



Review of migration and resettlement in Bangladesh: effects of climate change and its impact on gender roles



Anwara Begum
Bangladesh Institute of Development Studies (BIDS)



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About DECCMA Working Papers

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Titles in this series are intended to share initial findings and lessons from research studies commissioned by the program. Papers are intended to foster exchange and dialogue within science and policy circles concerned with climate change adaptation in vulnerability hotspots. As an interim output of the DECCMA project, they have not undergone an external review process. Opinions stated are those of the author(s) and do not necessarily reflect the policies or opinions of IDRC, DFID, or partners. Feedback is welcomed as a means to strengthen these works: some may later be revised for peer-reviewed publication.

Contact

Anwara Begum
anwarabids@gmail.com

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1. Introduction

After the successful completion of the sixth five-year plan (2010-2015), Bangladesh has been promoted to a lower-middle income country. However, this was just one of the many goals that were set – many other goals have not been successfully achieved. Bangladesh still faces several crises on multiple fronts. The majority of the population still lies in rural areas that are prone to natural disasters. The rising population and the quest for rapid urbanization (which causes people to move into the major urban centers – namely Dhaka and Chittagong) are two major issues which need to be addressed immediately. Problems pertaining to climate change, gender roles, migration and resettlement still persist. Such issues create the driving force for migration and resettlement into newer surroundings – surroundings that potentially offer better livelihoods and safety.

Several government and private sector policies exist to account for these changes. Some of them are timeworn and ineffective, and some of them do not address issues clearly. There is need for adjustment of these policies. This review analyzes migration and resettlement in Bangladesh, its causes and concerns (in relation to climate change and gender roles), and recommends strategies and policy reforms to accommodate migration and resettlement in order to make Vision 2021 a reality.

1.2. Background

The pervasive effects of climate change have the potential to disrupt socioeconomic dynamic of rural communities, posing significant challenges to policy makers and government officials. These challenges are often felt most at the individual and community level but decisions are made at the state level. In times of disasters, the State may be forced to resort to evacuation of most vulnerable communities, but these settlers tend to return to their original habitations due to social cohesion and cultural affinity, livelihood needs, place attachment and *in situ* adaptive strategies.

Extreme events such as cyclones and flooding are linked to human activity in at least four ways. Firstly, floods are sometimes the result of the release of dam water of the Ganges and Brahmaputra rivers by Indian authorities upstream. Secondly, climate change is projected to increase the frequency of cyclones, and may also increase river flooding due to the melting of glaciers far away in the Himalayas. Thirdly, population growth forces people to settle and develop economic activities such as farming and fishing on increasingly marginal and dangerous lands. Intersected with those three characteristics is the fact that the poverty of many of the people and the weakness of the state makes adaptation strategies difficult.

1.2.1. Working Definition of Resettlement

Resettlement is defined here as the movement of a whole community from one place to another, often planned and implemented through government or organization stipulated regulation and compensation. This takes place as a result of considerable and permanent challenge to community life. Resettlement characteristically involves a government involvement to shift communities or groups of people and to assist those people in reverting (or enhancing) their living standards by restoring their shelter, occupation, terrain and access to assets and services.

The review of the Conceptual Framework of migration in the next section will allow further understanding of the voluntary and involuntary forms of migration. The prime motivations which propel voluntary migration are also the benefits that are of paramount importance for involuntary (re) settlers.

1.3. Review of the Conceptual Framework of Migration

Hugo (1978) has conceptualized the idea of commitment within migration. The problem faced in defining 'usual place of residence' and the notion of 'permanence' could be resolved by considering the commitment of migrants (Begum 1999: p. 160). There will be a change in 'usual place of residence' and a sense of 'permanence' in the move only if it is followed by a change in commitment from one area to another. Standing (1984) has also sensed the shifts in commitment among migrants under 'migratory moments' (triggers occurring in the origin areas). Thus, to accommodate all types of long-term movements, (even 'return migration') with expected and concomitant attitudinal change, a modified outlook of the attribute of commitment is important. Migratory moves may include features related to nomads, gatherers, wanderers, migratory labourers, circular migrants/target migrants, seasonal migrants, compensatory migrants, life-cycle stage migrants, commuters, working-life migrants, life-time migrants, return migrants etc. (Begum 1999: p.161).

The base population in the rural areas is quite high while the opportunities for employment in those areas are scarce and seasonal at best. Previous Bangladesh censuses (1991, 2001) show that within internal migration, rural to urban migration is predominant (more than two-thirds of all types of migration), while the Sixth Five Year Plan documents the inability of the rural agricultural sector to provide sustained and sufficient employment throughout the year. Therefore, large groups of migrants opt for urban destinations, seeking non-agricultural livelihoods. Almost more than 40 percent of the urban population is comprised of rural origin migrants in all the cities, according to the Plan document.

In her book on Destination Dhaka, Begum (1999) tries to understand the expectations of individuals and the basic assumption is that individual reasoning and motivation is crucial. Migrants may be taking a strategy, which could be a survival bid, endeavour to change life style or economic strategy of profit maximization, or even a strategy to minimize risks in agriculture. This motivation would have important implications for the returns migrants expect from their migration episode. Their individual motives would affect the degree to which they would be content with their new situation and whether they would be committed to a way of life in the destination area (This section draws heavily upon "Destination Dhaka, Urban Migration: Expectation and Reality", by Begum, book published by University Press Limited, Dhaka, 1999).

