International Journal of Earth Sciences Knowledge and Applications
www.ijeska.com

Research Article

e-ISSN: 2687-5993

Factors of Climate Migration of Poor Slum Dwellers in Dhaka City

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INFORMATION

Article history
Received 03 March 2021
Revised 16 April 2021
Accepted 20 April 2021
Available 15 July 2021

Keywords
Climate change
Climate migrants
Slum dwellers
Factors
Dhaka City

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ABSTRACT

Bangladesh is in a vulnerable situation for climate change. This study examines the factors of the climate migration of urban poor slum dwellers in Bangladesh. The study was conducted at two slums in Dhaka city with a purposive sample survey, KII, and in-depth qualitative interview of selected climate migrant slum dwellers with the purposive sample size of 150. This study identified river erosion, cyclone, flooding, drought, and no agricultural work available during the off-season (Monga period) main environmental reasons of migration. It is found, inherent factors behind climate migration are mainly driven by economic and social factors i.e., unemployment, poverty, political, religious, and cultural conflicts, etc. In the migration process, the push factors are more active than pull factors. Poverty and unemployment pushed the poor villagers who were affected by any kind of climate change to move their residence to the cities. After the migration majority of the migrants struggle to survive and try to improve their livelihoods in the city slum. Even though poor migrants have contributed a lot to social and economic development, they still have to stay excluded from proper nutrition, housing, education, and sanitation. Planned migration, availability of work and social care services is suggested through this paper to reduce of further poverty urban poor.

1. Introduction

Bangladesh faces significant challenges in adapting to the impacts of climate change. Often cited as one of the most vulnerable countries to climate change, Bangladesh's topography and geographical location make it particularly susceptible to extreme weather events including cyclones, floods, and storm surges. Its vulnerability is caused not only by its biophysical factors (being a flat, low, delta country exposed to flooding and cyclones) (Ayers, 2014), but also its socio-economic factors (such as high dependence on agriculture, population density, and poverty) (Thomas, 2013). Hotspots of climate change vulnerability, where both biophysical and socio-economic vulnerability are high, are in the central and western coastal area, the north-western highlands, and along the main rivers (Ministry of Foreign Affairs of the Netherlands, 2018).

Environmental displacement has already become intense in geographically and environmentally vulnerable areas in Bangladesh. Thus, climate induced migration to big cities or nearby places is getting spontaneous over the last few decades. For instance, frequent exposure to natural disasters makes coastal people often bound to migrate in search of secure lives and livelihoods (Massey, 1999; Akter, 2009). Migration has long been an important livelihood strategy for the people of Bangladesh. Every year, thousands of destitute victims of natural disasters pour into the cities from rural areas. Others come in the hope of a better life whenever the

population rises to such an extent that people can no longer secure a livelihood, they migrated elsewhere. In recent years, most of the cities in Bangladesh are experiencing rapid but unplanned urbanization. While the annual population growth rate is 1.7 percent at the national level, the percentage of urban growth is increasing faster and it is expected that more than 50 percent of the population in Bangladesh will live in urban areas by the year 2025 (ESCAP, 2007).

It is estimated that every year 300,000 to 400,000 new migrants come to Dhaka from different parts of the country and mainly reside in more than 5,000 slums across the city (Baten, 2013). Climate migrants start living in urban slums to search for better and secure life. But urban slums are located mostly in low-lying environmentally hazardous areas coupled with inadequate facilities like food, shelter, sanitation, health care. These make their life even worse.

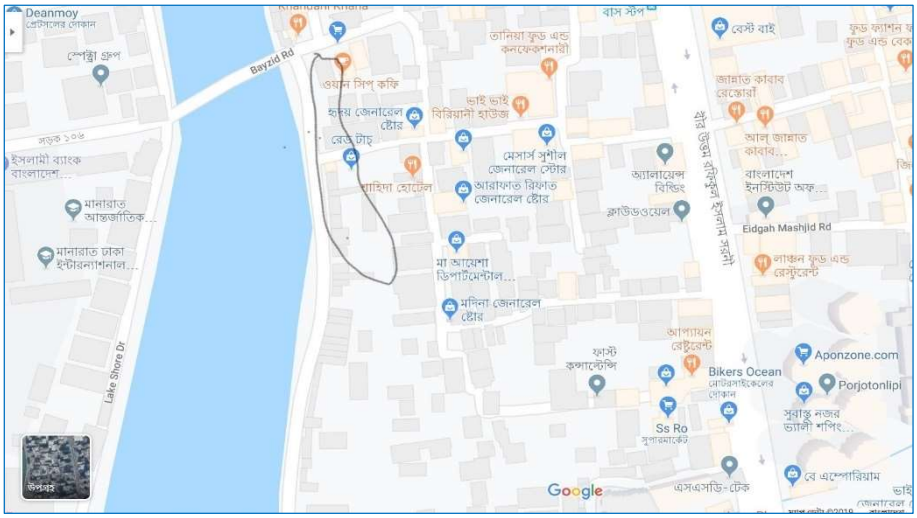

Fig. 1. Jilpar slum Shahjadpur

Fig. 2. Korail slum Mohakhali

2. Objectives of the Study

- To identify the factors of migration of the poor migrate from rural areas to Dhaka city.
- To find out the root cause of their migration that pushed them to migrate.

3. Rationale of the Study

This study represents the relationship between Factors of Climate Migration and the cause of climate change which push affected poor people to migrate towards Dhaka city in the Bangladesh context. Furthermore, these are some rationales that cannot ignore:

- This study will be more useful for academic purpose in worldwide.
- This research will be helpful for taking preventive measurement against Climate change migration.
- The policymakers of Bangladesh may be benefited from this study for developing policy against change impacts on poor people.
- This study on ageing will be the tool for the societal progress, provided the Bangladeshi policymakers to come up with appropriate policy responses to activate the potential of change impacts on poor climate migrant people.

- This study will further be intended to serve as a baseline for the development of more specification from the policy perspective for the change migration of urban poor slum people in Bangladesh.

4. Literature Review

Bangladesh's vulnerability to natural hazards also leads to climate displacement-the forced displacement of individuals and communities from their homes and lands. This is as a result of both "sudden onset events" such as floods, cyclones and riverbank erosion as well as "slow onset processes" such as coastal erosion, sea-level rise, salt water intrusion, changing rainfall pattern and drought (Siddiqui, 2011). The primary causes of climate displacement in Bangladesh are tidal height increases in the coastal areas (leading to tidal flooding) and riverbank erosion in the mainland areas (Displacement Solutions, 2010). The key secondary causes of displacement are tropical cyclones and storm surges in the coastal regions and river flooding in the mainland. The primary sites of displacement have been in the coastal regions and the river delta regions in the mainland of Bangladesh's 64 districts, 24 coastal and mainland districts are already producing climate displaced people (Displacement Solutions, 2012).

Table 1. Stated environmental reasons of migrating (through in-depth interviewees)

Reasons	Korail Slum		Shahajadpur Slum	
	Frequency	Percentage (%)	Frequency	Percentage (%)
River erosion	30	40	34	45.33
Cyclone	16	21.33	13	17.33
Sudden loss of their house and/or crops due to flooding	6	8	9	12
Drought and a lack of water for irrigation	7	9.33	6	8
Water-lodging	5	6.66	4	5.33
High temperatures or erratic rainfall	0	0	0	0
No agricultural work available during the off-season (Monga period)	11	14.66	9	12
Salinity	0	0	0	0
Sea level rise	0	0	0	0
Total	75	100	75	100

