

# Tides of Change: Understanding Climate-Induced Migration in Bangladesh's Coastal Regions

Mizanur Rahman <sup>1\*</sup>, Zereen Saba <sup>2</sup>, Asma Akther Popy <sup>3</sup>, Khaled Md. Mehzabin Alam Prottoy <sup>4</sup>, Masrur Abdul Quader <sup>5</sup>

1 Research Officer, Center for People & Environ (CPE)

2 Junior Specialist, Meteorology, BRAC

3 Research Associate-GIS Specialist, Center for People & Environ (CPE)

4 Research Assistant, Center for People & Environ (CPE)

5 Research Fellow, Policy Research and Advocacy, Programme Policy campaign, ActionAid Bangladesh

\* Corresponding Author: [mizanur.rakib97@gmail.com](mailto:mizanur.rakib97@gmail.com)

DOI: [10.71397/11202404](https://doi.org/10.71397/11202404)

## ***Abstract***

Bangladesh faces several climatic hazards/disasters due to its geographical location. The country suffers from natural disasters regularly, resulting in the loss of human life and livelihoods and the forced migration of people or whole communities to nearby areas. Research was conducted in the three coastal districts: Barguna, Patuakhali, and Cox's Bazar with the following goals: 1. To identify the causes of coastal climate-induced displacement; and 2. To identify the socioeconomic elements that contribute to forced migration. 3. Determine probable areas of Bangladeshi coastal relocation due to climate change. A combination of qualitative and quantitative methods is used for the study. Primary data was collected from the Household Questionnaire Survey, Focus Group Discussion (FGD), and Key Informant Interview (KII) with relevant people and institutions. In addition, secondary data and relevant

policies, documents, and books were reviewed from different sources. The study findings reveal that frequent cyclones, flooding, erosion, loss of land, and crop production are the primary causes of climate displacement in coastal areas. Internal migration and external migration are both common situations found in the three coastal districts. Increasing temperatures, drought, and losing crops in the Varendra regions are the leading causes of internal migration. The paper reveals that the coastal region of Patuakhali has the highest displacement threat, where ~39.6% of the people said that they would be interested in migrating immediately.

**Keywords:** Climate Change, Disaster, Migration, Livelihood, Coastal

## Introduction

People who live along Bangladesh's coasts are forced to migrate due to climate-related disasters and fragile livelihoods. Climate migrants are increasing in the coastal districts. Moreover, internal migration rose from 4.80% during 1991-2000 to 11.30% during 2000-2010 (Brennan, 2020). Results from a study conducted in Patuakhali show that seasonal migration increases by 33.90% (Rahaman, et al. 2022). Due to climate-induced disasters, about 15 million individuals in Bangladesh could be migrants by 2050, causing the greatest forced migration in the history of human life (Rashid, 2020). Impact of Climate change on several aspects including health, education, child protection, nutrition, and water and hygiene, all of which are affected by migration or residing in urban slums (UNDRR, 2016). Families are being displaced and pushed further into poverty because of longer-term climate change issues including sea level rise and saltwater intrusion. As a result, children's access to resources for healthcare and education is severely limited. (UNICEF, 2019). From 2014 to 2020, caused by the fifteen specified disasters including floods, cyclones and storm surges, salinity, riverbank erosion, etc. displaced 9.4 million people, and damaged 4.6 million

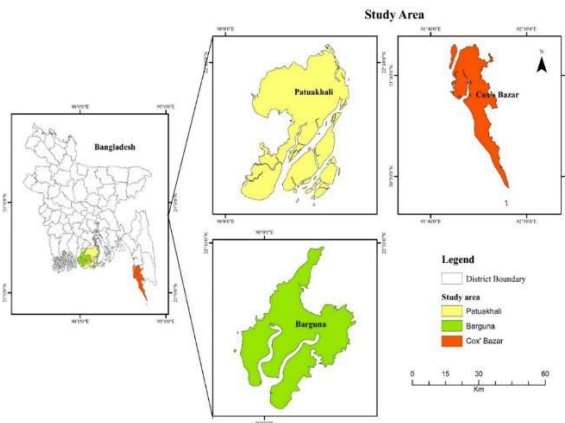
houses either fully or partially (NIRAPAD, 2021). In terms of migration frequency, permanent migration is lower than the temporary and seasonal migration rate, and most migrants choose urban areas as their prioritized destination. Extremely poor, and poor migrated people from these locations due to economic scarcity and insecurity (Rashid, 2020).

## Methodology

### 3.1 Study Area

The three coastal Bangladeshi districts of Patuakhali, Barguna, and Cox's Bazar provided the basis for the research article. (Map 1)

**Map 1: Study Area**



### 3.2. Data Collection

#### 3.2.1. Secondary literature review

Data collection, literature review, and long-term weather and climate data analysis of key climate parameters and disaster data to show the trends of change of climate and impacts on biodiversity, natural resources, water

resources, agricultural practices, food security, and livelihoods.