The Structural Functionalist Approach (Gerold-Scheepers T J F A and van Binsbergen Wim M J, 1978) emphasizes the role of the wider socio-economic and environmental structure, which affects individual action to the degree that it can pre-determine individual perception and transcend individual awareness to mould the pattern of social relationships. The Methodological-Individualist Approach (This doctrine was introduced as a methodological precept for the social sciences by Max Weber, most importantly in the first chapter of *Economy and Society* (1968 English translation, [1922])). The Methodological-Individualist Approach sees all social behaviour as being the outcome of calculated responses conceived rationally, consciously, perceptively and resulting from individual volition.

The Structural-functionalist approach describes the wider socio-economic milieu which conditions the migrant to seek alternate life-chances while the methodological-individualist approach is the outcome of responses conceived rationally and perceptively and through individual volition. Within the stagnant rural economy, both these factors, in addition to others, act as mobilizers when triggered by recurrent natural disasters and the cognizance among migrants that they may obtain more benefits from the city in the long run.

Migrants tend to be unskilled and ill-equipped for living in cities. Yet they migrate with expectations of a better life in the metropolis. They are not selected by age, sex and education, or the rural-urban income differential as popular hypotheses have, inadequately, suggested. It is fairly well-established that the poor and unemployed migrate primarily in search of work and income opportunities aspiring to improve their economic status (Todaro, 1977; Oberai and Singh, 1983; Gugler, 1988; Oberai, Prasad and Sardana, 1989; Begum, 1997 and 2000, 2009). In addition to the economic reasons, aspects like age, sex and education and even the presence of relatives can also be considered as factors influencing migration (Bilsborrow et. al., 1984; Begum, 1999, 2000). Other drivers such as family problems, natural catastrophes, fires, salinity, destitution, loss of agricultural and homestead land, political threats, etc. have propelled migrants to the capital city. Besides physical factors (Jacoby 1971; Rafferty, 1974) and

social factors, cultural factors and communications seem to be playing an increasingly important role in migration (Greenwood, 1971; Olsson, 1965; Premi and Tom, 1985). Moreover, government policies influence the distribution of population between rural and urban areas. These include policies of concentrating industrial infrastructure in the cities, price and import substitution policies oriented towards meeting urban consumption aspirations, and a wide range of social service investments preponderantly in urban areas (Amin, 1974; Lipton, 1977; Bilsborrow et. al., 1984). Cross-border migrations also occur in this era of globalization and virtual integration, especially during times of disasters.

The success of migration has been widely documented (Findley 1977, United Nations 1973; J W White 1979; Yap 1977; Oberai, Prasad and Sardana 1989; Oberai and Singh 1983; Bilsborrow, Oberai and Standing 1984; Kirkby 1985; Hugo G 1991 and various years; Siddiqui 2006 and 2012). However, in comparison, the constraints and resultant vulnerability associated with migration have been relatively under-researched in the context of climate change. Migration has always been a possible adaptation strategy for people facing environmental changes. Adaptation is strongly associated with the socio-ecological concept of resilience. In instances where the main reason for migration is that the small holders and landless farmers have very little income or irregular income, and are impacted by adverse climatic conditions), which precludes their access to adequate food and sustain their livelihood, the structural-functionalist approach gains importance.

With regard to successful migration, the methodological individualist approach (rational choice theories) criteria gains precedence; where migrants possess the human capital for optimizing their own migration (self-selected) episode to get returns from a profit maximizing endeavour (The indicators are health, material wellbeing, security, good social relations (social networks), instigating freedom of choice and action). Thus the literature point to income maximizing endeavour (Todaro, 1969; 1976), giving evidence of migration that is sustainable (Adams, 1969; Browning and Feindt, 1969; Block and Utaka 1969; Herrick, 1965; Sahota, 1968, Begum, 1999), albeit in conjunction with the Social Network theory (Pohjola, 1991).

Recognition of both approaches is needed by viewing basic merit in each: the former explains the structure within which the individual operates to assimilate the information required, the latter can explain why certain individuals migrate and why some do not migrate even within the same constraints and opportunities. Migration as an event occurs primarily through a decision. Without a doubt, one or two individuals, among several, play a catalytic role. There is also the phenomenon of the trigger effect, especially in inhospitable situations like climatic events and natural disasters. The decision is taken within a plethora of information but basically it is in-voluntary, based on the exigencies prevalent within the milieu and the understanding of options in destination area, accrual of benefits to the individual or the group, as expected - in future.