Source: Field survey, 2020

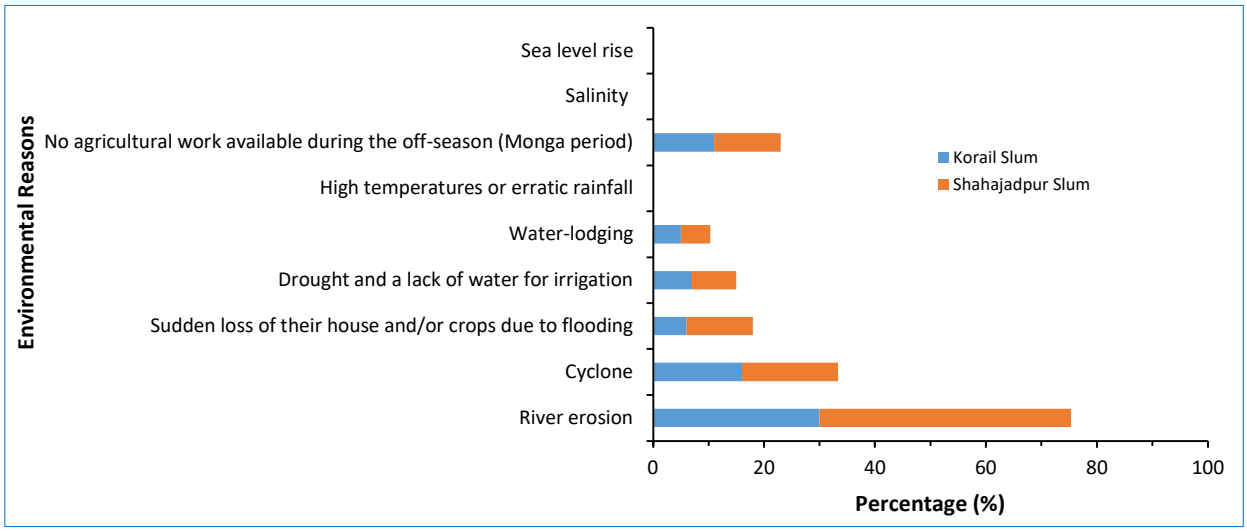

Fig. 3. Environmental reasons for migrating

The rapid growth of population and consequent landlessness along with other factors of population displacement in the rural areas lead to rural unemployment, which generates a growing flow of migrants. Most of the migrants who come from rural areas are poor, and hence the urban areas remain numerically dominated by the poor. The migrants originate largely from the economically depressed areas of the country (Sarwar and Rahman, 2004).

The poverty argument in Bangladesh is strong, where many poor and land less migrants are forced to migrate to support themselves or their families (Ahmad, 2005). The glaciers in the Himalayas will melt faster, sending more floodwaters to batter the Bay of Bengal. Cyclones will wrack the coast more frequently, and with more intensity. Salty seawater will pollute drinking supplies. Fertile land will be destroyed. Some of this is already happening. There have not been many studies indisputably tying Bangladesh's rural exodus to climate. But most of the research indicates that the majority of migrants hail from coastal areas that are already experiencing rising sea levels, increased salinity, destructive floods and cyclones.

At least 400,000 people move to Dhaka every year, according to the World Bank, while the International Organization for Migration (IOM) estimates that 70% of Dhaka's slum-dwellers moved there fleeing some sort of environmental shock. In 2012, A S Moniruzzaman Khan, the director of the

Centre for Climate Change and Environmental Research at BRAC University, tracked 1,500 families migrating to cities, mostly Dhaka (The Guardian, 2015).

It has been estimated that by 2050, one in every seven people in Bangladesh will be displaced by climate change. Up to 18 million people may have to move because of sea level rise alone. According to Environmental justice foundation, in 2016 alone, extreme weather-related disasters displaced around 23.5 million people. This does not include the people forced to flee their homes as a consequence of slow-onset environmental degradation, such as droughts, sea level rise and melting permafrost. Bangladesh is on the frontline of these impacts (EJF, 2020). Most of the writers give importance on issues, consequences and factors of climate effects behind migration. This paper study not only the factors of migration but also identifies the inherent environmental factors nexus with other socio-economic factors of migration to slum areas in Dhaka city to consider for up-gradation and advancement of living.

Table 2. Loss/Damage in climate effect (Karail Slum and Shahajadpur Slum)

Loss/ Damage in Disaster	Percentage (%)
Loss of life	12
Loss of living land	42
Damage of House	77
Damage of cultivated land	69
Loss in production	86
Loss of income source	92
Inoccupation	89
Income loss	91
Transportation problem	67
Water pollution and income hazards	76
Loss of domestic animal	31

Source: Field survey, 2020 (Multiple Answers)

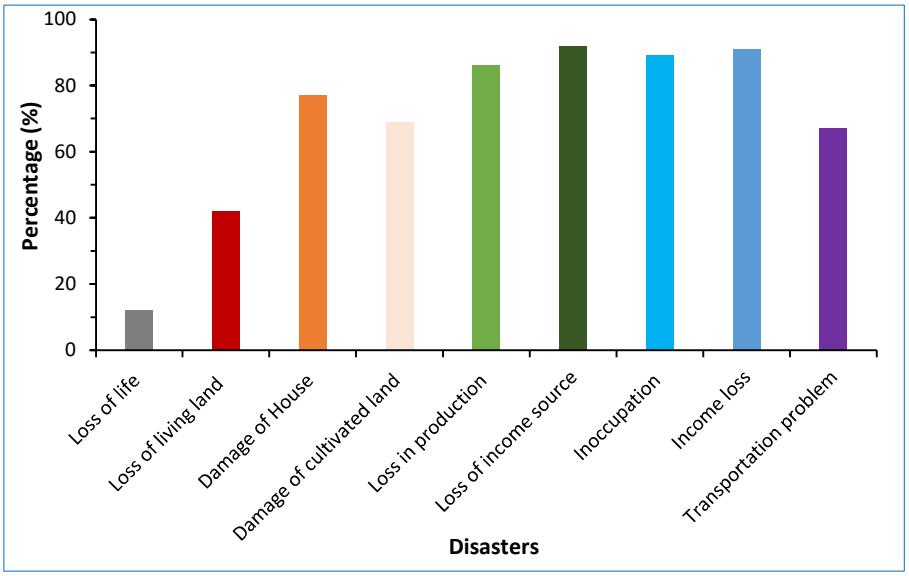

Fig 4. Loss/Damage in Disaster (Karail Slum and Shahajadpur Slum)

5. Methodology of the Study

5.1. Approach of study

This Research conducted both quantitative and qualitative types study. This study has been conducted through a quantitative approach because of representing some specific point of view of their life's vulnerability to natural hazards which leads to climate displacement and emphasizes the natural flow of slum dwellers social life. Besides, the study conducted through a quantitative approach which helps to compare the present situation of climate and non-climate migrants in the Dhaka Slum.

5.2. Study site

Two slums of Dhaka city where people migrated for climate change have been selected as the research area. General information has been collected from the Korail slums Mohakhali and Jilpar slums Shahjadpur area of Dhaka. These two areas have been selected because of the convenient of the researcher. The target groups of the respondents are the lower-class people who were migrated from their homeland to Dhaka city because of any kinds of climate effects.

5.3. Study period

This study was conducted from August 2019 to February 2020.

5.4. Location of the study area

The area of Jilppar slum located at Shahjadpur nearby Shajadpur Lake beside Manaratat International University. It is situated under the Dhaka North City Corporation.

Shahjadpur is a ward under number 18. The latitude and longitude of the Shahjadpur slum area are 23.791241 and 90.42245 (Fig. 1).

Korail, one of the largest slums in Bangladesh, is located just opposite the BRAC Head Office in Dhaka. Home to around one lakh people, who include 28,000 voters, Korail Basti is spread over 90 acres of government land in Mohakhali. People have been living there since 1990. It is also situated under Dhaka North City Corporation. Korail slum is a ward under number 20. Latitude and longitude of the Korail slum area are 23.784822 and 90.404326 (Fig. 2).

5.5. Population of the study

In this research, all older women who migrated because of climate change in Dhaka City from various palaces of Bangladesh have been selected as the population of the study. The respondents have been suffered different types of natural hazards including flood (e.g. river flood, urban flood and flash flood), cyclone and storm surges, drought, soil salinity, river bank erosion, tornadoes for their respective field about climate change effects.

5.6. Sampling of the study

A purposive sampling used to select two slums in Dhaka city. So that it has been easier and comfortable to run the study on these areas. A total of 150 climate migrant and 150 non-climate migrant participants have been interviewed. The respondents belonged to the age of 20 to 50 years. A total of 5 respondents interviewed as an individual case for representing actual factors of climate migration in slum of the Dhaka City.

