Slum Dwellers in Dhaka City*. International Journal of Earth Sciences Knowledge and Applications (2021), 3 (3), pp. 273 – 288.

resulting from climate induced displacement.⁶ According to WHO, over 7.1 million Bangladeshis were forcibly displaced internally by 2022 due to climatic events. It is predicted that this number may rise to 13.3 million by 2050.⁷ Such type of displacement raises issues of burdensome pressure on the urban areas where many climate-induced displaced people are crammed into the urban slums in search of survival. Such a new and uncertain environment puts increasing pressure on the climate induced displaced people with aggravating living & health conditions, poor services, less protection, and security. Especially, female members due to forced displacement are more susceptible to vulnerability and limited access to deal with emergencies because of inadequate health infrastructures, food supply, and so on.⁸ The adaptability of the climate induced displaced people in Bangladesh in the major cities, including Chattogram, depends on many factors, for instance, knowledge of people, financial support, the anticipation of the urgency, etc.⁹

Rationale of the Study

YPSA is a voluntary, nonprofit, organization for sustainable development. YPSA has been implementing a lot of projects and programs in Chattogram, Bangladesh and closely working with community people with the assistance of local government since 1985. In Chattogram, YPSA has extensive experience working at the community level at 41 wards under Chattogram City Corporation. YPSA has also been implementing climate related project titled “Bangladesh Housing, Land and Property Rights Initiative for Climate Displaced People” with the support of Displacement Solutions and “Addressing the rights and needs of climate forced displaced people in south-eastern coast of Bangladesh” with the support of Climate Justice Resilience Fund (CJRF)/New Venture Fund (NVF) since 2011 to till date. This study aims to find out the impact, strategies and policy responses towards climate induced displacement and rural-urban migration in Chattogram, Bangladesh. Such a scenario has not been captured broadly in the context of Chattogram yet. There is a spreading scope of comprehending the bigger picture of how climate induced displaced people in Chattogram were forced to migrate from rural areas to urban areas due to climate induced events, how they cope with the new environment in urban areas from their origin, what kind of strategies they follow or adapt and so on.

Chattogram has been chosen for this study because of its geographical location as a coastal region which is the largest port city and second largest city in Bangladesh. Karnaphuli River lies in the South, coastal side to the west and flood prone area to the Halda River to the east.¹⁰ Many climate migrants were forced to live in the slums of Chattogram due to climate induced events. Every year many people migrate to Chattogram City and live in the slum areas including the slums on risky hill slopes where they have frequent life threats for landslides. They have to adapt to a different

⁶ ibid

⁷ SM Najmus Sakib, *Climate Change Displaced Millions of Bangladeshis in 2022: WHO*. Retrieved from <https://www.aa.com.tr/en/asia-pacific/climate-change-displaced-millions-of-bangladeshis-in-2022-who/2750491>

⁸ Toole M.J. *Forced Migrants: Refugees and Internally Displaced Persons*. Social Injustice and Public Health, Oxford University Press (2021), pp. 213 – 228.

⁹ Chowdhury et al. *Climate Change Adaptation in Bangladesh: Current Practices, Challenges and the Way Forward*. The Journal of Climate Change and Health. Vol. 6 (2022).

¹⁰ Chittagong Development Authority (2008), *Preparation of Detailed Area Plan (DAP) for Chittagong Metropolitan Master Plan*, Chittagong, Bangladesh.

living setup than their origin which also affects them in many ways for example, ensuring birth certificates to the children of the climate induced displaced parents.¹¹ A large number of climate induced displaced people are still unprotected and vulnerable for getting the right to live in terms of getting food, shelter, education, primary health, sanitation and hygiene and so on when they migrate to the urban Chattogram. This study aims to find out the links of the climate induced displaced people's condition and their adaptational strategies in the slum areas of Chattogram considering rural to urban migration.

Objectives of the Study

The overall objective of this study is to unravel the nexus of climate induced displacement and rural to urban migration in Bangladesh: impacts, adaptation strategies, and policy responses"

The specific objectives are as follows -

- To analyze the patterns and drivers of climate-induced displacement and rural-to-urban migration in Bangladesh.
- To assess the socio-economic, environmental, and demographic impacts of climate-induced displacement and rural-to-urban migration in both places of origin and destination.
- To examine the adaptation strategies adopted by climate migrants in urban areas to cope with the challenges they face, including access to livelihoods, housing, services (health, education, WATSAN, etc.), protection and security, and social integration.
- To evaluate the effectiveness of existing policy frameworks and interventions in addressing the needs and rights of climate migrants and promoting sustainable urban development.
- Explore the role of various stakeholders, including the government, NGOs, and community organizations, in facilitating adaptation and resilience among climate migrants in urban areas.

Research Questions

The study will be conducted in Chattogram City Corporation. The key questions of the study are mentioned as the following:

- What are the patterns of climate-induced displacement in Bangladesh?
- What are the reasons or drivers of rural to urban migration in Bangladesh?
- Why do coastal people migrate from rural to urban areas in Bangladesh?
- What are the impacts (i.e., socio-economic, environmental, and demographic) of climate-induced displacement in point of origin in rural areas of Bangladesh?
- What are the impacts (i.e., socio-economic, environmental, and demographic) of climate-induced displacement in the destination of the urban areas of Bangladesh?
- What are the adaptation strategies adopted by climate induced migrants in urban areas to cope with the challenges they face, including access to livelihoods, housing, services (health, education, WATSAN, etc.), protection and security, and social integration?
- How climate induced migrants cope with the challenges including access to livelihoods, housing, services (health, education, WATSAN, etc.), protection and security, and social integration in urban areas of Bangladesh?

¹¹ <https://www.observerbd.com/details.php?id=301149> accessed on 10 September 2023

- How to increase the effectiveness of existing policy frameworks and interventions in addressing the needs and rights of climate migrants and promoting sustainable urban development?
- What is the role of relevant stakeholders, including the government, NGOs, and community organizations, in facilitating adaptation and resilience among climate migrants in urban areas of Bangladesh?

Chapter Two: Relevant Policy Responses Related to Climate-Induced Displacement Change in Bangladesh

Though climate-induced migration is common in Bangladesh, there is a lack of specific policy intervention in this regard. However, Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009 and Mujib Climate Prosperity Plan 2022 addressed some issues. For example, it recognized the relation between climate change and displacement while also addressing some of the implications of climate change, such as erosion of riverbanks, frequent drought, drainage congestion, scarcity of fresh water, and food playing as “push factors” to migrate people from rural to urban areas. The BCCSAP 2009 mentioned that declining livelihood opportunities and deteriorating agricultural production will drive “hundreds of thousands” of people to relocate, particularly from coastal zones. 20 million people may be uprooted by 2050, according to this projection. Slums in large cities have also been articulated as a high destination for people who migrate. This presents a pressing issue in light of Bangladesh's ongoing, rapid, and uncontrolled urbanization. Despite the fact that BCCSAP 2009 acknowledges that climate change has led to massive migration, no clear policy guidelines for migrants have been provided. Significantly, the Mujib Climate Prosperity Plan 2022 stated climate change is a humanitarian issue and has the greatest impact on the human inhabitant, it did not provide any outline of policy initiatives related to climate-induced displacement.

To some extent, National Housing Policy 2016 incorporated reconstructing and rehabilitating disaster affected areas where it did not mention rural to urban migration and response to this phenomenon. On the other hand, the National Strategy on Internal Displacement Management 2021 constituted a broader aspect of climate-induced internal displacement. Though it acknowledged pre-displacement, displacement, and post-displacement measures, it did not consider some critical socio-environmental perspectives.

Another issue is the clear disparity in policy notes. According to the Eighth Five-Year Plan, land and natural resources are experiencing significant strain due to the presence of migrants. On the other hand, the primary objective of the Outline Perspective Plan is to modify migration trends and introduce regulations to oversee its flow. Moreover, local government agencies do not have a clear understanding of their responsibilities when it comes to adapting to climate change.¹² Some of the projects can be relevant, for example, the Climate Victims Rehabilitation Project (Gucchogram), and the *Polli Janapad* project which were said to rehabilitate vulnerable people, not very specific to climate-induced displaced communities. Besides, there is no context-based policy guideline that can be fit for specific climatic events. Because the climate change implications are not the same in every area and the trend of climate displacement is also different. In Chittagong City, few local climate-change implications have been assessed, and neither the government agencies nor the city corporation have any intervention related to climate-induced rehabilitation. Though the city is

¹² Ahammad, R. (2011). Constraints of pro-poor climate change adaptation in Chittagong city. *Environment and Urbanization*, 23(2), 503-515. doi:10.1177/0956247811414633

increasingly facing rural to urban migration, there is no initiative to tackle the incident in a sustainable way.

Relevant policy instruments of Bangladesh:

1. National Adaptation Program of Action 2023-2050
2. Bangladesh Climate Change Strategy and Action Plan 2008/2009
3. National Housing Policy 2016
4. National Strategy on Internal Displacement Management 2021
5. Climate Change Trust Fund 2009
6. Mujib Climate Prosperity Plan 2022
7. Bangladesh Climate Change Resilience Fund (BCCRF)/ Bangladesh Climate Change Resilience Fund (BCCRF)
8. Climate Victims Rehabilitation Project (Gucchogram)
9. Outline Perspective Plan (Vision 2041)
10. National Plan for Disaster Management 2012-2025
11. Nationally Determined Contribution 2021
12. Bangladesh Delta Plan 2100
13. Dhaka Glasgow Declaration
14. Local Government Initiative on Climate Change (LoGIC)
15. *Palli Janapad* Project

Some of the most relevant policy responses are highlighted below:

National Adaptation Plan of Bangladesh (2023 - 2050)

The document highlights the need for a multimodal strategy to address the issues raised by migration brought on by climate change. It is very keen on infrastructure development and disaster preparedness, aiming at creating infrastructure for cyclone and flood protection, early warning system for various climate hazards such as lightning and landslides, and a climate resilient environment in general. Additionally, it underlines the importance of security measures and social safety nets to support the most vulnerable groups, including measures to tackle early marriage, domestic abuse and violence, and access to social services.

In addition, it highlights the necessity of long-term adaptation planning and cooperation, coordinating with medium- and long-term development plans and supporting transboundary cooperation to efficiently handle the issues associated with migration and the effects of climate change. The policy attempts to increase resilience and decrease vulnerabilities among impacted communities, promoting sustainable development in the face of migration brought on by climate change, through a combination of research-based indigenous adaptation practices, social inclusion initiatives, and infrastructure development.

Bangladesh Climate Change Strategy and Action Plan 2009

In tackling the complex policies surrounding migration caused by climate change, the paper emphasizes the need for two major frameworks: the Global Environment Facility (GEF) and the National Adaptation Programs of Action (NAPA). It emphasizes how urgently adaptation plans

must be put in place to lessen the negative effects of migration brought on by climate change, especially in areas where those effects are most likely to occur. These adaptation initiatives are essential for assisting nations and communities in adjusting to the loss of population and other effects of climate change.

The paper also emphasizes the importance of strong, inclusive policies in tackling the problems brought on by migration brought on by climate change. These regulations must be all-encompassing, accounting for the various demands and vulnerabilities of the impacted communities. The protection and welfare of people most vulnerable to displacement as a result of climate change, such as vulnerable populations including women, children, and the elderly, as well as marginalized communities, should be given priority. In addition, the text promotes increased international cooperation to address the intricate problem of migration brought on by climate change. Countries must collaborate to create coordinated responses and solutions since climate change has a transboundary influence and affects migratory patterns. Sharing best practices, resources, and information should be part of this partnership, along with helping vulnerable areas with capacity-building initiatives.

The document's overall message highlights the connections between migration, policy responses, and climate change. It emphasizes the need to take proactive steps to mitigate the effects of climate change on migration while simultaneously acknowledging the necessity of inclusive and cooperative strategies to guarantee the resilience and well-being of impacted nations and people.

Vision 2021

Following a shift in climate, people may modify their way of life in several ways to adjust to their new surroundings. Housing modifications, livelihood plans, food habits, cultural customs, social networks, and the promotion of better infrastructure and services are a few examples of these shifts. Individuals, for example, would have to search for houses that were tolerant of environmental dangers such as flooding or extreme weather elements. They could also have to modify their methods of subsistence to take advantage of the employment prospects in their new area. They also may have to incorporate new foods into their diets and change their eating patterns based on the foods available in the area. Developing new social networks, assimilating into the community, and pushing for improved services and infrastructure are all crucial components of post-climate migration lifestyle adjustments.

Policies have been suggested or put into place to help with climate migration and help people adjust to new settings. These measures aim at providing opportunities, resources and support to climate migrants. Using funds from international programs and funds, implementing blue economy policies to unlock sustainable benefits from marine resources, implementing public financing policies for water resource and environmental management, utilizing the Green Climate Fund (GCF) for climate finance, and implementing waste management policies to cut emissions and protect forests are just a few of the policies mentioned. Other policies comprise National Designated Authorities (NDAs) and National Implementation Entities (NIEs) to oversee climate funds. The policies aim to provide guidance, financial assistance and capacity building for adapting to climate change and transitioning into a new climate.

Bangladesh Delta Plan

Climate migration in Bangladesh is driven by several factors, including high population density and vulnerability to natural hazards intensified by climate change. With approximately 160 million people living in a small land area, Bangladesh faces challenges from tidal surges, flooding, river erosion, and cyclones. In response to these challenges, the Bangladesh Delta Plan 2100 (BDP 2100) has been developed as a long-term strategy. The plan aims to achieve upper-middle-income status, eliminate extreme poverty, and ensure sustainable management of water resources, ecology, environment, and land in the face of natural disasters and climate change.

Post-migration, individuals and communities experience significant lifestyle changes. Climate migrants often relocate from hazardous regions to safer areas within the country, seeking protection from floods, cyclones, and river erosion. However, their displacement can result in the loss of traditional livelihoods and increased vulnerability. Climate migrants may face social and economic challenges such as limited access to basic services, job opportunities, and competition for resources in their new locations. Adaptation and resilience building become vital for migrants to cope with their new circumstances, necessitating the adoption of new livelihood strategies and the development of resilience to future climate risks.

To address the challenges posed by climate migration, the BDP 2100 integrates various strategies, policies, and institutions. The plan adopts an adaptive approach, taking inspiration from Dutch Delta management best practices and incorporating technical assistance from the Government of the Netherlands. By integrating water, land use, ecosystem, and climate change considerations into development policies, the BDP 2100 seeks to mitigate the impacts of climate change, support sustainable resource management, and promote resilience in affected communities.

Overall, the BDP 2100 provides a comprehensive framework to tackle the complex issues associated with climate migration in Bangladesh. By addressing the reasons for migration, implementing strategies to support the post-migration lifestyle changes, and enacting policies focused on sustainable resource management, the plan aims to create a more secure and resilient future for both affected communities and the country.

National Strategy on Internal Displacement Management

Displacement and migration resulting from climate change are major problems around the world, and Bangladesh is one of the most vulnerable countries, particularly because of its geographical location. The country is exposed to various threats including floods, tropical cyclones, storm surges and droughts, causing significant population displacement. Bangladesh, on the other hand, has taken several steps to guarantee the safety and sustainability of persons displaced due to climate change. Actions include the building of houses for resettlement that are disaster resistant; and the adoption of the National Strategy on Internal Displacement Management, which seeks to incorporate the displaced populations into the process of development by emphasizing prevention, protection, and post-displacement solutions.

Bangladesh is following a comprehensive climate migration strategy, which is supported by international frameworks and agreements like Sendai Framework for Disaster Risk Reduction and

the Global Compact for Safe, Orderly and Regular Migration. The strategy seeks to address the needs of people affected by disasters and climate-induced displacement, stressing the need to take preventive measures and provide humanitarian support. Bangladesh's commitment to climate-induced migration through strategic planning and implementation grounded in the normative framework is also exemplified by the adoption of the National Strategy on the Management of Disaster and Climate-Induced Internal Displacement, which is based on international standards.

Chapter Three: Methodology

The research was conducted using a mixed-methods approach, including both qualitative and quantitative analysis. Initially, it followed a comprehensive literature review, consultation meetings with ward councilors & secretary of the ward councilors' office, *sardars*, leaders, and key persons of service delivery who could identify the tenants of 'Climate Induced Migrants' hotspots among the city corporation wards, sampling method, and sample size selection as well as data collection techniques and data analysis respectively.

At the very beginning of the research, an intensive literature review was conducted by the experts of the study team. After conducting the comprehensive literature review, the study team conducted consultation meetings with the respective ward councilors & secretary of the ward councilor's office, *sardar*, leaders, and key persons of service delivery who could identify the tenants of 'Climate Induced Migrants' hotspots among the city corporation wards. Subsequently, the study team tentatively estimated the 'Climate Induced Migrants' in slum areas and prepared a 'source list' which helps to identify the hot spots of the CIMs among the wards in the city corporation. Afterward, the study team physically visited these wards where CIMs accumulated and conducted field data collection.

The methodological framework of this research is described below:

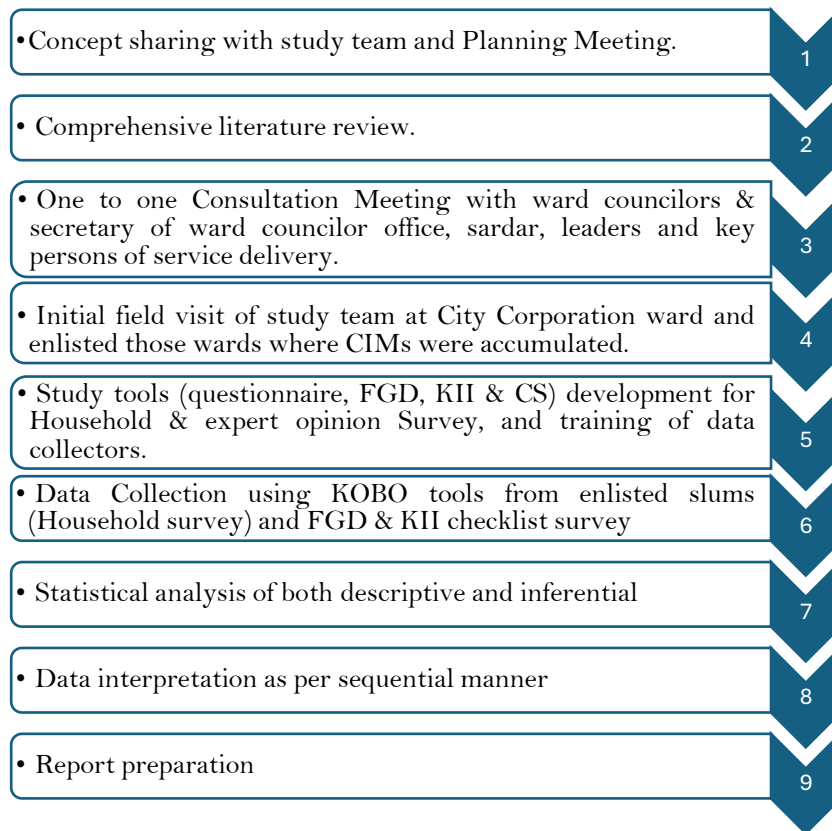


Figure 1: *Methodological Framework for CIM Research*

Concept Sharing with the Study Team and Planning Meeting

YPSA-KM4D department arranged a concept sharing meeting at the beginning of the research to share an overview of the study purpose and objectives with the study team members. Afterward, a planning meeting was organized to develop research methodology. During the concept sharing meeting, the research team discussed different aspects of climate change and climate induced migration as well as climate hotspots in urban areas like Chattogram City Corporation.

Literature Review

Literature review educates a researcher, enhances his/her knowledge, and increases confidence, which ultimately contributes to preparing an appealing proposal (Islam, 2014). The data/information were extracted from secondary sources. These sources were classified into two broad categories, such as web or online-based sources, like reports, peer-reviewed journal articles, books, and book chapters, and institutional based sources, for instance, both Govt. and Non-Govt. offices, research cells, and academic institutions respectively. The comprehensive literature review assisted in finalizing the primary data collection tools, survey methods, and survey procedures. The literature review also cited previously published scientific documents to best justify the proposed research methodologies and findings that were achieved from this study. Nevertheless, the comprehensive literature review mainly focused on:

- Patterns and drivers of climate-induced displacement and rural-to-urban migration in Bangladesh.
- Socio-economic, environmental, and demographic impacts of climate-induced displacement and rural-to-urban migration in both rural and urban areas.
- Adaptation strategies adopted by climate induced migrants in urban areas to cope with the challenges they faced, including access to livelihoods, housing, services (health, education, WATSAN, etc.), protection and security, and social integration.
- Effectiveness of existing policy frameworks and interventions in addressing the needs and rights of climate migrants and promoting sustainable urban development.
- Role of various stakeholders, including the government, NGOs, and community organizations, in facilitating adaptation and resilience among climate migrants in urban areas.