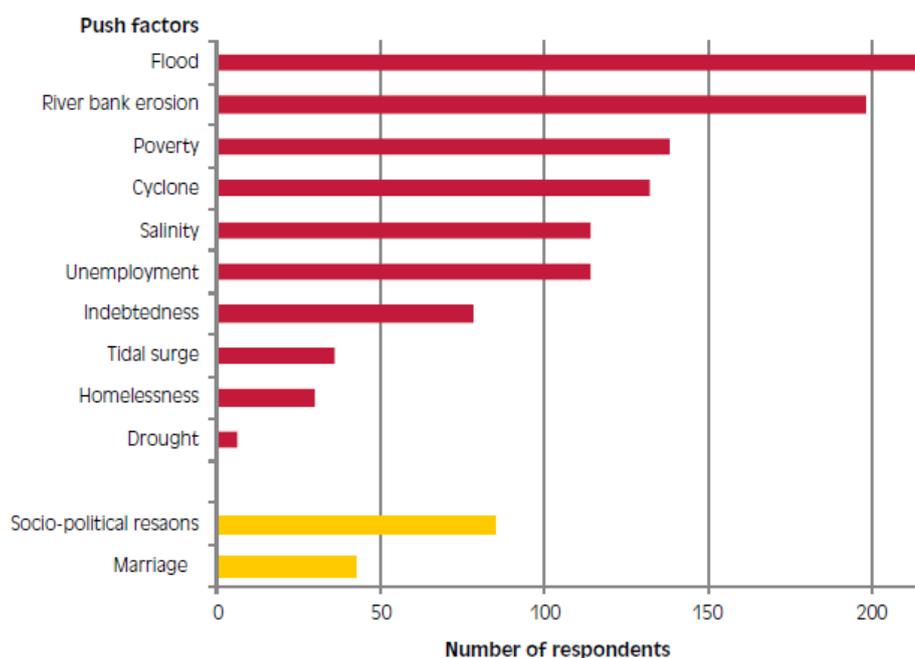
1.4. Reasons for Resettlement

People of Bangladesh normally choose to resettle within a country for two reasons – urbanization (rural-urban migration, in search of better livelihoods and opportunities) and displacement (forced resettlement due to natural disasters and climatic events).

In the quest for urbanization and improved livelihood, people from rural backgrounds move into the urban centers of Bangladesh. The issue here is that not all cities have become urbanized – Dhaka (the capital) and Chittagong (the port city) are the two primary urban centers in the country, but most parts of other divisions remain relatively underdeveloped. Hence, there is a larger inflow of people into Dhaka and Chittagong, thus overcrowding the cities. This regional and spatial imbalance causes several problems including limited access to health, education, infrastructure, transportation, and environmental management. Alternatively, a large portion of the population has no choice but to migrate, and are forced to be displaced out of their communities. One of the main drivers behind involuntary resettlement is climatic events and natural hazards. Climate change is a legitimate global threat – especially for a land as prone to natural disasters as Bangladesh.

1.4.2. Causes of Involuntary Migration

Anwar et.al carried out a survey in order to find out the reasons why people choose to resettle. The respondents mentioned several climate-related push factors. Out of 366 respondents, flood was mentioned by the highest number (59 percent), closely followed by river bank erosion (54 percent). Disaster-induced poverty occupied the third position, while cyclones came fourth. High salinity and unemployment appeared equally important. 21 percent mentioned indebtedness as a factor, and tidal surges were mentioned by 10 percent of the respondents.



Upon analysis of population displacement data, it has been found that natural disasters (e.g. tropical cyclones and floods) had displaced approximately 39 million Bangladeshis from 1970-2009 (Akter 2009). Almost half of the Bangladeshi population depends fully on agriculture. Those people are at risk of losing their livelihoods. Climate change is closely associated with extreme natural disasters. Such disasters, along with the rising sea levels, cause mass displacement across communities. Millions of Bangladeshis reside in low-lying coastal areas, and are therefore under threat.

1.4.3. Resettlement Due to Climate Change

Due to Bangladesh's unique geography, the country is highly susceptible to climate change. Floods occur frequently and are expected almost every year. Analysts (Copenhagen, 2009) have renounced and warned against a global temperature rise of two degrees Celsius over the past decade. Because, if this occurs, flooding is expected to increase by 33%.

Debates are ongoing as to whether Bangladeshi people are migrating voluntarily or involuntarily. Some consider migration as a voluntary action, but others have to choose if they wish to stay and starve, or

resettle and face the associated challenges and risks. There is extreme variation in the climate of Bangladesh. This is the cause behind several natural hazards and disasters. Variability in the environment is not a new occurrence, as it has been a long-term factor in the resettlement of Bangladeshi communities. As seen in the previous section, there are several other factors which cause resettlement as well, but the rapid onset of climate change has made it a much more significant factor than ever before. In the coastal areas, natural disasters are increasingly destroying employment opportunities for the locals through loss of property, eradication of fertile agricultural land and other income-generating activities. A study by Azad et.al depicts that a significant number of communities in coastal regions have lost their employment facilities due to increased salinity intrusion. The main culprit was the rise in sea levels.

1.5. Regions Where Migration Has Occurred Due to Climate Change

According to Anwar et.al “climate induced migrations take place after major extreme climate events”. There is a variation in the time span between the occurrence of the climate events and when the people actually migrate – this depends on a number of factors (recovery, preparation times etc.)