Table 3. Getting support from GO/NGO after climate effects

Support from GO/NGO	Category of support	Korail Slum		Shahjadpur Slum	
		Frequency	Parentage (%)	Frequency	Parentage (%)
Yes	Cash finance	3	4	2	2.67
	Loan	4	5.33	2	2.67
	Food and medicine	5	6.67	3	4
	Repair house	2	2.67	2	2.67
	Relief	7	9.33	8	10.67
	Training	0	0	0	0
	Compensation	1	1.33	2	2.67
	Information services	5	6.67	4	5.33
No	Nothing	48	64	51	68

Source: Field survey, 2020

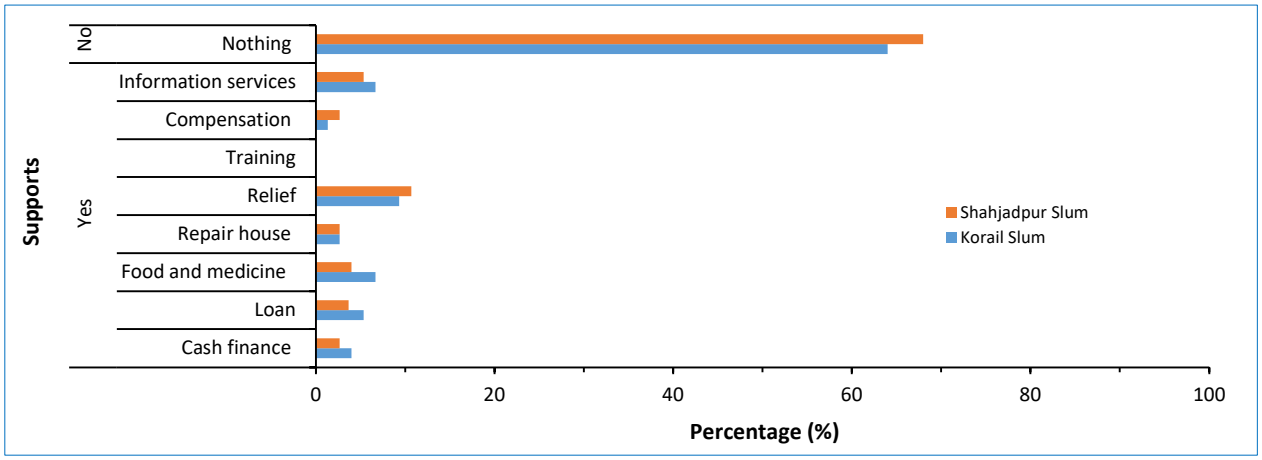

Fig. 5. Support from GO/NGOs after climate effects

5.7. Main data collection technique

The information has been collected through the in-depth interview that complied with qualitative analysis. For this study, it observed physically and in contact with selected cases. Primary data have been collected from selected samples through face-to-face interview using interview schedule and observation. KII includes household's socio-economic factors characterizing living conditions, physical environment, dietary practice and health outcome analyzed by applying statistical technique, frequency distribution. Primary data have been gathered by using a field study. The field study primarily offers a vulnerability survey of climate migrants using an interview schedule. A pre-tested, modified, semi-structured, self-administrated interview schedule designed based on the living condition of the climate migrant people in Dhaka city.

5.8. Data processing

Firstly, the collected data from the research area have been edited. Then it classified according to its characteristics. All respondent's data outcome has been analyzed by applying statistical technique, frequency distribution. Collected data processed with the help of Excel (2016 version) and the data have been measured with numerical value against each item of the variable. To represent five special cases, the proper way of analyzing case study used to analyze data.

5.9. Data presentation

After analyzing some data have been presented in a descriptive way and a quantity of data presented in the statistical line of the track. Data have been presented to use different data presentation such as multi-variant table and figures (pie chart, bar chart etc.).

Table 4. Reasons for choosing Dhaka City Slum

Reasons	Korail Slum	Shahijadpur Slum
Work availability, %	86	81
Kin network, %	83	79
Better life, %	92	89
Others, %	47	36

Source: Field survey, 2020

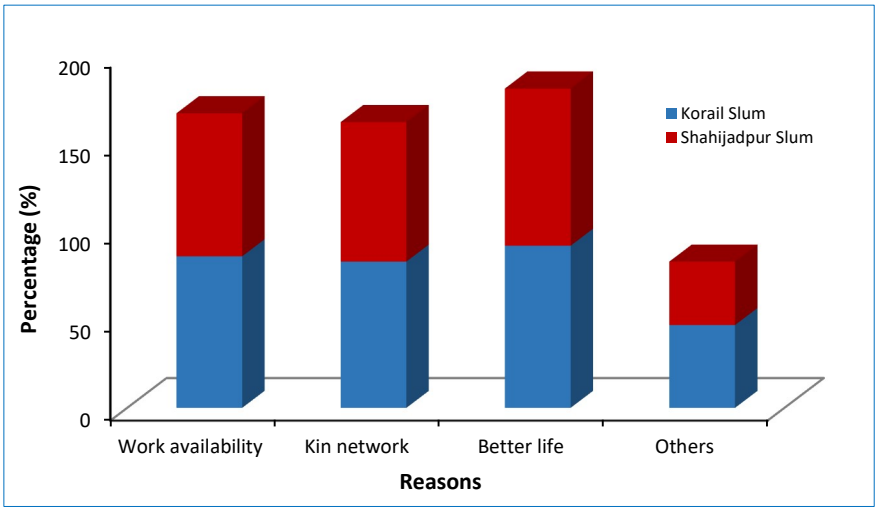

Fig. 6. Reasons for choosing Dhaka City Slum

6. Analysis of the Study

Migration is a selective process and it depends on the community, family or individuals and it also varies extensively from culture to culture. Several studies represented that migration varies depends on socio-economic, demographic, environmental, political and cultural factors. Lack of work availability, unemployment, political chaos, social discrimination, social prejudice, fanaticism, poverty, marriage, family conflict, better living, better educational facilities and natural disaster i.e., flood, drought, river erosion etc also act as motivational factors of migration. This study represents the inherent natural and environmental factors that directly or indirectly prompt to migrate from rural to urban.

Table 5. Respondents according to year of coming and place of residences

Place	Year of coming					
	1 to 5 years	6 to 10 years	11 to 15 years	16 to 20 years	21 to 25 years	Total
Karail Slum	15	17	14	16	13	75
Shahjadpur Slum	23	21	19	12	0	75
Total	38	38	33	28	13	150
Percentage (%)	25.33	25.33	22	18.67	8.67	100

Source: Field survey, 2020

6.1. Factors of Migration

The present study found various factors of migration in urban areas. Migration is always a selective process which is verity in the community, family, individual and from culture to culture. Various studies reported that migration various depends on Socio-economic, demographic and cultural factors. Some demographic factors also impulse to create socio-economic factors. That is lack of work availabilities, poverty, unemployment, natural disaster i.e., flood, drought, sea level rise, river erosion, salinity; and other socio-cultural factors are marriage, family conflict, social discrimination, social prejudice, better living, educational facilities etc act as motivational factors of migration. Sometimes political unrest or political disorder also bound to make migration (Farhana, et al., 2012).

Data collection from the field has been shown with tables and diagrams with a short description. Results obtained are shown below.

6.2. Reasons of Migration

Bangladesh experiences frequent natural disasters–such as

floods, cyclone, and drought. After affecting by any form of climatic event people first try to adapt with the changing environment and try to stay their home. Who lost everything and cannot survive any more, they leave their place of origin? Maximum (40%-45.33%) respondents migrated for River erosion, followed by Cyclon (21.33%-17.33%) and then no agricultural work available during the off-season (Monga period) (14.66%-12%) (Table 1 and Fig. 3).