One-to-One Consultation Meeting

YPSA's research team organized one-to-one consultation meetings with the ward councilors & secretary of the ward councilor office, *sardar*, leaders, and key persons of service delivery to identify the urban 'Climate Induced Migrants' hotspots among the city corporation wards. In the meantime, the study team shared the findings of the comprehensive literature review with these experts for selecting city corporation wards where CIMs were accumulated. To complete the above-mentioned tasks, the study team prepared a checklist before the consultation meeting and operated it with them.

After both a comprehensive literature review and consultation meeting, the study team identified the slums where CIMs were accumulated. Then the study team conducted discussion meetings with *sardar*, community leaders, and key persons of service delivery to double-check the earlier findings.

Subsequently, considering every finding, the study team prepared a ‘source list’ for accelerating the sampling procedure. Finally, the study team identified the ‘Urban Hotspot’ of climate induced migrants and possible survey locations effectively in the entire city corporation.

Data Collection

Step-1. Selection of the study locations

As per the earlier prepared source list, the study team divided every slum into five clusters. These clusters segregated on the presence of Climate Induced Migrants as per their density, such as <10 HHs, 10-24 HHs, 25 – 49 HHs, 50-99 HHs, and > 100 HHs. Subsequently, for sampling determination, the study team selected the slum from these clusters randomly.

Step-2. Development of Data Collection Tools

The YPSA research team developed a structured questionnaire with a set of questions for household data collection. The survey questionnaire covered the research objectives. Afterward, the questionnaire was uploaded on KOBO Tools. Besides, the research team developed the KII & FGD checklists for qualitative data collection. Before conducting this field survey, the survey tools were tested on the ground.

Step-3. Sampling Design and Conduct Survey

The household survey was conducted on 100 slums in the entire city corporation wards where maximum CIMs are accumulated. To conduct a statistically representative and authentic survey, Cochran’s Sample Size Formula was applied for appropriate sampling size selection for the Target Population, Islam, 2014¹³ & BBS, 2011¹⁴ presented the following formula.

Formula,

$$\text{With, } n_o = \frac{p(1-p)Z^2}{d^2} = \text{deff. (Design effect).}$$

Where,

- n_o is denoted desired sample size?
- p is a proportion of the required characteristics in the population. Theoretically, when p is unknown, $p=0.5$ gives the safest sample size since $p(1-p)$ takes the highest value for $p=0.5$.
 Z^2 , the value of the standard normal deviate usually set at 1.96 out of 95% confidence level.

¹³ Islam, M. N. 2014. An introduction to Research Methodology, Third Edition, Mullick and Brothers, Dhaka New Market, Dhaka – 1205, Pp. 163-165).

¹⁴ BBS. Bangladesh bureau of statistics, Ministry of Planning, Government Republic of Bangladesh, Dhaka, 2011.

- d is the allowing margin of error. The allowable margin of error is $d=0.05$ will be used. d is the margin of error (level of accuracy) to be tolerated at the 95 percent level of confidence which is considered as 5% margin of error ($d=0.05$) in our study.
- $deff$ is the design effect used for complex surveying using multistage cluster sampling. $deff$ can be taken as 1.5 - 2.0. In the current study as, multistage sampling will be done, here the $deff$ is considered as 2.

$$\text{So, } n_o = \frac{(0.5) \times (0.5) \times (1.96)^2}{(0.05)^2} = 384 \times 2$$

$$\begin{aligned} \text{Total desired sample size } n_o &= 768 \\ &= \sim 770, \text{ convenience for sample distribution} \end{aligned}$$

The research team used a mixed research approach which includes multistage cluster sampling, nonprobability sampling, purposive sampling, and random sampling.

In the first stage of sampling, the nonprobability approach was used to select the city corporation wards and slums where climate induced migrants were accumulated. After identifying the slums, the purposive sampling approach was used to estimate climate induced migrants, and this was done in consultation with ward councilors and relevant watchdog bodies. In the third step, the research team made a source list where all climate migrants were chronologically enlisted. This process was done with the help of 'Sardar' (the gateway of the slum). Subsequently, the research team divided city corporation wards and slums where climate induced migrants were gathered into certain clusters. Finally, the research team selected city corporation wards and slums in which areas were easily accessible, easy access to authentic data collection, available time to data collectors, and so on.

Key Informant Interview (KII)

KIIs were conducted with the ward councilors, secretary of ward councilor, Sardar, leaders and relevant urban watchdog bodies to identify wards, and slums where climate migrants accumulated. Nearly, 50 KIIs were conducted in the entire study.

Focus Group Discussions (FGD)

FGDs were conducted with climate migrants at 100 urban hotspots where (slums and wards) climate migrants accumulated.

Step-4. Data Entry and Processing

The data were obtained from secondary and primary sources as well as qualitatively and quantitatively. Qualitative data were interpreted with 'Narrative Analysis', and quantitative data were interpreted with Statistical Package for The Social Science (SPSS: version-20). Cluster basis analysis was conducted in tabular and graphical format.

Quality Control of Data Collection

Continuous quality control measures were taken during the data collection procedures. The study supervisor monitored and supervised interviewers. He checked the collected data for any missing information, logical inconsistency and misreporting and corrected it on the spot. Where major problems were identified, the interviewers were asked to re-interview the participants. In addition, the supervisors also interviewed five percent of the samples to assess the accuracy of the information collected by the interviewers.

Validation and Dissemination of Findings

The preliminary results of the study were presented in a validation workshop ensuring the participation of key stakeholders, including relevant officials from the Chattogram City Corporation, in November 2023. The workshop provided a platform for constructive feedback, ensuring the findings were thoroughly reviewed and validated by experts and practitioners. The comments and suggestions gathered during the dissemination workshop were carefully incorporated into the final study report, enhancing its accuracy, relevance, and applicability. This participatory approach not only strengthened the credibility of the research but also facilitated wider acceptance and ownership of the findings among stakeholders, ensuring their effective utilization in policy and decision-making processes.

Ethical Consideration

The proposed study strictly adhered to research ethics protocols involving human participants, as it included data collection. Data were gathered through interviews with male and female participants using KOBO Tools and a structured questionnaire. In all cases, participants were informed of the study's purpose and assured that their information would remain confidential, used solely for research purposes.

Prior to the interviews, respondents provided consent to participate. They were explicitly informed of their right to decline the interview, terminate it at any time, or skip any questions they found uncomfortable—without fear of repercussions. Additionally, participants were made aware that there would be no immediate benefits or compensation for their time. After reviewing and explaining the informed consent form, participants were asked to provide verbal approval before proceeding. Those who declined to participate were neither interviewed nor included in the analysis.

Confidentiality

The confidentiality was maintained during the study. To ensure participant data protection, all interview forms were anonymous with coded identification numbers. Questionnaires did not include any personally identifying information and all records were maintained in a secure locked file, with the records kept separate from any personally identifying information. Only authorized research staff members had access to the data, and no information was collected in the course of the study was passed on to external parties. Also, no identification information was shared in reports, presentations or publications.

The risk of compromised confidentiality was slight for participants who were interviewed outside of the clinic. In order to reduce this, the research team evaluated the privacy situation first. Participants were provided with the choice of meeting in another more secure location if sufficient privacy was not possible.

Chapter Four: Analysis of the Findings

Bangladesh is a high-density country affected by the climate induced disasters, where the majority of the one-fourth of the total population living in the coastal areas are at risk of being displaced due to river erosion, tidal surges, tropical cyclones, salinity, etc.¹⁵ For example, it is estimated that nearly 15000 to 30000 people internally migrate every year in the Chattogram due to salinity.¹⁶ As this study investigates the impacts and adaptation of the forcibly displaced climate migrants in Chattogram City, this chapter elaborates and delves into the findings in five sections, considering the following dimensions:

- Analyzing the demographic patterns of the study population
- Analyzing the patterns and drivers of climate-induced displacement and rural-to-urban migration of the climate migrant participants of this study
- Assessing the socio-economic, environmental, and demographic impacts of the climate migrant participants due to climate induced displacement and rural-to-urban migration in both place of origin and place of destination.
- Examining the adaptation by the climate migrant participants in urban Chattogram from the lenses of livelihood, housing, safe health services, education, drinking water facility, hygienic latrine facility, protection and security and social integration.
- Exploring the roles of various stakeholders, including the government, NGOs and community organizations in facilitating adaptation and resilience among the climate migrant participants of this study.

4.1 Population Profile

In this section, the demographic details of the respondents are discussed in terms of gender, age, religion, education, marital status, occupation, number of family members involved in the income of the family, present family income, expenditure, and savings, duration of living in the city of Chattogram, present housing condition, slum and house ownership, and family size.

¹⁵ Climate Change and its Impact in Bangladesh, pp 89

¹⁶ <https://www.ifpri.org/news-release/new-study-sea-level-rise-force-200000-migrate-bangladesh-coastal-areas>

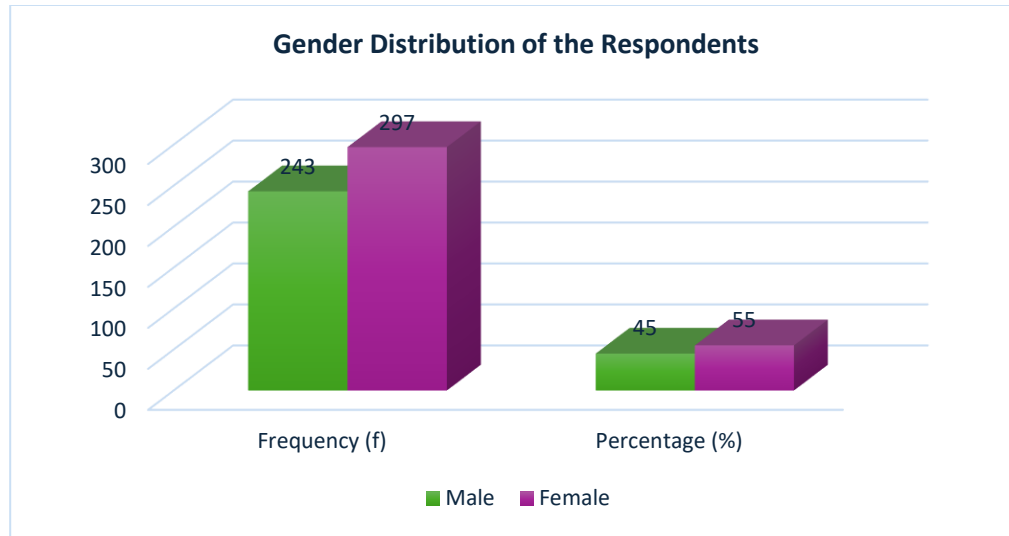


Figure 2: Gender Distribution of the Respondents

The study sample consisted of 540 climate migrants in urban Chattogram, with a gender distribution of 243 males (45%) and 297 females (55%) (Figure 2). Female respondents slightly outnumbered male respondents.

Table 1: Age of the Respondents

	Male	Female	Total
	%	%	%
Below 20 years	0.00	1.0	0.6
20 - 30 years	7.0	13.1	10.4
31 - 40 years	19.8	27.3	23.9
41 - 50 years	23.0	21.6	22.6
51 - 60 years	21.9	17.9	19.6
More than 60 years	27.7	19.2	23.0
Total	100.0	100.0	100.0

Table 1 reveals the age distribution of the survey participants that approximately 90% of respondents were more than, at least, 20 years older. In case of male respondents, majority of the respondents were more than 60 years old (27.7%) whereas most of the female members' age varied between 31 to 40 years.

Table 2: *Educational Status of the Respondents*

	<i>Male</i>	<i>Female</i>	<i>Total</i>
	%	%	%
Can only sign	32.2	33.3	32.8
Illiterate	34.3	38.4	36.6
Class 1 to 5 or <i>Ebtedayee</i>	19.8	15.8	17.6
Class 6 to 8 or Junior Dakhil	7.9	9.1	8.5
Class 9 - Class 10	2.5	1.7	2.0
SSC/Dakhil	2.5	1.0	1.7
HSC/Alim	0.0	0.3	0.2
Honors/Degree/Fazil	0.4	0.0	0.2
Others	0.4	0.3	0.4
Total	100.0	100.0	100.0

Figure 2 illustrates the educational attainment of the respondents among males and females categorized into various levels of education. A significant part of the respondents was found illiterate (36.6%) and can only sign (32.8%). The data also reveals that more male members (19.8%) completed education between class 1 to class 5 or *Ebtedayee* than their female counterparts (15.8%). Advanced education, for example, Honors level education, was rare among the participants.

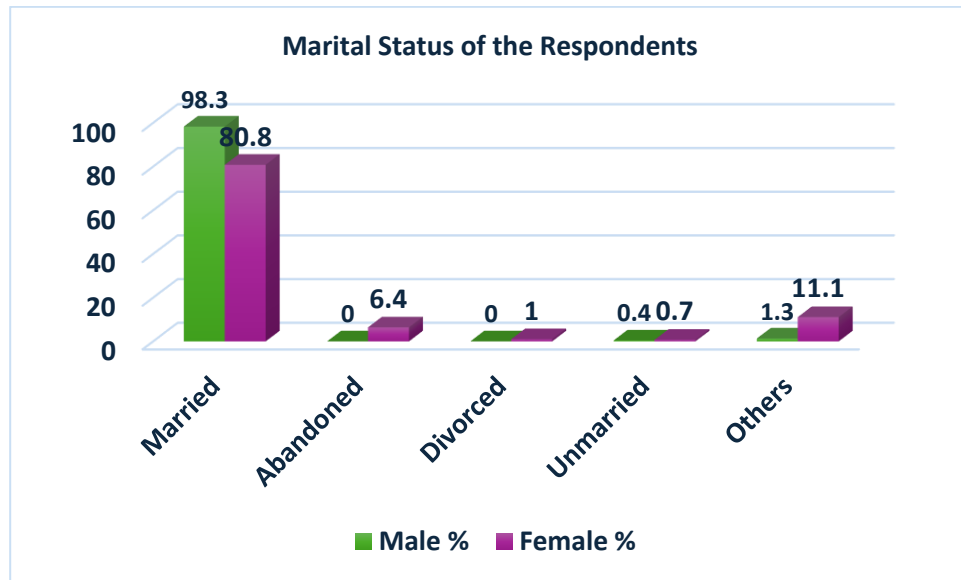


Figure 3: *Marital Status of the Respondents*

Majority of the participants, about 88%, were married. Being abandoned or divorced was found prevalent among the female participants more than the male participants.

Table 3: Occupation of the Respondents

	Female	Male	Total
	%	%	%
Agricultural worker	0.0	3.3	1.5
Begger	1.4	0.0	0.7
Can't do work / unable	7.4	2.9	5.4
CNG driver	0.0	5.8	2.6
Construction worker	0.0	4.1	1.9
Does nothing	11.8	9.9	11.0
Garment / factory worker	6.4	2.1	4.5
Homemaker / housewife	46.0	0.0	25.3
House maid / helping hand / home cook	15.5	0.4	8.7
Job holder	1.0	5.0	2.8
Laborer / day laborer	3.7	24.0	12.8
Rickshaw / van / auto driver	0.0	16.9	7.6
Small Business	1.7	13.6	7.2
Others (animal husbandry, chef, security guard, event management, sewing factory, tailoring, vehicle driver)	5.0	12.0	8.2
Total	100.0	100.0	100.0

Table 3 sheds light on the various types of occupations within the climate migrant respondents in urban Chattogram. There is a significant gender disparity in certain occupations. For instance, 46% of the female respondents were homemaker/housewife whereas many male respondents' occupations were either laborer (24%) or rickshaw/van/auto driver (16.9%). About 11% of the respondents said they 'does nothing'.

Table 4: Number of the Family Members Involved in Family Income

	Male	Female	Total
	%	%	%
1 member	35.1	33.8	34.5
2 members	43.4	46.3	45.0
3 members	19.3	16.1	17.5
4 members	2.1	2.6	2.4
6 members	0.0	1.3	0.7
Total	100.0	100.0	100.0

About 45% of the survey participants responded that they have two family members as contributors to the family income. On the other hand, nearly 35% of the respondents stated to have a single income contributor. A notable 17.5% of the respondents said that they have three family members involved in generating income for the family. There is a very tiny percentage found among the

survey respondents who said they have 4 or more than 4 family members engaged in family income activities.

Table 5: Family Income of the Respondents (monthly-BDT)

	Male	Female	Total
	%	%	%
Less than 5000 taka	2.5	3.0	2.8
5001 – 10000 taka	19.2	28.6	24.4
10,001 - 15,000 taka	30.0	42.4	36.8
15,001 - 20,000 taka	22.9	13.8	18.0
More than 20,000 taka	25.4	12.1	18.0
Total	100.0	100.0	100.0

While investigating the breakdown of monthly family income in Bangladeshi Taka (BDT) among the survey respondents, most of the participants said to have family income ranging from 10,001 to 15,000 taka, constituting 36.8% of the total, with males contributing 30.0% and females 42.4%. This suggests a notable gender disparity in this income bracket. Families earning between 5,001 and 10,000 taka make up 24.4% of the total, with females having a higher percentage at 28.6%, compared to males at 19.2%. The data also reveals that 18.0% of families earn more than 20,000 taka per month. Another 18% of the respondents said to have family income ranging from 15,001 to 20,000 taka.

Table 6: Family Expenditure of the Respondents (monthly-BDT)

	Male	Female	Total
	%	%	%
Below 5000 taka	1.7	1.4	1.5
5001 – 10000 taka	13.3	28.6	21.8
10,001 - 15,000 taka	35.8	43.1	40.0
15,001 - 20,000 taka	26.7	15.2	20.3
More than 20,000 taka	22.5	11.8	16.5
Total	100.0	100.0	100.0

It is evident that families with monthly expenditures ranging from 10,001 to 15,000 taka constitute the largest percentage at 40.0% of the total, with males contributing 35.8% and females 43.1%. Families with incomes between 5,001 and 10,000 taka make up 21.8% of the total, with females having a significantly higher percentage at 28.6% compared to males at 13.3%. Interestingly, the table reveals a notable difference in the distribution of expenditures among different income groups. Families with monthly expenditures exceeding 20,000 taka account for 16.5% of the total, with a higher percentage of males (22.5%) compared to females (11.8%).

Table 7: Family Saving (Income Vs Expenditure) (Monthly-BDT)

	<i>Male</i>	<i>Female</i>	<i>Total</i>
	<i>%</i>	<i>%</i>	<i>%</i>
Does not Save	55.1	72.0	62.1
Not having surplus money	36.6	19.8	29.6
150-1000 BDT	5.6	4.3	5.0
1001 – 3000 BDT	1.5	2.6	2.0
3001 – 5000 BDT	0.3	0.8	0.6
5001 – 7000 BDT	0.6	0.0	0.4
7001 – 9000 BDT	0.0	0.4	0.2
More than 9000 BDT	0.3	0.0	0.2
Total	100.0	100.0	100.0

Table 7 provides a breakdown of family savings among the participants, categorized by income and gender. The data presents the percentage distribution of individuals who either do not save, save specific amounts, or do not have surplus money to save. Notably, 55.1% of males and 72.0% of females, about 62.1% of the total respondents, stated that they did not save. Another staggering 29.6% of the participants stated that they had no surplus money to save after family expenditures.

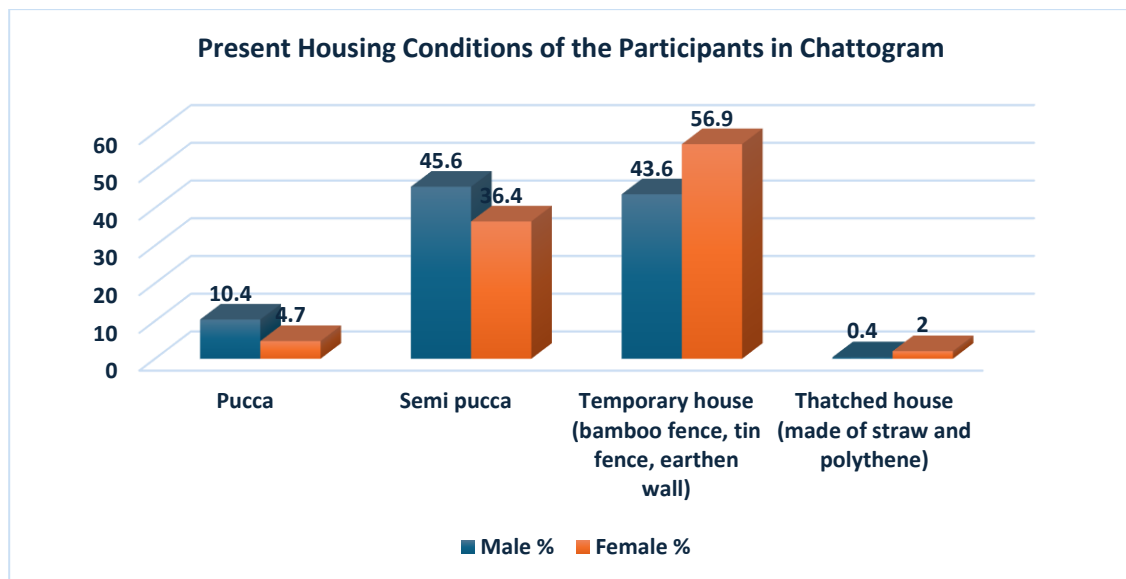


Figure 4: Present Housing Conditions of the Participants in Chattogram City

A substantial percentage of both males and females reside in temporary housing, characterized by bamboo fence, tin fence, or earthen walls, accounting for 50.9% of the total. Another significant

percentage of the respondents, about 40.5% comprising 45.6% male and 36.4% female, stated that they live in semi pucca houses. Pucca houses were found inhabited by 10.4% of males and 4.7% of females, contributing to an overall percentage of 7.3%. Thatched houses, constructed from straw and polythene, represent the least common housing type at 1.3%.