The two primary factors behind involuntary environmental displacement in Bangladesh are –

1. Rise in the tidal datum and sea levels, which causes flooding(in coastal areas)
2. Erosion of the riverbanks(in the mainland areas)

The primary displacement sites lie in the coastal regions and in the river delta regions of the mainland. Out of the 64 districts of Bangladesh, no less than 24 coastal and mainland districts are yielding an increasing number of climate displaced people.

1.5.1. Coastal Regions

Bangladesh has one of the highest percentages of population who reside in low-lying coastal zones. Currently, 65 million people live in a coastal area of approximately 54,461 square kilometers. This area is referred to as the LECZ (Low Elevation Coastal Zone), which comprises of regions in the coastal areas which are no more than ten meters above sea level (Mondal and Rajan, 1990). According to estimates (Pender, 2008) 3% of these lands will be lost by 2030, 6% by 2050 and 13% by 2080. Therefore, a constant flow of climate displaced people can be expected.

28 percent of the population of Bangladesh lives in the coastal regions - which, due to geographical reasons - are particularly vulnerable to natural hazards. The primary cause for this vulnerability is the rise in tidal heights (leading to flooding).Communities living in coastal areas also experience land subsidence and continuous squeezing of tidal plains.

Analysis of Districts Generating Climate Displaced Persons Provided by Association for Climate Refugees, 2011)

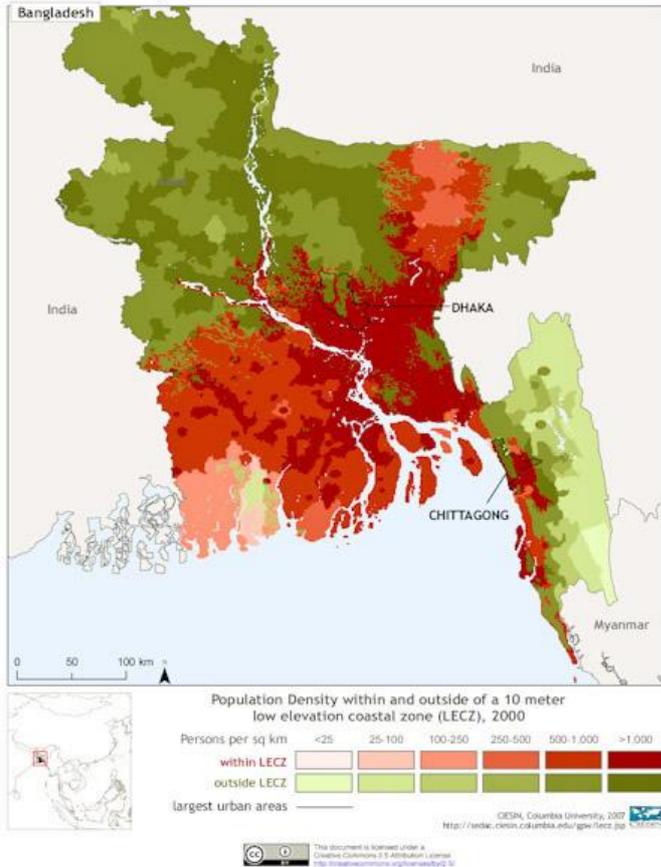
Coastal Districts Generating Climate Displaced Persons

1. Satkhira
2. Khulna
3. Bagerhat
4. Pirojpur
5. Barguna
6. Patuakhali
7. Bhola
8. Fani
9. Laxmipur
10. Noakhali
11. Chittagong
12. Cox's Bazaar

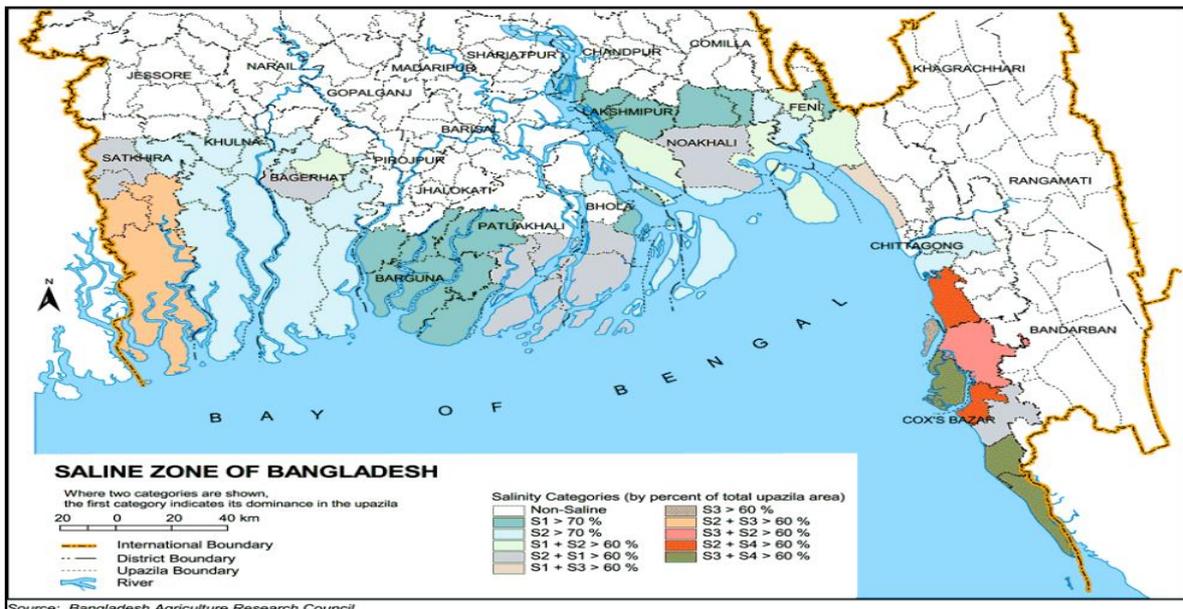
Mainland Districts Generating Climate Displaced Persons

