



## Climate Refugees in Bangladesh

Understanding the migration process at the local level

## **Imprint**

### **Published by:**

Diakonisches Werk der EKD e.V.  
for "Brot für die Welt"  
Stafflenbergstraße 76  
D-70184 Stuttgart  
Germany  
Phone: ++49 711/2159-568  
E-Mail: [info@brot-fuer-die-welt.de](mailto:info@brot-fuer-die-welt.de)

**[www.brot-fuer-die-welt.de](http://www.brot-fuer-die-welt.de)**

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**Art.Nr.:** 129 501 220

Stuttgart, February 2012

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Understanding the migration process at the local level

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# Contents

1	Introduction	7
2	Background: Climate-related migration	8
3	Methodology of the study	10
4	Country context	12
5	Theoretical explanations of climate related migration	14
6	National efforts on climate change	15
7	Environmental, social and economic factors influencing migration	16
7.1	Access to land and income	16
7.2	Push and Pull Factors for Migration	18
7.3	Factors Preventing Migration	20
8	Causes of climate-related migration in Bangladesh	23
9	Conclusions	25
9.1	Seeking international recognition for climate refugees	25
9.2	Improving support for climate refugees in Bangladesh	25
	References	27
	Annex	28

## Figures and Tables

### Figures

Figure 1:	Overview of the selected sending areas	10
Figure 2:	Slum inhabitants in Dhaka	13
Figure 3:	Distribution of migrants and rate of migration according to land holding capacity of the migrants	17
Figure 4:	Distribution of migrants and rate of migration according to income of the migrant before migration	17
Figure 5:	Ranking of push factors	19
Figure 6:	Ranking of pull factors	19
Figure 7:	Factors that prevent migration (advantages and disadvantages)	20
Figure 8:	Preventive measures suggested by the interviewees	21
Figure 9:	Sending areas – Jamalpur	28
Figure 10:	Sending – Khulna	29
Figure 11:	Sending areas – Bhola	30

### Tables

Table 1:	Distribution of highest percentage of targeted destination of the migrants	18
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## Abbreviations

BBS	Bangladesh Bureau of Statistics
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BCAS	Bangladesh Centre for Advanced Studies
BDR	Bangladesh Rifles; the Border Guards of Bangladesh
BNP	Bangladesh Nationalists Party
BRRI	Bangladesh Rice Research Institute
BSF	Border Security Force; the Border Guards of India
CC	Climate Change
CDMP	Comprehensive Disaster Management Program
CUS	Centre for Urban Studies
DFID	Department for International Development (UK)
DoE	Department of Environment
GBM	The Ganges, the Brahmaputra and the Meghna (region)
GDP	Gross Domestic Product
GIS	Geographical Information System
GHG	Greenhouse Gas
GO	Governmental Organization
ICESCR	International Covenant on Economic, Social and Cultural Rights
IDPs	Internally Displaced Persons
IPCC	Intergovernmental Panel on Climate Change
IOM	International Organization of Migration
IRIN	Integrated Regional Information Networks
IRS	Indian Rupees
LECZ	Low Elevation Coastal Zone
MDG	Millennium Development Goal
MoEF	Ministry of Environment and Forests
NAPA	National Adaptation Programmes of Action
NEMAP	Border Administration Force of Burma/Myanmar
NGO	National Environmental Management Plan
PRSP	Non-Governmental Organization
SLR	Sea Level Rise
Tk	Taka (Bangladesh currency)
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
WMO	World Metrological Organization

## 1 Introduction

Migration is an ancient social phenomenon in Bangladesh. In most cases, migrations occur due to social, economic and health reasons. Climate change induced migration or Climate Refugees<sup>1</sup> appeared only recently in the social history of Bangladesh. Extreme climate events like floods, cyclones and tidal surges, as well as gradual impacts of climate change like salinity or river erosion, cause climate induced migration.

In most cases, the migrants are extremely poor. Their poverty is further intensified by impacts of climate change, which mark the point of their departure from the homeland where they leave behind their relatives, their connections and a past marked by frustrations and sufferings. But often, their future is gloomy, full of uncertainty and unpredictability.

According to the destination areas of the climate change migrants, we have observed two categories:

- climate refugees within the country;
- climate refugees outside the country.

Migrations within the country occur when the migrant families receive support from acquaintances and relatives. Migration outside the country is usually facilitated by middlemen and their accomplices.

The study is an attempt to describe in a comprehensive way the phenomenon of climate induced migration and analyses possible remedial measures in accordance to national and international human rights laws with a view to ensure that vulnerable communities may receive the assistance and protection needed to survive.

The present study is a micro level effort to understanding the dynamics of the country's climate refugee prob-

lem. Drawing on other research and publications, the present study explores different combinations of push and pull variables of displacement and their effect on places of destinations, based on opinions from affected people as well as relevant stakeholders.

The concluding policy recommendations given on internally displaced persons and climate migration are to be framed by conscious understanding of cultural affinity as passed on through generations as well as by taking into account demographical data including income, age, and gender. The insight obtained from the study should thus not only create the basis for people's formation of opinion but should also prompt actions towards resettlement of those who have already become climate refugees.

<sup>1</sup> The term "climate refugee" is applied in the Bangladesh context. There, however, is no legal recognition of this term on the international level.

## 2 Background: Climate-related migration

Bangladesh is experiencing very frequent adverse climate change impacts caused by global warming. Regular and long lasting floods, high-intensity of cyclones and tidal surges, and encroaching salinity are only a few examples of climate change impacts. These impacts create a new generation of destitute people called 'climate refugees'. These people have lost their livelihoods, homestead and other properties and have been compelled to migrate in search of livelihood due to adverse effects of climate change. No academic definition has been given to them. In our study, we refer to these people as climate refugees.

Reliable information on displaced population due to climate change is very much scattered throughout the existing literature and documentation. Environmentalists, scientists, geographers and ecologists are not on common ground since they describe relevant terms and concepts in different ways, such as "environmental migration", "climate change-induced migration", "ecological or environmental refugees", "climate change migrants" and "environmentally-induced forced migrants". In this study, we have opted for the term "Climate Refugee" because environmental disasters due to global warming are the real cause for mass migration, and this term reflects the urgency, the seriousness and the global responsibility of the issue at hand. A significant correlation between migration and environmental degradation was shown by Afifi and Warner (2007).

In absence of a nationally or internationally accepted definition and legal as well as moral recognition of the status of these impoverished people, their definite humanitarian and developmental needs and rights remain unaddressed. Moreover, we do not have adequate qualitative and quantitative information about these excluded people at local or national level.

This study on Climate Refugees was primarily designed to understand the overall national situation of these underprivileged people; the process of becoming climate

refugee, the possibility of stopping climate migration, the Bangladeshi government's present and potential position on climate refugees, and possible international initiatives for them. Even within the limited scope of the study, a lot of information and insight has been generated.

The study reveals that climate refugees migrate in two major patterns. Either they migrate immediately after extreme events of climate change, or they go through a process of income erosion and ultimately leave the place. They migrate within the country or across the border depending on contacts and connections in the receiving areas.

The factors contributing to migration due to adverse climate change impacts are many. Disproportional income in comparison to the family size, inability to pay back loans, wage loss during prolonged sickness or the potential of gaining land properties and the possibility of higher earnings are the major reasons. It can be observed though, that the cash income of a family which has migrated may go up significantly, but the actual income and asset status may drop dramatically. Living conditions are very challenging and it is felt by the interviewed that government expenditure in order to develop structural facilities of disaster risk reduction is the most effective way of climate migration prevention.

According to the definition of the Global Governance Project, a European research programme, climate refugees are people who have to leave their habitats, immediately or in the near future, because of sudden or gradual alterations in their natural environment related to at least one of three impacts of climate change: sea-level rise, extreme weather events, and drought and water scarcity (Global Governance Project).