Table 8: Ownership of Slums in City Areas

	Male	Female	Total
	%	%	%
Government (by occupying)	39.2	52.9	46.8
Personal	48.3	26.4	36.3
Private	12.1	20.3	16.6
Others	0.4	0.3	0.4
Total	100.0	100.0	100.0

The majority of the respondents, about 46.8%, reside in slums on the government lands by occupying. Another 36.3% of the respondents said to reside in personally owned slums, and approximately 16.6% of the climate induced migrant participants stated to reside in privately owned slums.

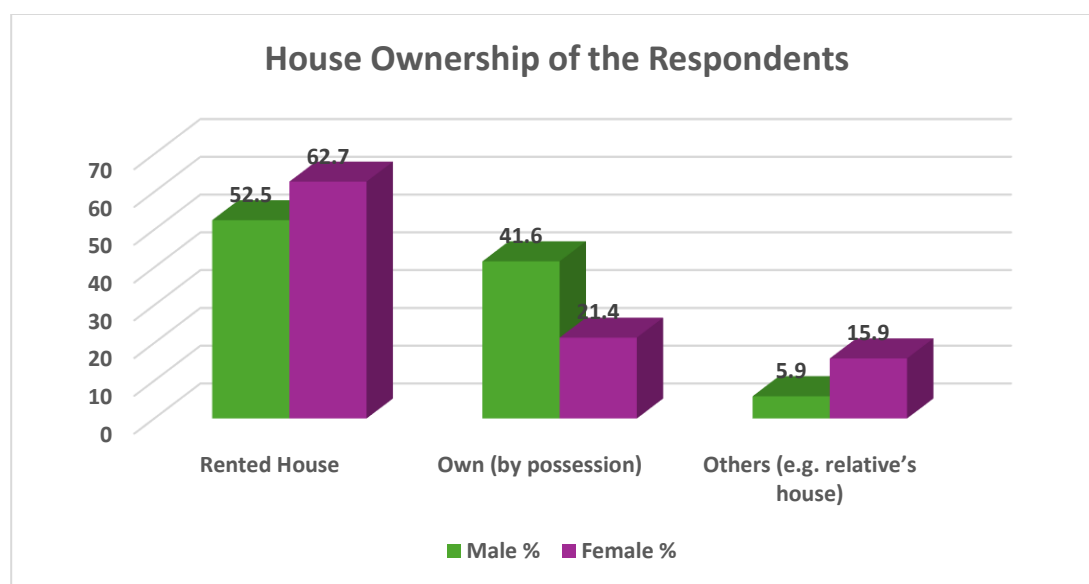


Figure 5: House Ownership of the Respondents

The majority of climate migrant participants, both males (52.5%) and females (62.7%), reside in rented houses. On the other hand, a substantial portion of males (41.6%) and females (21.4%) own their houses by possession, contributing to an overall ownership percentage of 30.4%. Notably, there

is a marked gender disparity in house ownership, with a higher percentage of males owning houses compared to females.

Analysis of the Findings:

According to the demographic features of this study, among the total 540 climate migrant respondents surveyed in the slums of the city corporation areas in Chattogram, females constituted 55% of the total, slightly outnumbering males (45%). The age distribution revealed that the majority of respondents were above 20 years old, with a significant portion of males being over 60 years old and females primarily falling between 31 to 40 years. Regarding education, a considerable portion of respondents were either illiterate (36.6%) or could only sign (32.8%), with limited advanced education attainment. Married respondents were prevalent (88.7%), with abandonment or divorce more common among females.

Occupation patterns of the participants showed gender disparities, with a significant number of females being homemakers/housewives, while males were primarily engaged in labor-intensive work such as laboring or driving rickshaws/vans/autos. Majority participants said to have two family members contributing to family income (45%). About 34.5% respondents mentioned one family member, and approximately 17.5% of the participants stated three family members involved in family income which indicated that number of the family members engaged for family income did not exceed more than three persons overall by the responses of the majority respondents. Family income and expenditure varied, with a considerable portion of families earning between 10,001 to 15,000 taka monthly, while expenditures predominantly fell within the same range. Findings on the family income and expenditure show that the respondents had hard time saving up some money for them as most of their income went for the expenditure on day to day living mostly. This is also visible from the data about their family savings as well where about 62.1% of the respondents said to not have saved any money so far. Nearly 30% of the climate induced migrant respondents also stated about not having surplus money for saving.

Housing conditions ranged from temporary bamboo fence, tin fence and earthen wall (50.9%) to semi-pucca (40.5%), with a notable percentage (46.8%) residing in the government lands by occupying them along with staying in the personally or privately owned slums. Moreover, house ownership showed a gender disparity, with more males owning houses compared to females. The findings also showed that more than half of the participants were residing in the rented house.

From the Focus Group Discussions (FGDs) findings, it was found that most of the climate induced migrants came in the urban Chattogram from Sandwip, Bhola, Noakhali, Barisal and Chandpur.

4.2 Patterns, Drivers/Causes of Climate-Induced Displacement and Rural-To-Urban Migration in Chattogram City

This section delves into getting insights into the patterns of climate induced displacement and drivers or causes that were exhibited by the climate induced migrants among the study participants. The participants were asked questions about whether they have idea about climate change, which climatic events forced them to be displaced from their place of origin to the place of destination, times they have been displaced and causes, pattern of displacement due to climatic events and so on.

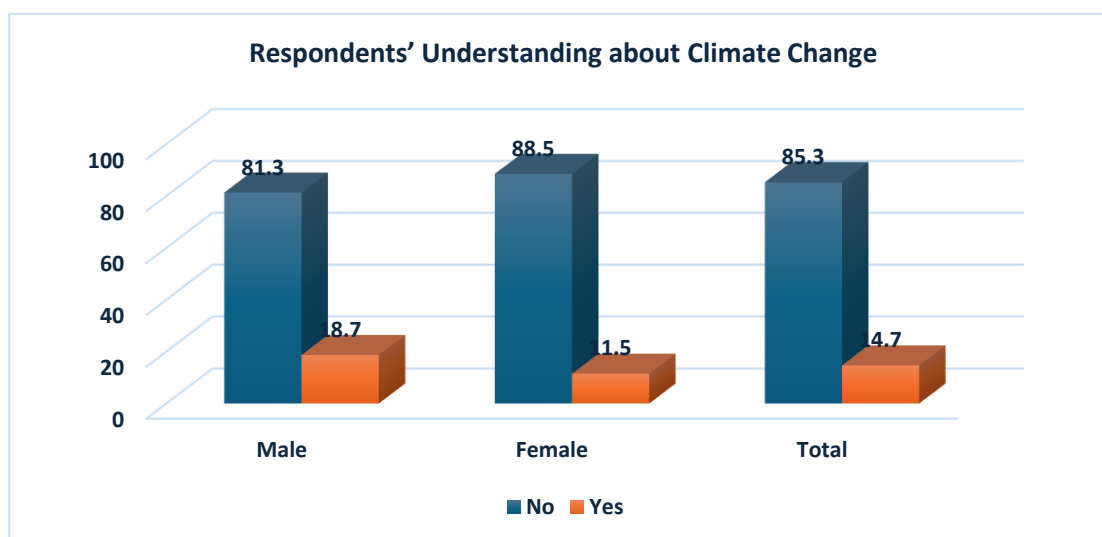


Figure 6: *Respondents' Understanding about Climate Change*

A significant majority of both males (81.3%) and females (88.5%) expressed a perception that they had no idea about climate change (Figure 6). Conversely, a smaller percentage of respondents, 18.7% of males and 11.5% of females, acknowledged having some level of awareness or understanding of climate change. The overall percentage of climate induced migrant participants with some knowledge about climate change is 14.7%. They perceived that due to change in climate, there is an increase in river erosion, cyclones, temperature level, extreme heat, tornados, floods, excessive rain etc.

Table 9: *Climatic Event Responsible for Respondent's Displacement to Urban Area from the Rural Area*

	Male	Female	Total
River erosion	67.3	74.5	70.4
Flood	15.3	14.7	15.0
Influx of tidal water	6.5	3.5	5.3
Cyclone	5.5	2.8	4.4
Sea level rise	2.3	0.0	1.3
Tornado	0.3	1.6	0.9
Landslide	1.3	0.4	0.9
Salinity and salinization	1.0	0.4	0.7

Waterborne diseases	0.3	0.4	0.3
Drought	0.0	0.4	0.2
Others	0.3	1.4	0.7
Total	100.0	100.00	100.0

N.B: Multiple Answer Considered

While looking at the reasons behind families relocating to the city because of climate induced disasters, river erosion emerged as the most prevalent cause, affecting 70.4% of the total respondents, with a higher impact on females (74.5%) compared to males (67.3%). Floods constitute the second most common reason at 15.0%. Other significant factors include the influx of tidal water (5.3%), cyclones (4.4%), and sea level rise (1.3%).

Table 10: Frequency of the Respondent's Displacement in the Place of Origin before Moving to the City

	Male	Female	Total
1 time	35.3	46.8	41.5
2 times	32.4	30.5	31.4
3 times	22.0	10.2	15.6
4 times or more	10.4	12.5	11.6
Total	100.0	100.0	100.0

Table 10 provides insights into the frequency of displacements experienced by the respondents and their families before settling in their current location. Maximum respondents comprising 41.5% reported having moved or been displaced once in their lives, with a higher percentage of females (46.8%) than males (35.3%). Around 31.4% of the total respondents have experienced relocation twice in their ancestral place, with a slightly higher percentage for males (32.4%) compared to females (30.5%). Those who have moved three times account for 15.6%, with males (22.0%) having a higher proportion than females (10.2%) in this category. Furthermore, 11.6% of respondents have faced four or more displacements, with 10.4% males and 12.5% females.

Table 11: Frequency of the Respondent's Displacement after Moving to the City Slum Area

	Male	Female	Total
	%	%	%
1 time	21.2	28.1	25.0
2 times	12.9	19.0	16.2
3 times	9.1	14.9	12.3
4 times or more	6.6	8.5	7.6
Never Displaced	50.2	29.5	38.9
Total	100.0	100.0	100.0

Table 11 outlines the frequency of movements or displacements experienced by the respondents and their families after relocating to city slums. Among the respondents, 25.0% reported moving or being displaced once, with a higher percentage for females (28.1%) compared to males (21.2%). Those who experienced two moves constituted 16.2%, with females (19.0%) having a slightly higher proportion than males (12.9%). The percentage of individuals moving three times is 12.3%, with females (14.9%) again showing a higher percentage than males (9.1%). Respondents who underwent four or more displacements accounted for 7.6%, with 6.6% males, and 8.5% females. The reasons for their moving in the city area stated by the respondents were high rent, eviction, waterlogging, lack of job opportunities, landslides and so on. Notably, a substantial proportion (38.9%) indicated that they never displaced after coming to Chattogram city area.

Table 12: Types of Losses the Respondents Suffered in the Area of Origin in Village (ie, where you/ your family came from/ ancestral home) due to Climate Change Related Disasters

	Female	Male	Total
Loss of homestead	23.0	22.7	22.9
Loss of the house	20.4	20.3	20.3
Harm of the property	18.4	16.4	17.5
Harm of the land	15.5	14.9	15.2
Loss of the relatives	4.0	5.6	4.7
Loss of familial bond	5.2	3.3	4.4
Movement or displacement	3.5	5.3	4.3
Occupation change	3.0	3.8	3.3
Loss of social property (school, madrasa, bazar etc.)	2.7	3.1	2.9
Death of the family members	2.5	2.8	2.6
Loss of the job opportunity	1.8	1.6	1.7
Others	0.1	0.4	0.3
Total	100.0	100.0	100.0

N.B: Multiple Answer Considered

The study participants were asked what type of losses they faced in their place of origin/ancestral place. Table 12 delineates the types of losses experienced in respondents' areas of origin due to climate-induced disasters. The most prevalent form of damage was the loss of a homestead, affecting 22.9% of the total respondents, with marginal differences between females (23.0%) and males (22.7%). Loss of the house (20.3%) and harm to property (17.5%) were also significant. Other notable losses said by the respondents included harm to the land (15.2%), loss of relatives, and the disruption of familial bonds. Additionally, movements or displacements and changes in occupation were also reported.

Table 13. Losses Caused by the disaster in Respondent's Place of Origin (Approximate Monetary Value of the Assets of the Respondent)

Currency (BDT)	Female	Male	Total
	%	%	%
Below 50000	16.2	4.6	11.0
50000 to 100000	16.5	11.8	14.4
100000 to 500000	46.9	29.0	38.9
500000 to 1000000	14.8	29.4	21.4
1000000 to 1500000	3.5	9.7	6.2
1500000 to 2000000	0.3	8.8	4.2
2000000 to 2500000	0.0	0.4	0.2
2500000 to 3000000	1.0	3.8	2.3
3000000 to 4000000	0.3	0.8	0.6
4000000 to 5000000	0.3	0.8	0.6
Above 5000000 (up to 10000000)	0.0	0.8	0.4
Total	100.0	100.0	100.0

Table 13 provides insights into the perceived losses (roughly estimated in taka by the respondents) caused by the climate induced disasters, measured in Bangladeshi Taka (BDT). The majority of respondents estimated losses falling in the range of BDT 100,000 to 500,000, accounting for 38.9% of the total, with a higher percentage reported by females (46.9%) compared to males (29.0%). The second most prevalent range was BDT 50,000 to 100,000, representing 14.4%, with slightly higher percentages for females (16.5%) than males (11.8%). Notably, 21.4% of respondents estimated losses in the range of BDT 500,000 to 1,000,000, with males (29.4%) having a higher proportion than females (14.8%) in this category.

Table 14: *Type of Assets (non-measurable in money) Lost during the Climate induced Disasters*

	Male						Female						Total					
	Yes		No		Total		Yes		No		Total		Yes		No		Total	
	F	%	f	%	F	%	F	%	F	%	F	%	f	%	f	%	f	%
<i>Loss of Life</i>	66	38.15	107	61.85	173	100.0	91	33.70	179	66.30	270	100.0	157	35.44	286	64.56	443	100.0
<i>Loss of the Bond with Relatives</i>	155	73.81	55	26.16	210	100.0	193	67.01	95	32.99	288	100.0	348	69.88	150	30.12	498	100.0
<i>Loss of the Bond with Neighbors</i>	148	70.14	63	29.86	211	100.0	180	62.07	110	37.93	290	100.0	328	65.47	173	34.53	501	100.0
<i>Disintegration of Society</i>	142	71.72	56	28.28	198	100.0	209	71.82	82	28.18	291	100.0	351	71.78	138	28.22	489	100.0
<i>Loss of Social Harmony</i>	123	61.19	78	38.81	201	100.0	166	58.04	120	41.96	286	100.0	289	59.34	198	40.66	487	100.0
<i>Loss of Worshipping Place</i>	156	77.61	45	22.39	201	100.0	207	72.13	80	27.87	287	100.0	364	74.44	125	25.56	489	100.0
<i>Loss of Graveyard/Crematorium</i>	155	78.18	43	21.72	198	100.0	215	74.91	72	25.09	287	100.0	371	76.34	115	23.66	486	100.0
<i>Loss of Social or cultural Identity</i>	63	35.39	280	64.61	178	100.0	113	40.65	165	59.35	278	100.0	176	38.60	280	61.40	456	100.0
<i>Loss of Social Dignity</i>	106	54.92	87	45.08	193	100.0	152	53.33	133	46.67	285	100.0	259	54.07	220	45.93	479	100.0

The climate induced migrant respondents were asked the types of assets lost during the climate induced disasters in the place of origin that were non-measurable in money. About 70% of the respondents said that they lost their bond with relatives. More than 70% respondents stated to have lost their integration into society, worshipping places and graveyards or crematorium. About 54% of the respondents said to have lost social dignity, and 35% of the participants also cited loss of life due to climate induced disasters.

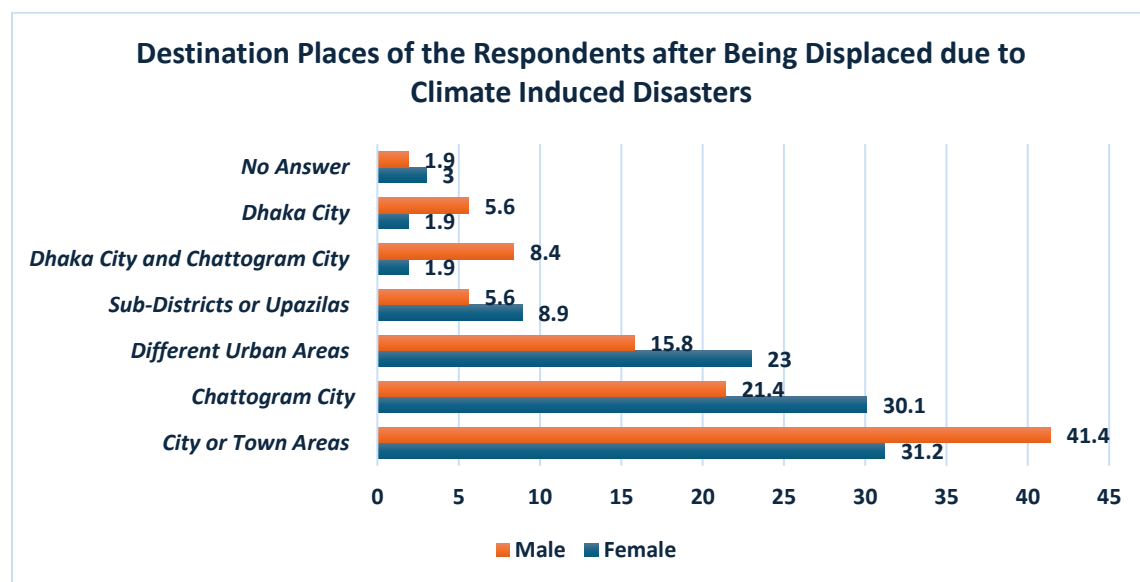


Figure 7: *Destination Places of the Respondents after Being Displaced due to Climate Induced Disasters*

After being displaced majority of the climate induced migrants stated to have chosen city or town areas to move as destination places. Another 26.3% of the respondents stated to come to Chattogram city. Different urban areas were also the destination places (19.9%).

Table 15: *Approximate Year of Rural-to-Urban Migration of the Respondents*

	Female	Male	Total
Before 1970 (from 1940 to 1970)	16.0	7.8	12.3
1971 to 1980	10.5	17.4	13.6
1981 to 1990	10.2	10.8	10.6
1991 to 2000	32.9	34.8	33.7
2001 to 2010	19.7	17.8	18.8
2011 to 2020	8.5	8.7	8.6
Recent (from 2021 to present)	2.4	2.5	2.4
Total	100.0	100.0	100.0

*Duration has been found from 1940 to 2023

The respondents were asked when they came to Chattogram city due to climate induced displacement. Approximately 16.0% of females and 7.8% of males arrived before 1970, with a combined total of 12.3%. The decade from 1991 to 2000 witnessed the highest influx, constituting 32.9% of females and 34.8% of males, contributing to an overall 33.7%. The following two decades (2001 to 2010 and 2011 to 2020) also showed significant migration, accounting for 19.7% and 8.5% of females, and 17.8% and 8.7% of males, respectively. Recent years, from 2021 to the present, saw a smaller percentage of 2.4% for both genders.

Table 16: Rural to Urban Migration Pattern of the Climate Migrant Respondents

	Male	Female	Total
The whole family has left the ancestral area	80.3	86.4	83.5
Husband and wife arrived but other family members are living in the ancestral area	8.0	8.8	8.4
Head of household only	10.5	3.7	6.9
Others	1.3	1.0	1.1
Total	100.0	100.0	100.0

N.B: Multiple Answer Considered

A significant majority, comprising 83.5% of the total, indicates that the entire family left the ancestral area. Another notable category, at 8.4%, reveals that husbands and wives arrived in the city while other family members continued to reside in the ancestral area. A smaller percentage, 6.9%, signifies cases where only the head of the household has migrated.