13. Nilphamari
14. Kurigram
15. Rangpur
16. Gaibandha
17. Jamalpur
18. Bogra
19. Sirajganj
20. Munshiganj
21. Manikganj
22. Rajbari
23. Faridpur
24. Shariatpur

Population Density within and outside of a 10m Low Elevation Coastal Zone



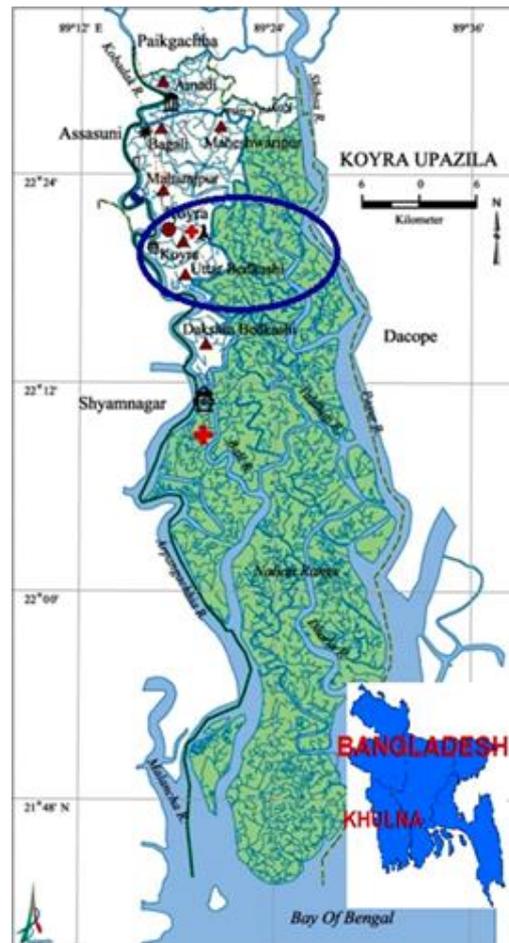
Results from workshops organized by the Association for Climate Refugees (ACR, 2011) found that Tidal floods had affected 236 sub-districts in the coastal areas of Bangladesh, as a direct result of the rising sea-level. The workshop also found that most of the villages in the affected sub-districts have been flooded by tidal saline water. Studies show that high tides and cyclones have destroyed the houses of 32 percent of the communities in the affected regions. Among them, 64 percent have been displaced locally (on remaining embankments or in higher ground), 27 percent have been displaced to other locations within Bangladesh, and 9 percent have been displaced internationally.



Case Study: Koyra

A field study was conducted at Koyra near the Sunderbans in Khulna. Most income primary sources (agriculture and fisheries) had been affected by the impacts of natural disasters over decades. Alternative income sources (e.g. gathering wood, cultivation of honey etc.) had also been severely affected, thereby causing a notable slowdown in the earnings of the locals.

The region was already notorious for high levels of salinity. Serious economic losses were experienced after cyclone Sidr (2007). The impact of Sidr destroyed houses and wiped off the savings of locals. The shock of Sidr had been repeated by cyclone Aila (2009). The impact of Aila had more devastating effects than that of Sidr, because it made the damages of Sidr irrecoverable. After Aila, there was a further increase in salinity and tidal surges. It exposed the region to longer and more frequent floods, thus causing average income levels of the locals to fall sharply to an unsustainable 1500 Tk. per month. There was massive migration and resettlement from the people of Koyra, but many of the locals decided not to migrate due to family responsibilities, poverty and the risk of finding employment opportunities elsewhere.