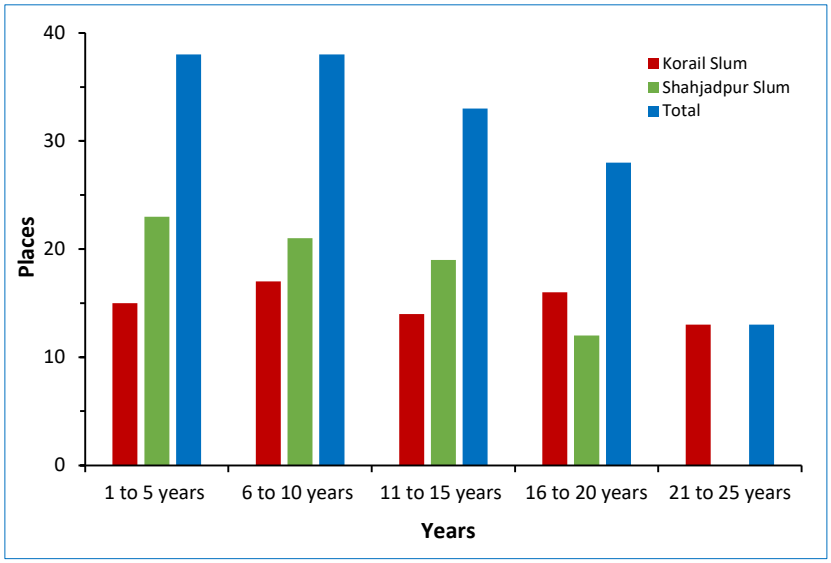

Fig. 7. Respondents' year of coming and place of residences

6.3. Loss/Damage in climate effect

92% of the respondents (climate migrant) lost their income source after climate effect, 89% inoccupation and 86% lost in production, whereas 77% house and 69% cultivated land were damaged and 42% lost their living land during disaster. Besides, some of them (12%) lost any of their family member's life (Table 2 and Fig 4).

6.4. Getting support from GO/NGO after climate effects

Most of the respondents (64%-68%) did not get any support from GO/NGO after climate effect in their place of origin. However, approximate 10% respondents got relief after climate effect (Table 3 and Fig 5).

6.5. Reasons for choosing Dhaka City Slum

Most of time, it has been seen people want to live in better life. Besides, in any crisis period the poor people want to get help or any kind of assistance from rich relatives. Work availability and kin-network played a very important role for choosing migration place/city (Table 4 and Fig 6).

Table 6. Inherent Factors of Environmental Migration (KS= Korail Slum, SS= Shahjadpur Slum)

Inherent Factors of Environmental Migration	River erosion		Cyclone		Flooding		Drought and a lack of water for irrigation		Water logging		No agricultural work available during the off-season (Monga period)		Total	Percentage (%)
	KS	SS	KS	SS	KS	SS	KS	SS	KS	SS	KS	SS		
Economic Factors of migration														
Poverty	18	20	9	8	4	6	5	3	3	3	7	5	91	60.67
Unemployment	11	13	5	4	2	2	1	2	2	1	3	2	48	32
Social Factors of migration														
Population explosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marriage	1	1	0	1	0	0	0	0	0	0	0	1	3	2
Social inequality/ discrimination	0	0	1	0	0	1	0	0	0	0	1	0	3	2
Religious violence	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Political Factors of migration														
Crossing boarder	0	0	0	0	0	0	0	1	0	0	0	1	1	0.66
Exchange of political party	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pressurization of politics	0	0	1	0	0	0	1	0	0	0	0	0	2	1.33
Involvement of politics	0	0	0	0	0	0	0	0	0		0	0	0	0
Total	30	34	16	13	6	9	7	6	5	4	11	9	150	100

Source: Field survey, 2020

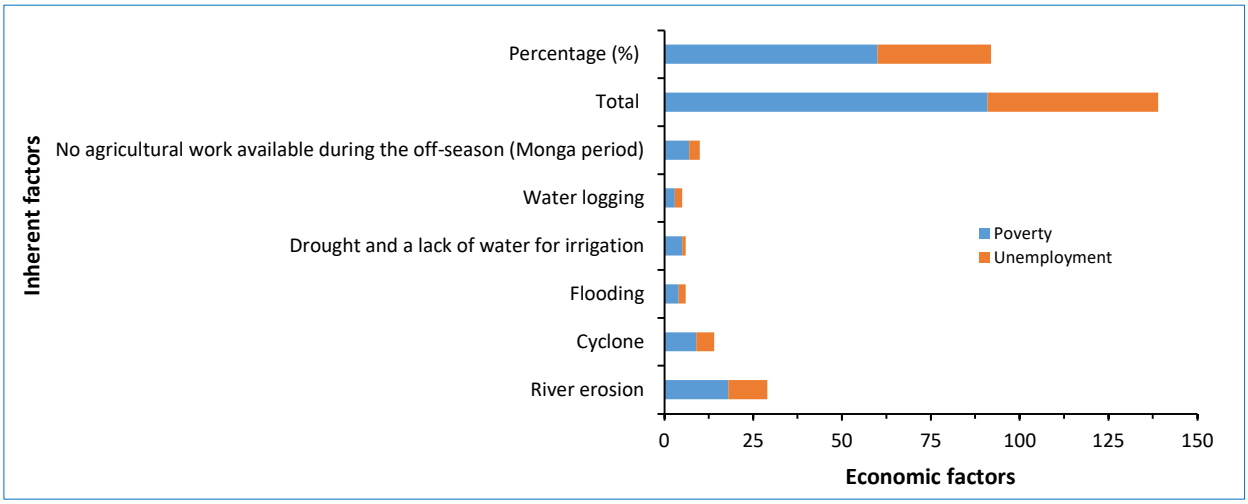

Fig. 8. Inherent factors of environmental migration

Table 7. Factors of Migration (respondents of non-climate migrants=150)

Factors of migration	Korail Slum	Shahjadpur Slum	Total	Percentage (%)
Economic Factors of migration				
Poverty	29	24	53	35.33
Unemployment	17	13	30	20
Social Factors of migration				
Population explosion	3	5	8	5.33
Marriage	5	7	12	8
Social inequality / discrimination	8	9	17	11.33
Religious violence	3	4	7	4.67
Political Factors of migration				
Crossing boarder	1	1	2	1.33
Exchange of political party	1	1	2	1.33
Pressurization of politikse	5	6	11	7.33
Involvement of politics	2	4	6	4
Others	1	2	3	2
Total	75	75	150	100

Source: Field survey, 2020

6.6. Year of coming and place of residences

Day by day the proportion of migration increased for the climate change. The number respondents were the same (25.33%) for who migrated 1-5 years ago and 6-10 years ago; and it is 22.00% who migrated 11-15 years ago. 18.67% respondents came from their home districts before 16 to 20 years. However, 8.67% respondents came from their home land 20 to 25 years ago because of climate change (Table 5 and Fig 7).

5.7. Inherent factors of environmental migration

There are few factors like Social, cultural, religious, political etc. to drive climate and non-climate migrants to the city, however, poverty (60.67% climate migrant & 35.33% non-climate migrant) and unemployment (32% climate migrant & 20% non-climate migrant) are the main economic factors (Table 6 and Fig 8). When Social, political and religious factors have very minimal influence on climate migrant, these has significant influence on non-climate migrant like pressurization of politics (7.33%), social inequality (11.33%), and religious violence (4.67%) (Table 7).

5.8. Push and pull factors: employ while theoretical and analytical framework

Migration is the movement of people from one place to another. People can move long or short distances and might move for a short period of time or might spend the rest of their lives in a new place. Migration can take place over short or long distances and it can be a one-way movement or temporary. Some people choose to migrate (voluntary) or others may be forced to move (forced). There are many economic, social and physical reasons why people emigrate and they can usually be classified into push and pull factors. Push factors are those associated with the area of origin Pull factors are those that are associated with the area of destination (Fig. 9).

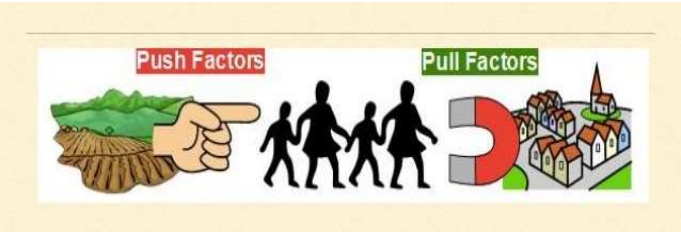

Fig 9. Push Factors and Pull Factors

Push factors are the reasons why people leave an area. They include: lack of services, lack of safety, high crime, crop failure, drought, flooding, poverty, war.