Table 17: Influential Figures/Factors for Making Decision to Move from the Village to the Present Location in the City

	Female	Male	Total
Connection with relatives	50.1	34.2	42.6
Connection with friends/ networking	13.7	30.5	21.6
With the help of relatives	13.4	14.5	13.9
All options mentioned above	13.9	6.8	10.5
Through the middleman or 'Dalal'	3.6	9.2	6.3
Others	5.3	4.9	5.1
Total	100.0	100.0	100.0

N.B: Multiple Answer Considered

The decision to move from the village/ancestral area of the climate migrant respondents to the current city location was primarily influenced by connections with relatives. About 42.6% of respondents identified this factor as the driving force behind their relocation. The connection with relatives played a more significant role for females (50.1%) compared to males (34.2%). Additionally, friends were cited by 21.6% of respondents, with males (30.5%) showing a higher inclination towards this factor than females (13.7%). A noteworthy proportion, 13.9%, mentioned that the move was facilitated with the help of relatives. On the other hand, 6.3% mentioned relying on middlemen or 'Dalals,' with males (9.2%) more inclined towards this method than females (3.6%).

Table 18: Purpose of the Climate Migrant Respondents or their Family Members Coming from the Village to the City

	Male	Female	Total
	%	%	%
For income (work purpose)	40.6	30.7	34.5
Safe habitat	35.0	26.6	29.8
Disaster risk-free area	7.7	10.5	9.4
Safe life for the child	5.2	11.3	8.9
Safe future for the child (education)	4.4	8.8	7.1
Improved living arrangements	4.8	7.7	6.5
Improved health care	2.1	4.4	3.5
Others	0.4	0.0	0.2
Total	100.0	100.0	100.0

N.B: Multiple Answer Considered

The decision for the climate migrant respondents and their families to move from the village to the city appears to be primarily driven by economic motives, as suggested by the findings shown in Table 18. Approximately 34.5% of respondents indicated that the migration was for income and work purposes, with a higher percentage for males (40.6%) compared to females (30.7%). Ensuring a safe habitat emerged as another significant factor, accounting for 29.8% of the total responses, incorporating 35.0% male respondents and 26.6% female respondents. About 9.4% of the respondents said that they moved to the city area because they thought it would be disaster risk free than their village. Furthermore, the desire for a secure environment for children was evident, with 8.9% specifying a safe life for the child and 7.1% emphasizing a safe future for the child through better education opportunities. Improved living arrangements and access to healthcare also played a role, though to a lesser extent.

Analysis of the Findings:

The data provided sheds light on the patterns, drivers, and consequences of climate-induced displacement and rural-to-urban migration among climate induced migrants in Chattogram city. Firstly, the majority of respondents (85.3%), regardless of gender, expressed a lack of awareness about climate change, indicating a significant gap in understanding the underlying causes of environmental degradation leading to displacement. Despite this, a notable proportion of participants recognized the impacts of climate change, attributing events such as river erosion, cyclones, floods, and extreme weather phenomena to climate variability. The FGD discussants also perceived that the temperature is increasing, and rain pattern is changing. They also stated that there is more river erosion now than before.

River erosion emerged as the predominant driver of the respondents' forced displacement both from survey and FGD findings, affecting over two-thirds of respondents of the survey, particularly females. This was followed by floods, indicating the vulnerability of the among the respondents mainly increased back their village home due to river dynamics. Other factors contributing to displacement included tidal water influx, cyclones, and sea-level rise,

highlighting the diverse range of climate induced disasters exacerbating migration patterns. According to slum-wise household data, Key Informant Interview (KII) findings, and Focus Group Discussion (FGD) outputs, the research team estimates that 30% to 40% of the slum population in Chattogram city are climate-induced migrants individuals who migrated from rural to urban areas due to disasters or climate-related events.

The frequency of displacement both before and after relocation to Chattogram city underscores the recurrent nature of climate-induced migration, with many respondents experiencing multiple displacements throughout their lives where majority (41.5%) corresponds to at least 1 time displacement. Also even in the city areas, about 25% of the respondents said that they were displaced after moving in the city at least once. This suggests a cycle of vulnerability, wherein individuals and families continually seek refuge from the disasters in their ancestral village and as adaptation strategy in the city areas, often resulting in repeated uprooting and resettlement. Female respondents seemed to be more vulnerable in this regard than their male counterparts.

The types of losses experienced by respondents in their areas of origin due to climate induced disasters are multifaceted, encompassing not only physical assets such as homestead (22.9%), houses (20.3%), property (17.5%), and land (15.2%) but also familial bonds, social dignity, bond with neighbors, worshipping place and so on. These losses have significant socio-economic implications, disrupting communities and exacerbating poverty and vulnerability.

Furthermore, the estimated monetary losses reported by respondents provide insight into the economic impacts of climate-induced displacement, with a substantial proportion (38.9%) estimating losses in the range of BDT 100,000 to 500,000. This underscores the financial strain placed on affected households and highlights the urgent need for comprehensive adaptation and resilience-building strategies to mitigate the adverse effects of climate change on vulnerable populations. Addressing the underlying drivers of climate-induced displacement and implementing targeted interventions to enhance resilience and livelihood opportunities are critical to safeguarding the well-being of affected communities and promoting sustainable development in the face of climate change.

The data provided offers valuable insights into the patterns, drivers, and consequences of rural-to-urban migration among climate migrants in Chattogram city as well. It reveals a multifaceted picture of migration among the respondents due to climate change, including destination preferences, migration timelines, decision-making processes, and perceptions of government responsibility. One striking finding is the prevalence of Chattogram city as the primary destination for climate migrants, with around 26.3% of respondents, both male and female, choosing this urban center as their new home. Additionally, a significant portion of migrants (35.8%), particularly females, also migrate to other cities or towns, highlighting the urbanization trend driven by climate-induced displacement.

The timing of migration indicates distinct waves of movement, with the highest influx occurring between 1991 and 2000, followed by substantial migration in the subsequent decades. This suggests that climate-induced displacement has been a persistent phenomenon over several

generations, with migrants seeking refuge in urban areas at different points in time. A staggering percentage of the respondents, about 83.5%, stated to leave their ancestral places with their whole family. Moreover, the decision-making process behind migration reveals the influence of family dynamics, with the connection of relatives (42.6%), friends and networks, playing a central role in migration decisions. From FGD findings, such male dominance over decision making of climate induced migration to urban areas was also evident as maximum FGD participants focused on the husbands and fathers as the main decisionmakers. Overall, it reflected a collective approach to migration. Friends and relatives were found as primary influencers behind making decision to move from the village to the present location in the city of the respondents.

Economic considerations emerged as a primary driver of migration, with respondents citing income opportunities (34.5%) and the pursuit of a safer habitat (29.8%) as key motivations for relocating to the city. FGD participants of this study also indicated that they came to the city because of getting a place to live and availing income generating activities along with ensuring better education for their children. This underscores the complex interplay between environmental vulnerabilities, livelihood insecurity, and the search for better opportunities in urban settings.

4.3 Socio-economic, Environmental, and Demographic Impacts of Climate-Induced Displacement and Rural-to-urban Migration in Both Place of Origin and Destination

Climate-induced displacement and rural-to-urban migration entail multi-layered impacts across socio-economic, environmental, and demographic dimensions, influencing the respondents both in the origin and destination areas. Such migration often exacerbates poverty levels and strain local resources, contributing to economic disparities. In urban destinations, influxes of climate induced migrants can strain existing infrastructure, housing, and services. This sub-section sheds light on the findings regarding the living standard along with the services and the respondents' satisfaction level about it in both of their rural places/places of origin and Chattogram city areas where they currently live in.

Table 19: Type of Living Condition of the Respondents (Rural & Urban)

	Village			City		
	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Dark and shadowy	0.2	2.2	1.3	4.6	7.6	6.3
Dry and clean (rented house minimum standard)	35.1	28.0	31.1	25.8	14.4	19.3
Free of garbage and waste	8.7	7.4	7.9	4.7	3.2	3.8
Free of malodor	13.3	8.4	10.5	8.9	6.1	7.3
Full of malodor	0.5	2.3	1.5	13.3	16.7	15.2
Garbage filled	1.9	3.8	3.0	7.2	9.1	8.3
Hygienic	10.4	11.0	10.7	4.0	3.2	3.5
Noise-free	10.9	9.3	10.0	3.9	3.7	3.8
Noisy	1.1	4.2	2.9	9.3	9.9	9.7
Sunlit and bright	15.2	16.9	16.2	9.9	10.4	10.2

Wet and damp	2.7	6.5	4.9	8.4	15.8	12.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

N.B: Multiple Answer Considered

In rural villages, a higher percentage of individuals reported living in areas described as dry and clean (31.1%), sunlit and bright (16.2%), hygienic (10.7%), noise free (10.0%) and free of malodor (10.5%) compared to the city area. Conversely, participants stated about their living conditions in the urban areas characterized as noisy (9.7%), full of malodor (15.2%), and wet and damp (12.6%) in most cases.

Table 20: Respondents' Satisfaction Level about their Living Condition (Rural and Urban)

	Village			City		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
Very good	28.1	51.4	41.1	8.3	11.8	10.2
Good	57.0	36.2	45.4	27.5	20.5	23.6
Neutral	14.9	12.5	13.6	45.8	42.4	44.1
Bad	0.0	0.0	0.0	17.5	23.6	20.8
Very bad	0.0	0.0	0.0	0.8	1.7	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notably, majority of the respondents expressed their satisfaction for the living condition in rural villages by saying 'very good' with 28.1% of males and a significantly higher 51.4% of females, contributing to an overall satisfaction rate of 41.1%. Conversely, for city area, only 8.3% of males and 11.8% of females reported a very good satisfaction level, resulting in a lower total satisfaction rate of 10.2%. Most respondents indicated a "good" satisfaction level for the living condition in the village area as well, stated by the 45.4% of the participants whereas such satisfaction is low for the present living condition in the city area (23.6%). About 44.1% of the respondents expressed neutrality living in urban areas compared to 13.6% in rural areas. Additionally, dissatisfaction is more prevalent in urban settings, with 20.8% reporting bad living conditions, while no respondents in rural villages reported a negative satisfaction level.

Table 21: Scope of Cremation/Burial of the Respondents (Village)

	Male	Female	Total
	%	%	%
Familial graveyard/ crematorium	47.8	50.3	49.2
Community graveyard/crematorium	41.0	41.9	41.5
In the relative's land	4.3	4.3	4.3
In the given land	4.3	0.9	2.4
In someone else's land	1.4	1.7	1.6
By buying land	0.7	0.9	0.8
Others	0.4	0.0	0.2

Total	100.0	100.0	100.0
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N.B: Multiple Answer Considered

The climate migrant participants were asked about where they used to cremate or bury in their place of origin/ancestral village area. In response, majority of the respondents, both male (47.8%) and female (50.3%), indicated the use of familial graveyard or crematorium for cremation, contributing to an overall total of 49.2%. Additionally, a substantial proportion (41.0% for males and 41.9% for females) reported utilizing community graveyard or crematorium facilities. A smaller percentage of respondents mentioned cremation on relatives' land (4.3%) or in a given land (2.4%).

Table 22: Scope of Cremation/Burial (Urban Area)

	Male	Female	Total
	%	%	%
Community graveyard / crematorium	30.8	34.5	32.7
On the government owned land	30.5	29.3	29.9
By buying land	10.7	19.5	15.3
Through other organizations (<i>Anjumane Mofidul Islam, Gausia Committee</i>)	19.8	5.6	12.3
In the given land	4.6	4.5	4.5
Took to the own village	2.1	2.8	2.5
Familial graveyard/ crematorium	1.1	1.4	1.3
In someone else's land	0.3	0.9	0.6
In the relative's land	0.0	1.2	0.6
Others	0.3	0.2	0.3
Grand Total	100.0	100.0	100.0

N.B: Multiple Answer Considered

The data illustrated in Table 22 show that community graveyard or crematorium was the most chosen option by both male (30.8%) and female (34.5%) participants, contributing to a total of 32.7%. About 29.9% of the participants said that they would cremate or bury on government-owned land. About 10.7% of male and 19.5% of female participants stated that they had to buy land for cremation/burial in city area, resulting in a total of 15.3%. Cremation through other organizations, such as *Anjumane Mofidul Islam* and *Gausia Committee*, was stated by 12.3% participants in total. Other methods include cremation in given land, taking the deceased to their own village, and using familial graveyards or crematoriums.

Analysis of the Findings:

The information gathered on the socio-economic, environmental and demographic effects of displacement and rural-to-urban migration reflects complex dynamics in the lives of the people interviewed in both the origin and destination areas. There is a significant role for the environment to influence living circumstances and living satisfaction. The respondents in rural

villages found that they had better conditions with regard to cleanliness, hygiene and noise compared to their present villages in the city while noise pollution, malodor and dampness were the challenges they faced in the rural villages. Taking these weaknesses into account, the respondents had different opinions on their satisfaction with the way they live in a rural village, with a majority of them stating they are satisfied with rural village living while a significant number said they are neither satisfied nor neutral about urban living conditions.

The insights gained from the focus group discussions (FGDs) conducted with migrants affected by the climate in Chattogram's city corporation areas reveal some of the difficulties these people experience. Participants indicated that they live in inadequate housing, inadequate living conditions, lacking in proper waste management and sewerage facilities, which results in excess mosquito and open drains. Additionally, periodic inundation issues were caused by tidal surge, exacerbating the difficulties experienced by people. The fear of eviction and conflicts over landownership further exacerbated the situation, alongside the high living costs. Access to basic civic facilities, such as, gas, electricity, water supply, etc. was very limited in most slums/colonies, thus limiting access to basic civic services. Further, the landlords' regulations prevented the family members from staying, women expressed concerns about safety and security, lack of freedom of movement, and increased child rearing risks, such as landslides.

Climate induced migrants were found to have a change regarding the scope of cremation or burial process when they were displaced from their ancestral villages due to climatic disasters and had to come to city areas. In the village, the respondents utilized familial graveyards more (49.2%) whereas in city areas they had to go for community graveyard or government owned land or had to buy land.

4.4 Adaptation Strategies Adopted by Climate Migrants in Urban Areas to Cope with the Challenges, Including Access to Livelihoods, Housing, Services (health, education, WATSAN, etc.), Protection and Security, and Social Integration

4.4.1 Livelihood-Related Adaptability by the Respondents

Table 23: Difference of the Respondents' Monthly Family Income between Village and City areas

Currency (BDT)	Village			City		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
Less than 5000	51.0	58.3	55.1	5.0	5.1	5.0
5001 to 10,000	27.8	25.6	26.5	16.3	26.9	22.1
10,001 to 15,000	11.2	8.4	9.7	31.3	43.8	38.1
15,001 to 20,000	6.6	7.4	7.1	25.0	13.5	18.8
More than 20,000	3.3	0.3	1.7	22.5	10.8	16.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 23 illustrates the disparity in monthly family income between the rural area they came from and city area in Chattogram city they live in. A substantial percentage of males (51.0%) and females (58.3%) reported a monthly family income of less than 5000 BDT in rural areas, contributing to an overall total of 55.1%. On the other hand, there were 5.0% of males and 5.1% of females with this income level in urban areas. The ratio of males and females in the urban areas with a net total of 22.1% of the population were found in the range of 5001 to 10,000 BDT, whereas the urban rural villages had a total of 27.8%. It is noteworthy to point out that in all the higher income brackets (10,001-15,000 BDT, 15,001-20,000 BDT and above 20,000 BDT), the urban cities had higher percentages than the rural villages which reflects the fact that the respondents were receiving lower income in their villages than in urban cities.

Table 24: Satisfaction of the Respondents Regarding Monthly Family Income (Rural and Urban)

	Village			City		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
Extremely satisfied	11.2	19.7	15.8	0.8	1.0	0.9
Very satisfied	0.0	0.0	0.0	3.3	5.1	4.3
Satisfied	24.5	20.7	22.5	0.0	0.0	0.0
Neutral	59.3	51.5	54.9	30.7	39.5	35.5
Not very satisfied	5.0	7.5	6.3	50.2	34.5	41.6
Extremely unsatisfied	0.0	0.7	0.4	14.9	19.9	17.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

The climate induced migrant participants were asked about whether they were satisfied with their income level both in their place of origin in village area and place of destination in city area.

Their responses show that the majority of the respondents expressed a neutral stance, with 59.3% of males, 51.5% of females, and a total of 54.9%, regarding their family income back in the villages. Slightly over a fifth of respondents reported being satisfied, with 22.5% overall, while 15.8% claimed to be extremely satisfied, mainly driven by female respondents (19.7%). On the contrary, in case of income level in urban areas, a significant percentage of males (50.2%) and females (34.5%) reported not being very satisfied, contributing to a total of 41.6%. Moreover, a considerable proportion of the respondents expressed neutrality (35.5%) regarding their income level in urban areas.

Table 25: Satisfaction Level of the Respondents about their Occupation (Rural and Urban)

	Village			City		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
Very satisfied	12.2	19.7	16.3	2.9	0.3	1.5
Satisfied	52.1	55.9	54.1	24.7	25.5	25.1
Neutral	34.0	21.4	27.2	65.7	61.6	63.5
Not satisfied	1.3	3.1	2.3	6.7	11.2	9.2
Highly unsatisfied	0.4	0.0	0.2	0.0	1.4	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

While expressing their satisfaction level about the occupation in comparing with the village area to city area, climate induced migrant respondents mostly found neutral in city area (63.5%), either not satisfied or not unsatisfied with their occupation. However, more than half of the respondents stated that they were satisfied with their occupations back in their villages.

Table 26: Desired Jobs/Activities of the Respondents in the City Area Besides the Current Job

	Male	Female	Total
	%	%	%
CNG driver	9.1	7.3	8.2
Construction worker	5.5	1.5	3.7
Day laborer	11.4	6.7	9.1
Does not desire to do any work	3.3	6.7	5.0
Feriwala (petty business)	1.4	2.4	1.9
Garbage collector	0.0	0.9	0.4
Garments/factory worker	13.0	17.0	14.9
Homemaker/housewife	0.8	4.7	2.7
Job holder	7.5	7.9	7.7
Maid/home cook	0.3	4.4	2.3
Others	5.3	7.9	6.5
Rickshaw/van/auto driver	19.7	9.7	14.9

Shop / hotel / restaurant worker	1.9	0.9	1.4
Small business	14.1	12.6	13.4
Student	1.7	6.2	3.8
Unemployed	0.8	0.3	0.6
Vehicle driver / helper	4.2	2.9	3.6
Total	100.0	100.0	100.0

N.B: Multiple Answer Considered

While asked to the respondents what kind of job or activities they would desire to get beside their current job they were doing in the city area, they mostly said about involving as garment/factory worker (14.9%), rickshaw/van/auto driver (14.9%), small business (13.4%) and so on. Female respondents more tended to do working in garments sector while male respondents desired to be involved in rickshaw/van/auto driving. This indicates their less confidence desiring high end jobs for them.

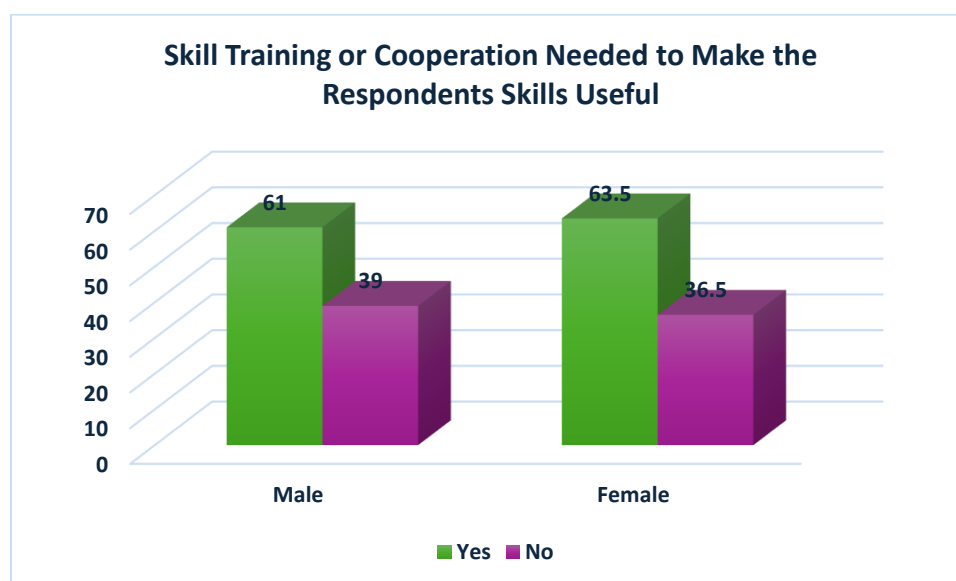


Figure 8: Skill Training or Cooperation Needed to Make the Respondents Skills Useful

While asked majority of the climate induced migrant respondents expressed their need for skill training or cooperation to make their skills useful for more income generation (62.4%). Most of them stated that they needed training on learning driving, sewing, business techniques, computer training, mobile servicing, garments operation trainings etc.

