CLIMATE INDUCED MIGRATION: A CASE STUDY IN KHULNA CITY

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ABSTRACT

As a low-lying country of South Asia, Bangladesh has to face various types of climatic events and challenges especially in the coastal areas. These events can affect population movement in Bangladesh in various ways. The primary causes including both the unexpected and periodic environmental events impact on the displacement of population in altered ways. The study has the importance which indicates that sudden environmental hazards like cyclones, floods, and riverbank erosion and these movements usually happen on a huge scale. In these circumstances, people return to their original places after the situation of the affected area becomes stable. However, there are also some extreme events which can result in a permanent form of migration. The study is aimed to explore why the migrants are forced to leave their own environment in the Khulna city of Bangladesh. To achieve the objective, 200 different surveys were conducted on the migrants living in Khulna city. These migrants came from the different disaster-prone upazillas from Khulna district in Bangladesh. The research reveals that cyclones and extreme flooding events, the erosion of riverbank, loss of agricultural land and salinity intrusion in the study area were the principal reasons for their movement and they are facing various troubles in terms of their employment opportunities, new living conditions in the new places of unfamiliar environment.

Keywords: *Climate induced migration, causes, disasters, movement, Khulna city*

INTRODUCTION

The coastal areas of Bangladesh are enormously vulnerable to different kinds of climatic disorders for its climate and geographical situation (World Bank, 2002). The country encountered serious cyclones like Sidr in November 2007, Aila in April 2009 and continuous flooding in the year 2004, 2007 and 2009, cyclone Nargis in 2010 and Mahasen in May 2013 (Ahmed, 2010). The Intergovernmental Panel on Climate Change (IPCC 2001) stated that the coastal areas of Bangladesh are in danger which may increase saline water by 2050. Also, temperature rising may reduce the manufacture of crop by 30% and decrease the production of Boro rice by 62% and wheat by 61% by 2050 in Bangladesh (Adger, 2003). Environmental disorders greatly influence the movement of population in different ways. It also depends on the intensity of the disaster and the affected countries and people. Nevertheless, in the aftermath of ultimate climate events, there is a deficiency of clear suggestion for a systematic trend of actively pursued patterns of migration (IPCC, 2012).

The present situation of migration illustrates that many people are now being displaced by environmental disasters than war (Ahsan, 2014). The idea of climate and population movement due to environment is not a new chapter and can be drew back to previous considerations on environmental displacement those were predominantly noticeable from the 1990s. Climate induced migration has appeared as the extreme danger encountered by human beings in the present world (Clime Asia, 2009). It effects on various sectors like economic development, social security and basic rights of the people (UNDP, 2007). A lot of individuals have already been exiled for the cause of climate induced natural calamities like Aila and Sidr in Bangladesh. These affected people are forced to shift from one place to another for the environmental disaster and are unable to continue their livelihood any longer.

The southern seaside areas of Bangladesh are the place of living for 35 million habitants with a 738 person/km2 density which will be 40-50 million by 2050 (Hossain, 2009). Basically, the coastal people of Khulna district suffer much for the natural disasters due to its location. For this reason, by this time many people have shifted to the Khulna city areas from the coastal zones for the regular storms and cyclones, erosion of riverbanks, salinity intrusion, loss of agricultural lands etc. This procedure of climate induced rural to urban migration in Khulna started in 1970 when a robust cyclone attacked the coastal regions that caused to 3 million deaths (IOM, 2009). In recent, the cyclones Sidr and Aila are liable for the great destruction in the southwest coastal region in Bangladesh in 2007 and 2009. Salinity intrusion in groundwater and soil is another environmental challenge in this area, which reduces the amount of agricultural land and living places. The primary objective of the study is to examine the inherent factors of migration why they are forced to leave their own environment in the Khulna city of Bangladesh.