The United Nations Environment Program (UNEP) defined these potential migrants as being 'environmental refugees'. UNEP-researcher El-Hinnawi defined environmental refugees being "people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardized



their existence and/or seriously affected the quality of their life.” (El-Hinnawi 1985)

The International Organization for Migration (IOM) has suggested a broader working definition of “environmental migrants” as “persons or groups of persons who for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions are obliged to leave their habitual homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad.” (IOM 2008)

### 3 Methodology of the study

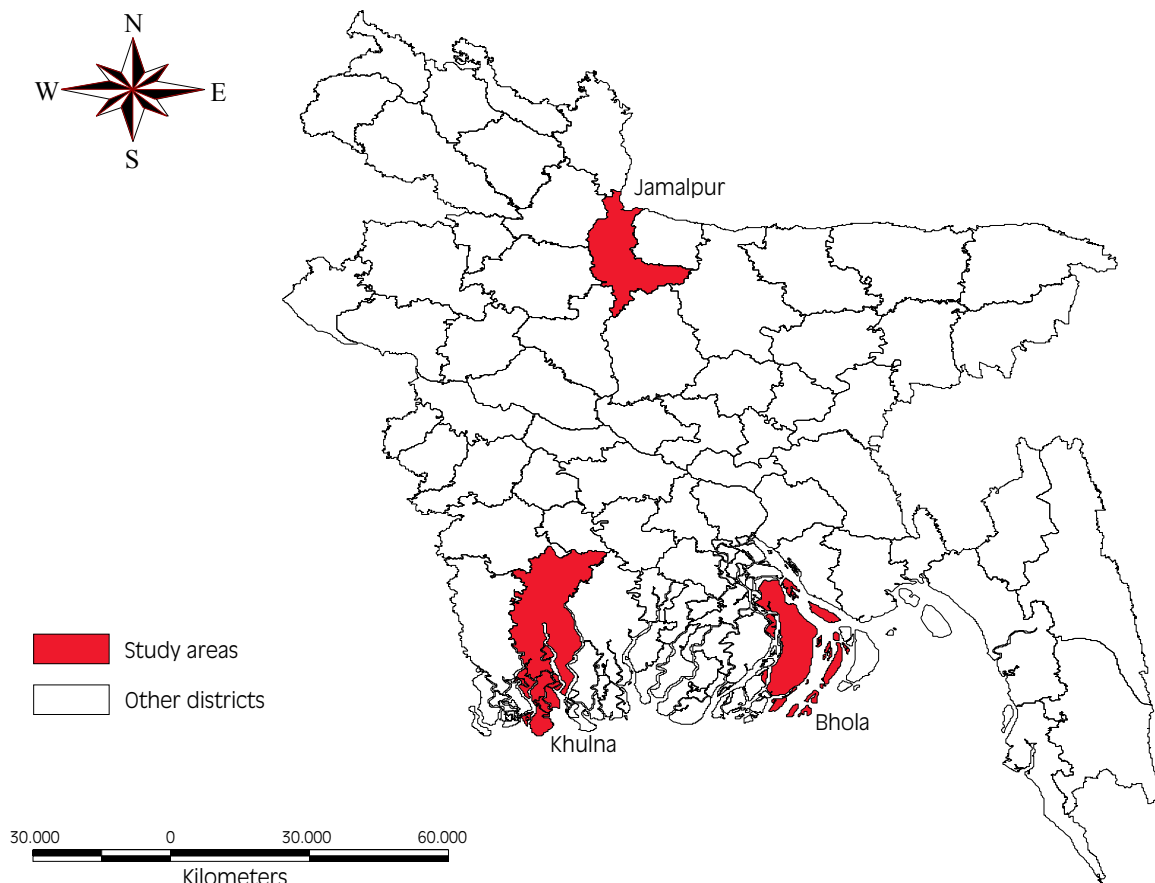
For the purpose of this study both secondary and primary data have been reviewed. But comparable data are rare. The fourth assessment report of IPCC estimates a number of 150 million climate refugees (2010) worldwide, whereas numbers published by Christian Aid go up to 200 million refugees. Specific data for Bangladesh are not available. The few studies published on climate refugees in Bangladesh are predominantly case studies – and describe trends only. The sources of secondary data used in this study include:

- International studies, documents and reports from different international institutions
- National studies, documents, newspaper clippings, interviews and other reports

Primary data has been gathered by using field study methods like surveys, dialogues, case studies and observations. The field study primarily offers a sociological and economic vulnerability survey of climate refugees using a semi-structured questionnaire. Interviews were conducted with families as well as key informants at certain points of the migration routes of climate refugees. In total, 366 climate refugee families were taken into account. In the selection process of families considered for the study we took care that women-headed families and disabled-headed families were represented. Informants were generally relatives or very close friends of climate refugee families.

The survey areas were classified as "sending areas" – i.e. areas the families have left, and "receiving areas" – i.e. areas the families came to. The sending areas considered in this study have been selected on the basis of the number of people who have migrated out of the area.

Figure 1: Overview of the selected sending areas



In absence of reliable data on the number of climate refugees from different areas, the study team drew upon newspaper reports, views of professionals and talked to politicians and social leaders. The three sending areas for the field survey (Figure 1) were the following:

- Coastal Khulna to observe the impacts of cyclones and tidal surges on climate migration;
- Mid-Coastal Zone of Bhola island to observe the impacts of tidal surges and river erosions on climate migration; and
- River basin of North-western border, Jamalpur, to observe the impacts of floods, draught and river erosions on climate migration.

For a detailed illustration of the sending areas see the Annex. The two selected receiving areas were the Dhaka Metropolitan Area and the Kolkata Metropolitan Area.

Every analysis has to cope with certain limitations. First of all, the study draws upon a limited survey sample from limited geographical areas. As a result, some important migration trends might not have been considered in this study. Second, in absence of generally accepted definitions of climate migration or the term climate refugee, the field team did not dispose of criteria for selecting informants. Finally, using methodologies like interviews might offer new insights to the climate refugee problem but are a major challenge for being intensive and time consuming.

## 4 Country context

Global warming and sea level rise significantly challenge the survival of living entities on earth and is becoming visible in public discourse. Anthropogenic activities play a key role. The most noteworthy consequence is forced migration. In most cases, migration is the last alternative when adaptation to these changes fails because people do not have the means to adapt. Migration has always been an answer to environmental changes. It depends on the severity of such changes whether migration is either temporary, permanent, internal, or international.

The First Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) in 1990 noted that the greatest single impact of climate change might be on human migration (IPCC 1990). In 2007 Christian Aid and the Stern Review on the Economics of Climate Change in 2006 estimated the number of displaced persons up to 200 million and 250 million people respectively due to climate change related phenomena.

Bangladesh, for its geographical location and geomorphologic conditions is one of the countries most vulnerable to climate change (Anwer 1999), particularly to sea level rise, and the poorest people are the main victims for having the least capacities to adapt. Bangladesh only meagerly contributes to carbon emissions but has to pay a very high prize. Year by year, millions of people suffer from cyclones, tidal surges, floods, water loggings, salt-water intrusions, or river bank erosion.

Analyzing available data on population displacement, it has been found that 39 million people in Bangladesh were displaced by major natural events like flood and cyclone over 40 years (1970-2009) (Akter 2009). At the same time about 48 percent of the total population fully depend on agriculture and are at risk to lose their livelihoods due to climate induced disaster.

Presently observable anomalies in nature are not interpreted by the people affected as a manifestation of climate change. They are very concerned, though, about seasonal weather variation, i.e. irregular rainfall, exces-

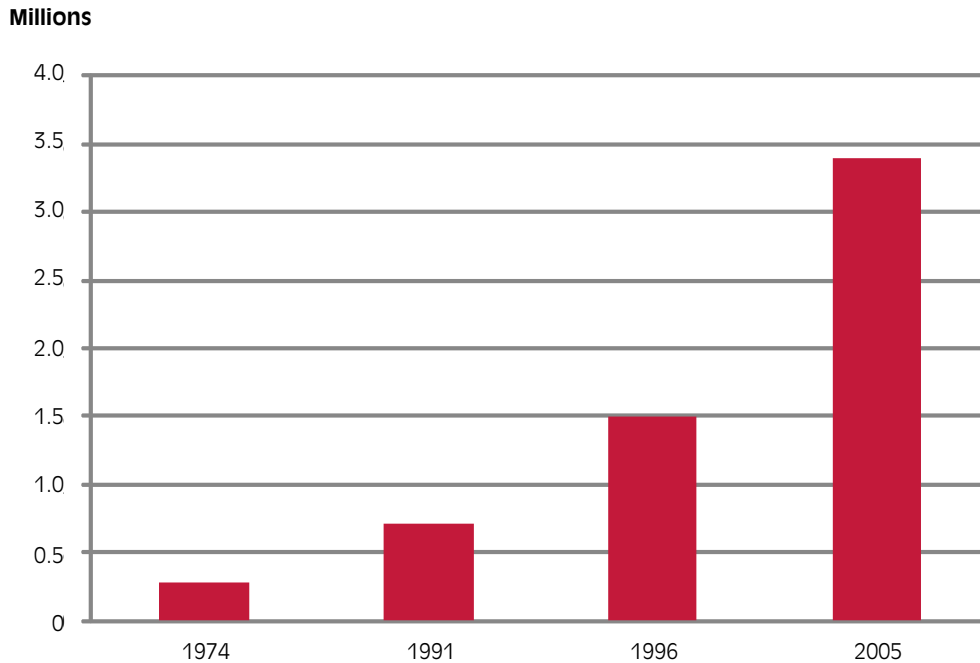
sive temperature, frequency, intensity and duration of cyclones, floods and storms that forces them to leave and become refugees.