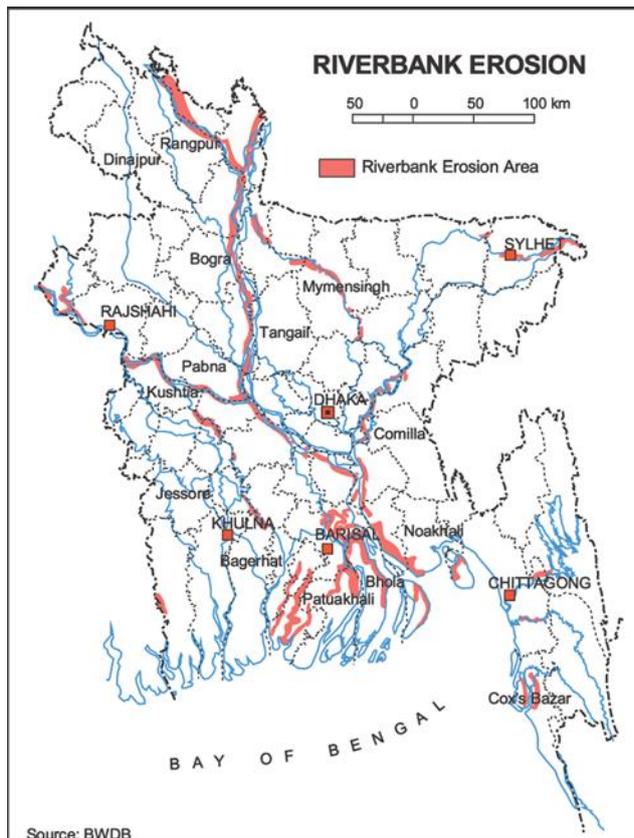


Case Study: Ramgoti

In Bangladesh, Coastal Embankment/Polder stretch for 5000 km, numbering approximately 125 of such interventions, and occupying 13000 square km. Historically, people have tried to protect agricultural land with mud embankments. Hence it is difficult to identify an area that is free from embankment without first visiting that area. Ramgoti, in Lakshmipur, was chosen for qualitative field assessment as it has historically been linked with massive river erosion.

Ramgoti Village is being served by Polder No. 59/2 of the Coastal Embankment Rehabilitation Project (CERP) Credit 2783-BD, at Bahaddarhat and Motirhat Areas. The total coverage is 4085 km. On the 8–9 November 1986: A severe cyclonic storm hit the coastal island and chars near Chittagong, Barisal, Patuakhali and Noakhali. Maximum windspeed was 110 km/h at Chittagong and 90 km/h at Khulna. Casualty: 14 people. Damages: 972 km² of paddy fields were inundated; Schools, mosques, warehouses, hospitals, houses and buildings were destroyed at Amtali upazila in Barguna District.

The onset of the 1986 cyclone created protection imperatives for locals, and also created need to improve agricultural production by reducing salt water intrusion. The immediate concern, under the circumstances, was the involuntary resettlement of 1800 families to make way for the polder. In this case, the Government was partially successful in introducing improved technology in the design and construction of protection works, and improved methods of embankment maintenance. There was partial progress towards mitigating inadequate embankment maintenance, but limited progress was achieved on reforming systemic institutional problems. Cyclone protection was provided but not to the extent planned. Only 14 of the 21 polders targeted for rehabilitation were protected completely by new or renovated embankments that filled critical gaps in the sea defenses, leaving seven polders at risk of rapid inundation from cyclones. After the project formally closed in 2003, it appeared that the resettlement part of the project was left incomplete and there has been no post-resettlement monitoring due to issues associated with land acquisition and compensation. Farmers, aided by many



non-project interventions, were able to capitalize on improved agricultural conditions provided by rehabilitated embankments and substantially upgraded internal drainage.

Government land ownership was quite high, although this was not matched by sufficient funding of Overhead and Maintenance (O & M), once the project had been completed (WB, 2005: p. ix). The Bangladesh Coastal Embankment Rehabilitation Project (CERP) was initiated in response to the devastating cyclone of 1987, and approved in 1995. The BWDB managed the project but failed to deliver on the social issues, resettlement in particular, which languished once donor oversight ceased. In 2002, there was an impact assessment but it failed to influence systematic attention to monitoring and evaluation of the socio-economic, beneficiary participation, social forestry, O&M and improved technology of design, construction, maintenance of the embankments (WB, 2005: p. 3). For further reference please refer document on Project performance

Assessment Report, Bangladesh, Coastal Embankment Rehabilitation Project (CREDIT 2783-BD), Feb 11, 2005, World Bank.

Mainland Districts

There was a slowdown in agricultural production as fertile lands in North-West Bangladesh went through desertification. The majority of the land area of Bangladesh lies in the delta of three great rivers– the Brahmaputra, the Ganges and the Meghna. The rivers produce a peak discharge in the flood (monsoon) season of 180,000 cubic meters every second (on aggregate this is the second highest in the world, after the Amazon) Two-billion tons of sediments are carried out annually. Two-thirds of the riverbank regions is less than 5 meters above sea-level, and therefore is highly prone to flooding. On average, every year approximately 25% of Bangladesh gets inundated. However, historical evidence shows that every 4-5 years, there is a severe flood that can potentially flood 60% of the country.

The Association for Climate Refugees (ACR) conducted several workshops which revealed that river bank erosion had affected 179 sub-districts in the mainland areas of Bangladesh. For decades, the villages in these sub-districts have been eroded by flash flood waters. River erosion and flooding destroyed the properties of 42% of locals living in those areas. Among them, 66% have moved nearby onto neighboring embankments; 26% have migrated to other locations in the country and 8% have been displaced across borders.

Illustrative Case: Bhola

Mr. Akbar Ali and his family lived in a village nearby a river in Bhola. During the monsoon season, the riverbank started eroding – reaching two miles into the village. All his family's land and assets were engulfed. Despite their efforts, they could not manage to save their house. Mr. Akbar Ali used to rent out a portion of his land, maintain leaf plantations, sustain a small fishing business and raise some cattle. The total damages he had accrued in property loss amounted to over nine-times his annual income. He had to sell the few assets he managed to retain for his family's wellbeing.