Table 8. Push and pull factors of Migration (Climate migrant and non-climate migrant)

Factors of migration	Push factors Place of origin	Korail and Shahjadpur Slum	Pull factors Place of destination	Korail and Shahjadpur Slum
Demographic and social factors	Population growth	26	Stable population	63
	Young age structure	53	Population decline	52
	Inadequate educational institutions	33	Demographic ageing	42
	Medicare	57	Welfare state benefit	47
	Social security	49	Educational institutions/education system	53
	lack of safety	58	Medicare/ Good health care facilities	64
	Loss of huge wealth	87	Social security	12
Economic factors	Unemployment	83	Demand for labour	85
	Low wages	79	High wages	87
	Lack of service	68	higher employment	82
	Poverty	93	Welfare	91
	Low consumption	86	High consumption	87
	Living standard	66	Living standard	63
	Work unavailability	87	Better service	72
Political factors	Dictatorship	66	Democracy	73
	Shadow democracy	68	Rule of low	49
	Bad governance	56	Pluralism	52
	Political upheaval conflict	47	political stability	83
	(Civil) war	44	Peace and Security	78
	Terrorism	63	Protection of human	59
	Human rights violation	74	Civil rights	58
	Oppression of minorities	71	Protection of minorities	77
Ecological factors	Ecologic disaster	93	Better environment	62
	Desertification	46	Unawareness about environment pollution	43
	Lack of natural resource	78	Thoughtlessness of irrigation	84
	Water shortage	51	good climate	51
	Soil erosion	54	lower risk from natural hazards	87
	crop failure	72	Protection of Natural resource	39
	Lack of environmental policy	82	environmental policy	53
Migrant flows and migrant stocks	Decision of the family or the clan	89	Community trends	88
	Information flows	72	Information flows	78
	Media	84	Media	81

Source: Field survey, 2020

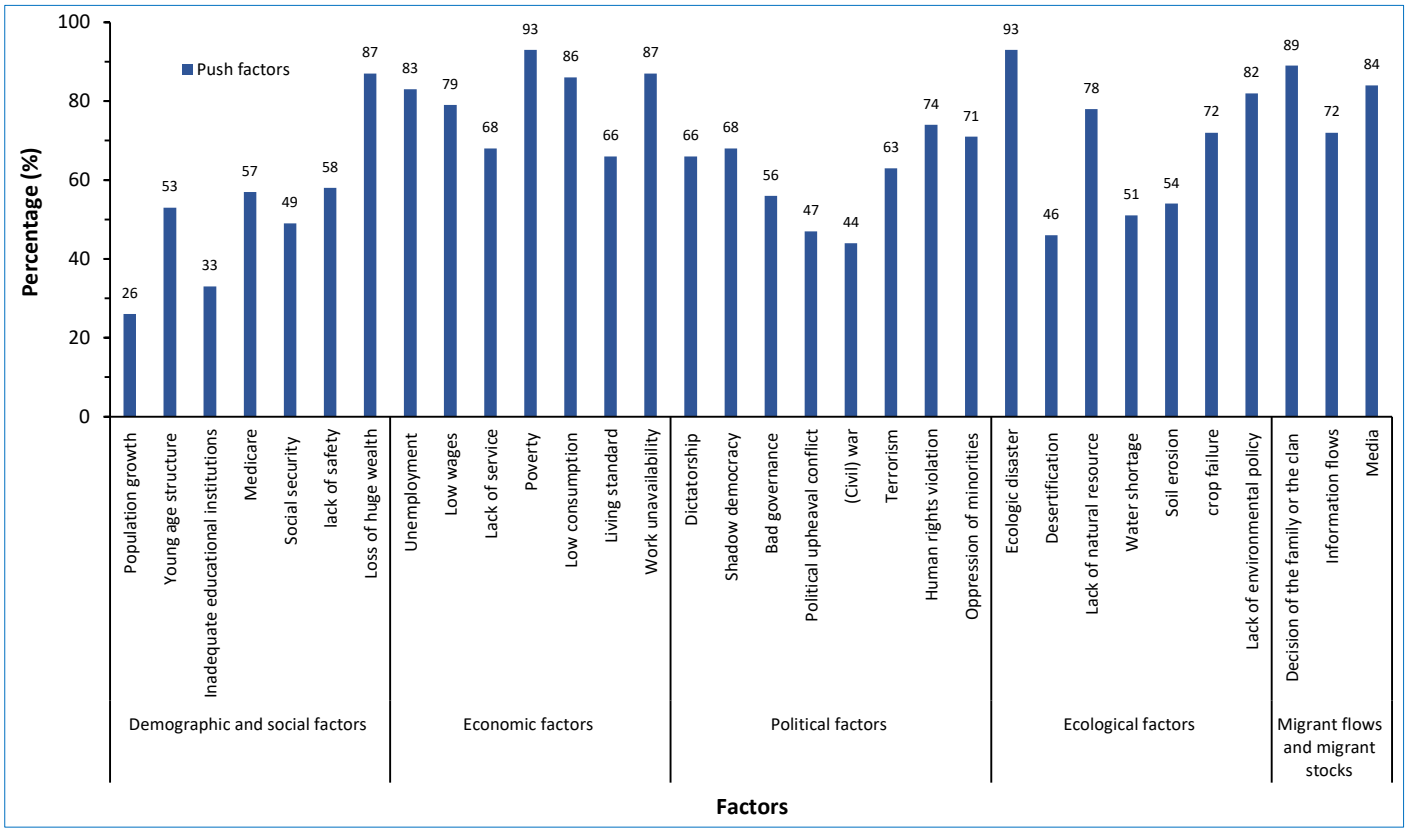

Fig. 10. Push factors of migration (Place of origin)

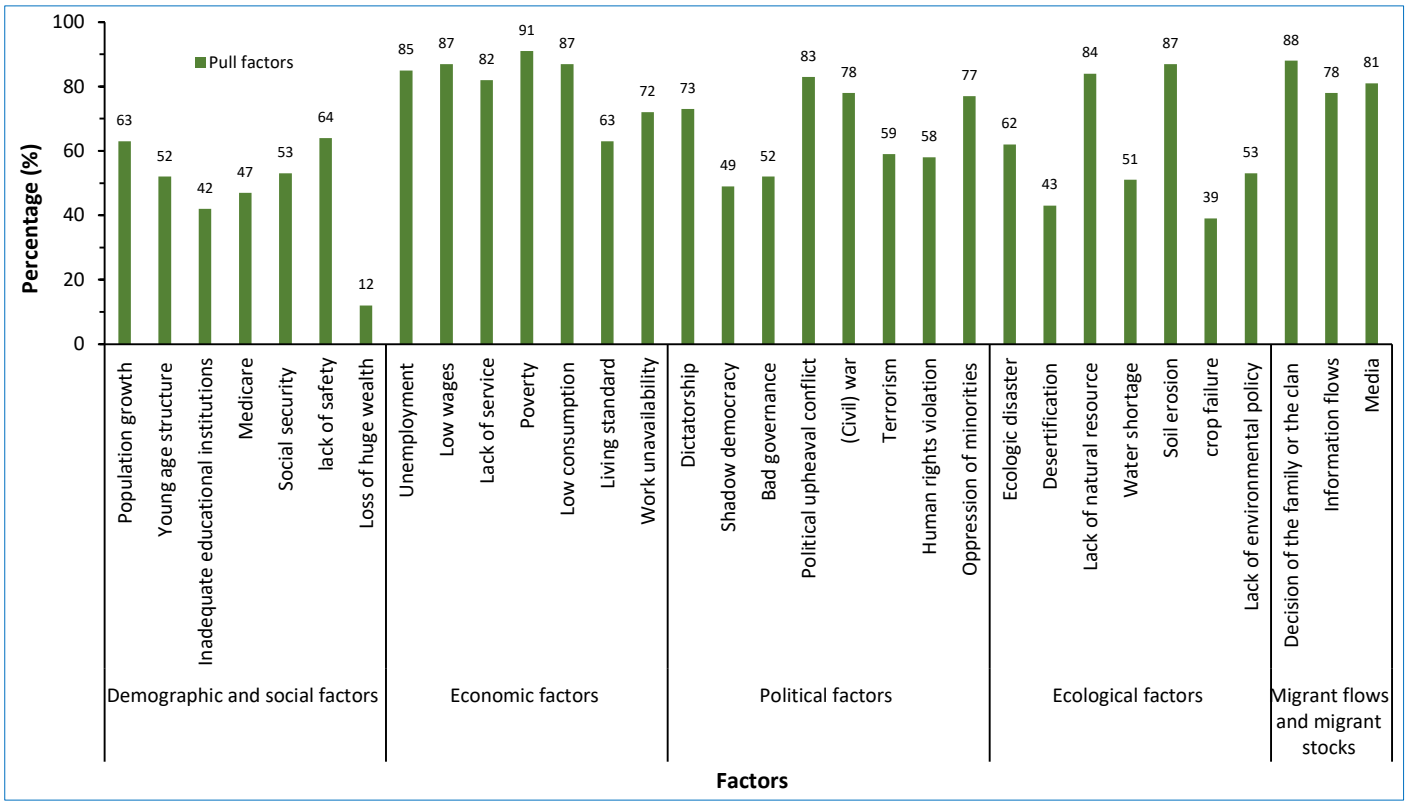

Fig. 11. Pull factors of migration (Place of distinction)