Analysis of long-term data on weather and climate, disaster and water data were collected from the Bangladesh Meteorological Department (BMD), Department of Agricultural Extension (DAE), Disaster Management Bureau (DMB), Bangladesh Water Development Board (BWDB), and other relevant organizations.

**Table 1: Reviewed Documents**

Methods	Documents/Quantity
<b>Relevant Policies and Acts</b>	Migration policy, Agriculture Policy, Gender Policy
<b>Relevant Articles</b>	National Plan for Disaster Management (NPD, 2021 to 2025), IPCC Sixth Assessment Report (AR6), Bangladesh Climate Change Strategy and Action Plan (BCCSAP), Bangladesh, Delta Plan, Standing Order on Disaster -2019, 8th Five-Year Plan of Integrated Coastal Zone Management Plan, National Plan on Water and Sanitation for hard to reach area, Coastal Embankment Improvement Plan, Mujib Climate Prosperity, and other relevant articles were reviewed and analyzed.
<b>Relevant Stakeholders and Institutions</b>	Department of Agriculture Extension (DAE), Dept. of Disaster Management (DDM), Ward Disaster Management Committee, Union Disaster Management Committee (UDMC), Bangladesh Water Development Board (BWDB), Union Disaster Management Committee (UDMC), and other relevant organizations

### 3.2.2. Primary data collection

Primary data like quantitative and qualitative data were collected following steps:

1. Participatory actual data, experiential knowledge, and perspectives of the susceptible individuals and communities on climate-induced disaster, livelihoods, and existing absorptive, adaptive, and transformative

capacities collected through the Household Questionnaire Survey (HHS).

2. Analyzing the Participatory ability of individual, family, community, and institutional levels to knowledge, and practice, to adapt to climate change, unseen impacts on women, and children (especially girls) of climate-related shocks, existing coping mechanisms and perceived as positive (contributing to resilience) or harmful in the long term (ex. selling productive assets might be negative) through Focus Group Discussion (FGD) and Key Informant Interview (KII).

**Table 2: Sample Segregation**

Methods	Quantity
<b>Household Questionnaire Survey</b>	<b>Total 620</b> Cox's Bazar- 248 (M 112, F 112, PWD 24) Barguna- 155 (M 70, F 70, PWD 15) Patuakhali- 217 (M 98, F 98, PWD 21)
<b>Focus Group Discussion (FGD)</b>	<b>Total 27</b> (9 in each district) Men, women, youth, mixed groups (male and female), farmers, persons with disability, market actors, and fisherfolk
<b>Key Informant Interview (KII)</b>	<b>Total 21</b> (7 in each district) Department of Livestock Services (DLS), Dept. of Disaster Management (DDM), Department of Agriculture Extension (DAE), Ward Disaster Management Committee, Financial Institute, Union Disaster Management Committee (UDMC),

Primary data were collected from the Household Questionnaire Survey (HHS), Key Informant Interview (KII), and Focus Group Discussion (FGD)

The household sample was determined using Slovin's Sample Determination Formula:

$$n = N / (1 + Ne^2)$$

SAAD (Sex, Age, and Disability) segregated (adult, youth, and PWD) 620 households' samples were identified and surveyed in the research area (**Table 3**).

**Table 3: The household survey sample**

Districts	Adult		Youth		PwD	Total
	M	F	M	F		
Cox's Bazar	80	80	32	32	24	<b>248</b>
Barguna	50	50	20	20	15	<b>155</b>
Patuakhali	70	70	28	28	21	<b>217</b>
<b>Total</b>	<b>200</b>	<b>200</b>	<b>80</b>	<b>80</b>	<b>60</b>	<b>620</b>

### 3.3 Data analysis

Statistical Analysis was applied to quantitative data. The numeric data was processed by SPSS software. Qualitative data from different sources and combined and cross-checked against the results. The research team explored the potential connections and relations among several categories of data.

### Migration Policy and Climate Change Landscape in Bangladesh

The government or its authorized authority shall oversee all operations connected to the hiring and emigration of people from Bangladesh for employment abroad. No citizens may relocate abroad for employment or permit others to do so unless they do so in conformity with the requirements of this Act (**Ministry of Law, 2013**). According to **LFS (Labour Force Survey), 2016–17**, migrants affected by natural catastrophes make up 0.6% of the overall population, (BBS, 2018). These will help achieve zero migration by preserving or improving the way of life for those who reside in vulnerable locations (**MUJIB CLIMATE PROSPERITY PLAN, 2021**). In inland and marine waters, extreme temperatures and unpredictable rainfall (**Ministry of Environment, Forest and Climate Change, 2022**) directly affect the physiology of fish, growth, mortality, dietary habits, migratory patterns, and reproductive systems. Rural areas

may migrate more internally to metropolitan areas because of climate change's negative effects. The most vulnerable members of society are those who relocate to metropolitan areas because of disasters caused by climate change. Due to disaster-driven migration from coastal areas, many young people are compelled to work; this pattern is also seen in other effects of climate change (MoEF&CC, 2022). Internal migration and climatic displacement are now greatly influenced by environmental catastrophes also; the impact of climate change in Bangladesh is increasing (MoDM&R, 2020). River erosion, which is a major cause of rural-to-urban migration, people are moving from disaster-prone, vulnerable areas to urban centers in search of work, which is one of the main reasons why slums in big cities and small towns are expanding quickly (LGED, 2012).