Mr. Akbar Ali managed to occupy a small piece of land on the other side of the river. After building a small house there, he was soon evicted. His business partners offered him to come to Dhaka, but he did not proceed, being aware of his vulnerabilities. However, he eventually resettled with his family and migrated to a slum in Dhaka.

Secondary Causes of Migration from Mainland Due to climatic events and natural hazards

As discussed in previous section of this working paper, the coastal regions of Bangladesh are prone to storms and tropical cyclones which force people into resettling elsewhere. Flooding of rivers in the mainland areas causes involuntary displacement as well.

On average, Bangladesh experiences severe tropical storms and cyclones once in three years. Such storms move northwards through the Bay of Bengal typically during the monsoon season. The storms are accompanied by gushing winds in excess of 150kph. This results in massive storm surges. Tropical cyclones have claimed hundreds of thousands of lives in Bangladesh; about 500,000 in 1970 and over 140,000 in 1991. Storm surges are comparatively greater in Bangladesh compared to that of her neighboring countries because of its narrow shape in the southern parts. These events have devastating effects, including high loss of lives, loss of livestock, extensive damage to housing, properties and infrastructure, along with and agricultural disruption and soil erosion.

Impact on gender

The impacts of natural disasters and climate change have been found to be gender-biased. Females are subject to much more challenging situations than men. Culture, norms, and biological attributes – all contribute to increasing the vulnerabilities of women (Katha Kartiki, 2015).

A paper on the Feminization of Poverty stated that “Women are more vulnerable to poverty”. Studies on income disparity between male and female-headed households were performed to test the validity of the claim. The results from the studies showed that there were strong correlations between gender and poverty. Vulnerability to climate change varies linearly with poverty. The National Institute of Population Research and Training revealed that 12.8% of households in Bangladesh are headed by females. Those households are therefore especially susceptible to climate change.

In order to explore new livelihood opportunities, it is often the men who migrate to urban areas. In certain occasions, they migrate with their entire families. But in many cases, the ones who are less able to migrate (due to expectations, societal pressures etc.) get trapped in the vulnerable areas. This includes the ultra-poor, women, children, the elderly and the disabled. Data on the gender of climate displaced people after the cyclone Aila shows males occupying a large percentage, and that it is the women who are left behind (Katha Kartiki, 2015).

Food security

The massive population of Bangladesh is distributed evenly between males and females, but the geographical distribution is a different story. Seventy to eighty percent of the women live in rural areas. Many of these rural women are poor, and therefore susceptible to climate change. There is a lack of data to support the fact that poor rural women face greater challenges due to climate change compared to males, but it is a fact that is widely acknowledged by the FAO . The social, economic and political context for women in Bangladesh makes them more vulnerable to climate change and food security.

Rising levels of salinity, changes in the global climate and occurrence of frequent natural disasters (e.g. cyclones SIDR and Aila) make it very difficult to ensure food security. Impact of climate change on food security of rural poor women in Bangladesh has been studied by Parvin et.al (2013).

Surveys conducted by Parvin et.al indicate that 83% of their sample did not know the meaning of the term 'climate change'. However, they acknowledge that climate conditions have experienced rather startling changes compared to last 15-20 years. They gave examples of rising temperatures, rainfall patterns, natural disasters, rising salinity and the availability of clean water. All the examples they mentioned are somewhat related to changes in the climate – either directly or indirectly.

Gregory et al. (2005) mentions ways in which climate change affects food systems and security. Climate change affects the production of crops. This leads to loss of income for farmers, and also increases food prices in the markets due transportation restrictions, disruptions at supply chain infrastructures etc.

The study conducted by Parvin et.al asked women in the study area for the reasons behind the sharp decline in food availability. The responses were recorded and found to be the following: 76% mentioned a decline in the total crop yield, 63% mentioned a rise in food prices and increase of family expenses. Some of the respondents could not understand or identify any link between the impacts of climate change with the food shortages. However, the respondents did acknowledge climate change as a reason behind income-loss, unemployment and the decline in the crop yield. As far as food prices are concerned, 53% attributed that to government interventions.

In the study area of Parvin et.al, the most severe impacts on the livelihood of the locals were caused by salinity intrusions. The increase in salinity levels has forced the people to explore alternative economic activities to maintain a steady livelihood. In the late 80s to early 90s, more than 80 percent of poverty-stricken people were involved in agricultural activities. Since then, people have explored alternatives, and many have taken up fishing, shrimp farming, and related labour activities, shifting from agriculture. High salinity intrusion destroys agricultural potential, and many areas experienced a decline in crop production by more than three times.

Effective policies which can reduce the hardship of women do not exist. They require provisions for food security. New policies catering to climate change adaption strategies need to be implemented. The amount of research work performed has been poor, and old policies need revision and proper implementation. Local communities can partner with NGOs and other institutions in order to take integrated efforts to enhance food security for all.