METHODOLOGY

This study has been conducted based on stratified systematic random sampling method. Out of 1100 respondents in different slums and urban fringe areas in and around Khulna city, about 200 respondents are classified as the targeted community. The targeted communities are the people who are displaced or migrated from their origin due to climatic hazards like cyclones and flooding, river erosion, water and soil salinity, loss of agricultural land etc. Based on the research, targeted respondents are categorized in the climate displaced or climate migrant stratum. Out of those 200 selected respondents, 100 respondents are selected through systematic random sampling, every alternative sample has taken to conduct the questionnaire survey. The alternative sample has been taken to minimize the sampling error and to get the maximum diversity. Selected 100 samples are not equally distributed among the thanas of Khulna city, rather they were selected based on the concentration of the displaced or migrated communities. Therefore 50% of the respondents are selected from Daulatpur thana, 20% from Khalishpur thana, 20% are from Dighalia and rest 10% from Sonadanga thana. Pre-selected survey was performed to conduct the questionnaire survey to get the field data. Secondary data sources were also used to gather information regarding the inherent causes of the migrants. Needed documents were composed from numerous sources specifically through surveying household, focused group discussion, key informants' interview (KII) and from

thesis papers and several journals. The key informants were the head of the family and the local counselors of that area. The flow chart of the research methodology is presented in Figure 1 below:

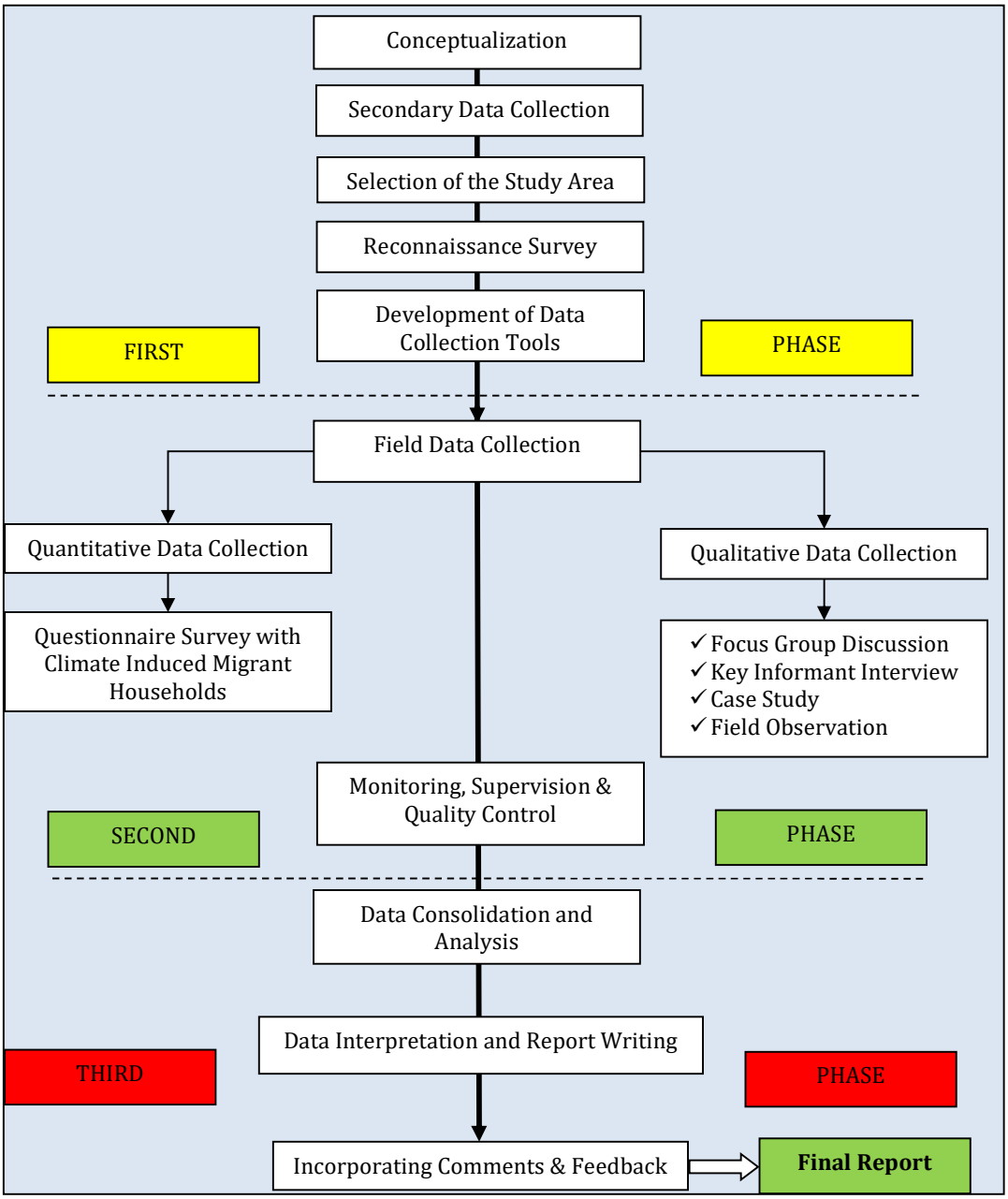

Figure 1: Methodology of the Research

RESULTS AND DISCUSSION

The Place of Origin of the Migrants

Among the 100 climate migrants, the highest percentage is originated from Koyra, Dacope and Paikgacha. The other locations from where the migrants originated found from the study are Shamnagar, Ashasuni, Vagba, Sagordari, Tala, Keshobpur Sadar as described in Figure 2. All these places are susceptible due to the effects of the natural disasters like cyclones, flood, storm surges etc

become a frequent climate threat in these places. As such the people are pushed to migrate in the urban areas.

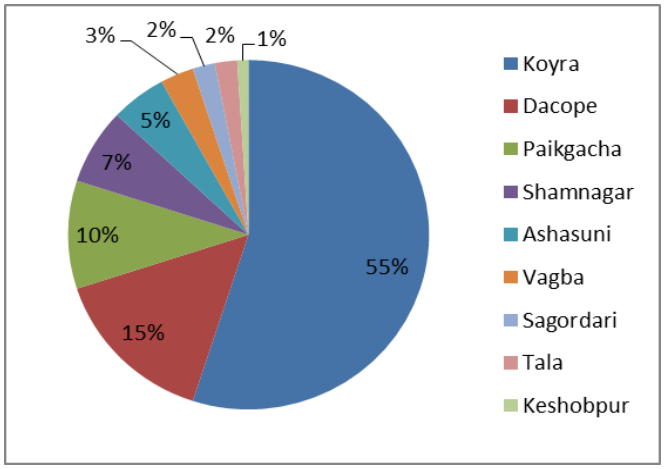

Figure 2: Place of origin of the migrants

Types of Migration

While studying the climate migrants living in the urban areas of Khulna city, it was found that most of them are permanently migrated to the city and have no plan to go back to their place of origin. Figure 3 indicates that the percentage of climate migrant that have left their origin permanently is 80%. The percentage of seasonal migrants who have come because of heavy rain, flood, draught or other reasons is 15% and the temporary dwellers who will go back to their origin after having some resources is 5%.

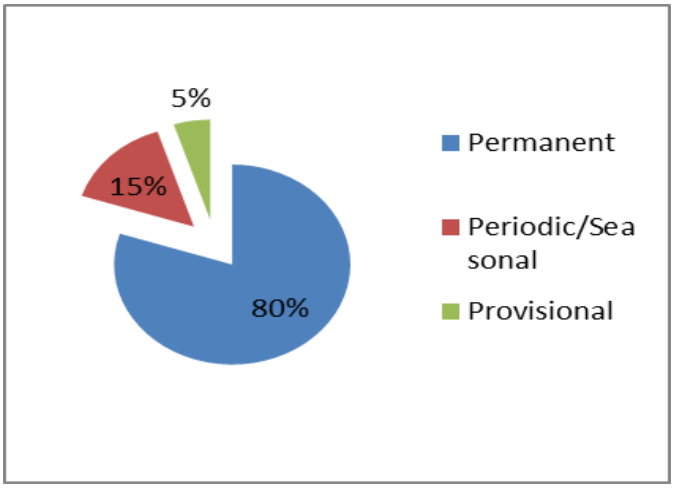

Figure 3: Pattern of migration

Year of Migration

According to Figure 4 below, among the 100 climate induced migrants, 3 people migrated in1995 and 2000, 5 people in 2003, 20 people in 2007, 15 people in 2008, 20 people in 2009, 16 people in 2019, 13 people in 2020 and 5 people in 2022. The Figure also indicates that, 66% have migrated to Khulna city till 2009 and the rest 34% migrated between from 2010 to 2022. In 2007, 2008 and 2009, cyclones Sidr, Nargis and Aila hit the southern coast of Bangladesh which created climate migrants from mainly Koyra and Dacope upazillas. They were forced to come to the city in search for a job in

that period (IOM, 2009). After these occasions, new climate migrants created in 2019 mainly for the events of dreadful cyclones Fani and Bulbul.