The first validated document of the government of Bangladesh is the 2015 **National Strategy on the Management of Disaster and Climate-Induced Internal Displacement (NSMDCIID)** which concentrates entirely on displacement, climate change, and environmental issues. It is also recognized that displacements have a significant impact on the rights and entitlements of those who experience them as well as the communities (MoEW&OE, 2020). Additionally, due to climate-related disasters, the Bangladesh Delta Plan 2100 prioritizes on integration of climate change adaptation into current policies, institutional capacity building, effective management of migration, and institutional reform (MoEW&OE, 2020). However, the migration issue is not covered by the Bangladesh Climate Change Strategy and Action Plan (BCCSAP)-2009. The Ministry of Environment, Forests and Climate Change (MoEF&CC) and its associated organizations handle the Climate change issues. However, climate-induced migration is not clear to the institutional management and not mentioned the covered the BCCSAP 2009

(MoEW&OE, 2020). Migration from rural communities to urban areas can be sparked by land erosion and the loss of rural livelihood. Therefore, as part of the Eighth Five Year Plan (8FYP), the Government will continue to be dedicated to designing cities that are more hospitable by putting in place effective systems for facilitating migrant integration into the city, adequate housing for new populations, and employment opportunities for those who are looking for work (8FYP, 2020).

## Climate and disaster vulnerability in the study area

### 5.1. Climate vulnerability

Based on the respondents' perceptions, the study reveals that temperature trends are rising across all three coastal districts, while rainfall is decreasing (Table 4). Participants in the FGDs also reported similar observations for Patuakhali and Barguna.

**Table 4: Climatic parameters trend in the study region, 2012 to 2021**

Climatic parameters	Patuakhali	Barguna	Cox's Bazar
Temperature	+	+	+
Rainfall	-	-	-

**Here (+ means Increased and – means Decreased)**

### 5.2. Disaster vulnerability

Climate-related disasters like storm surges, cyclones, droughts, and salinity intrusion have historically occurred in the study areas. Considering the five years from 2015 to 2020, the cyclone was found to be the most prevalent hazard/disaster in the study area. Specifically, cyclones impacted 73,976 households in Cox's Bazar, 103,488 households in Patuakhali, and 112,163 households in Barguna, highlighting the increased vulnerability of these

areas to future cyclones. In the same period, the districts of Patuakhali and Cox's Bazar, had 62,136 and 49,103 households affected by flooding, respectively. The main climatic and natural extremes in Patuakhali, Barguna, and Cox's Bazar districts are waterlogging, storm and tidal surges, thunderstorms, lightning, and river and coastal erosion. Furthermore, hailstorms became a major worry for impacted households in these districts between 2015 and 2020 (**Table 5**).

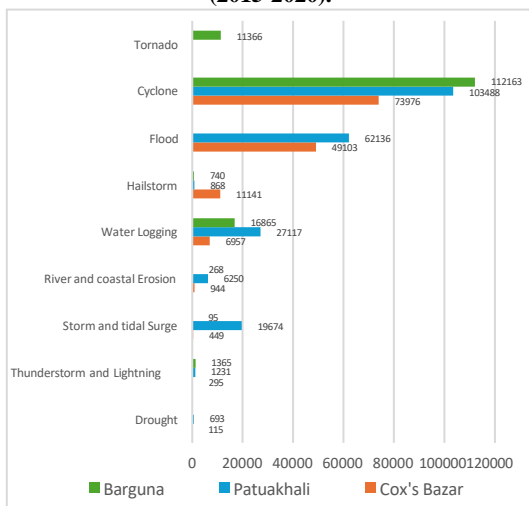
Lightning has been identified as a growing hazard in the study area, by the Patuakhali Disaster Risk Reduction Office (DRRO). Additionally, participants in Focus Group Discussions (FGDs) across all three districts have highlighted the substantial risk that hailstorms pose to agriculture.

In the Patuakhali district, the female FGD participants shared that at least ten ducks per household die from weather-related diseases every winter and summer. Disaster-induced loss and damage are almost similar in all six districts which were also found in the national disaster statistics. In Patuakhali, the Bangladesh Disaster Related Statistics (BDRS) estimates 30917.174 hectares of crops damaged during 2015-2020 which is the highest crop damage from all three study areas (BDRS, 2021) (**Table 5**).