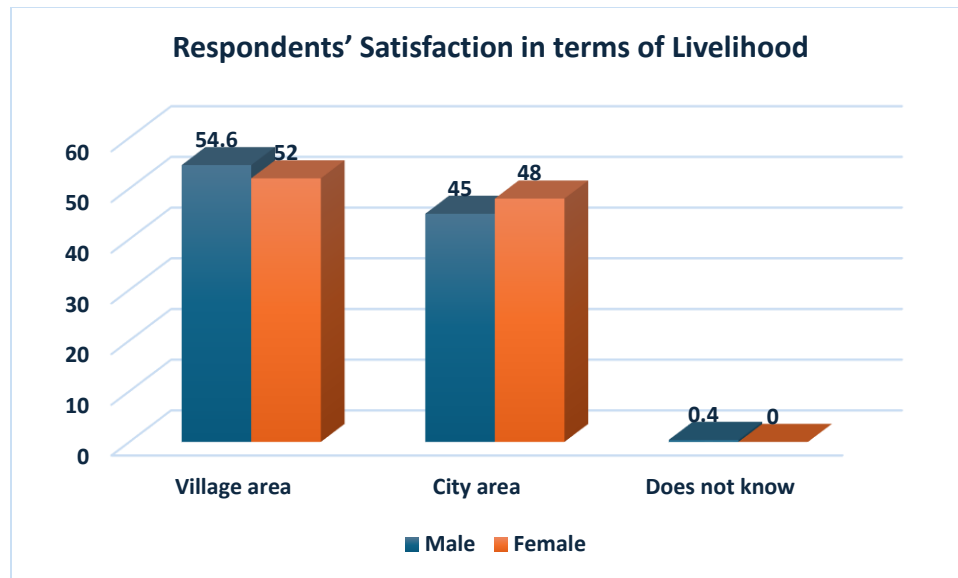


Figure 9: *Respondents' Satisfaction in terms of Livelihood*

About 54.6% of male respondents and 52.0% of female respondents expressed satisfaction with their livelihood back in village, with an overall satisfaction rate of 53.3%. Conversely, in the city area, satisfaction levels are slightly lower, with 45.0% of males and 48.0% of females reporting satisfaction, resulting in an overall satisfaction rate of 46.6%.

Analysis of the Findings:

The information shared offers insight into the adaptation measures taken by climate induced migrants in Chattogram city to mitigate the problems they faced, such as livelihoods, housing, service, protection, security, and social integration.

The data demonstrates that there is some remarkable changes in the income and expenditure pattern of the family, between the rural villages they belonged to and the urban areas in which they are living at present in terms of livelihood related adaptability. It shows that a significant portion of climate induced migrants actually made more money when they moved to the city, and fewer people were in the lowest income brackets in the urban areas than in rural areas. In the village area more than half of the respondents reported their income below 5000 taka, but majority of them reported their income above 5000 taka in the city area. This is partly because the satisfaction with income and expenditure in urban areas is lower compared to rural areas despite higher earning, suggesting that there are challenges in coping with the high cost of living in urban areas.

Furthermore, the data reveals the wide range of occupations that climate migrant respondents have in rural and urban areas, moving from mainly agricultural and day laborer work in villages, to a much broader, more diverse, range of jobs in urban areas, such as garments workers, drivers

and small business owners. In contrast, satisfaction with occupations in rural areas was relatively high (54.1% were satisfied, 19.7% very satisfied), but for many participants there was a neutral attitude (63.5%) or dissatisfaction with their occupation in the city, which indicates a need for more employment opportunities or skills development in the city. Most of the respondents wanted to have a job in Garments Industry/Factory or in rickshaw/van/auto. About 13.4% respondents, including both men and women, want to have small business opportunities of their own. Given these results, it's not surprising that 62.4% of respondents in the survey said that they require skill training or cooperation to utilize their current skills. The importance of skill development and training initiatives to enhance climate induced migrants' livelihoods in urban areas also thus became visible. This underscored the potential of tailored skill development initiatives to help climate induced migrants and their integration into the urban economy.

In terms of income, mixed reactions came while expressing their opinions. The participants in the FGD from 4 areas (Sandwip Colony, Amin Colony, Nure Madina Mahalla and Badshah Mia Brickfield) expressed their satisfaction in the village area as they had good working environment and sense of freedom in their work. However, FGD members from rest of the four areas (Roufabad Colony, Madarbari, 3 no. Jhil and Railway Colony) expressed satisfaction about income generation in the city areas due to lack of any land to cultivate and job opportunities in their ancestral lands. The FGD respondents also noted difficulties in securing livelihoods and access to skill-based training programs to migrants, due to the effects of climate change. The participants described the need for vocational training on the following skills: tailoring, cattle rearing, poultry farming, sewing, beauty parlors, computer skills and repairing of motor parts. They, however, said there were few job prospects and challenges they faced in getting employment because of their temporary status. The majority of participants did not have sufficient funds to initiate businesses or to earn extra money. Further, the lack of jobs security and safety issues occurred frequently. Access to livelihoods was hindered by a lack of documents (birth certificates, NID cards, etc.), local politics, corruption, lack of skill training, declining job opportunities, and low and irregular wages, particularly for those who become sick. Even though there were these challenges, no participants indicated they had engaged in development activities, and therefore, a missed opportunity to improve their livelihoods by engaging in development activities within their community and participation.

4.4.2 Housing Related Adaptation

Table 27: *Satisfaction Level of the Respondents about the House Ownership*

	Village			City		
	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
	%	%	%	%	%	%
Bad	0.0	0.3	0.2	17.8	30.3	24.7
Good	74.2	59.2	66.0	47.3	31.0	38.4
Neutral	5.0	5.1	5.1	33.6	37.0	35.4
Very bad	0.0	0.0	0.0	0.0	1.4	0.7
Very good	20.8	35.4	28.8	1.2	0.3	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Male respondents reported a good level of satisfaction in the village areas for their house ownership with 74.2% reporting a good level of satisfaction while 59.2% of the female respondents reported a good level of satisfaction, giving an overall satisfaction rate of 66.0%. In comparison, satisfaction rates were seen to be significantly lower in the city with 47.3% of males and 31.0% of females reporting satisfaction levels and a combined satisfaction rate of 38.4%. Importantly, there was a significant percentage of respondents in the city who felt that their house ownership was bad (17.8% of males and 30.3% of females) compared to the insignificant percentages that reported dissatisfaction with the house ownership in the village area.

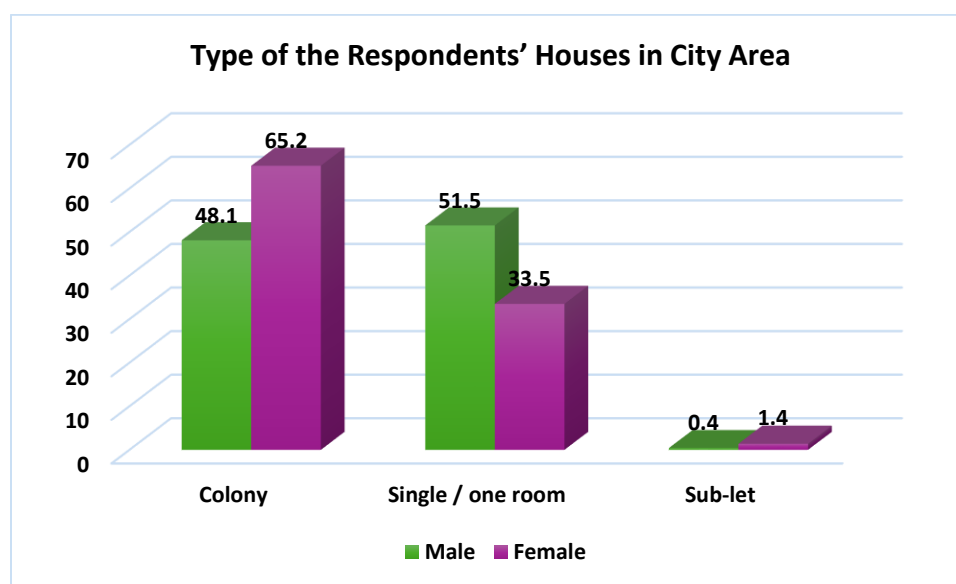


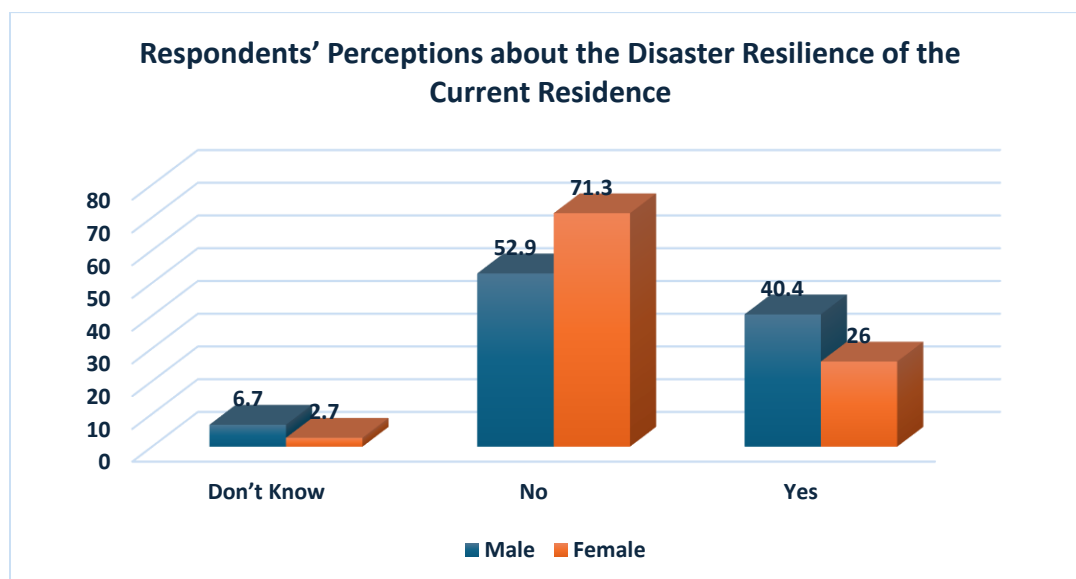
Figure 10: *Type of the Respondents' Houses in City Area*

The majority of male respondents (48.1%) stated to reside in colony houses, while a larger proportion of female respondents (65.2%) also said about staying in similar housing arrangements, resulting in an overall prevalence of 57.5%. In contrast, a considerable portion of both male (51.5%) and female (33.5%) respondents occupied single or one-room dwellings, contributing to an overall 41.6%. Sub-let housing arrangements represent a minimal fraction of the respondents' residences (0.9%).

Table 28. Size of the Respondents' Houses in the City Areas

	Male	Female	Total
	%	%	%
100 Sq Feet	28.0	42.9	36.1
150 - 200 Sq Feet	3.8	12.2	8.4
150 to 200 Sq Feet	24.7	29.9	27.5
200 - 250 sq feet	0.4	0.3	0.4
200 to 250 Sq Feet	28.9	11.9	19.5
Above 250 Sq Feet	14.2	2.7	8.1
Total	100.0	100.0	100.0

The most prevalent house size among male respondents is in the range of 200 to 250 square feet, constituting 28.9% of the total, while for female respondents, the majority reside in houses of 100 square feet, accounting for 42.9%. Interestingly, a significant proportion of both male and female respondents stated to occupy houses ranging from 150 to 200 square feet, with 24.7% and 29.9% respectively.



N.B: Multiple Answer Considered

Figure 11: Respondents' Perceptions about the Disaster Resilience of the Current Residence

Most male (52.9%) and female (71.3%) respondents had a negative perception of the resilience of their dwellings, giving a combined score of 63.1%. In contrast, 40.4% of males and 26.0% of females were confident that their houses were disaster resistant, for a total incidence of 32.4%. A small proportion of males (6.7%) and females (2.7%) said that they are uncertain about the ability of their dwellings to withstand the effects of disaster.

Analysis of the Findings:

Data for migrants whose migration was linked to climate change shows that there is a significant change in the migrants' housing situation and satisfaction with the place of relocation from ancestral villages to urban areas, especially Chattogram city. In village areas, most of the participants owned their own houses, with nearly all reporting ownership or possession. But when displaced, a large percentage was forced into rental accommodations in the city. This shift reflects the challenges of the respondents in obtaining stable housing in the city as a migrant induced by climate change. It shows the climate induced migrants are vulnerable to housing insecurity and there is a necessity to address their housing needs in the urban areas of Chattogram through targeted actions.

Besides, there is a wide difference between the satisfaction of people with house ownership in the village and city. While a substantial majority (66.0%) expressed satisfaction with village housing, this sentiment notably declined in the city (38.4%), with a considerable portion perceiving their housing situation as bad (24.7%). There was a significantly higher dissatisfaction in the city, especially among females. This gap highlights the struggles migrants face when living in urban housing environments, such as security of tenure, housing quality and adequacy.

There is a significant variability and challenge in terms of the types and sizes of houses where the respondents reside in urban areas. While a majority reside in colony houses (57.5%), a considerable portion occupies single or one-room dwellings, particularly males. This reflects the high density of urban climate induced migrants in slums which consequently makes space, ventilation and privacy difficult to achieve. Furthermore, the results with regard to house size highlight the limited space for climate induced migrants, and many of the migrants live in small houses exacerbating the problem of overcrowding and poor living conditions.

The problems encountered by the climate induced migrants living in slum housing in urban Chattogram, are diverse and multifaceted ranging from land dispute to eviction, small size of house, vulnerability to climate hazard etc. The challenges highlight the need for targeted interventions to enhance housing conditions and resilience of vulnerable groups in cities. To address these issues, the respondents suggested several solutions: to make the slums owner, raise the height of the house floor, introduce room rent control, and suggest structural improvement for residents to make the house safe and comfortable to live in. The solutions proposed here emphasize the need to address both structural and systemic challenges in seeking sustainable and resilient housing for climate migrants in cities. Furthermore, the respondents' awareness of climate change or disaster resilient house (such as being resistant to fire hazard, landslide,

adequate ventilation, etc.) highlight the significance of structural aspects and adaptation coping within the context of building resilient housing and reducing the impact of climate change hazards. Majority of the respondents also expressed that they did not consider their current residence in the urban slums in Chattogram city as disaster resilient (63.1%).

4.4.3 Safe Health-Related Adaptability

Table 29: Satisfaction Level of the Respondents about Receiving Medical Care

	Village			City		
	Male	Female	Total	Male	Female	Total
Bad	1.7	4.4	3.2	0.4	1.4	0.9
Good	49.6	47.8	48.5	66.4	63.1	64.6
Neutral	47.9	45.5	46.7	19.3	13.2	15.9
Very good	0.8	2.4	1.7	13.9	22.4	18.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

It is observed that both in village area and city area, most of the respondents said that the medical care seemed ‘good’ to them, contributing to 48.5% and 64.6% of the respondents accordingly indicating decreasing satisfaction level in comparison to villages. Interestingly, in city areas, about 18.5% of the respondents were found to state ‘very good’ with their medical care service. It indicates that the medical care facilities were found to be better in city areas than village areas.

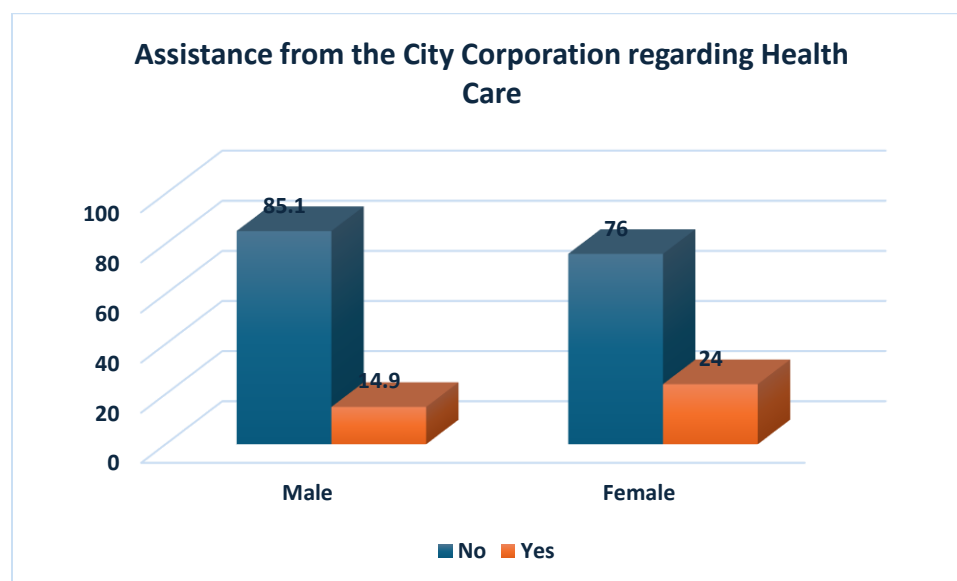


Figure 12: Assistance from the City Corporation regarding Health Care

About 80% of the respondents said that they did not receive any assistance from the city corporation regarding healthcare. Only about 19.9% of the participants stated to have such assistance.

Table 30: Major Barriers Accessing Medical Care in Urban Areas

	Percentage
Increase in drug prices	30.4
High fees of registered doctors	22.2
Costs related to diagnosis are high	17.5
Long waits in outpatient departments	12.9
City Corporation health centers are far from slums	8.4
Hospital accommodation/seat shortage	8.1
Others	0.5
Total	100.0

N.B: Multiple Answer Considered

The highest percentage, representing 30.4% of respondents, indicated that the rising cost of drugs is a major problem, which means that financial pressure is a challenge to obtaining the required drugs. Close behind these were high cost of procedures by registered doctors (22.2%), which emphasized the affordability problem in accessing professional health services. Also, 17.5% stated that medical diagnosis cost is high. 12.9% of respondents commented on long OPD waiting periods. 8.4% of the respondents mentioned the distance of City Corporation health centers from slum areas.

Table 31: Ways of Addressing Barriers to Medical Care

	Percentage
Providing free health care or medicine to slum dwellers	26.8
Regular spraying of mosquito repellents	16.5
Establishment of separate health care corner for poor or slum dwellers in hospitals	12.1
Establishment of satellite community clinics	11.0
TCB/ Fair Price/ Mobile Goods Distribution	6.6
Proper waste management	6.3
Carrying out awareness activities	3.6
Wash hands with soap before eating	3.3
Improving sewage system	3.0
Not living in hazardous areas	2.4
Fresh water supply	2.1
Using hygienic toilets	2.0
Washing hands with soap after using the toilet	2.0
Using sandals in the toilet	1.0
Raising the floor of the toilet, so that it does not get flooded	0.8
Others	0.5
Total	100.0

N.B: Multiple Answer Considered

Table 31 outlines various strategies for addressing barriers to medical care, particularly targeting slum dwellers and vulnerable populations. The most notable one, used by 26.8% of the respondents, is free health care or medicine in slum areas. In addition, it was recommended that frequent spraying of mosquito repellents should be carried out as an important step and 16.5 % of the respondents recognized the importance of mosquito repellents for prevention of vector borne diseases. The introduction of separate healthcare corners for the poor/slum dwellers in hospitals was observed by 12.1% of the respondents who targeted to address the healthcare needs of the poor/slum dwellers. In addition, other strategies were put in place, such as, proper waste management, and awareness activities (11.0%). Prevention of disease spread through hygiene-related interventions, including handwashing with soap prior to eating, improvements of sewage systems, and promotion of use of hygienic toilets were also emphasized.

Analysis of the Findings:

The findings on safe health-related adaptability sheds light on the patterns of seeking medical care among climate induced migrant respondents in both village and city settings, as well as their satisfaction levels and the prevalent health challenges they face. It is notable that while satisfaction levels regarding medical care were relatively high in city areas in Chattogram, they declined in opinions in case of ancestral village areas, suggesting disparities in healthcare access and quality between rural and urban settings. All of the FGD participants also said that there was vaccination programs conducted in the slums. However, in some cases they have to pay whereas they did not have to pay earlier for vaccination.

It is noted that 80% of the respondents said that they did not receive any assistance from the city corporation regarding healthcare which indicates a major lack in getting services from the Chattogram City Corporation regarding healthcare in case of climate induced migrant slum dwellers. FGD findings also indicated that mostly, there are no healthcare facilities to receive from the city corporation. Only few participants said in two FGDs said that they have a nearby clinic only to get urgent healthcare facilities or delivery babies.

Constraints including increased drug prices (30.4%) and high fees charged by registered doctors (22.2%), emerged as major barriers to accessing medical care in urban areas. Long waiting times and the distance of healthcare facilities from slum areas further compounded these challenges. High medical costs, no nearby hospital or doctor, no free or low-cost healthcare facilities available are also the concerns mentioned by the participants during the FGDs.

Respondents identified several strategies for addressing these barriers, including providing free healthcare or medicine (26.8%), regular spraying of mosquito repellents, and establishing separate healthcare corners for marginalized communities within hospitals.