Bangladesh is one of the ten countries worldwide with the highest percentage of population living in low-lying coastal zones. Currently approximately 65,500,000 people live in an area of 54,461 square kilometers known as the Low Elevation Coastal Zone (LECZ) which comprises the coastal region within ten meters above sea level (Mondal and Rajan 1990). Loss of coastal land to the sea in these vulnerable zones – currently predicted to reach up to 3 percent by the 2030s, 6 percent in the 2050s and 13 percent by 2080 – is likely to generate a steady flow of displaced people (Pender 2008).

It is estimated that due to erosion, salinity, and storm surge displacement might increase significantly (Ahmed and Neelormi 2008). People migrate to urban centers nearby or to the capital cities or sometimes across the border in need of opportunities for fishing and agriculture. Scientists and environmentalists increasingly agree upon the correlation between climate change and migration.

The agricultural production has already gone down due to desertification of the north western zone of Bangladesh. Mass displacement already is occurring because of extreme weather events. Furthermore, mass migration already is the consequence of sea level rise making highly productive low-lying coastal areas disappear that has been home to millions of people.

In the area of origin, lack of food and water, lack of income opportunities, lack of infrastructure and absence of alternative livelihood options are the root cause for migration caused by climate change. This kind of change already encourages major migratory movements from Bangladesh into neighboring countries i.e. India & Myanmar especially from places near the border. Unconfirmed estimations state that around 6,000 illegal immigrants are daily crossing the border to Assam, India from Bangladesh. If this statement is true, 180,000 Bangladeshis come to Assam every month, up to a total of 2,160,000 every year.

**Figure 2: Slum inhabitants in Dhaka**

Source: Centre for Urban Studies (2006)

Consequently, in the area of destination, rapid urbanization and the growth of slums are parallel consequences of huge population shifts. Friedman (2009) noted that about 500,000 people every year move to the capital city Dhaka from the banks of the Buriganga River mainly from coastal and rural areas. According to the International Organization for Migration (IOM), about 70 percent of slum dwellers in Dhaka experienced some kind of environmental shocks. Slums in Dhaka city have been growing rapidly since 1971. Several surveys on slum growth in Dhaka, conducted by the Centre for Urban Studies (CUS) recorded the rapid increase in the slum population (see Figure 2).

## 5 Theoretical explanations of climate related migration

Bangladesh is one of the most densely populated countries in the world with over 144 million people, and a density of 1,064 inhabitants per km<sup>2</sup>. The population is set to increase by over 250 million until 2050, with a population density rising dramatically to 1,764 per km<sup>2</sup> while the proportion of the population living in urban areas is projected to increase by 15 percent until 2030 and reaching almost 40 percent in 2050. This includes 15 million displaced people due to push factors of climate change (IPCC 2001a, b). By now scientists, researchers and development practitioners are taking this issue seriously and partially or fully try to address this matter.

Authors agree that the key drivers of migration fall into three broad categories:

- factors related to the place of origin including lack of economic opportunities, and lack of access to resources ('push' factors),
- factors related to the place of destination, including the availability of employment and demand for workers, higher wages, political stability or access to resources ('pull' factors) and
- factors that might facilitate or restrict migration, including family or social networks, government policies, economic ties as well as social and cultural exchange according to the push and pull theory of migration (Lee, 1965).

Regarding internal migration, Afsar (2003), citing Afsar and Baker (1999) and Hossain et al. (2003), stated that migration to urban areas increased dramatically from 1.2 to 16.4 per thousand between 1984 and 1998 whereas rural-rural migration increased from 1.5 to 4 per thousand during the same period.

Herrmann and Svarin (2009) explored that the high percentage of rural-urban migration in Bangladesh, com-

pared to other least developed countries, can be attributed to relatively strong push factors on the one hand and strong pull factors on the other.

The main factor that encourages people to leave their homes in the countryside is the frequent recurrence of natural disasters, which undermine agricultural development and cause food crises. By contrast, the main factor that attracts people to urban centers is the expansion of the non-agricultural sector, industry and services, which promises jobs and higher household incomes.

According to Richard Odingo, climate change will increase poverty and worsen food security (cited in Davis et al. 2009). Urban poverty will increase if environmentally displaced people keep moving into the slums of the cities. This creates pressure on limited natural resources like land and water.

## 6 National efforts on climate change

Bangladesh is signatory to the United Nations Framework Convention on Climate Change (UNFCCC). In 1992, the Government of Bangladesh signed the UNFCCC and ratified it in 1994. In 2003, the Ministry of Food and Disaster Management established the Comprehensive Disaster Management Program (CDMP) in partnership with the UK Department for International Development (DFID) and UNDP. CDMP has a number of disaster management components, among them to establish an integrated approach to climate change and disaster management. The Bangladesh Government has a well-built Disaster Management Programme with focus on preparedness, such as: raising awareness to reduce unacceptable risks, to raise national capacity for disaster management; advance knowledge in handling disasters and improving early warning systems.

Bangladesh successfully completed the National Adaptation Programmes of Action (NAPA) in 2005 as the first country to identify immediate and urgent needs for adaptation to climate change, including the adoption of the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2009. This is the main basis of Bangladesh's efforts to combat climate change under the following six pillars:

- food security, social protection and health,
- comprehensive disaster management,
- infrastructure,
- research and knowledge management,
- mitigation and low carbon development,
- capacity building and institutional strengthening.

Various programmes and sub-programmes have been listed in the BCCSAP which are to be implemented by different governmental and non-governmental organisa-

tions and establish a Climate Change Secretariat to facilitate this work. Even the Bangladeshi government is incorporating climate change issues into sectoral plans and national policies. Climate change is well addressed in the action plans for the Millennium Development Goals (MDG) and Poverty Reduction Strategy Papers (PRSP), although other environmental policies including the National Environmental Management Plan (NEMAP), the National Land Use Policy, and the National Forest Policy do not make specific reference to climate change. To focus mainly on adaptation measures, the Government also established the National Climate Change Fund and allocated about \$45 million to it in the FY2009 budget. In addition, the Multi-Donor Trust Fund was established to pool funds from development partners to implement a long-term strategy to mitigate the adverse effects of climate change in Bangladesh.

However, in terms of climate migration, there have been no significant national or international steps observed to identify these disadvantaged people and resolve the problem. Not only this, the climate refugee issue has been ignored in the global climate change discussion as well. Therefore, the Bangladesh government should take a leadership role and raise a strong demand for resettlement of climate refugees and should strongly negotiate for a separate fund for the adaptation and compensation of the climate refugees under the UNFCCC secretariat.

## 7 Environmental, social and economic factors influencing migration

In this section, the results of the field studies are presented which give valuable insight into who migrates and who does not migrate and what the factors are contributing to or preventing migration. While being far from exhaustive, some important trends can be identified from the surveys which can serve as a guideline for addressing climate related migration within local contexts.

### 7.1 Access to land and income

Intuition suggests that the poor and ultra poor are groups most prone to climate migration. But our recent field study shows that extreme climate change events like cyclones and river erosion can enforce migration on families with a medium range of income and medium size of land holding status compared to Bangladeshi standards. From the survey, we can locate that out of a

total of 366 migrants, around half of the families are landless and another third possesses less than 5 decimals of land. However, the survey also shows that 10 percent of the total sample own more than 10 decimals of land (see Figure 3).

When it comes to the question of income, the results are even more apparent that not only the poorest people are forced to migrate. While more than half of the 360 respondents earn less than Tk.1500, one third have a monthly income of more than Tk.2000 (see Figure 4).