At the same time, the district lost 2053.10 million BDT from livestock and 1147.86 million BDT from poultry due to the disaster.

Similarly, in Barguna, BDRS estimates that 24150.02 hectares of crops were damaged, 367.65 million BDT from livestock, and 225.15 million BDT from poultry due to the disaster in 2015-2020.

**Figure 1: Disaster-affected households in the study area (2015-2020).**



Source: (BDRS, 2021)

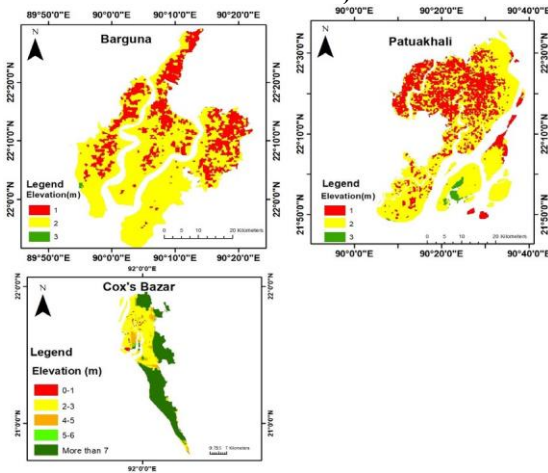
**Table 5: Disaster-induced loss in 2015-2020 (BDRS, 2021)**

District	The disaster affected loss (2015-2020)		
	Crops (Paddy) (acres)	Livestock (BDT in a Million)	Poultry (BDT in a Million)
Patuakhali	76398	2053.10	1147.86
Barguna	59676	367.65	225.15
Cox'sbazar	26436	673.35	134.13

Despite being a coastal district, Patuakhali has some areas where the highest elevation is three meters above Mean Sea Level (MSL), as demonstrated by DEM analysis. The northeastern portion of the district has lower elevations, whereas the majority of it stays at an average elevation of two metres. Lower elevations are found in regions like Dasmania Upazila's northern region, Galachipa, Patuakhali Sadar, Dhumki, and Mirzaganj. Due to its low

elevation, the district is more susceptible to storm surges. Conversely, Barguna has a maximum elevation of three metres and is mostly found in small areas in Patharghata Upazila's southwest. The southern part of Patharghata, Barguna Sadar, and Amtali Upazila are mostly two metres above sea level, while Betagi, Bamna, and the northern part of Amtali are one metre below sea level. Among the three coastal districts, Cox's Bazar has the highest elevation due to its hilly terrain. Nonetheless, Maheshkhali has lower elevations in some places, ranging from 0 to 1 metre. Minimum elevations in Cox's Bazar are found in Chakaria, Pekua, and Kutubdia Upazila, and range from 2 to 3 metres. The other upazilas, which are Ramu, Ukhia, Teknaf, and some northern Chakaria, all continue to be higher than metres (**Map 2**).

**Map 2: Study Area Elevation (Barguna, Patuakhali, and Cox's Bazar)**

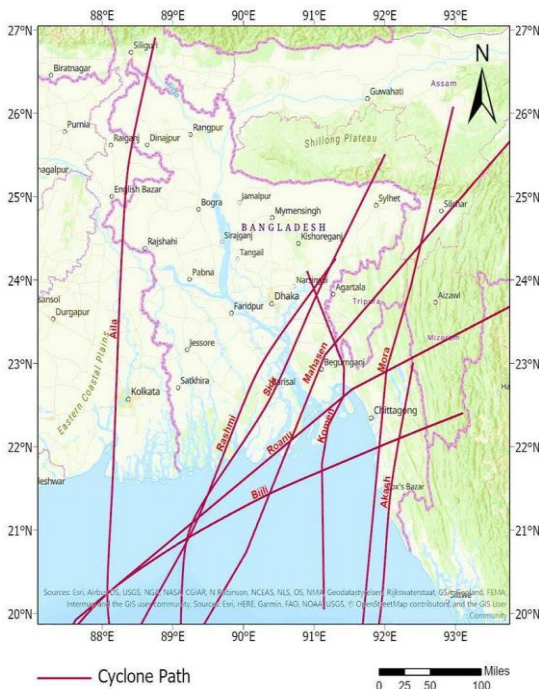


Cyclone Jawad, which hit Cox's Bazar during the most recent ten-year period (2013–2022), had the lowest storm surge height ever measured; Cyclone Mohasen, which affected Cox's Bazar, Barguna, and Patuakhali, had the highest storm surge height (**Figure 2**). A comparison of the elevation of the three coastal districts and the storm surge height indicates that parts of Cox's Bazar

(Maheshkhali, Ramu, Teknaf, and a small portion of Ukhia) are comparatively safe from flooding during storm surges. However, Patuakhali and Barguna districts are more vulnerable to storm surges than Cox's Bazar district when taking into account variables like storm surge height, the rising trend of Mean Sea Level (MSL), and land elevation. The historical cyclone map 3 indicates several cyclones heated at various times in Bangladesh. Among them, Akash, Roanu, Mora, Mohashen, and Rashmi were heated directly in the study areas.