4.4.4 Child Education Related Adaptability

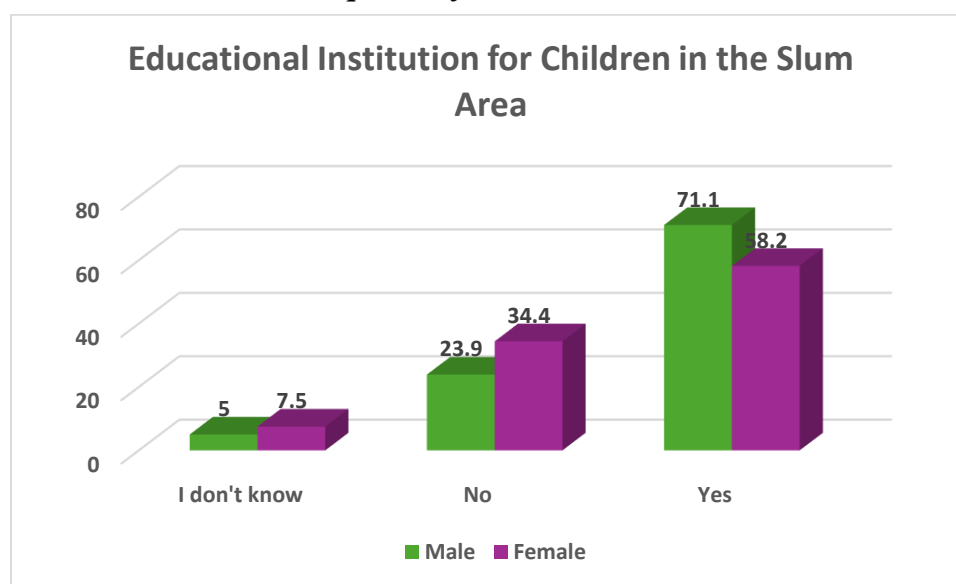
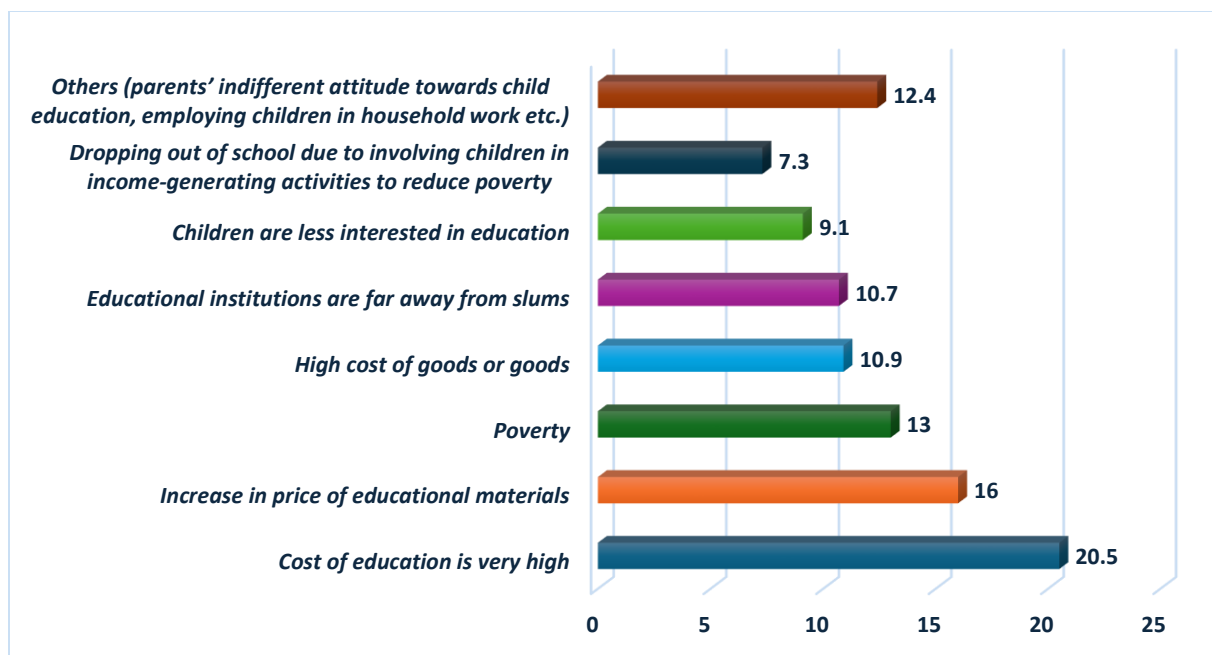


Figure 13: **Table 43: Educational Institution for Children in the Slum Area**

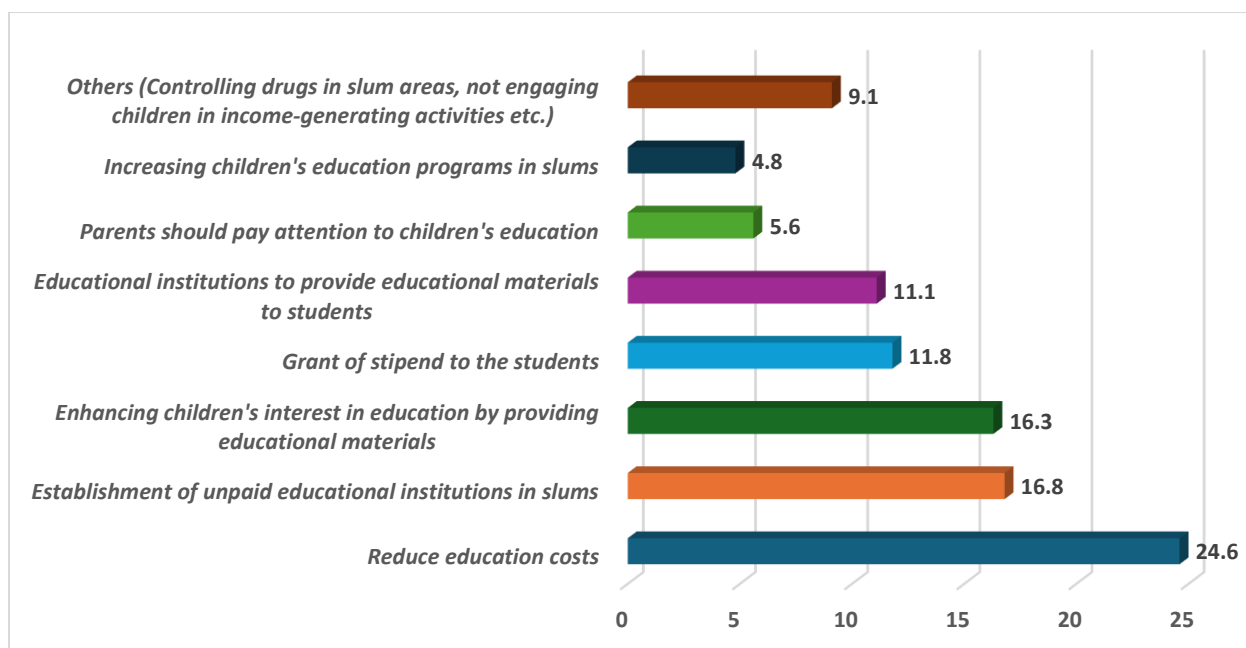
About 64.0% of the respondents confirmed the existence of educational institutions for children in the slum areas. Specifically, 71.1% of males and 58.2% of females reported the presence of such institutions. However, a notable proportion of respondents, totaling 29.6%, indicated the absence of educational institutions for children in slum areas. While the respondents were asked about the main barriers to ensuring children's education in slum areas, about 20.5% of them mentioned the high cost of education. Another 16% of the participants noted increase in price of educational materials. Other barriers they cited were poverty (13.0%), high cost of goods (10.9%), distance of educational institutions (10.7%) and so on.



N.B: Multiple Answer Considered

Figure 14: *Main Barriers to Children's Education in Slum Areas*

About 20.5% of the respondents stated high education costs and increased prices of educational materials (16.0%) as the primary barriers for getting their children to education facilities which mainly indicate the financial barriers. Other challenges included poverty, distance to educational institutions, and children's engagement in income-generating activities, reflecting broader socio-economic constraints that hinder educational access and participation.



N.B: Multiple Answer Considered

Figure 15: *Ways of Solving Obstacles towards Children's Education in Slum Areas*

The most prevalent approach, cited by 24.6% of respondents, involves reducing education costs, reflecting the financial barriers faced by families in accessing education. 16.8% of the respondents point to the existence of free institutions for education in slum areas which purpose is to offer education that is not limited by financial means. 16.3% of the respondents highlight that they are interested in strengthening children's interest in learning through providing educational materials. Other strategies involve paying stipends to students (11.8%), making sure that educational institutions will provide the required materials (11.1%), and involving parents in children's education (5.6%). In addition, the respondents mentioned an increase in education programs in slums, the restriction of the children from doing income generative activities, project-based education program managed by non-governmental organizations, etc.

Analysis of the Findings:

The findings of child education adaptability of climate induced displaced respondents indicate both the prevailing situation and possible solutions to enhance educational access and quality of children of climate induced migrant respondents in Chattogram city. Most of the respondents (64.0%) agree that educational institutions exist in slum areas. Yet a considerable number (29.6%) still reported the lack of such institutions, highlighting the lack of educational infrastructure that needs to be addressed.

High education fees (20.5%) and higher prices of educational materials (16.0%) were referred to by a large number of parents/carers as financial barriers to a child's education in the slum areas. Other obstacles included poverty, distance to educational institutions and children's involvement in income-generating activities, which are general socio-economic hardships that pose a significant barrier to education access and participation. To overcome these challenges, a number of strategies have been suggested such as lowering educational costs (24.6%), setting up unpaid educational institutions (16.8%) and improving children's interest in education by providing material (16.3%). Furthermore, efforts like making financial allowances to children, ensuring educational institutions supply required teaching materials and promoting parental engagement in their children's studies are noted as necessary for overcoming challenges and enhancing educational results in slums.

4.4.5 Water and Sanitation Related Adaptability

Table 32: *Types of Drinking Water Supply (Village & City Area)*

	Village Area	City Area
Tube-well	53.7	46.4
Pipeline	0.2	43.6
Pond	15.5	0.3
River	14.1	0.2
Well	9.7	0.3
Rainwater	4.2	0.8
Others	2.5	8.3
Total	100.0	100.0

N.B: Multiple Answer Considered

From the findings shown in Table 32, the majority of the participants stated that the tube-well is the primary source for drinking water supply both for their village before climate induced migration (53.7%) and in city areas after climate induced migration (46.4%). It is also worth mentioning that pipeline came out as another major source of drinking water mentioned by about 43.6% of the participants. Although ponds (15.5%) and rivers (14.1%) were the drinking water sources for some participants back in the village, these two sources were not the major sources in case of city areas to collect drinking water.

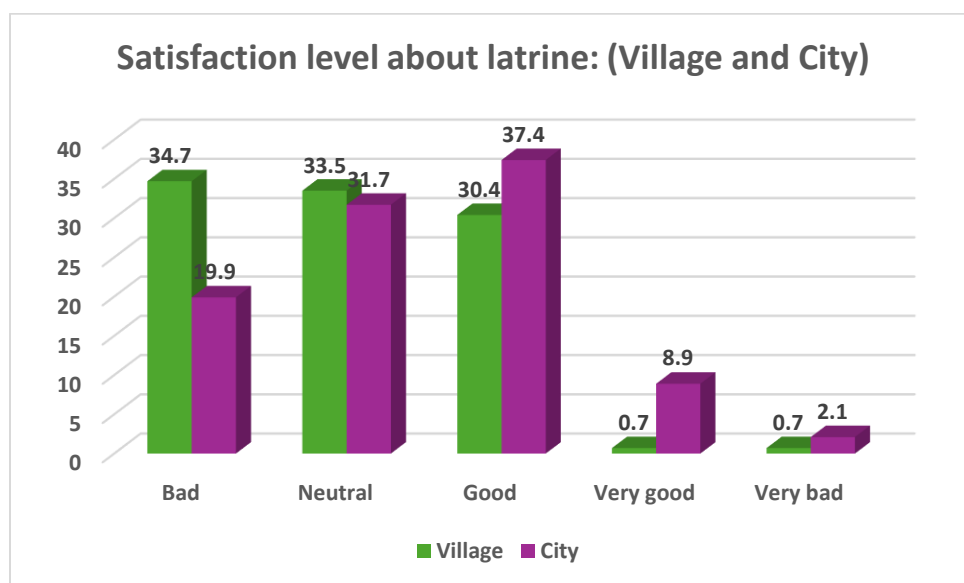


Figure 16: *Satisfaction level about latrine: (Village and City)*

A majority of the respondents expressed a neutral satisfaction with the use of latrines in villages, 33.5%. This is closely followed by those who rated their satisfaction as bad, which amounted to 34.7% of the respondents. Also, 30.4% indicated that they were satisfied with a good level and few indicated very good (0.7%) or very bad (0.7%). In city areas, the distribution of satisfaction levels differs slightly. 37.4% of respondents indicated good satisfaction level. The next largest

group, 31.7%, rated their satisfaction as neutral, followed by those rating their satisfaction as low, which make up 11.7%. Fewer reported poor satisfaction (19.9%) and a significant number reported very good satisfaction (8.9%). The proportion of those who judge their satisfaction very bad (2.1%) is very low.

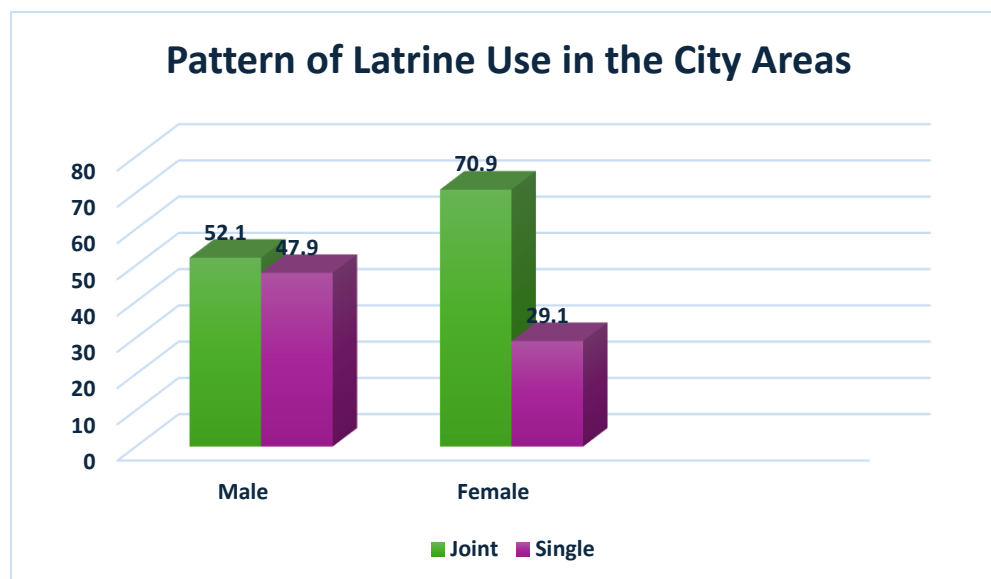


Figure 17: Pattern of Latrine Use in the City Areas

Among male respondents, 52.1% reported using joint latrines, whereas 47.9% reported using single latrines. However, a significantly higher proportion 70.9% of female respondents reported using joint latrines, while 29.1% reported using single latrines. The average number of respondents (62.6%) said they used joint latrines, while 37.4% used single latrines. The results indicate that the use of joint latrines in urban area was higher than the use of single latrine, especially females than males.

Analysis of the Findings:

The results of drinking water supply related adaptability provide information about drinking water sources, satisfaction with the drinking water sources, perceived water quality and purification techniques used by the people in the village and city areas. The main sources of drinking water also differ between village and city areas, tube-wells are dominant in both areas but in village areas (53.7%) are a bit more than in city areas (46.4%). Further, it is found that pipelines are also a great source in the urban regions (43.6%) in the respondent's opinion. On the other hand, natural water supply sources were identified in greater numbers in the village areas and were much less used in the city areas, suggesting the trend towards piped water supply sources as urbanization progresses.

The data analysis on sanitary latrines related adaptability offers insights on the types of latrines used, satisfaction with latrines, latrine use, footwear use, and waste disposal practices by CIMP participants in both villages and cities. Joint latrines (62.6%) were the most prevalent type of latrines used by the climate-induced displaced respondents in city areas. Only 37.4% of the

respondents said they were able to access single latrines. The data indicates mixed feelings about latrine facilities when it comes to satisfaction. Respondents also recalled less favorably the facilities they had in the village, with more saying they were bad or neutral, while in city areas, more respondents said they were good or neutral. This implies that even though there are improvements in the latrine facilities in urban areas, there is still potential for further improvement to satisfy users' expectations and preferences.

The FGD participants' responses also show that there is a difference in the use of latrines between male and female respondents in the city areas; there is a higher proportion of female respondents using joint latrines than male respondents. This suggests that there may be gender differences in access to and use of sanitation facilities that could require specific attention to ensure that access to sanitation is gender-balanced for all. Moreover, majority of the participants reported the use of sandals in the latrines, a good practice for hygiene in order to reduce the transmission of diseases and infections. It was noted, however, that a significant percentage of participants, especially the females did not wear sandals, which could be a point of intervention in a hygiene promotion and education campaign.

In general, the results highlight the need for enhancing sanitation facilities and culture so as to achieve safe and dignified sanitation facilities for climate induced migrants in the urban areas of Chattogram city. Furthermore, promoting equal access and use of sanitation facilities should be given more weight to achieve gender equality.

4.4.6 Safety and Security Related Adaptability

Table 33: Pattern of Safety and Security: Rural vs. Urban

	Village	City
Vulnerable to natural disasters	83.4	28.9
Influence of local politics	5.7	19.0
Violence against women and children	5.1	15.3
Abduction of women and children	1.7	4.9
Effects of muscle strength/muscle	1.5	3.8
Eve teasing	1.4	12.2
Others	1.2	6.6
Drug addiction	0	9.4
Total	100.0	100.0

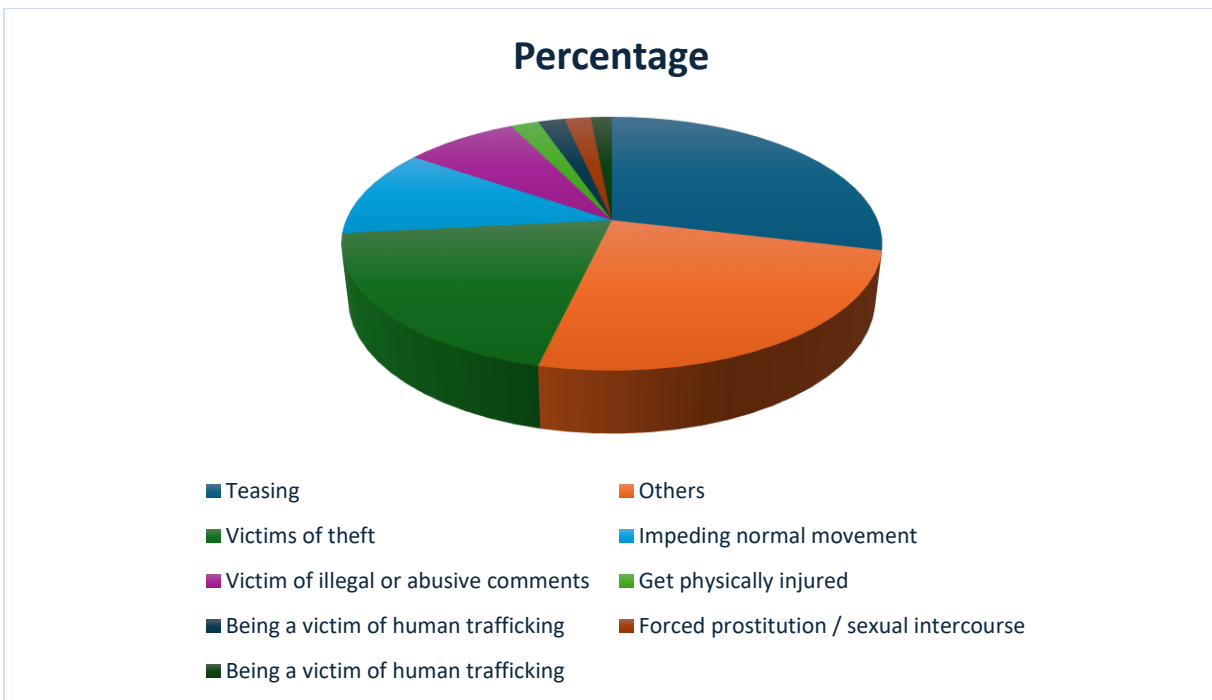
N.B: Multiple Answer Considered

It is interesting to observe that over 80% of the respondents noted natural disaster related vulnerability as their safety and security concern whereas in case of city areas the concerns mentioned were diverse such as natural disasters (28.9%), influence of local politics (19.0%), eve-teasing (12.2%), violence against women and children (15.3%), drug addiction (9.4%) etc.