Our survey, other field data and other available information find that climate migration takes place in areas with:

- direct impacts of extreme climate change events,
- difficult communication, and
- inadequate post-disaster relief and rehabilitation measures.

#### Field Study Example: Mr. Minto Mia

Mr. Minto Mia lives in Dhaka with five family members. He is in his forties and works as day labourer. His elder daughter is 17 and works at a garment factory. His wife also is employed in a garment factory. The family earns an average of Euro 80 a month.

Mr. Minto Mia is originally from Bhola district. The family had lived there for generations and were wealthy enough to lead a decent life in their village home. But he had to migrate to Dhaka just a year back. While migration was inevitable, they would have had the opportunity to go to Pirozpur to their in-laws' house. But as Dhaka offered better employment opportunities, they finally decided against Pirozpur.

The family had lived nearby a river in Bhola and during monsoon the riverbank started eroding. The river erosion reached two miles into the village and engulfed all assets and land of his family. Mr. Minto Mia tried

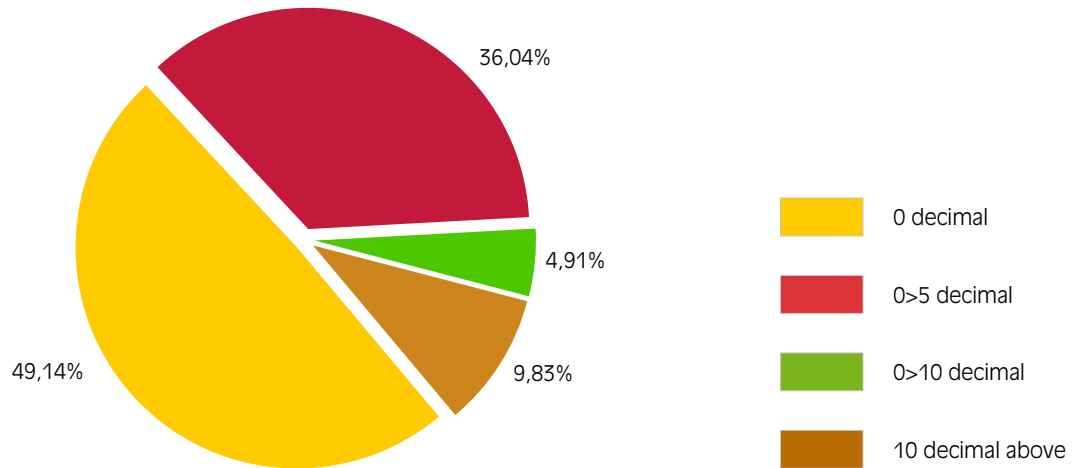
to save his house but could not. Besides land, part of which he used to lease out, he also had betel leaf plantations, fishing business and four cows. His net annual income amounted to Euro 2000. He lost property equivalent to Euro 18.000. He was left with a few hundred Taka, three cows, few savings and no alternative source of income. He had to sell cows, spent all his savings and became insolvent.

On the other side of the river, a river shoal had approached. Mr. Minto Mia occupied a piece of this land and built a small house to live there. But he was evicted from the river shoal.

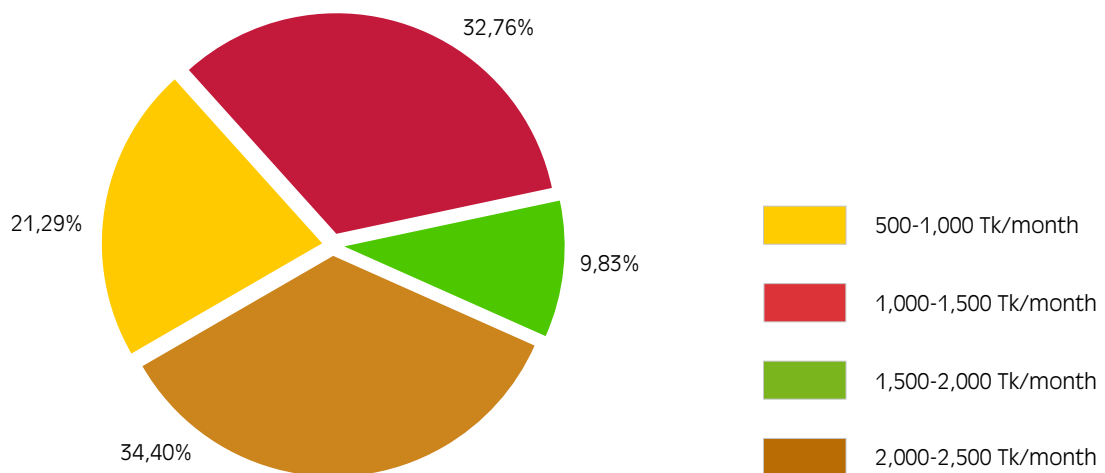
He was first offered to come to Dhaka by one of his business partners, named Rab Halder, but being aware of his vulnerabilities he did not precede further. Mr. Minto Mia's mother-in-law lives in Adabar Slum. She patroned Mr. Minto Mia's migration to join her there.



**Figure 3: Distribution of migrants and rate of migration according to land holding capacity of the migrants**



**Figure 4: Distribution of migrants and rate of migration according to income of the migrant before migration**



Areas with chronic extreme climate change events are also prone to climate change induced migration, particularly cluster migration.

In our survey areas, climate migrants choose several migration destinations. A generalized pattern of climate migration is towards Dhaka, larger and fast growing cities and towns, and possibly some to India. From our field survey, it appears that the highest number of mi-

grants targeted Dhaka, comprising 57 percent of the total. The second highest number of the migrants headed towards other big cities or growing towns is about 31 percent of the migrants under survey. The next group opted to migrate to India, which is about 21 percent of the total. However, the latter group might not be exclusively due to climatic events and most likely be associated with sociopolitical reasons prevailing in Bangladesh (see Table 1).

**Table 1: Distribution of highest percentage of targeted destination of the migrants**

Destination	Percentage
Dhaka	52.2%
Chittagong	28.4%
India	19.4%
Total	100%

Total number of respondents (N) = 402

## 7.2 Push and Pull Factors for Migration

Human societies are guided by a very complex interplay of social, economic and political forces. Any decision for change in our lives is the result of an interplay of numerous factors. A critical decision like migration is not supposed to be taken on the basis of single phenomena like climate change impacts. In case of climate migration, a

very wide range of social, economic and political factors interact and lead a person or group of persons to decide on migration.

It appears that the event of climate migration can be better understood by a Push-Pull theory. In climate migration, the push factors are the events or phenomena existing in the place of settling that make migration inevitable. Through our field based 'perception survey' we could establish that political events or impacts are one major contributing factor to climate migration. 23 percent of the respondents considered politics to be influencing climate migration decisions. Only 12 percent of the respondents regarded social events like marriages influencing migration.

The respondents mentioned several climate related push factors (see Figure 5). Flood was mentioned by the highest number of respondents (59 percent). River bank erosion was voted second by 54 percent. Disaster

### Field Study Example: Titu

Titu (35) is a waste paper collector in South Kolkata, India. His wife is a part time maid servant working in two houses close to their shanty and casually working as call girl depending on the demand from gangsters who control and protect their shanty. Titu and his wife originally come from Koira upazila of Bangladesh and are climate migrants. Titu was a day labourer in his village and used to work on plantations, as wood cutter in the Sundarban, as labourer on fishing boats and in many other occupations.