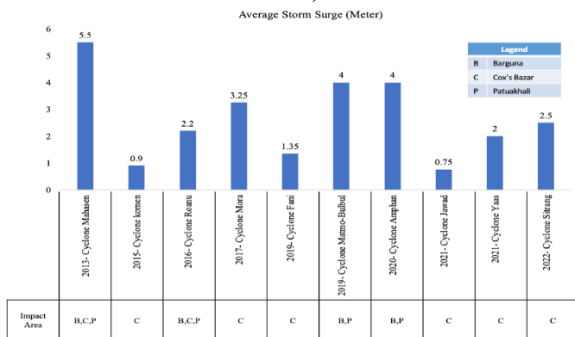
**Map 3: Historical Cyclones in Bangladesh**

**Historical Cyclones in Bangladesh (2009-2017)**



Source: (Hassan et al. 2020).<sup>1</sup>

**Figure 2: Impacted storm surge in the study area (2013-2022)**



## Findings and Discussion

### 6.1. Impact of climate change and disaster in the study area

To standardize participant insights and create a Composite Vulnerability Matrix, the perceptions of respondents were utilized to measure vulnerability in the study areas. This study made it clear that some industries and professions are more vulnerable than others in particular regions. In Patuakhali and Barguna, for example, agriculture was found to be highly vulnerable, whereas Cox's Bazar showed a marked vulnerability in the education sector. Interestingly, Patuakhali and Barguna both mentioned how vulnerable the livelihood sector is, especially agriculture. In addition, the water sector showed high vulnerability in all study areas but Cox's Bazar (Matrix 1). Focus group discussions (FGDs) with participants from these areas revealed persistent issues, like drinking water shortages that occur in both the summer and the winter. In addition, Patuakhali and Barguna participants emphasized how the scarcity of drinkable water is made worse by the rising salinity levels in surface and groundwater during these seasons.

**Matrix 1: Sector-wise vulnerability matrix of the study area**

Sectors	Barguna	Cox'sbazar	Patuakhali
Agriculture	High	Medium	High
Education	Low	High	Low
Health	Low	Low	Low
Livelihood	High	Low	High
Water	High	Low	High
<b>Legend</b>			
Low	0-33%		
Medium	34-65%		
High	66-100%		

## 6.2 Occupational Vulnerability

Climate change and natural disasters have a substantial impact on the socio-economic environment and livelihood activities in the areas under study. A Composite Vulnerability Matrix was created using the insights of the respondents, normalising their comments. Different occupational groups were found to be vulnerable in this analysis, with farmers being the most vulnerable across all districts (Matrix2). Farmers are the main victims of climate-related disasters, especially in Barguna, where farmers and fishermen are more vulnerable. Focus group participants in every district consistently identified farmers as the most vulnerable group.

Farmers in Cox's Bazar, Barguna, and Patuakhali reported major problems with salinity intrusion and insufficient irrigation during the dry season, which caused disruptions to agriculture. However, during the monsoon season, crops suffer severe damage because of tidal flooding. Due to unfavorable climatic conditions, many respondents who fished in these areas highlighted that they were unable to access fishing grounds during the

rainy and dry seasons alike. Even though there are fishing opportunities after the monsoon, access to resources is hampered by fishing restrictions, especially along riverbanks. Shahporir Dwip participants emphasized other difficulties that have arisen since the Rohingya inflow, such as fishing bans along the Naf River that worsen food shortages all year long.

**Matrix 2: Occupational Vulnerability Index**

Occupation	Barguna	Cox's Bazar	Patuakhali
Boatman			
Day labor			
Farmer			
Fishermen			
Small trader			

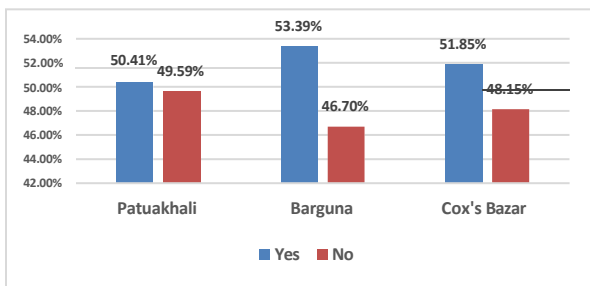
Legend	
Low	0-33%
Medium	34-65%
High	66-100%