Table 34: *Satisfaction Level of the Participants about Getting Safety and Security*

	Village			City		
	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Extremely unsecured	0.0	0.0	0.0	0.0	0.3	0.2
Not secured	51.5	33.3	41.4	58.8	61.6	60.2
Neutral	15.8	34.0	26.0	9.2	21.4	16.1
Secured	32.4	32.0	32.1	30.4	15.7	22.2
Very secured	0.4	0.7	0.6	1.7	1.0	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

This data shows that the satisfaction of participants in regard to safety and security was not greater in both the village and the urban areas. In villages, most male and female participants felt not secured (41.4%) and neutral (26.0%), and fewer felt secure (32.1%) or very secure. A significant proportion of both males and females indicated they were not feeling secure (60.2%) and less indicated feeling neutral (16.1%) or secure (22.2%) in the city areas.

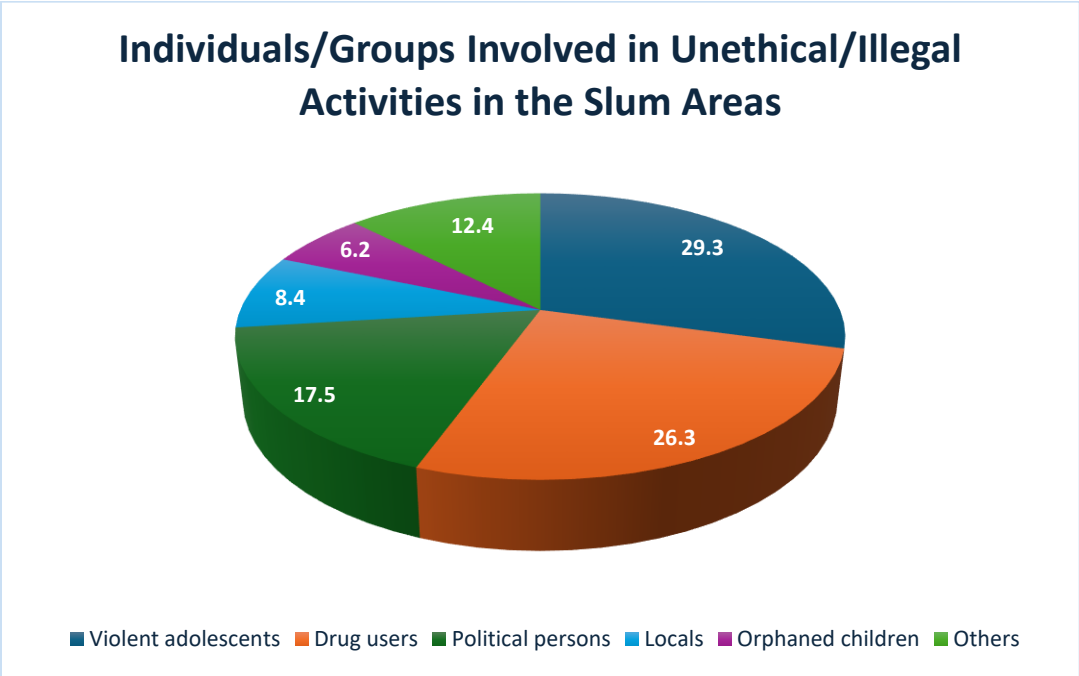


N.B: Multiple Answer Considered

Figure 18: *Types of Violence/Harassment Women Faced During Mobility*

Teasing was the most widespread form of violence, accounting for 28.8% of the violence reported. Theft victims made up 19.7% of the incidents and 11.3% of the participants reported incidents that involved impeding normal movement. In addition, 8.1% of women said they had been the

subject of illegal or abusive comments and approximately 2.0% of the participants said they had suffered physical injuries.



N.B: Multiple Answer Considered

Figure 19: *Individuals/Groups Involved in Unethical/Illegal Activities in the Slum Areas*

The data presented here show the range of individuals or groups perceived by the participants to be involved in unethical or illegal activities within slum areas, including adolescents, drug users, political figures, locals, and orphaned children. Most participants pointed to violent adolescents in their answers as being engaged in such activities, with 29.3% of all respondents mentioning them. Another about 26.3% of respondents reported the involvement of drug users in unethical or illegal activities. 17.5% of the respondents perceived political persons to be involved in illegal activities.

Analysis of the Findings:

The analysis of safety and security related adaptability among climate migrant participants sheds light on the pattern of safety and security varied by their ancestral village and urban living areas. Interestingly, more than 80% of the respondents stated being vulnerable to the natural disasters whereas now influence of local politics, violence against women and children, sexual harassment became more prevalent after coming to the city areas, along with natural disasters vulnerability. It seemed that women and children have become more insecure and vulnerable in the city than the village as the data show.

It is evident from the findings that satisfaction levels regarding safety and security were generally low, with a significant proportion of participants in both village and city areas reporting feeling either not secured (higher percentage in city areas than village, 60.2%) or neutral. Many respondents expressed their opinion to be 'secured' more in their ancestral villages than the city areas comparatively. This suggests a widespread perception of insecurity among climate-induced migrants, highlighting the need for interventions to address safety concerns and improve the overall sense of security in urban settings. FGD findings also supported same as quantitative findings.

Moreover, experiences of violence or harassment during mobility were reported by a significant number of female participants, with teasing (28.8%) and theft (24.9%) being the most common types of incidents. These findings highlight the need for measures to ensure the safety and security of women during mobility and within urban environments.

In the slum areas, violent adolescents (29.3%), drug users (26.3%), political persons (17.5%) were found mostly involved in the unethical/illegal activities in the slum areas according to the respondents. The measures taken to resolve conflicts or problems within slum areas indicate that participants primarily seek help from the slum society, slum owner, or slum 'sardar' or manager. This suggests the importance of community-based approaches to conflict resolution and problem-solving within slum communities, involving both formal and informal leaders and stakeholders. Overall, the findings highlighted the complex nature of safety and security challenges faced by climate induced migrants in urban settings of Chattogram.

4.5 Roles of Various Stakeholders (Government, NGOs, and Community-based Organizations) in Facilitating Adaptation and Resilience among Climate-Induced Migrants in Urban Areas

In facilitating adaptation and resilience among climate-induced migrants in urban city areas, various stakeholders play integral roles. Governments are primarily responsible for implementing policies and providing resources to support climate-induced migrants for their sustainable adaptation. NGOs complement these efforts by delivering essential services, raising awareness, and advocating for their rights. Community-based organizations engage directly with affected communities, empowering them to develop localized adaptation strategies and fostering social cohesion. This sub-section highlights the study participants' perceptions about the roles of various stakeholders, e.g. government, NGOs or community-based organizations, regarding ensuring their civic rights in response to assisting them adapting resiliently in Chattogram City.

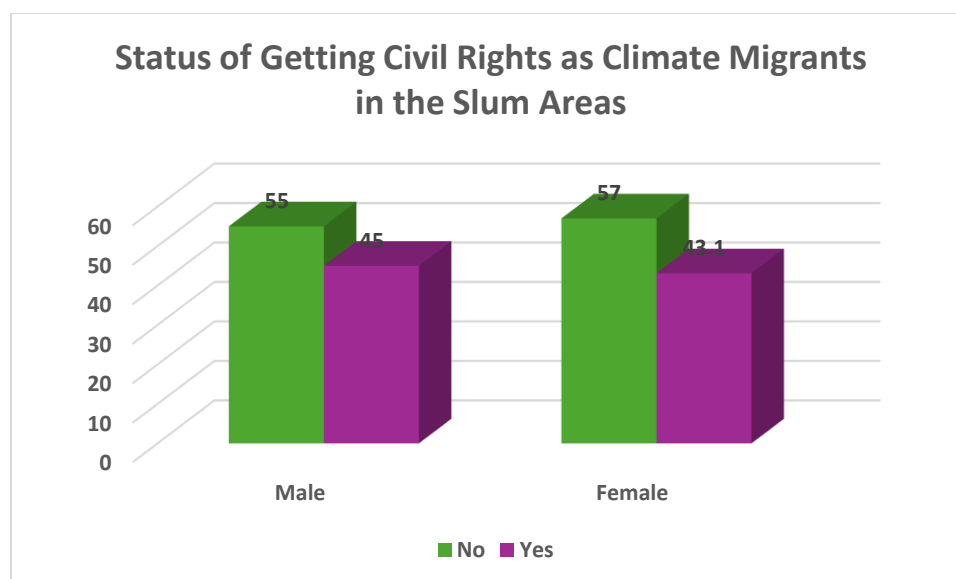


Figure 20: Status of Getting Civil Rights as Climate Migrants in the Slum Areas

Overall, among all respondents, even though about 44.0% reported having civil rights, more than half of the participants (56.0%) reported not having them. Among male respondents, 45.0% reported enjoying civil rights, while 55.0% reported not having achieved them. Similarly, among female respondents, 43.1% reported having civil rights, while 57.0% reported not having attained them. Some of the causes mentioned by the climate migrant participants for not having the civic rights included: not advocating for their rights, corruption, influence of local politics, nepotism, more helpless people than the service limit, lack of education and awareness etc.

Table 35: Allowance Giving Programs in the Slum Areas

	Male	Female	Total
Don't Know	10.9	2.7	6.3
No	37.7	59.8	49.8
Yes	51.5	37.5	43.8
Total	100.0	100.0	100.0

The participants were asked whether there is any allowance giving programs continuing in the slum areas for them such as allowance for the differently able persons, allowance for the elderly people, poverty allowance (VGF card, VGD card etc.), allowance for the freedom fighters and so on. Table 35 presents data on allowance giving programs in slum areas. Nearly half of the respondents (49.8%) stated that there was not any allowance giving programs in the slum areas including 37.7% males and 59.8% females where female participants responses towards negative was found higher in percentage. On the other hand, a significant portion of the participants (43.8%) reported the existence of allowance giving programs in the slum area. About 6.3% of the participants did not know about such allowance giving programs, while 49.8% reported the absence of such programs, and 6.3% stated they did not know.

Table 36: Having Eligible Family Members in the Participants' Families for Getting Allowance

	Male	Female	Total
	%	%	%
Yes	47.3	45.8	46.3
Don't know	30.4	26.1	28.0
No	22.4	28.1	25.7
Total	100.0	100.0	100.0

Among all respondents, 46.3% reported having eligible family members for receiving allowances, while 25.7% reported not having eligible family members, and 28.0% stated they did not know. Among male respondents, 47.3% reported having eligible family members for receiving allowances, while 22.4% reported not having eligible family members, and 30.4% stated they did not know. Similarly, among female respondents, 45.8% reported having eligible family members, while 28.1% reported not having eligible family members, and 26.1% stated they did not know. The respondents who said they were having eligible family members to get allowance, also mentioned that they did not receive such allowance. Reasons for such stated by them were not advocating for them to get allowance, nepotism, corruption, local politics, lack of citizenship certificate, lack of awareness about getting such allowance etc.

Table 37: Public, Private, or Community-based Organizations Working to Enhance the Adaptation Process in Slum Areas

	Male	Female	Total
	%	%	%
No	69.6	59.9	64.2
Yes	19.6	38.0	29.8
Don't know	10.8	2.0	6.0
Total	100.0	100.0	100.0

Nearly 65% of the respondents reported the absence of such organizations working for them, including 69.6% male and 59.9% female respondents. Only about 29.8% of the respondents were found to have said 'Yes' regarding this. When they were asked what type of work they did for them, they mentioned food distribution, free medical healthcare services, education (morning to afternoon free school), free clothes, awareness creation during disasters etc.

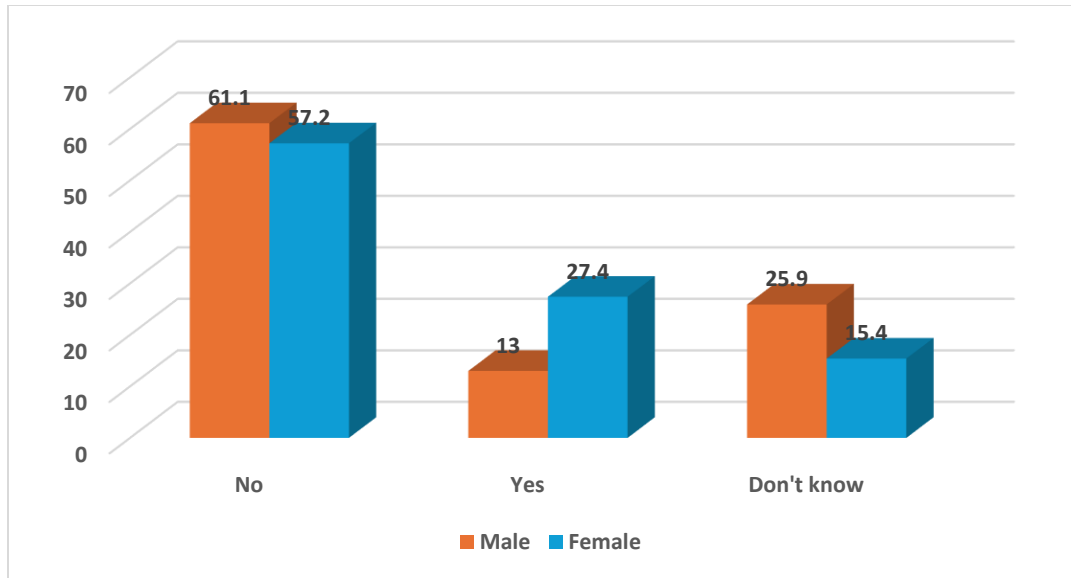
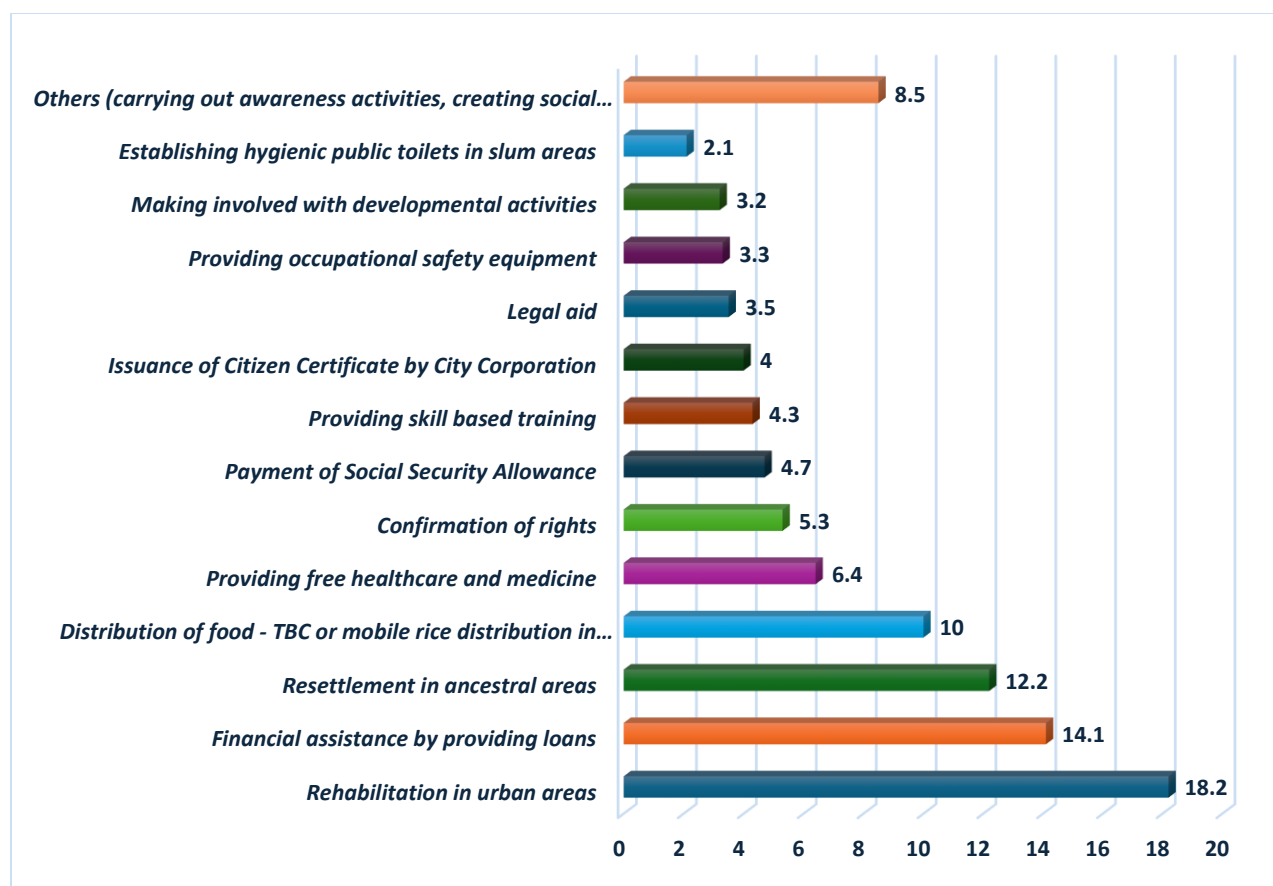


Figure 21: Government, Private or Community-based Organizations Working to Enhance Climate Induced Migrants' Capacity in Slum Areas

About 58.8% of the participants indicated that no government, private or community-based organizations working to build the participants' capacity in slum areas. Only about 20.9% of the respondents cited 'Yes' in this regard who mentioned some of the activities done by such organizations for capacity building of the climate migrants in slum areas such as providing loan or capital, providing employment, giving occupational safety equipment, raising awareness on environmental conservation, listing with government offices for giving social benefits etc.



N.B: Multiple Answer Considered

Figure 22: Participants' Expectations from the Government and Non-government Organizations

Figure 22 summarizes the expectations of government and non-governmental organization climate migrant participants. Support in transition to new housing environment is the most common expectation (18.2% of participants). Another key expectation was financial support in the form of loans, as 14.1% of the participants indicated that they needed economic support. The resettlement in ancestral areas is cited by 12.2% of participants. Other expectations include distribution of food, free health care, and confirmation of rights, which focused on basic needs and rights. Besides, participants believed that services like social support allowances, citizens certificate, skill based trainings and legal aid are essential in ensuring social support and empowerment. Infrastructure expectations consist of hygienic public toilets, better fresh water supply, which suggests improvements in living conditions. In addition, the participants requested DRR measures, kid's education and protection of vulnerable groups like women and children.

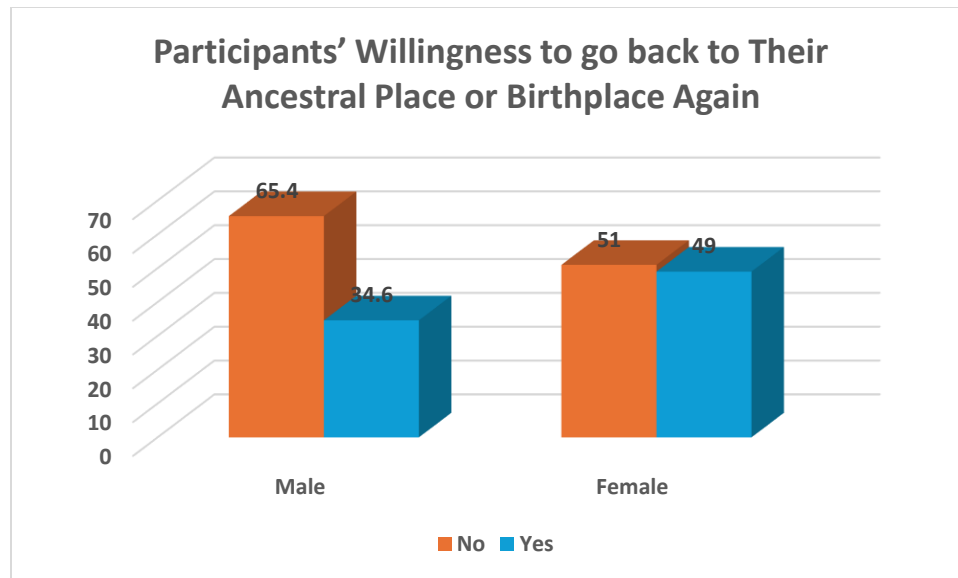


Figure 23: Participants' Willingness to go back to Their Ancestral Place or Birthplace Again

Interestingly, more than half of the climate induced migrant participants (57.3%) expressed their unwillingness to go back to their ancestral places. The reasons they showed were there was no ancestral house or land left for disasters, becoming habituated living in the city, having a community in the city, more income in the city, lack of job opportunities in village areas, having disaster prone areas etc. However, the participants who said 'Yes' (42.7%) in terms of citing their wanting to go back to their villages said so for the kinship they had back in their villages and the mental connection they felt, high health risk in the city, difficulty in surviving in the city because of high expenditure, having own piece of land back there etc.

Analysis of the Findings:

The analysis of the roles of various stakeholders, including government, NGOs, and community-based organizations, in facilitating adaptation and resilience among climate induced migrants in urban city corporation areas in Chattogram reveals significant insights into the challenges faced by climate induced migrants and the condition of the efforts made by different stakeholders to address them.