Pull factors are the reasons why people move to a particular area. They include: higher employment, more wealth, better services, good climate, safer, less crime, political stability, more fertile land, lower risk from natural hazards (tutor2u, 2020).

Fig. 12. Sustainable livelihood framework

In general, migration can be explained by push-factors and pull-factors between regions and by helping migrant networks on both sides. Table 8 shows the climate and non-climate effected migration potential points out foremost to the push-factors and the migrant networks between sending and receiving areas (Schmid, 2011).

According to push factor indicators this study found, the unemployment (83%), Low wages (93%) and Work unavailability (87%) are the main economic factors for climate migrants in the Place of origin (Table 8 and Fig 10). Besides, according to pull factor indicators this study found, the demand for labour (85%), high wages (87%) and Better service (72%) are the main economic factors for climate migrants in the Place of destination (Table 8 and Fig 11).

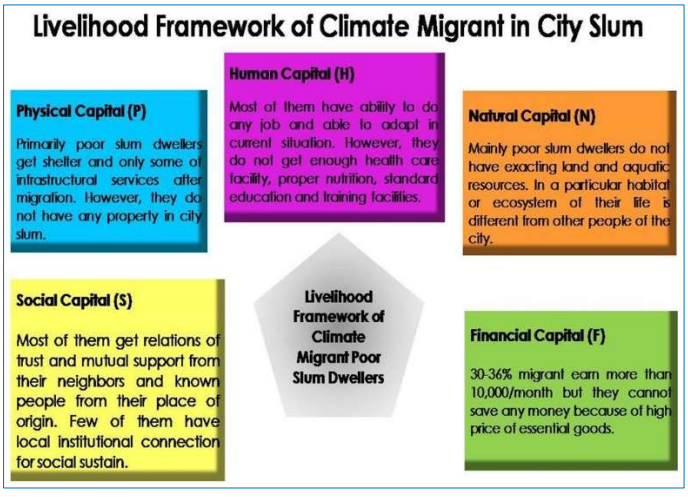

Fig. 13. Livelihood ramework of climate migrant in City Slum

6.9. Sustainable Livelihood Framework

Sustainable Livelihood Framework indicates five capitals (Natural, Human, Physical, Social and Financial) which help to mention improvement and current position of sustainable life and livelihood (Fig. 12).

6.10. Occupation of climate migrant and non-climate migrant

The occupations for male were farming, fishing, shop keeping and business whereas few females only worked as a maid, most of them do not do any paid work. After moving to the city, migrants (climate and non-climate both) preferred to do the same or similar types of job (Tables 9 and 10). As there is not enough opportunity of farming and fishing in the city, people of these profession choose different profession.

6.10.1. Occupation after climate migration (Korail Slum)

In the survey it has been found, migrated people preferred to do the same or similar job when they moved to the city slum. 78.67% respondents were Rickshaw puller, Housewife, Fisherman and Farmer before the migration, and 10.67% respondents were unemployed. All rickshaw puller (100%) chose to pull rickshaw after the migration. In case of housewife, 53.33% chose to be maid servant and 20.00% remain housewife. Assuming Fishing and farming is a hard job, it has been found those people chose comparatively hard job in the city, 34.15% chose to pull rickshaw and 26.83% become day labour (Table 11).

6.10.2. Occupation after non-climate migration (Korail Slum)

In regard of choosing a profession after the migration, climate and non-climate migrants, all followed the same trend. No rickshaw puller (6.67%) and day labour (14.67%) changed their profession after the migration. 42.67% respondents were either fisherman or farmer, out of these, 28.13% chose rickshaw pulling and 18.75% became garment worker. 69.23% housewives became maid servant and same number (15.38%) of housewives chose to be housewife and garment workers (Tale 12).

Table 9. Major Occupation of Climate migrant and non-climate migrant (After the climatic event and now in Dhaka)

Types of occupation	Korail Slum							
	Climate Migrant				Non-Climate Migrant			
	After the climatic event before migration		Now in Dhaka		Before migration		Now in Dhaka	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Rickshaw puller	3	4	17	22.66	5	6.66	14	18.67
Unemployed	8	10.67	0	0	9	12	0	0
Day labour	4	5.33	15	20	11	14.33	14	18.67
Maid servant	3	4	13	17.33	3	4	16	21.33
Housewife	15	20	3	4	13	17.33	2	2.67
Garment worker	0	0	11	14.67	0	0	12	16
Shop keeper	0	0	2	2.67	1	1.33	2	2.67
Businessman	1	1.33	1	1.33	1	1.33	1	1.33
Office peon	0	0	1	1.33	0	0	2	2.67
Security guard	0	0	2	2.67	0		1	1.33
Hawker	0	0	4	5.33	0	0	3	4
Fisherman	17	22.66	0	0	15	20	0	0
Farmer	24	32	0	0	17	22.66	0	0
Construction worker	0	0	5	6.66	0	0	2	2.67
House caretaker	0	0	1	1,33	0	0	6	
Total	75	100	75	100	75	100	75	100

Source: Field survey, 2020

Table 10. Major occupation of climate migrant and non-climate migrant (After the climatic event and now in Dhaka)

Types of occupation	Shahijadpur Slum							
	Climate migrant				Non-climate migrant			
	After the climatic event before migration		Now in Dhaka		Before migration		Now in Dhaka	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Rickshaw puller	4	5.33	17	22.66	5	6.66	13	17.33
Unemployed	12	16	1	1.33	15	20	1	1.33
Day labourer	3	4	15	14.67	4	14.33	12	16
Maid servant	2	2.57	13	17.33	3	4	16	22.66
Housewife	16	21.33	3	4	14	18.66	2	2.67
Garment worker	0	0	14	18.66	0	0	13	17.33
Shop keeper	0	0	2	2.67	1	1.33	2	2.67
Businessman	1	1.33	1	1.33	1	1.33	1	1.33
Office peon	0	0	2	2.67	0	0	2	2.67
Security guard	0	0	1	1.33	0	0	1	1.33
Hawker	0	0	4	16	0	0	3	4
Fisherman	15	20	0	0	14	18.66	0	0
Farmer	23	30.66	0	0	18	24	0	0
Construction worker	0	0	1	1.33	0	0	1	1.33
House caretaker	0	0	2	1,33	0	0	7	9.33
Total	75	100	75	100	75	100	75	100

Source: Field survey, 2020

Table 11. Occupation after climate migration (Climate migrant, Korail Slum)

	After climate migration (Climate migrant, Korail Slum)															
	Rickshaw puller	Unemployed	Day labour	Maid servant	Housewife	Garment worker	Shop keeper	Businessman	Office peon	Security guard	Hawker	Fisherman	Farmer	Construction worker	House caretaker	Total
Rickshaw puller	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Unemployed	0	0	0	25	0	75	0	0	0	0	0	0	0	0	0	100
Housewife	0	0	0	53.33	20	26.6	0	0	0	0	0	0	0	0	0	100
Fisherman	35.29	0	29.41	0	0	5.88	5.88	0	0	0	11.76	0	0	11.76	0	100
Farmer	33.33	4.17	25	0	0	0	0	0	4	8.33	8.33	0	0	12.5	4.17	100