### 6.3 Livelihood Opportunity

The problems facing agriculture are made worse by climate change, which results in lower crop yields, eroding arable land, and declining shared property resources like fisheries and forests. Smallholder and subsistence farmers are forced by this situation to both significantly reduce their income and modify their methods of subsistence. Sadly, the most defenseless members of society, especially those who work directly in the food industry and have low levels of resilience—are the ones who suffer the most from these effects. As a result, opportunities for living are gradually dwindling, which eventually leads to a reduction in job opportunities. The results of the study highlight the severity of unemployment, with Barguna reporting the highest

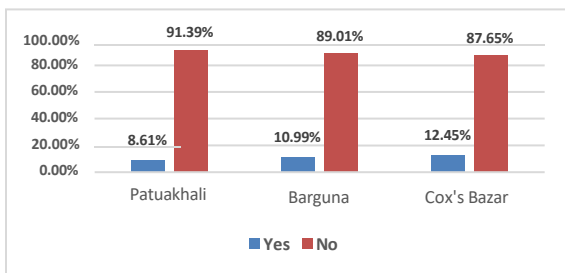
percentage of respondents (53.39%) who were unemployed (**Figure 3**)

**Figure 3: Employment scenario in the study area**



As a result, within the last ten years (2012-2022), many people are changing their livelihood activities. In all six districts, primary livelihood-changing scenarios are found. The highest number of respondents from Cox's Bazar (12.45%) and the lowest number of respondents from Patuakhali (8.61%) have changed their main livelihood option within this period (**Figure 4**).

**Figure 4: Primary livelihoods option changing scenario**



By this period, day labor has increased drastically in all three coastal districts. In Barguna, by this period, laborers increased by 55% which was 31.57% ten years ago

**(Table 6).** Day labourers increased the most in Patuakhali districts (23.97% to 61.90%). The data reveals that, a huge livelihood-changing scenario in Farming sectors of all three districts. Lower-income people are not involved with farming because of landlessness, drought, and a lack of irrigation which was reported by the FGD participant. The day laborer FGD participants reported that ten years ago, most of them were engaged in agriculture or fishing from nearby rivers and sea for their wages. Some of the day laborers of Patuakhali and Barguna also reported that they were engaged with crab collection and honey collection from Sundarbans. But the resources being scarce and farming being challenging due to salinity forced them to engage in daily labor. The transport laborers mentioned in the FGDs that they have no alternative income source and lack skill; they are involved with auto-rickshaws, and taxi driving though previously they were engaged with farming.

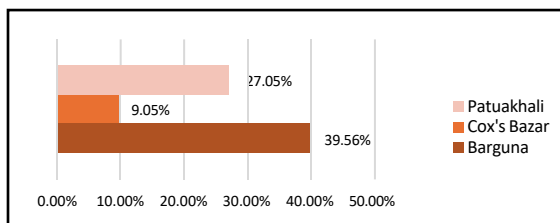
**Table 6: Livelihood-changing scenario**

Livelihood opportunities	Barguna		Cox'shazar		Patuakhali	
	Present	Previous	Present	Previous	Present	Previous
Farming	10.00%	41.05%	4.76%	21.66%	4.76%	38.84%
Fishing	10.00%	7.37%	0.00%	21.67%	9.52%	9.10%
Small trading	20.00%	16.84%	38.10%	21.67%	23.81%	22.31%
Day Labour	55.00%	31.57%	52.38%	28.34%	61.90%	23.97%

### 6.3 Migration threat

Migration and displacement are common occurrences in the study area, with notable instances of both internal and external migration in each of the four upazilas. In addition, changes in the population are visible.

According to the study, Barguna faces the greatest threat from migration, with 39.56% of respondents saying they would like to migrate right away. On the other hand, the least amount of migration threat is present in Cox's Bazar, where only 9.05% of respondents said they would be prepared to relocate to a safer area (**Figure 5**).

**Figure 5: Migration threat**

Focus group discussions (FGDs) in all six districts revealed that participants blamed climate change-related factors like salinity and drought for their current situation of not being able to earn a living wage. They also emphasized how the growing water crisis was forcing them to relocate in pursuit of food and water security. Significant homestead losses because of riverbank erosion were also mentioned by respondents from Kutubdia and Char Montaz, which forced migration. The study employed binary logistic regression analysis to assess the influence of different factors on the probability of participants reporting relocation to new areas. With an odds ratio of 3.78, the analysis showed that employment status was the best predictor of migration. More specifically, people who had no work prospects were more likely to leave quickly (**Table 7**).