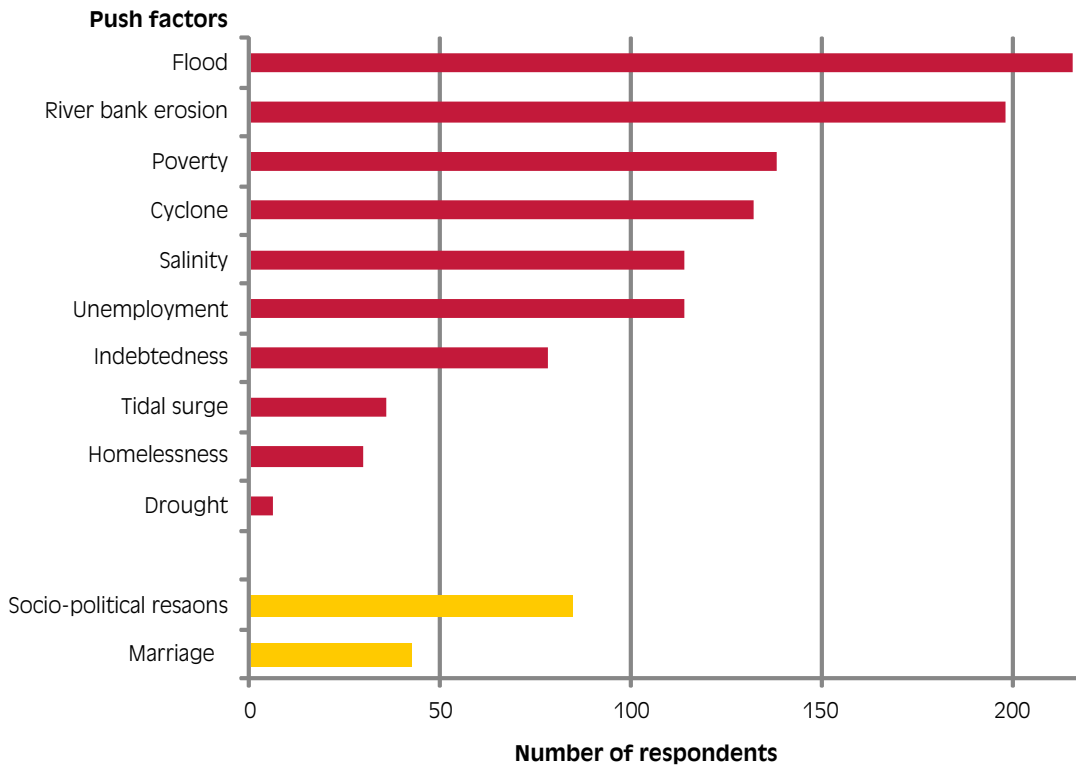
The opportunity to find work in Koira was diminishing as saline water based prawn cultivation and subsequent saline intrusion engulfed agriculture of Koira. It became difficult to find employment for more than 20 days a month. With the birth of his third child it became really difficult to feed the family. When cyclone Sidr destroyed his house, things became even more difficult for his family. He started to migrate to Khulna and Jessore during lean seasons to earn his money as a rickshaw puller.

In Jessore he met a passenger who advised him to go to Kolkata and collect wastepaper as the Hindu community for cultural reasons is reluctant to do this job and the demand for wastepaper is high in paper board mills. He was told that he could easily earn 200 to 400 Indian Rupee per day. The passenger assured him support in crossing the border and settling in Kolkata.

Titu took the mobile number of this kind person, came back home and sold out almost all his land, one goat and five chickens. That was all he had. The passenger helped him and his family to cross the border and took 2000 Rupees for it.

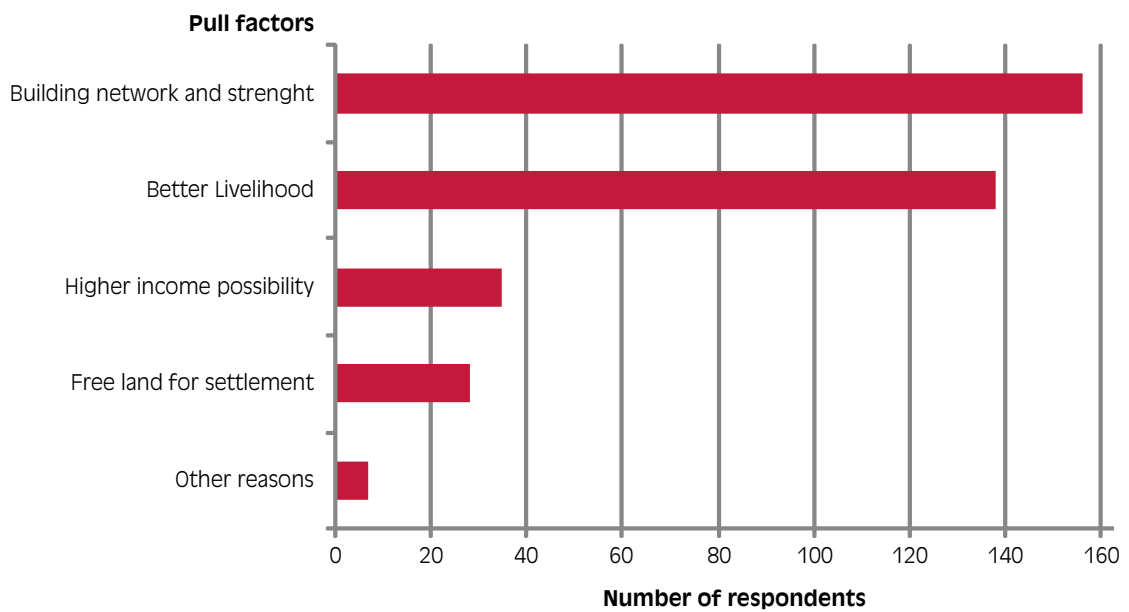
Titu and his family were allocated in a small shanty house in a slum for 400 Indian Rupees (IRS) per month. The passenger was partly right. He could earn 300 to 400 Rupees during festivals. On normal days he did not earn more than 80 or 90 Rupees per day. On rainy days there was no income and there was no other way than to accept this.

**Figure 5: Ranking of push factors**



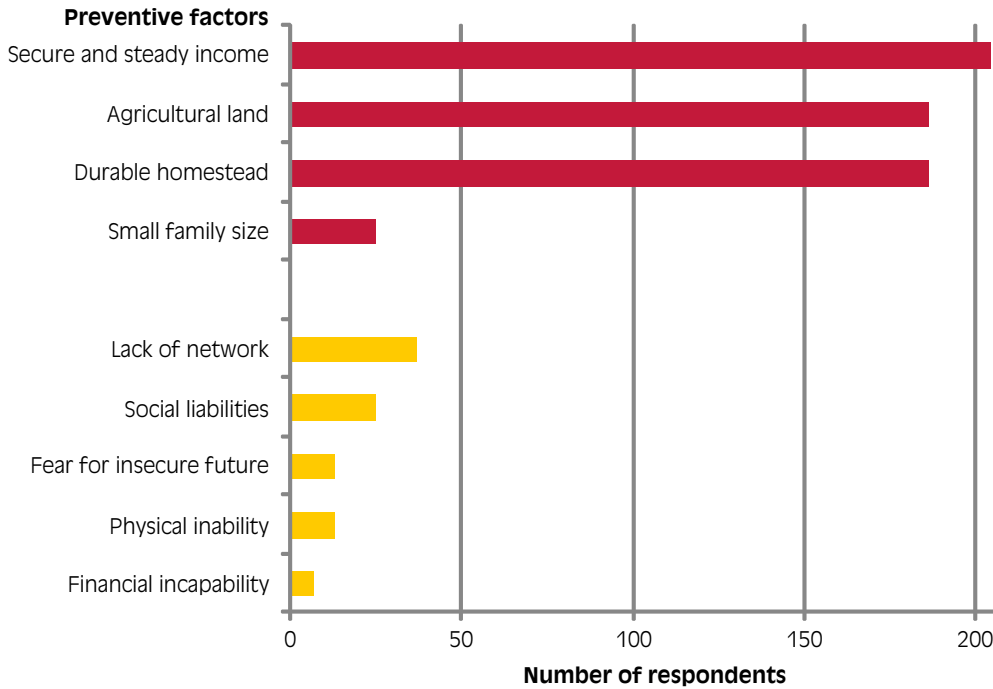
red/dark: disaster related push factors; yellow/light: non-disaster factors;  
 total number of respondents (N) = 366; multiple answering was possible

**Figure 6: Ranking of pull factors**



Total number of respondents (N) = 366; multiple answering was possible

**Figure 7: Factors that prevent migration (advantages and disadvantages)**



red/dark: advantages; yellow/light: disadvantages of migration;  
total number of respondents (N) = 366; multiple answering was possible

induced poverty got the third position, followed by cyclones. Unemployment and salinity received equal importance levels. Indebtedness was mentioned by 21 percent. Tidal surge was mentioned by 10 percent of the respondents.

The pull factors (see Figure 6) are events or phenomena existing in the receiving areas and lure the migrant families into taking their decision in favor of migration. The respondents mentioned several pull factors for climate migration. The most important pull factor mentioned was patronage from the receiving area. This very pull factor was then divided into two sub-factors for patronage.