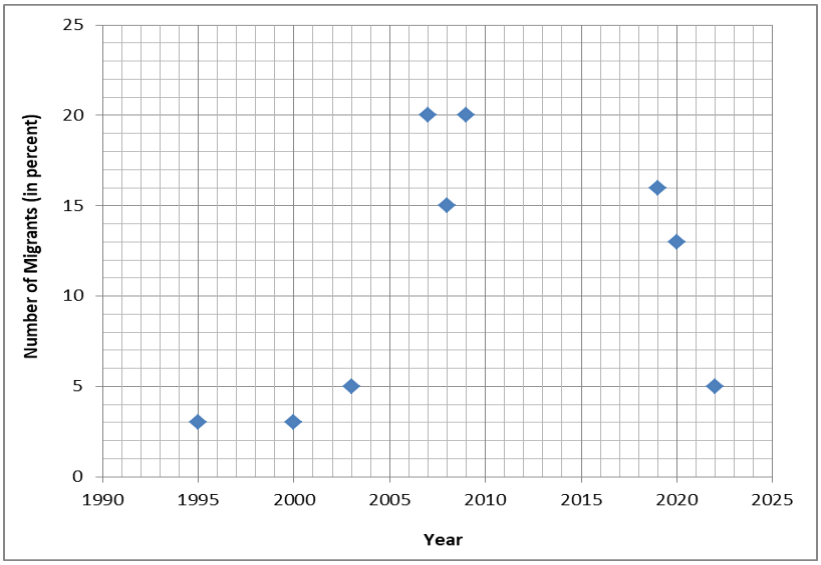

Figure 4: Year of migration

Inherent Factors Behind Migration

In this study, the composed data exposed that the respondents migrated to Khulna city for some particular reasons of climate-induced natural disasters. The poor and deprived people in southwest coastal areas especially women, senior citizens, kids are the most harshly affected by the natural disasters. They are really unable to deal with and react to natural catastrophes because of their poor economic condition. Basically, the people who are marginalized, economically inferior and politically deprived are less able to the processes of decision-making in the society. As in Figure 5, the results found from the study indicate that the cyclonic disasters, river erosion, soil salinity, water logging, flood etc. are the main reasons for the migration. Among the respondents, 77% are cyclone affected, 15% are affected by riverbank erosion, 5% by loss of agricultural land and rest 3% have migrated because of the salinity intrusion in that area.