Source: Field survey, 2020

Table 12. Occupation after climate migration (Non-climate migrant, Korail Slum)

	After climate migration (Non-climate migrant, Korail Slum)															
	Rickshaw puller	Unemployed	Day labour	Maid servant	Housewife	Garment worker	Shop keeper	Businessman	Office peon	Security guard	Hawker	Fisherman	Farmer	Construction worker	House caretaker	Total
Rickshaw puller	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Unemployed	0	0	11.11	22.22	0	66.67	0	0	0	0	0	0	0	0	0	100
Housewife	0	0	0	69.32	15.83	15.83	0	0	0	0	0	0	0	0	0	100
Fisherman	33.33	0	6.67	0	0	20	0	6.67	6.67	0	6.67	0	0	6.67	13.33	100
Farmer	23.53	0	5.88	0	0	17.65	0	0	5.88	5.88	11.76	0	0	5.88	23.53	100

Source: Field survey, 2020

Table 13. Occupation after climate migration (Climate migrant, Shahjadpur Slum)

	After climate migration (Climate migrant, Shahjadpur Slum)															
	Rickshaw puller	Unemployed	Day labour	Maid servant	Housewife	Garment worker	Shop keeper	Businessman	Office peon	Security guard	Hawker	Fisherman	Farmer	Construction worker	House caretaker	Total
Rickshaw puller	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Unemployed	0	0	8.33	16.67	0	75	0	0	0	0	0	0	0	0	0	100
Housewife	0	0	0	56.25	18.75	25	0	0	0	0	0	0	0	0	0	100
Fisherman	40	0	33.33	0	0	6.67	6.67	6.67	6.67	0	0	0	0	0	0	100
Farmer	31.82	0	27.27	0	0	0	0	0	4.55	4.55	18.18	0	0	4.55	9.09	100

Source: Field survey, 2020

Table 14. Occupation after climate migration (Non-climate migrant, Shahjadpur Slum

	After climate migration (Non-climate migrant, Shahjadpur Slum)															
	Rickshaw puller	Unemployed	Day labour	Maid servant	Housewife	Garment worker	Shop keeper	Businessman	Office peon	Security guard	Hawker	Fisherman	Farmer	Construction worker	House caretaker	Total
Rickshaw puller	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Unemployed	0	6.67	6.67	13.33	0	73.33	0	0	0	0	0	0	0	0	0	100
Housewife	0	0	0	78.75	14.29	7.14	0	0	0	0	0	0	0	0	0	100
Fisherman	21.43	0	28.57	0	0	7.14	7.14	7.14	7.14	0	0	0	0	0	21.43	100
Farmer	27.78	0	16.67	0	0	0	0	0	5.56	5.56	16.67	0	0	5.56	22.22	100

Source: Field survey, 2020

Table 15. Income of climate migrant and non-climate migrant

Income	Climate Migrant				Non –Climate migrant			
	Korail Slum		Shahjadpur Slum		Korail Slum		Shahjadpur Slum	
	Frequency	Parentage (%)	Frequency	Parentage (%)	Frequency	Parentage (%)	Frequency	Parentage (%)
4000-6000	14	18.66%	13	17.33	13	17.33	10	13.33%
6000-8000	21	28%	17	22.66%	19	25.33%	18	24%
8000-10000	17	22.66%	19	25.33%	21	28%	20	26.66%
10000 Above	23	30.66%	26	34.66%	22	29.33%	27	36%
Total	75	100%	75	100%	75	100%	75	100%

Source: Field survey, 2020

6.10.3. Occupation after climate migration (Shahjadpur Slum)
Climate migrants living in Shahjadpur slum preferred to choose same or similar job after the migration. Rickshaw puller, day labour and businessman chose the same job in Dhaka city. Almost half (49.33%) of the migrants were either fisherman or farmer before the migration, 35.15% of them chose to pull rickshaw and 29.73% chose to be a day labour. 18.75% housewives decided to be the same in Dhaka while 56.12% became maid servant and 25.00% took challenge to become garment workers.

In regard to the migrant who were unemployed before the migration, 75% became garment worker, 16.67 % became maid servant and 8.33% chose to be a day labour (Table 13).

Table 16. Assistance which helps not to migrate because of climate change

Assistance which helps not to migrate because of climate change	Percentage (%)
Grants-in-Aid by GO	94
Easy getting of Medical Facilities	73
Remodeler the Agriculture	92
Job Facilities	85
Rehabilitation service	96
Help from GO/NGO in Disaster time	97
Help from GO/NGO in Disaster off time	90

Source: Field survey, 2020

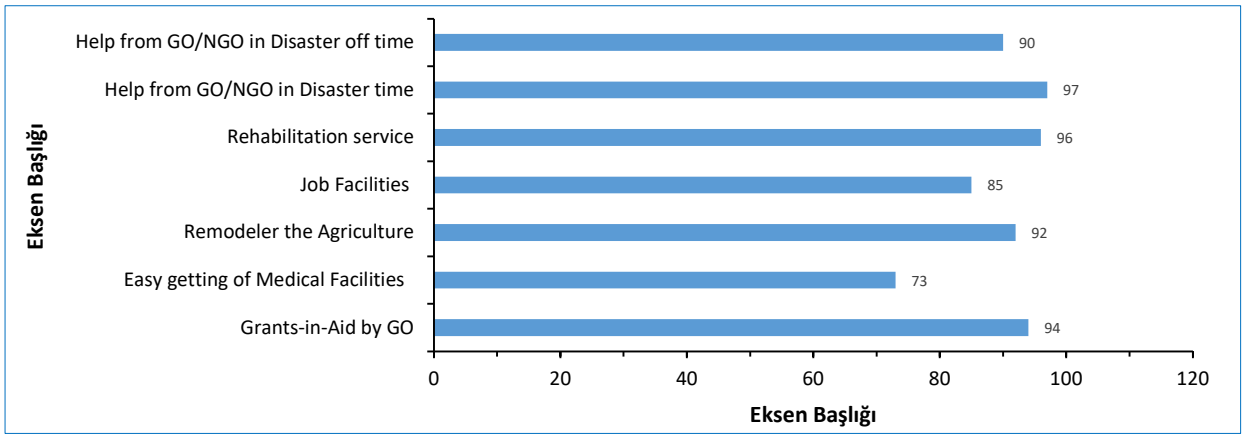

Fig. 14. Assistance which helps not to migrate because of climate change

6.10.4. Occupation after non-climate migration (Shahjadpur Slum)
In case of non-climate migrant in Shahjadpur slum, migrants followed the same trend of climate migrant. No rickshaw puller changed their profession, and most of the housewives (78.75%) became maid servant and 14.29% remain housewives. 25.00% of fisherman & farmer became rickshaw puller and 21.88% chose to be day labour (Table 14).

6.11. Income of climate migrant and non-climate migrant
30-36% migrants earn more than 10,000/- monthly but they cannot save any money because of high price of essential goods. There have not such difference between climate migrants and climate migrants amount of monthly earning (Table 15).

6.12. Assistance which helps not to migrate because of climate change
Most of the respondents believe, help from GO/NGOs in disaster time, rehabilitation service and Grants-in-aid by GO the basic resistance which help not to migrant with family because of climate change. In addition, some of the respondents have given priority to get help from GO/NGO in disaster off time, remodel the agriculture, job opportunity and availability of the medical facilities (Table 16 and Fig. 14).

6.13. Respondent's opinion about the development of their livelihood

Most of the respondents think that grants in Aid by GO; disaster pre, post and on time assistance development and disaster censuses program formulation with planed migration is the basic requirement for their standard of leaving and development their livelihood. Besides, some of the respondents have given priority to give resilient rehabilitation system, price reducing of daily products, increase employment opportunity, free medical & education, recreation facility and development in communication also needed to develop of their livelihood (Table 17 and Fig. 15).