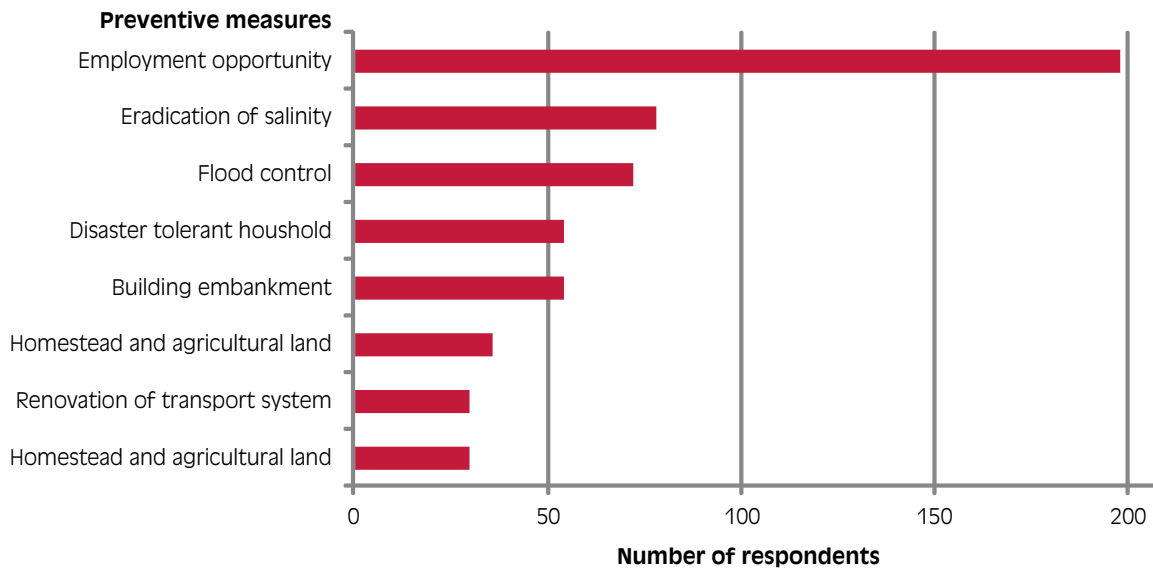
Regarding the motive for patronage, the highest amount of respondents mentioned building strength and network. ‘To provide better livelihood to relatives and known people’ was stressed by 38 percent. Some other pull factors include higher income possibility in receiving

area, mentioned by 10 percent and free land for settlement, mentioned by 8 percent.

### 7.3 Factors Preventing Migration

The study attempted also to find out appropriate coping mechanisms in face of climate migration which would assist the respondents not to migrate. The non-migrant informants who belong to the same social and economic class were asked about their reason for not migrating. The respondents mentioned a wide range of factors that were not always limited to climate adaptation (see Figure 7). More than half of the respondents answered secure and steady income during and after extreme climate change events, durable homestead and agricultural land, while only 7 percent mentioned small family size.

The respondents also mentioned some other factors which prevented them from migration. The most

**Figure 8: Preventive measures suggested by the interviewees**

Total number of respondents (N) = 366; multiple answering was possible

#### Field Study Example: Mr. Abdul Halim Sheikh

Mr. Abdul Halim Sheikh is an inhabitant of Koyra-5, a small village neighboring Shundarban, and has been living there since he was born. Being head of the family (members) he is the only responsible as there is no other member contributing to the family income. He is a fisherman and often goes to Shundarban to fish apart from working as a labourer on plantations.

Mr. Abdul Halim Sheikh was a well-off person. He had a secure and respectable income and a relatively large homestead. But due to the impacts of frequent and successive natural disasters like cyclones, tidal surges and salinity, his economic base gradually faded away. All of his income sources had been affected by the impacts of natural disasters over decades. In earlier years, there was a lot of fish in the river to catch but nowadays he could hardly catch enough fish to make sufficient money for a living. Other income sources of Shundarban (i.e. honey, wood etc.) were also severely affected which caused remarkable recession of earnings.

Mr. Abdul Halim Sheikh also suffered a serious economic loss after cyclone Sidr. The impact of Sidr cost

his house and the little savings he had put aside for the marriage of his two daughters. The shock of Sidr had been repeated by Aila. The impact of this subsequent cyclone was much worse than Sidr before, because it made it impossible to recover from the damages caused by Sidr. He used up all of the last remainder of his assets to rebuild his house.

After Aila, salinity, tidal surges and prolonged floods caused more heavy injuries and as a result his income level fell rapidly to 1500 Tk per month. He would have migrated if he had not had his homestead and the responsibility for his daughters.

The last ten years had been the worst of his life as he did not have any other means to support his large family but to work as a labourer on plantations. All of his income sources had ceased to exist as a consequence of recurring natural disasters. He often thinks of migrating to a more secure place. However, as he has a large family, an elderly mother to care for and a very poor income. It is just not possible for him to migrate.

## Climate Refugees I Study

important ones are the lack of contact and linkages in receiving area and social liability like education of children or marriage of daughters. Fear of insecure future, physical inability and financial incapability were also mentioned.

While asked what can be done to prevent migration, a number of preventive measures were suggested (see Figure 8). These preventive measures include development initiatives, technical solutions to different problems and climate change adaptation measures. Most important was employment opportunities which more than half of the respondents answered. To a lesser extent (between 14 and 20 percent) climate change adaptation measures like flood control or eradicating salinity were considered important. Other issues of rural development, such as the land and house distribution among landless poorer community and a better transport system were mentioned by less than 10 percent of the respondents.

## 8 Causes of climate-related migration in Bangladesh

Taking all the literature on climate related migration into account, our field study has been conducted in three districts particularly vulnerable to climate change ('source areas'), and draws on case studies from the capital of Bangladesh which is one of the destination areas, combined with an extensive desk review of available information on climate change and migration issues in Bangladesh. Based on this data, we are not in the position to draw an overall scenario of the situation in Bangladesh but we are able to partially make a statement on push and pull factors of climate change impacts that might contribute to the development of appropriate policies to address climate change induced migration.

Internal migration is rising day by day. Case studies disclose that after a sudden onset of disasters like cyclones or tidal surges in the coastal belt, the number of migrants increases. For example, over one million people lose their homesteads or land to river erosion each year (RMMRU 2007).

The results of a questionnaire survey suggest that displaced people initially try to relocate themselves within their home village or in neighboring villages, then gradually shift to the nearest town centers, larger cities and to the capital. Most of them end up in slums or squatter settlements where basic amenities are lacking. Their number has been constantly increasing, by 2007 the growth rate was 4 percent per year. In 2007 they represented 86 percent of the urban population. (UN-HABITAT 2007). Heavy monsoonal rains in 2007 affected over 10 million people in 39 of the country's 64 districts, driving a reported 3,000 migrants a day to Dhaka due to inadequate relief and lack of income (IRIN 1997). However, where aid has been effectively distributed and food markets supported (e.g. 2004 tornado and 1998 floods) out-migration has been minimal (Del Ninno et al. 2001). From 1991 to 2002, almost 226,000 persons have migrated overseas in search of employment. Most of them originally come from disaster prone areas of Bangladesh.

While seasonal migration has been a recognized trend in Bangladesh for decades, (people moving for a certain period of time, mostly during the agricultural lean period and then come back to their villages) our field research suggests that this migration is becoming more permanent in recent times. A number of push factors contributed to this increase in levels of permanent migration like damage to infrastructure after a sudden disaster, lack of income opportunities and decline in alternative coping mechanisms in the affected areas. Participants of the case studies stated that migration tends to be seen as the only solution in such a situation.

Coming back to the question "When do climate refugees migrate?", the climate induced migrations take place after major extreme climate events. The time span between extreme climate events and actual migration differs from case to case. From our study three different trends can be derived. In the first case, some of the refugees migrate within 3 to 15 days after extreme climate events. During and immediately after such events, everyday life comes to a standstill. The migrant families wait for a relatively better situation when the families can dispose of the remaining assets and are able to save enough money to cover travelling expenses. The family then sets off for the receiving area. In our survey, we have identified 132 families in such a situation which correspond to 36 percent of the total number of families questioned.