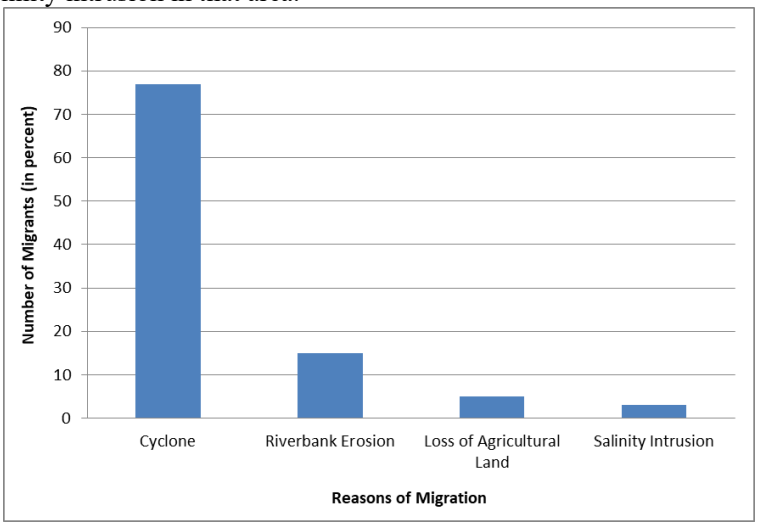

Figure 5: Reasons of migration

Cyclones and Extreme Flooding Events

There were three severe cyclones occurred in 2007, 2008 and 2009 namely Sidr, Nargis and Aila attacked the southern coastal region of Khulna and as a result, a large number of people were displaced in a short period (IOM, 2009). A different climate migration arose in 2019 mainly for the actions of overwhelming cyclones Fani and Bulbul. The affected people displaced for safeguarding their socio-economic securities after these cyclones form that region. The collected data in Figure 6 represent that 22 people migrated in 2007 for the cyclone Sidr, 20 people for cyclone Nargis, and another 20 people for Aila. In 2019, 8 people migrated for the cyclone Fani and 7 people for Bulbul. After the cyclone Aila, people migrated for the shortage of food and water, losing the own living places, fish and agricultural business farms. The data denotes that the highest 28.57% people migrated by the cyclone Sidr in 2007.

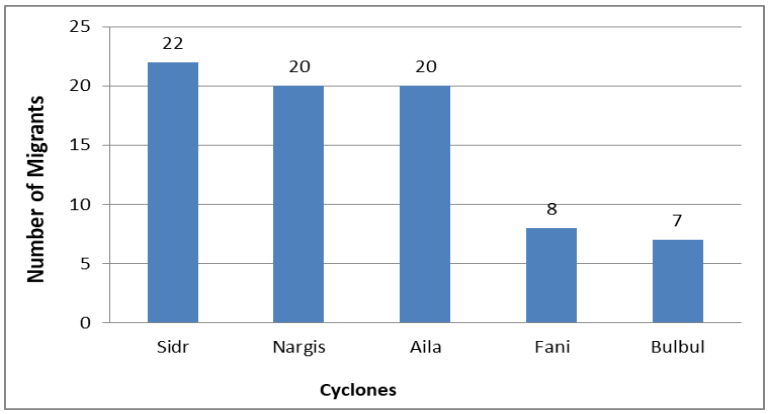

Figure 6: Migration due to cyclones

Riverbank Erosion

Riverbank erosion is another reason for the displacement of the migrants for their loss of household possessions. People, who live in the riverside areas, are very much vulnerable. They lose their land and assets immediately after the erosion of the river starts and become helpless. After losing their assets, the poor families were forced to travel to Khulna city in an instant response for their shelter and rehabilitation. The present study illustrates in the Figure 7 that, in the year 2000 the numbers of migrants were 2 and in 2005, one people migrated to Khulna City. But in 2010, the number of migrants increased to 5 because of the consequent strikes of natural disasters in that period, which is 33% and it is the highest amount of migration due to the riverbank erosion. From 2015 to 2022, total 7 people migrated to Khulna city.

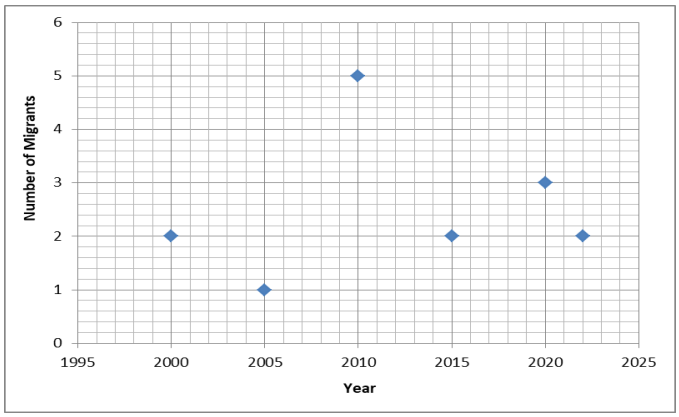

Figure 7: Migration due to riverbank erosion

Loss of Agricultural Land

Salinity Intrusion and Riverbank Erosion are the main causes for the losses of agricultural lands. Salinity intrusion is a significant issue in this area. This process happens when saltwater mixes up with the ground water and soil. This kind of involvement of salt into agricultural areas makes the soil less fertile and less suitable for farming. It leads to reduced agricultural productivity and the abandonment of cropland. Other reasons include quick urbanization and the construction of roads, highways, industrial areas, and other infrastructure projects result in the conversion of agricultural land into non-agricultural use. This process is particularly relevant in rapidly growing cities and towns like Khulna. According to the Figure 8 below, the study indicates that 2 people migrated in 2010 and 2015 respectively, which is 40% among the entire migrated people; and 1 people migrated in 2022 which is 20%.