Table 17. Respondent's opinion about the development of their livelihood

Respondent's opinion about the development of their livelihood	Percentage (%)
Grants-in-Aid by GO	98
Development in Communication	66
Free Medical Facilities	73
Price reducing of daily products	87
Free Educational service	70
Increase Employment Facility	85
Recreation Facility	70
Resilient Rehabilitation system	96
Planned Migration	95
Disaster Censuses Program Formulation	90
Disaster pre, post and on time assistance development	97

Source: Field survey, 2020

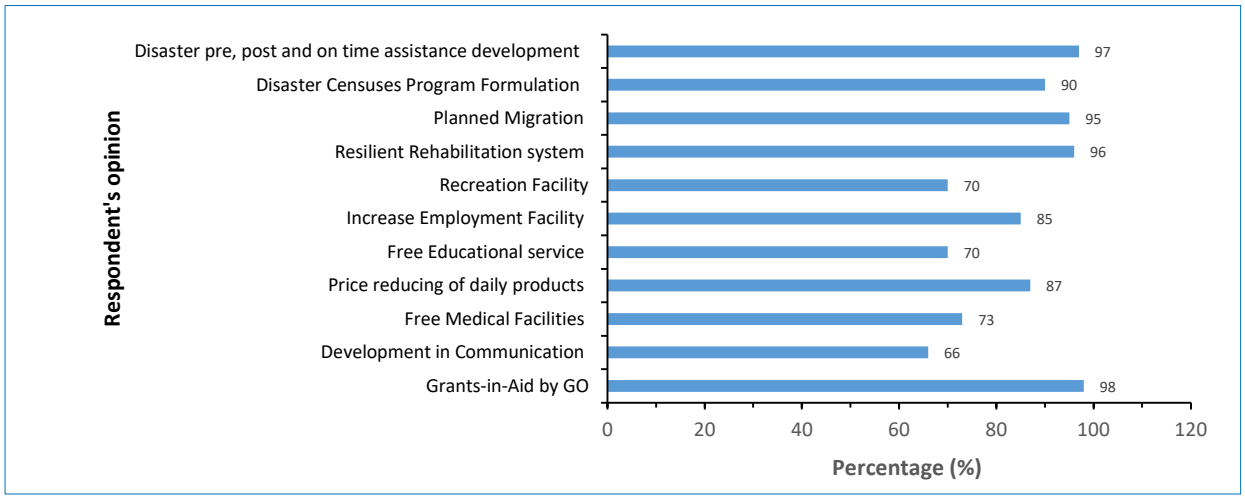

Fig. 15. Respondent's opinion about the development of their livelihood

6.14. Differences of climate migrant and non-climate migrant slum dwellers

Difference between climate migrant and non-climate migrant slum Dwellers addressed into five different categories by gender, age, level of education, networks and types of climatic events that pushed them to Dhaka and duration in the city (Table 18).

6.15. Case 1

Nuru mia (48), a father of two sons migrated from Barishal district. He had depressing experiences and affected by cyclone occurred Mohashen in 2013. It was the most catastrophic disaster he had ever seen. He used to cultivate other people's land before the cyclone, however, he lost all his work after that. Trying all possible ways, he failed to recover his situation which makes him to leave his land with all family members. Once migrated to Dhaka they rented a small slum house at Shahjadpur Jilpar. The house (approx. 70 sq. ft.) did not have enough space to stay together. In Dhaka, he started work as a day labour and his wife managed casual maid job in 4/5 houses. Suddenly she had to get operation to remove her uterus. After that she could not capable to work properly. Nuru Mia had been suffering in Asthma for few years and could not work regularly. His younger son never contributed to the family. Sometimes he used abusing language to demand money. He did not even stay with them regularly. However, his elder son stayed with them and work as a day labour. Now Nuru Mia's elder son is the only earning member in the family. However, his income is not sufficient for their livelihood. With the increasing living cost, his small amount of income hardly covers anything.

6.16. Case 2

Housewife Sahida Begum (36), from Mehendiganj who was forced to move to Korail slum in Dhaka city. Prior to migration her husband used to do only farming, and he did not have any other skills. She migrated with six family members including one divorced daughter. They did not have enough croplands in the village. Their teenaged son

used to help her husband in harvesting. One day, they were affected by river erosion and lost their house and paddy land. At that time, one of their relatives gave them shelter. Some of the villagers left the village and migrated to the city. They also migrated to the Dhaka city with some other villagers. After one week her husband managed a casual work and tried to manage some works for other family members. He and their elder son had to change their job many times, now he works as a permanent Rickshaw Puller and their elder son works as a construction labour. She works as a maid in 1/2 houses in a day. Her divorced daughter stared work in a garment industry. Now their family income is better than the village and they are satisfied with the present life. Their family members do not think to go back to the village, because they have improved their life after the migration, and they do not any property in their homeland.

Table 18. Differences of climate migrant and non-climate migrant slum dwellers

Differences	Climate migrant slum dwellers	Non-climate migrant slum dwellers
Reason of migration	Try to survive after disaster, but they are unable.	Seeking better life
Environmental change	Forced to leave their home region due to sudden or long-term changes to their local environment.	There is no necessity to leave their home because of environmental change.
Loss of family member	Any of their family member lost by disaster	There has no chance to loss anyone because of Disaster
Physical fitness	Health problems: malnutrition, diarrhoeal diseases, and transmission of diseases.	More physically fit than the climate migrant.
Mental stress	Threat to climatic stress is a vital factor	No climate related mental stress.
Farming season	No chance to return place of origin during the farming season.	Return home during the farming season.
Plan of migration	Disaster forces to unexpected migration. sudden and unplanned	Migration as per necessity of their life and family. had more time to plan their migration
Back to home place	Some of them have intention to go back home place but some of the have no way to go back who lost their land because of river erosion.	Most of them decided to migrate for short term. Maximum of them decided to go back permanently after getting solvency.
Assets	There is no or very minimal asset in the place of origin.	Still have their rural-based assets and families or relatives.
Family size	Live in the city with bigger family with both earning and non-earning members.	Migrated with the active members only and now live in the city with small families.
Facilities	Disaster pre, post and on time assistance development	Want to get GO or NGO's Grants-in-Aid facilities in an emergence.

7. Discussion

Migration is a natural process where surplus manpower from the rural sector moves and contribute in urban industrial growth. Before the migration the person might had a rural work, which might have very low productivity or inoccupation. As job opportunity increased after the migration, it influences people to take the risk of it.

They were unable to take various preventive measures before the disaster because of their economic situation. They tried to stay in their homeland as long as they could. When they were unable to live in, they started moving to the city.

Lack of work availability, poverty, unemployment, natural disaster (flood, drought, see level rise, river erosion, salinity) and other socio-cultural factors (marriage, family conflict, social discrimination, social prejudice, better living, educational facilities etc) act as motivational factors of migration. Sometimes political unrest or political disorder also forced to migrate. Disaster happened long time ago, but the effects still exist in their life.

8. Limitations of the Study

- Sometimes it was difficult to get access to the information because respondents wanted to response only at their own suitable time and place.
- Some of the respondents were found non-co-operative and failed to give proper response.
- Only one hundred fifty respondents are not enough for representing the actual scenario of the study.
- Finally, the study would be more efficient to represent various aspect of community if enough resources were available.

9. Recommendations

- Physical fitness, skill buildup training, availability of work and social care services should create employment opportunities.
- Supportive Adaptation measure to make planned migration of climate induce displacement.
- Rise community awareness through effective social education which help to develop poor slum dwellers' livelihood.
- Grants-in-Aid by GO, disaster pre, post and on time assistance development, and disaster censuses program formulation with planed migration would help to improve their standard of leaving and development of their livelihood.

10. Conclusion

Migration is a natural process where additional manpower released from the rural sector. Besides, migration is also needed for urban industrial growth. In general, the decision of migration comes to be the function of variables like income difference between rural and city, the chance of getting a job, the risk attitude of the migrant, and information of availability of jobs in urban locations.

Most of the respondents indicated that higher job opportunity, better education and health care facilities, and

other available social services attracted them to migrate towards the city.

Internal migration within Bangladesh also requires more attention, many migrants face challenges due to the lack of services, resources and employment opportunities. Who moves from a rural to urban area requires some sort of skills to secure employment, while migrants need more money for urban living?

Finally, focus on National policy, planning and program, and Poverty alleviation program could be helpful for plan migration.

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