**Table 7: Regression Analysis:  
Examination of Land Ownership, Employment, and  
Migration Trends**

Indicators	Coefficients	Lower 95%	Upper 95%	t Stat	P-value
Employment	3.781757	3.781757	3.781757	65535	0.545
Land ownership	-0.48496	-0.48496	-0.48496	65535	0.044
Migration trend	-6.21642	-6.21642	-6.21642	65535	0.001

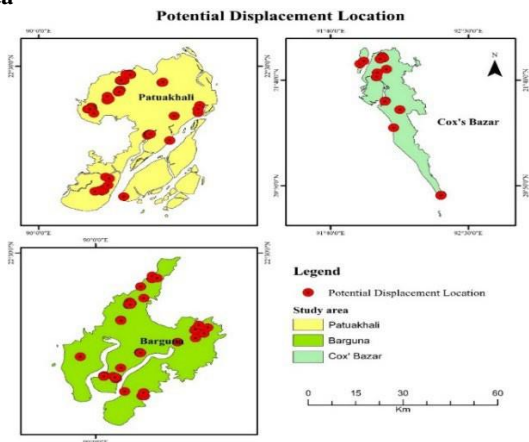
Significant mitigation efforts are expected among communities residing in several unions due to a variety of factors, including the loss of homestead land, the decline in agricultural production, economic downturns, livelihood crises, and the scarcity of freshwater. By applying Agent-based Models (ABM), large-scale mitigation initiatives have been pinpointed areas. Widespread mitigation efforts have been prompted by homestead land loss, agricultural difficulties, economic crises, and freshwater scarcity in the unions of Boga, Dashmina, Bashbaria, Pangasia, Lebukhali, Itbaria, Motherbunia, Kakrabunia, Baliatli, Mithaganj Galachipa, Ratandi Taltoli, and Bara Baishdia. Due to comparable climate-related hardships, residents of the unions of Betagi, Kazirabad, Mokamia, Bamna, Burir Char Naltona, M. Baliatali, Chowra, Kukua, Borobagi, and Chotobogi are also leaning towards mitigation techniques. Significant mitigation efforts are also noted among the people living in the upazilas of Pekua, Ramu, Kutubdia, Maheshkhali, Ukhia, Teknaf, and Cox's Bazar Sadar. These efforts are motivated by similar issues such as the loss of homestead land, agricultural difficulties, financial difficulties, and freshwater shortages. On the other hand, groups living in the unions of Hujuri Para, Baragachhi, Badhair, Pachandar, Jahanabad, Mougachhi, Baneshwar, Sardah, Yousufpur, Jhaluka, Basupara, Subhadanga, and Bajubagha indicate that they would like to move. This is mainly because of the combined effects of losing homestead land, facing challenges in agriculture, experiencing economic downturns, facing livelihood crises, and a shortage of freshwater. Furthermore, people from the unions of Baliyadanga, Nezampur, Gomostapur, and Chhatrajitpur are also inclined to migrate, with their decision being motivated by issues related to climate change (**Map 4**).

The effects of climate change disproportionately affect women and children as they increase human migration and displacement. Focus groups (FGDs) with women and Key Informant Interviews (KIIs) with local government

representatives, the Department of Women and Children Affairs, Department of Social Service revealed several issues related to women's increased vulnerability to the effects of climate change. The majority of those are:

- Limited access of women to productive resources and services;
- The limited adaptive capacity of women;
- Unequal condition and position of women in family and society
- Lacking decision-making power
- Limited access to early warning information, services, and facilities
- Women-headed family,
- Limited access to market and communication,
- Social insecurity and violence against women

**Map 4: Potential climate-displacement location in the study area**



## Conclusion

Climate change's effects worsen migration and human displacement, disproportionately harming women and

children. Changes in ecosystem services have a big impact on local livelihoods, income levels, and migration patterns. Notably, the requirement of permanent residency is a prerequisite for receiving Social Security Net (SSN) benefits, which deprives migrated individuals of vital support networks. People are forced to leave their homes due to the displacement brought on by climate change. The dynamics of displacement can be affected by climate change, but paradoxically, it can also impede or obstruct efforts at sustainable development, human mobility, and access to fundamental rights. The complex interactions among poverty, conflict, and climate change make displacement even more complicated, especially in long-term situations where planning and financing mechanisms are frequently insufficient to meet long-term needs.

## References:

- [1] Bangladesh Bureau of Statistics. (2018). *Report on labour force survey (LFS) 2016-17*. Bangladesh Bureau of Statistics. [chrome-extension://efaidnbnmnibpcjpcglclefindmkaj/https://mole.portal.gov.bd/sites/default/files/files/mole.portal.gov.bd/page/ac7088c7\\_a211\\_4905\\_9ff3\\_1e62af00c837/LFS\\_2016-17\\_compressed.pdf](https://mole.portal.gov.bd/sites/default/files/files/mole.portal.gov.bd/page/ac7088c7_a211_4905_9ff3_1e62af00c837/LFS_2016-17_compressed.pdf)
- [2] Bangladesh Planning Commission. (2020). *Eighth Five Year Plan*. General Economics Division (GED), Bangladesh Planning Commission.
- [3] BDRS. (2021). Bangladesh Disaster-related Statistics 2021. In *Climate Change and Natural Disaster Perspectives*.
- [4] Brennan, M. (2020). *Understanding climate-related security risks in Bangladesh*. <https://www.undp.org/sites/g/files/zskgke326/file>

es/migration/oslo\_governance\_centre/57995ed766b9b95a96c04f530b01efe14f9e330f9ee82d0765fcd5cac4a74a6.pdf