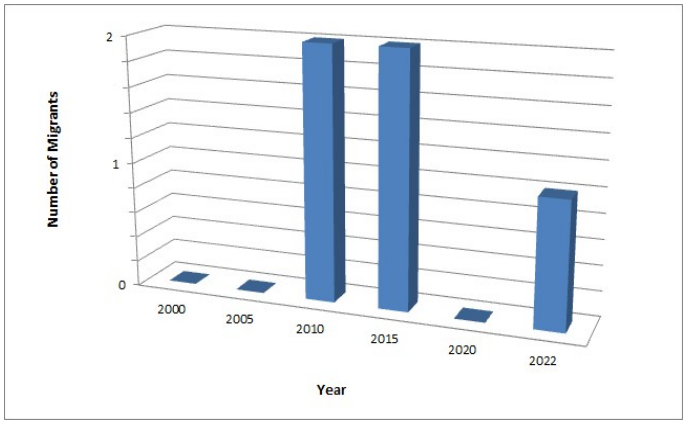

Figure 8: Migration due to loss of agricultural land

Salinity Intrusion

Salinity intrusion in the coastal regions in Khulna is a great problem. In Bangladesh, this is a significant environmental issue which affects the region's agriculture, water resources, and livelihoods. This is the gradual increase of saltwater into freshwater sources, primarily rivers and groundwater, which can have harmful effects on the local ecosystem and societies. Local communities were forced to migrate in search of better opportunities as the agricultural productivity declines. It also leads to various social and economic challenges for the migrants. The data in Figure 9 revealed that 3 people migrated due to the salinity intrusion in the land and drinking water in the year 2010, 2015 and 2022 respectively, which is 33% of the entire migrants.

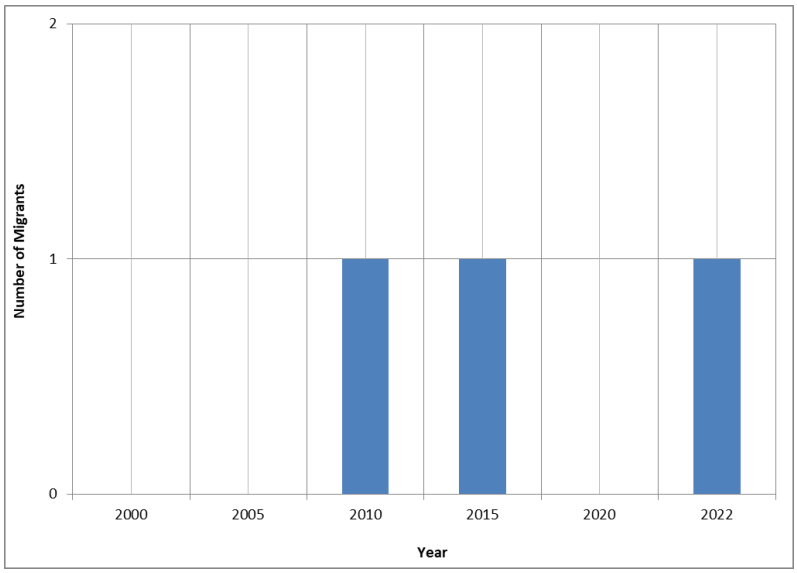

Figure 9: Migration due to salinity intrusion

CONCLUSION

The research on climate-induced migration in the Khulna region highlights the crucial need for comprehensive and adaptive actions to address the multifaceted challenges posed by various kinds of natural disasters. The primary data showed that the extreme damages and losses for the cyclones had a straight influence on persuading the choice of migration. The findings expose a clear relationship between environmental changes and population migration along with underlining the demanding nature of the issue. There were some push factors and pull factors which prompted the people to transfer in the city areas like better lifestyle, employment opportunity, developed transportation systems. The major findings from the research are as follows:

1) Cyclones and extreme flooding events are the major factors for the migration. 28.57% people migrated by the cyclone Sidr in 2007.
2) Because of the consequent strikes of natural disasters in 2010, 33% people migrated for riverbank erosion.
3) Due to the loss of agricultural lands, 80% people migrated from 2010 to 2015 and 20% people migrated in 2022.
4) 33% people migrated due to the salinity intrusion in the land and drinking water in the year 2010, 2015 and 2022.

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