Firstly, the findings highlight the status of climate induced migrants in slum areas regarding their attainment of civil rights. A significant portion, specifically more than half of the participants (56.0%), reported not having achieved civil rights, citing reasons such as lack of advocacy, corruption, local politics, and nepotism. This indicates systemic challenges in ensuring the rights and entitlements of climate induced migrants, the need for government intervention and advocacy efforts by NGOs and community-based organizations. The summary also encapsulates the grievances expressed by participants during Focus Group Discussions (FGDs) in Chattogram city. Firstly, all participants highlighted their lack of civic rights due to being

landless and temporary residents, leading to harassment when seeking essential documents such as birth certificates, NID, or citizenship certificates. Additionally, disparities were noted in the distribution of TCB cards, with some receiving them while others did not, particularly affecting middlepersons who did not receive allowances or assistance directly. Furthermore, the absence of access to clean drinking water and challenges in burying deceased family members were cited as pressing concerns. Lastly, the absence of VGF cards further compounded the socioeconomic challenges faced by the participants.

Moreover, the data sheds light on the presence of allowance giving programs in slum areas, with a substantial proportion of participants reporting the absence of such programs (49.8%). This highlights gaps in social welfare provisions for them in the slum areas, particularly in accessing financial assistance and other essential services. Additionally, the data reveals challenges in accessing allowances, with some participants reporting not receiving them despite having eligible family members (46.3%), citing reasons such as corruption, lack of advocacy, and lack of awareness about eligibility criteria. About 28.0% of the respondents also did not even know or were not aware whether they had any eligible family member in their families to receive any allowance. Furthermore, the majority of the respondents (64.2%) stated the limited presence of public, private, or community-based organizations working to enhance the adaptation process in slum areas, increasing their capacities. While some organizations were identified, a majority of participants reported the absence of such entities, indicating a lack of support for climate induced migrants in accessing essential services and building resilience. FGD findings also show the same findings through the discussion responses as well. However, among those organizations that were present, participants cited various activities such as food distribution, healthcare services, education, and disaster awareness campaigns, highlighting the diverse ways in which stakeholders are contributing to adaptation efforts.

Additionally, participants expressed a range of expectations, including rehabilitation in urban areas, financial assistance, resettlement in ancestral areas, and distribution of essential resources. These expectations reflect the urgent need for comprehensive support measures to address the multifaceted challenges faced by climate induced migrants in urban areas, including livelihood opportunities, social protection, and access to basic services.

From the qualitative FGD findings, the main problems identified in the slum/colony areas include cramped living conditions, inadequate waste management and sewerage systems, high mosquito infestation, susceptibility to tidal surges leading to inundation, and conflicts over land ownership resulting in fear of eviction among climate migrant residents. Additionally, the high cost of living, lack of basic civic facilities such as gas, electricity, and water supply, restrictions on relatives staying due to landlord policies, and compromised safety and security for women were highlighted. Moreover, limited freedom of movement for women, the risky environment for raising children, and concerns about landslides further exacerbate the challenges faced by residents. To address these issues, several solutions were proposed, including granting citizenship rights to facilitate the acquisition of necessary documents, rehabilitating climate migrant populations with permanent addresses, streamlining government support processes to

prevent middleperson interference, providing skill training and job opportunities for income generation, offering small capital for starting businesses, and installing solar panels to address electricity shortages. Additionally, ensuring minimum civic rights for climate migrant populations in Chattogram city was emphasized to improve their overall quality of life and integration into the community.

However, despite these connections, a significant proportion of participants expressed unwillingness to go back to their ancestral places (57.3%), citing reasons such as lack of housing and land, used-to-adaptation to urban life, and economic opportunities in cities. This highlights the complex decision-making processes involved in climate induced migration and the challenges climate induced migrants face in reconciling their past with their present circumstances. Most of the FGD participants also said that they do not want to go back in their ancestral places because they lost everything there. Even though most of the participants are not satisfied with the living condition in the city area, they are here for income. They only want to go back to their ancestral place if they are provided permanent housing and livelihood opportunities in their point of origin. If government initiatives are taken for the climate induced migrants to ensure these facilities, they might think of going back to their ancestral places. Otherwise, most of them expressed their preference to stay in the city area for income, as discussed in the FGDs.

During the FGDs, the proposed solutions for addressing the challenges faced by climate induced migrants include collaborative efforts to rehabilitate them in preferred city or village areas, providing legal assistance for any legal issues, and establishing special mechanisms for obtaining essential documents such as NID cards and citizenship certificates. Other recommendations include establishing low-cost clinics and schools, conducting awareness campaigns to discourage early marriage of adolescent girls due to poverty, and ensuring fair distribution of support and assistance to those in genuine need. Additionally, initiatives to remove the fear of eviction among climate migrants in Chattogram city are essential.

Further insights from focus group discussions (FGDs) reveal that while some migrants have good relations with locals, others face discrimination and belittlement due to their status as poor and landless individuals displaced by river erosion. Although many migrants are dissatisfied with living conditions in the city, they remain there for income opportunities and express a desire to return to their ancestral places only if provided with permanent housing and livelihood opportunities. The provision of facilities such as permanent housing, livelihood opportunities, land cultivation, and animal husbandry could incentivize migrants to return to their ancestral places. Mixed opinions were expressed regarding income satisfaction, with some preferring village areas for their lower living costs, healthier environment, and greater safety, while others favor city areas for communication systems, diverse income opportunities, and adaptation to city lifestyles. Overall, satisfaction levels varied among participants, with factors such as living costs, work opportunities, safety, and lifestyle preferences influencing their perceptions of village and city areas.

4.6 Findings from Key Informant Interviews (KIIs)

1. Areas of Origin of the Climate Induced Migrants in Chattogram City and Climate Induced Migration Identification:

Most of the climate induced migrants living in the slum area of Chattogram city came from Barisal, Bhola, Comilla, and Noakhali who faced river erosion, and coastal hazards. Sea Level Rise (SLR), frequent cyclones, and floods, people were also stated by the KIIs as the reasons for CIMs' shifting towards city areas from the village areas. Within city, CIMs are often displaced due to landslides in hill-covered areas.

2. Hotspots and Impact Measurement:

The KII respondents indicated that the CIMs live sporadically in the city. According to the Forest and Development Officer from the Chattogram City Corporation, the CIMs in Chattogram city generally live in hilly forest land, vacant lands of Bangladesh Railway beside rail-lines in Dewanhat, Jhautola and Pahartoli areas, and alluvial areas. The population of the city was around 20 lacs which has increased up to 80 lacs due to this inflow. It has a significant impact on the environment and economy. The environmental carrying capacity has been overburdened and the population density is very unhealthy in the urban area. But some positive aspects are that these people are the workforce in Ready Made Garments industries and industrial sector.

All the KII interviewees said that the CIMs certainly impact on social, economic, environmental, and security issues in the city areas of Chattogram having both positive and negative impacts. However, negative impacts are significant.

2.1 Positive Impacts: CIMs processes the flow of formal and informal manpower. The formal workforce includes garment workers, petty or small business workers and development workers (construction workers), and informal manpower such as street vendors, floating traders, and hawkers sell daily commodities (people can easily purchase daily commodities such as vegetables, retail products, clothes, etc.). Furthermore, they establish a foliating marketing system in every street and “mohalla” (local hub of community) which means they gather the roadside with different types of daily goods on the van carts or temporary settings. As a result, local or adjacent people could purchase their daily products from them. Through this process, local or nearby people could easily buy fresh vegetables, fish, meat, retail products, clothes, and daily needs at relatively cheap prices.

2.2 Negative Impacts: Urban areas of Chattogram become overpopulated for CIMs. Urban watchdog bodies could not ensure utility services like shelter, gas, electricity, water, healthcare facilities, and employment opportunities for all. Besides, the security system in urban areas is disrupted. However, these people are newcomers to the city, with no shelter, food, employment opportunities, and insufficient capital and assets. In this situation, they are engaging in various types of illegal activities to ensure their needs.

One key informant interviewee from Chattogram Development Authority commented that as officers they practice and consider that "everyone has the right to enjoy a minimum standard of living and everyone has civil rights" and "we do not discriminate against people on the basis of their identity, we provide our services to all".

3. Challenges Faced by CIMs:

They face several challenges including living in congested rooms, lack of proper water and sanitation facilities, unhealthy environment, and inability to continue study due to poverty and so forth. As a newcomer, these people are deprived of shelter, food, employment opportunities, and insufficient capital and assets, and education for children, healthcare facilities, and security.

4. Facilities to be Provided to the CIMs for Adaptation:

While asked the KII respondents proposed some facilities that could be provided to the CIMs for better adapting in the city life of Chattogram. They mostly stressed on implementing awareness activities, for example, arranging sessions to improve their behavioral pattern for healthy lifestyle, campaign to stop child marriage, and arranging alternative income generation training for them to refrain them from criminal activities and so forth. Some of the KII responded that to ensure their civic rights, basic needs, and utility services, such as shelter, food, employment opportunities, education for children, health care facilities, and security, they need to undergo 'personal counseling' initially since CIMs are scared after they lose their wealth and identity back in their ancestral villages. They need to be made to realize that "they are not a threat in this city, they have a right to live here and enjoy a minimum standard of living like others."

5. Development Activities for the CIMs:

There is a dedicated department in the City Corporation to oversee slum related issues who work on health, WASH, education etc. The KII from Chattogram City Corporation (CCC) said that CCC have already initiated a house loan scheme under which 1000-1200 houses have been built. They also carry regular activities like drainage management and road management and provide shelter and food support during natural disasters and emergency situation. KII findings also showed that although CDA does not have any initiative directly, they are participating in different stakeholder meetings and advice to different non-state organizations who are working in urban slums such as JICA, UNDP, UNICEF, and so on. As per need, CDA provide technical support to different watchdog bodies, like CWASA, CCC, and LGED.

6. Organizational Considerations of Climate Change in the Activities:

The KII respondents acknowledge that climate change has crucial implications on urban system. For example, the city submerges frequently as a result of tidal flow. Hence, CCC established 6-7 sluice gate in the vulnerable drains, covers on open drain, set deep tubewells. They also claimed to initiate two treatment plants and dumping stations in Arefin Nagar and Hali Shahar to manage urban waste. The staffs collect waste from door to door. From the KIIs, the findings showed that

from the climate change point of view, CDA has implemented 90% of development works in this city. For instance, drafting a 'Master Plan' where every type of development task is referred in an inclusive way, drainage system plan for reducing the water logging in Chattogram city, developing Fauzdarhat to CTG port city connecting or link road (according to the KII, it reduces the severity of catastrophic storm surge, cyclone, and coastal flooding, protects city and agricultural land, reduces traffic congestion, accelerating trades Chattogram port to other districts), building Kalurghat bridge to Karnafully (Shah Amanat Bridge) link road (under construction), building Saltkhola women dormitory (for housing purpose of garment women workers- climate induced migrants are often the employee of readymade garments industries), constructing nearly 18 sluice gates on the sea and river sides (protects city and business hub from the natural disasters), Karnafully river dredging (for river current, navigation and trade) purpose etc. The KII respondents also pointed out having the setback system while building any infrastructure where every infrastructure should have fire extinguishers to minimize disaster risks, protecting urban water bodies, keeping rainwater harvesting system in the slums for having quality drinking water etc.

7. Initiatives for Climate Induced Migrants:

The KII respondents from CCC mentioned about already having helped CIMs in the slum areas to build houses through loans. They also proposed expanding city territory, increasing ward number and so on. In terms of ensuring civic rights to the CIMs, the KII respondents claimed that the CCC staff help them to get citizenship certificates. Even they help them to fill-up it when anyone cannot do that due to illiteracy. They also stated to provide vocational trainings, such as mobile phone repair, tailoring, housing loans, healthcare by establishing health centers in every ward, maternity clinic, free medication and vaccine, satellite clinic etc. CCC has not yet taken any such initiative to integrate CIMs with local society as mentioned.

8. Plan or Strategic Initiatives for CIMs in Line with National Policies:

There is master plan by the city corporation on drainage management, standing committee for poverty reduction, slum development department, urban mapping and so on. In fact, for climate induced migrants, 'development projects should be taken up where people are displaced'. The KII respondent from CDA said that government should build embankments to protect against erosion (sea and river), and land zoning to prepare disaster mapping. Government agencies should do EIA before taking up any development project and install sluice gates on dams and coastal afforestation on dams. Employment opportunities should be created for CIMs. Rural areas should be covered under the Rural Electrification Programme.

One KII respondent said that *"If you develop industrialization with electrification in an area then this area automatically becomes functional, through building growth centers, and develop markets, settlements, roads, and communications and new infrastructure"*.

Chapter Five: Limitations of the Study

There were some limitations in this study, which are mentioned below:

1. To comply with the study's objectives and research questions, a detailed questionnaire was developed to catch multiple dimensions to achieve a thorough understanding about the CIMs' conditions in the slum areas in Chattogram city areas and also comparing to their village life. However, conducting survey thus took long time although this study captured diverse perspectives regarding the objectives.
2. Most of the study participants were hard to find during daytime as they were mobile due to their livelihood.
3. Although this study stressed comparison of the adaptability of CIMs in city areas of Chattogram and their places of origin/ancestral villages, another perspective could have been added to focus on who internally displaced but still chose to live and stay in the village areas. Another research scope could be explored in this regard.
4. Despite clearly instructed and mentioned, in some areas CIM respondents demanded money or help in return after giving the interviews.
5. Many CIM participants were found missing who participated in the pilot survey due to again displacement in the city areas.

Chapter Six: Recommendations and Conclusion

Based on the results of this study, the policy suggestion to address the problems of the climate induced migrants in Chattogram can be made in two ways; the first is to provide short-term relief and the second is to find sustainable solutions. Immediate help is needed and must be given to alleviate the current situation, including housing, food security, and medical care. To provide temporary accommodation for displaced persons and families, facilities with basic services should be set up. In addition, food distribution should be considered to provide relief for the immediate difficulties and medical aid should be provided to meet medical needs. Policies should focus on the implementation of climate-resilient infrastructure and urban planning in the long-term, to reduce the vulnerability of communities to climate change. This involves reinforcement of coastal structures to withstand strong surges and the provision of flood management infrastructure to minimize inundation threat or river erosion. In addition, skills development programs, employment placement and support for small-scale entrepreneurship should be promoted to establish sustainable livelihood opportunities. Acknowledging land tenure rights and securing land rights for people who are moving due to the climate will help avoid conflicts for land ownership and eviction. Government, non-governmental organizations and local communities must work together effectively for policy implementation. Additionally, public awareness sensitization on climate change adaptation and mitigation measures should be carried out to sensitize communities to take proactive measures to protect their environment and livelihood. Finally, regional cooperation and international partnerships should be encouraged to help to mobilize resources and know-how to tackle the situation of climate-induced migration in Chattogram and beyond. Below are detailed recommendations with regard to the support to the climate induced migrants and sustainable solutions.

Assistance to the Climate Induced Migrants in Chattogram City Areas:

- More than 80% of the climate induced migrant participants were found having very low literacy rate which indicates the vulnerable condition of them lagging for not reaching to the literacy. It also reduces their possibility to improve their life conditions in urban city areas of Chattogram and secure good jobs. Many respondents also reported education expensive to avail for which a special plan could be taken to open special schools for free or low cost or giving special allowances for sending their children to schools and further studies.
- Saving for future was found rare among the responses in this study by the climate induced migrants. About 62% of the respondents were found not saving any money and approximately 30% of the climate induced migrant participants mentioned they did not have surplus money to save. Financial literacy training could be provided to them for better finance management and savings.
- Low saving mentality and capability were also visible from the findings because of the high expenditure in city areas. Even though they income but through small earning jobs

regarding city contexts. Skill training must be recommended for the climate migrant participants to increase their income level.

- More than half of the climate induced migrant respondents were found living in the houses made of bamboo fence, tin fence and earthen wall complaining about condition of the houses in city areas of Chattogram. Currently, the City Corporation's participation in informal settlement activities happens indirectly and sporadically. There is a need for more deliberate engagement, advocacy, and policy dialogues to establish and implement consistent involvement of the city corporation in managing informal settlements and delivering housing services to the climate induced migrants for better housing adaptability in city areas removing fear of eviction among them.
- A staggering 85% of the participants were found having no idea about climate change and its adverse impacts. Targeted awareness-based training and capacity-building opportunities for climate induced migrants in city areas could be arranged to enhance their understanding of climate change issues and their ability to effectively communicate and address these challenges within their communities.
- About 56% of the climate induced migrants pointed out not having any organizations working in the slums to improve the living standards. In this regard, different organizations should come forward to take necessary projects and activities to better their living conditions by providing proper waste management system and gender sensitive toilet facilities, gender segregated bathing facilities, establishing more water points for better quality water, raising awareness on sanitations, etc.
- Cremation and burial facilities should be provided at ease for the climate induced migrants in Chattogram city since majority of them live in very economically vulnerable positions. Community graveyard facilities are not majorly available, and they have to either bury in the government owned land or have to buy land.
- Nearly 63% of the climate induced migrant respondents mentioned their need for skill training or cooperation to make their skills useful or leveraging their skills to more income. A need-based survey should be done to deeply dig their needs related to this demand and need based skill training will be arranged for their better livelihood and skills related adaptability.
- About 80% of the climate migrant participants cited not having assistance from the city corporation regarding healthcare facilities. Affordable healthcare facilities through the existing community clinics and establishing more slum-based clinics would be a better solution to reach and provide medical assistance to the climate induced migrants in the city areas of Chattogram. Spraying mosquito repellents and taking measurements to

reduce waterlogging in the slums is also recommended highly to reduce health hazards in the slums.

- It is essential to implement protection-focused initiatives, especially concerning crimes against women and children, domestic and gender-based violence, protecting teenagers from joining teen-gangs, and child marriage. According to the majority of respondents, the overall safety situation is deemed unsatisfactory.

Sustainable Solution Approaches:

- **Building Sustainable Embankments:** More than 85% of the respondents in total of this study pointed to river erosion and flood as the climatic disasters to force them being displaced in their places of origin. Since both two disasters related vulnerability are posed by the river dynamics, building sustainable embankments and finding creative and non-environmental-hindering solutions to tackle floods to minimize the losses could be the pressed concern of the Government to consider with more priority in Chattogram district.
- **Rehabilitation in Urban Areas:** Since 93% of the respondents were found living in Chattogram city more than 10 years and majority of the climate migrant respondents' willingness to stay in Chattogram city signifies that rehabilitating the climate induced migrants is crucial. Chattogram City Corporation (CCC) and Chattogram Development Authority (CDA) may come forward to draw out another plan targeting the rehabilitation of the climate induced migrants in Chattogram city or integrate their demands in the existing plans in line with the government policies.
- **Social Security Allowance:** Providing social security allowances is a durable solution to safeguard the more vulnerable sections of the climate induced migrants in Chattogram city such as elderly, widow, people with disability and so on.
- **Citizenship Certificate or NID Card:** To access government safety nets program or getting into any formal education system or services, citizenship certificate and NID cards are necessary. Climate induced migrants in Chattogram city may be provided with the opportunity to update their citizenship certificate or national identity card.
- **Gender-Sensitive Policies:** Developing and implementing gender-sensitive policies and programs that recognize the heightened risks and vulnerabilities faced by female climate induced migrants is necessary. Targeted support and resources to address the specific needs of women, including access to education, healthcare, and economic opportunities should be provided.
- **Climate Change Awareness:** Launching comprehensive awareness campaigns to educate communities, especially women, about the impacts of climate change and the threats it

poses to their lives and livelihoods. Utilizing various communication channels and community outreach programs to disseminate information and raise awareness about climate-related risks and adaptation strategies.

- **Sustainable Infrastructure:** Investing in sustainable infrastructure, such as resilient embankments and flood management systems, to mitigate the impacts of river erosion and flooding in Chattogram district. Implementing innovative, environmentally friendly solutions that minimize harm to ecosystems while effectively protecting communities from climate-related disasters.
- **Community Engagement and Participation:** Fostering community engagement and participation in climate resilience planning and creating bond among the locals and climate induced migrants could be taken as a platform. Encouraging collaboration between government agencies, local communities, and civil society organizations to co-create and implement adaptation strategies that address the needs and priorities of climate-induced migrants. About 64% of the climate induced migrants stated that they found no public, private or community-based organizations working to enhance the adaptation process in slum areas which is a concerning matter.
- **Capacity Building and Resilience:** About 58% of the respondents said that no government, private or community based organizations work in the slums to enhance their capacity in the slum areas. Providing training and capacity-building programs to enhance the resilience of communities to climate-induced migration is necessary for long run. Equipping climate induced migrants with skills and knowledge to adapt to changing environmental conditions, diversify livelihoods, and minimize their vulnerability to climate-related risks.
- **Integration of Climate Adaptation into Development Planning:** Integrating climate adaptation considerations into local development planning processes. It is needed to ensure that climate resilience measures are mainstreamed across sectors, including infrastructure development, urban planning, agriculture, and disaster risk reduction, to build more resilient and sustainable communities in Chattogram district.

For further Contact and more information



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