In the second case, the families who still have some assets at their disposal try their best to restore their normal life after the event and only leave the area when they fail to cope. These families are forced to a 'distress sell' of their remaining assets to be able to pay the travel expenses to the receiving areas. Our survey located 108 of such migrant families in the survey areas, that is 29 percent of questioned families.

Finally, in the third case, we found that families lose income and assets due to one or more natural calamities combined with social and economic constraints. As a matter of consequence, these families borrow money from more than one source. When they cannot pay back, they leave for a new place. 78 such cases were

found among all the families interviewed. This is equivalent to 21 percent of the total families addressed under the survey.



## 9 Conclusions

The interconnection between climate change and migration is far from being simple. Scientists have named a lot of examples for the push factors related to climate change impacts that triggers people to move to other places either permanently or temporarily, within the country or leaving the country. But there a wider scale of these known factors is missing so that the government along with other stakeholders might take into account a database regarding climate change induced migration. To reduce migration, support will be needed through a range of measures that include food security, social protection and health, disaster management, infrastructure and institutional development. In case people take the decision to move to other areas, the focus then needs to be on relocation in order to support migrants and on improving the absorptive capacity of receiving areas in order to provide the basic requirements for a humane life. Political recognition is needed to properly address the climate refugees issue and there is obviously a need of regional cooperation to facilitate international migration.

### 9.1 Seeking international recognition for climate refugees

#### "Climate refugees" need an official recognition

There is no legal recognition of the term "climate refugee" or for the term environmental refugee. There is, however, the necessity to apply a terminology for forced migration due to climate change – and to recognize it. This could help to improve the status and support for climate refugees on the international level.

#### Climate change affects the right to adequate housing

The right to adequate housing is a basic human right under the International Covenant on Economic, Social and Cultural Rights (ICESCR) as an element of an adequate standard of living. Observed and projected climate change will affect the right to adequate housing by

sudden and slow onset disasters that influence permanent displacement from the areas of origin to the areas of destination.

#### "Climate refugees" need to be adequately addressed within the UNFCCC process

A more coherent approach is necessary to meet the need for protection of climate refugees. In climate negotiations, climate related migration is acknowledged as an issue countries need to act upon as part of adaptation policies. However, there is no explicit protection existing for those displaced because of environmental changes or disasters. There is a need for a coordinated approach under the UNFCCC and the most vulnerable countries should urge UNFCCC to take action towards to compensation and insurance for Climate Refugees.

### 9.2 Improving support for climate refugees in Bangladesh

#### National policies have to address the issue of climate refugees

Despite the reality of climate induced migration in Bangladesh, the issue is not yet properly addressed by national policies. This lack is most obvious in the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) and the National Adaptation Plan of Action (NAPA). The BCCSAP was reviewed and revised in 2009 but climate refugees were not properly addressed. Therefore, there is a need to lobby and advocacy to include climate migration into both the BCCSAP and NAPA.

#### Climate induced migration needs to be addressed at the local level

There is a need for the development of structures and other adaptation measures against natural calamities to reduce the need for migration. Coping strategies to face abrupt climate change should be strengthened in a variety of ways i.e training and awareness, better education, diversification of livelihood options, community-led natural resource management, and effective disaster risk management that can reduce vulnerability and in-

## Climate Refugees I Study

crease the ability to manage climate change processes. By highlighting some important factors contributing to migration at the local level, this study gives valuable advice that can serve as a guideline and should be adapted to the local context.

### **Government initiatives should improve support for climate refugees**

For those people who have no other option than migration due to climate change, the government needs to take the necessary action to support the relocation of climate refugees through different development policies in Bangladesh. This could include prioritizing climate refugees in Khas land distribution and the affected people also need to be incorporated in social safety net programs.

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Figure 9: Sending areas – Jamalpur