- [5] Ministry of Disaster Management and Relief. (2020). *National Plan for Disaster Management*. Ministry of Disaster Management and Relief. chrome-extension://efaidnbmninnibpcjpcglclefindmkaj/[https://modmr.portal.gov.bd/sites/default/files/files/modmr.portal.gov.bd/page/a7c2b9e1\\_6c9d\\_4ecf\\_bb53\\_ec74653e6d05/NPDM%202021-2025%20Draft.pdf](https://modmr.portal.gov.bd/sites/default/files/files/modmr.portal.gov.bd/page/a7c2b9e1_6c9d_4ecf_bb53_ec74653e6d05/NPDM%202021-2025%20Draft.pdf)
- [6] Ministry of Environment, Forest and Climate Change. (2022). *National Adaptation Plan of Bangladesh*. Ministry of Environment, Forest and Climate Change. <https://drive.google.com/file/d/1QQAfrk4PrjqZ4f4EXledObyzME544-Kd/view>
- [7] Ministry of Environment, Forests. (2009). *BCCSAP 2009*. Ministry of Environment, Forests.
- [8] Ministry of Expatriates' Welfare and Overseas Employment. (2019). *Action Plan for the implementation of the Expatriates' Welfare and Overseas Employment policy 2016*. Ministry of Expatriates' Welfare and Overseas Employment. chrome-extension://efaidnbmninnibpcjpcglclefindmkaj/[https://probashi.portal.gov.bd/sites/default/files/files/probashi.portal.gov.bd/miscellaneous\\_info/b6428052\\_b660\\_4854\\_bca1\\_2308c5cac262/Action%20Plan%20for%20the%20implementation%20of%20the%20Expatriates%E2%80%99%20Welfare%20and%20Overseas%20Employment%20policy%202016.pdf](https://probashi.portal.gov.bd/sites/default/files/files/probashi.portal.gov.bd/miscellaneous_info/b6428052_b660_4854_bca1_2308c5cac262/Action%20Plan%20for%20the%20implementation%20of%20the%20Expatriates%E2%80%99%20Welfare%20and%20Overseas%20Employment%20policy%202016.pdf)
- [9] Ministry of Expatriates' Welfare and Overseas Employment. (2020). *BANGLADESH MIGRATION GOVERNANCE FRAMEWORK*. International Organization for Migration. chrome-extension://efaidnbmninnibpcjpcglclefindmkaj/

- [https://bangladesh.iom.int/sites/g/files/tmzbd11006/files/documents/Bangladesh\\_MiGOF.pdf](https://bangladesh.iom.int/sites/g/files/tmzbd11006/files/documents/Bangladesh_MiGOF.pdf)
- [10] Ministry of Local Government. (2012). *Water and Sanitation Hard to Reach Areas of Bangladesh*. Ministry of Local Government, Rural Development and Cooperatives.
- [11] Ministry of Local Government. (2012). *Water and Sanitation Hard to Reach Areas of Bangladesh*. Ministry of Local Government, Rural Development and Cooperatives.
- [12] *MUJIB CLIMATE PROSPERITY PLAN*. (2021). Government of the People's Republic of Bangladesh.  
<https://drive.google.com/file/d/1MQNIZyxDONMW4A8UK69e4rSqdIAoSVly/view>
- [13] NIRAPAD. (2021). *Multi-Hazard Risk Analysis of Climate-Related Disasters in Bangladesh*. June 1–53.  
[https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/multi-hazard\\_risk\\_analysis\\_in\\_bangladesh\\_final\\_report.pdf](https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/multi-hazard_risk_analysis_in_bangladesh_final_report.pdf)
- [14] Rahaman, M, A; Rashid, M. A; Saba. Z. (2022), *Capturing the effectiveness of disaster risk reduction (DRR) and climate change adaptation (CCA) interventions of SHOUHARDO III, Care Bangladesh, Dhaka, Bangladesh, 2022*.
- [15] UNDRR. (2016). Learning to Live in a Changing Climate: The Impact of Climate Change on Children in Bangladesh.  
<https://www.preventionweb.net/publication/learning-live-changing-climate-impact-climate-change-children-bangladesh>
- [16] UNICEF. (2019). Climate change threatens the lives and futures of over 19 million children in Bangladesh. <https://www.unicef.org/rosa/press-releases/climate-change-threatens-lives-and-futures-over-19-million-children-bangladesh>