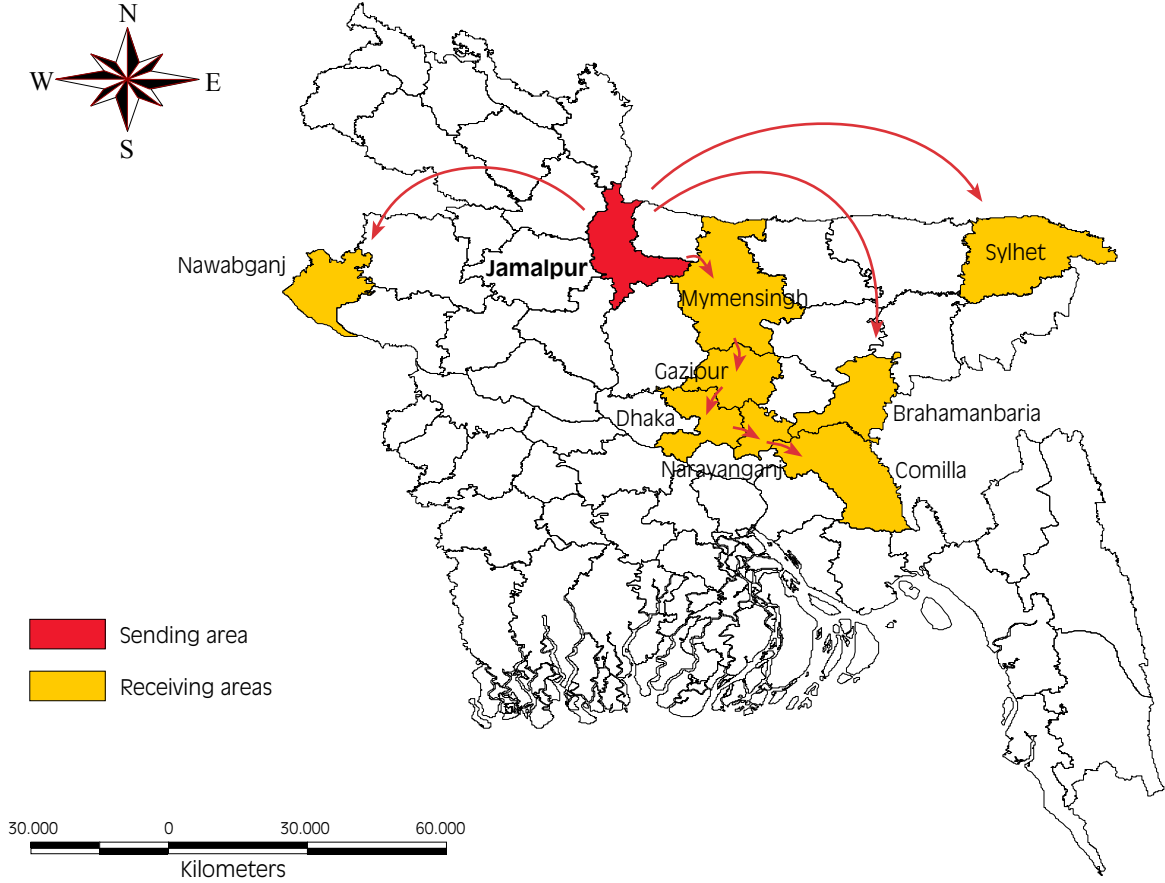


Figure 10: Sending areas – Khulna

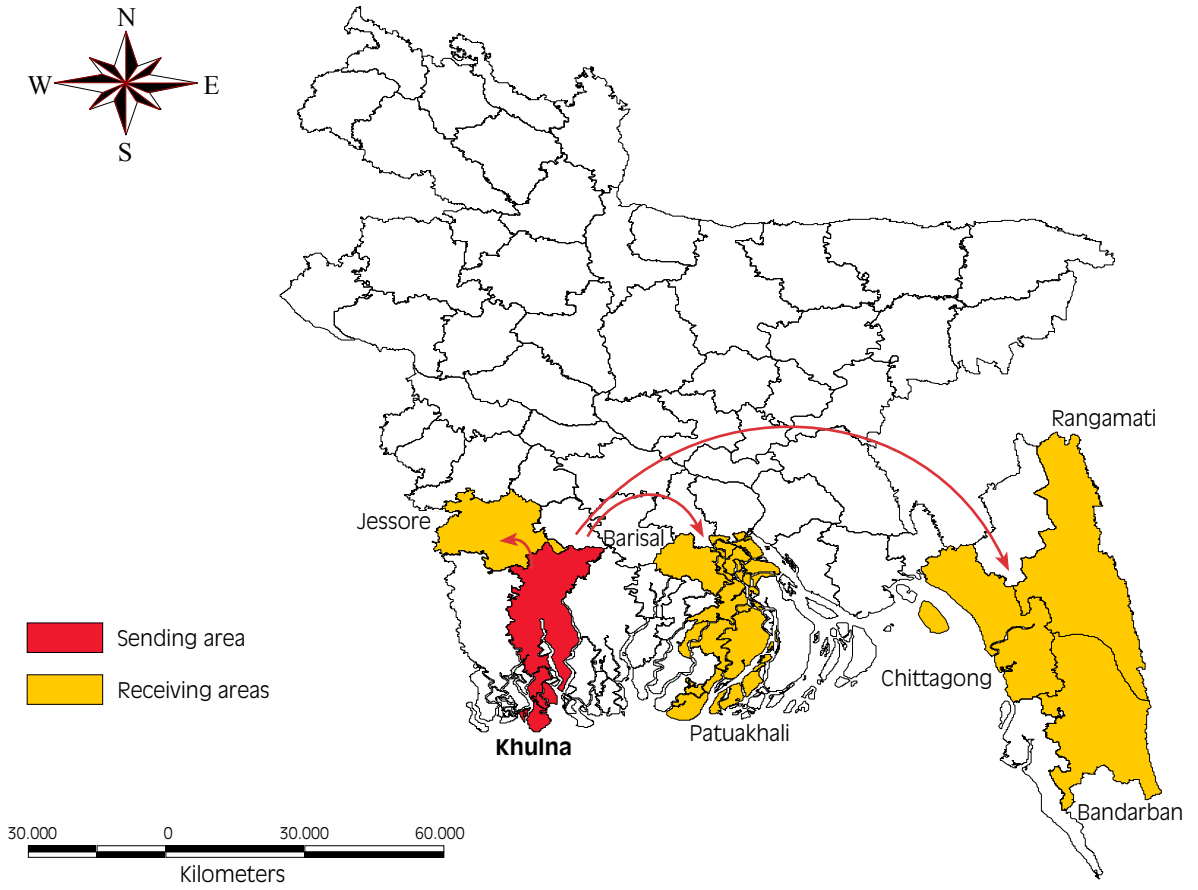
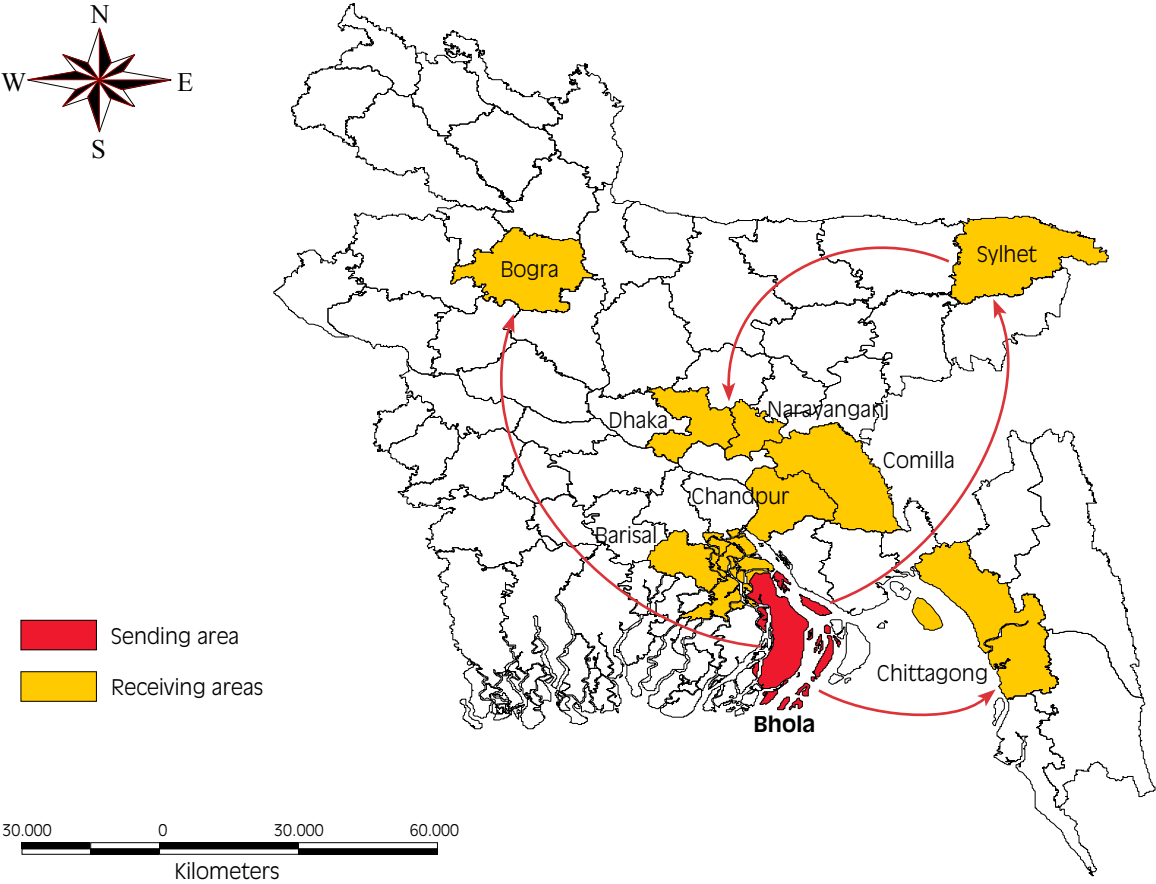
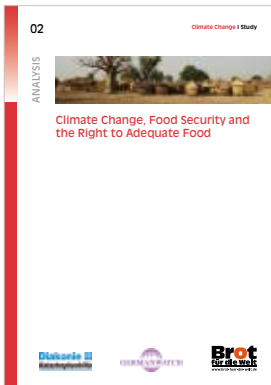


Figure 11: Sending areas – Bhola





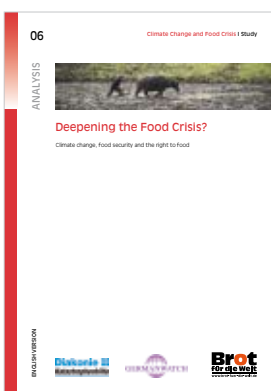
## Climate Change, Food Security and the Right to Adequate Food

The study documents the important facts about the relationship between climate change and food security. It gives recommendations for the national and international policy focussing on strategies to adapt to climate change.

English version, 212 pages, Stuttgart 2008

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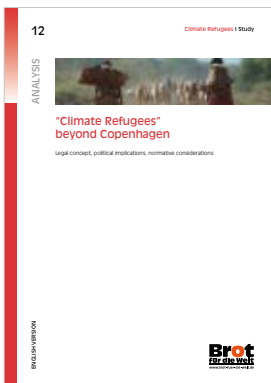


## Deepening the Food Crisis?

Summary of the most important facts of the above main study "Climate Change, Food Security and the Right to Adequate Food". With recommendations for the national and international policy.

English version, 28 pages, Stuttgart 2009

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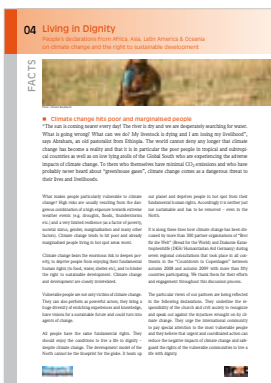


## "Climate Refugees" beyond Copenhagen

Partner organizations of "Brot für die Welt", as well as their target groups, are directly affected by the impacts of climate change. Answers to the challenges of "climigration" are insufficient. The analysis recommends policy-making on climate change to be aligned with human rights principles – in order to both prepare for the unavoidable and foreseeable effects of climate change, and to reduce future Green House Gas emissions.

English version, 32 pages, Stuttgart 2010

Download: [www.brot-fuer-die-welt.de/downloads/fachinformationen/analyse\\_12\\_englisch.pdf](http://www.brot-fuer-die-welt.de/downloads/fachinformationen/analyse_12_englisch.pdf)



## Protection and Reparations for "Climate Refugees"

Among the many concerns raised by the phenomenon of climate change, the likelihood of mass population displacement is among the most pressing and worrisome. There has been relatively little substantive discussion of this crucial issue at the international level, and there is yet no clear international policy direction for addressing a problem of potentially immense magnitude.

English version, 4 pages, Stuttgart 2010

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