Social vulnerability

The mobility of women, especially in the rural areas of Bangladesh, is limited. They are left with insufficient resources to prepare for and equip themselves against natural calamities. A 2011 report by the World Health Organization reveals that women who are subject to violence prior to disasters are more likely to experience increased violence after the disasters. This, on many occasions, lead to them becoming separated from their families and from protective and supporting environments. The report also says that after natural calamities, women are more likely to become victims of domestic and sexual violence. Fear of such situations make women reluctant to using shelters.

In times of floods, many women fear social reprisal for leaving their homes, or for taking shelter with strangers. Because of this, they often stay back without seeking refuge. Children also hinder their mobility. There is also a great share of women who do not possess basic survival skills, such as swimming. In 1991, 90% of the fatalities were women and children.

The challenges faced by women do not end after the floods are gone. Problems even persist afterwards due to structural and circumstantial factors. Azad, Hossain and Nasreen studied the impact of floods on the livelihood of Bangladeshi women. They found that 61% of flood-surviving women were evicted from their normal dwellings. Sanitation facilities of 21% of them were damaged.

The study of Azad et.al found that about 90% of the women in their survey became ill through continuous use of wet clothing during floods. Women have been on the receiving end of harassment, abuse, mental torture and domestic violence during floods. Floods and other natural disasters upset normal lives. There is increase of criminal activity and destruction of essential resources and preserved necessities like wood for fuel.

Physiological vulnerability and access to healthcare

The World Health Organization (2011) reports that saline water can cause hypertension, and therefore increase risks of premature abortion and post-partum hemorrhage. Health services suffer during times of disaster. There is rise in maternal and infant mortality rates along with a shortage of immunization services. Family planning services and reproductive health care are also affected.

Other matters that affect the livelihoods of people living in rural areas, especially women include: loss of housing, loss in crop production, livestock death, loss in productivity, supply shortages and input prices, limited access to markets and loss of income, savings and employment.

Conclusion

The existing policies of climate change consider all affected people as equally vulnerable. Gender sensitivities are poorly mainstreamed and the needs of women are not particularly acknowledged. Collaboration and responses from multiple sectors need to take place in order to integrate and prioritize gender specific issues into different policies, such as healthcare, disaster management and disaster preparedness.

While designing and implementing policies and adaptation services, the special needs for women should be incorporated. Although studies recognize women primarily as vulnerable within society, they also appreciate women's roles in disaster management. The vulnerability of women could potentially be minimized if more women are involved in the formal decision making process. It can help meet the women's requirements to carry out responsibilities that are in line with gender division of labor.

Adaptation activities should integrate special provisions against gender-based violence. Taking the challenges of women into account, it is important for other facets to be addressed as well – food security and availability, access to family planning, antenatal and postnatal care, safe delivery services etc. Once the gender issues are properly mainstreamed, only then can policies be redesigned to meet the needs of one of the most vulnerable sectors of society in Bangladesh.

The Legal Framework in Bangladesh:

The Legal Framework under which the provision of land acquisition in the Constitution is laid out is in Article 42 of the Constitution of Bangladesh and it is quoted below:

“Subject to any restriction imposed by law, every citizen shall have the right to acquire, hold, transfer or otherwise dispose of property and no property compulsorily acquired, nationalized or requisitioned save by authority of law”.

“ A law made under clause (1) shall provide for the acquisition, nationalization or requisition with compensation and shall either fix the amount of compensation or specify the principles on which and the manner in which, the compensation is to be assessed and paid; no such law shall be called in question in any court on the ground any provision in respect of such compensation is not adequate”.

-Therefore the Bangladesh Constitution recognizes the fundamental human rights.

Policy/Legislation Analysis

List of Policies:

The policies below, have been listed chronologically:

- Land Acquisition Act I of 1894;introduced in British India;
- Executive Instruction of Bengal Government, 1917;
- Executive Instruction of 1947 (Bengal Ordinance No. 5);
- East Bengal Emergency Requisition of Property Ordinance, promulgated on July 14, 1947, for a short period;
- (Emergency) Requisition of Property Act, 1948 (Act XIII of 1948);
- Cantonments (Requisitioning of Immovable Property) Ordinance, 1948;
- Acquisition of Waste Land Act, 1950 (East Bengal Act XIX of 1950);
- Town Improvement Act, 1953;
- Rehabilitation Act, 1956;
- Chittagong Hill Tracts (Land Acquisition) Regulation, 1958;
- Hats and Bazaars (Establishment and Acquisition) Ordinance, 1959;
- Acquisition and Requisition of Immovable Property Ordinance, 1982 (Ordinance II of 1982); Act I of 1894 repealed, and Act XIII of 1948 rescinded;
- Requisition of Movable Property Ordinance, 1987;
- Acquisition of Property on Emergency Basis Act 1989 (Act IX of 1989) promulgated for a temporary period of five years;
- Acquisition and Requisition of Immovable Property Act, 1994;
- JamunaMultipurpose Bridge Project (Land Acquisition) Act, 1995;
- PadmaMultipurpose Bridge Project (Land Acquisition) Act 2007

** Note that the above mentioned are acts, and not laws.

The government of Bangladesh has a specific resettlement policy. The November 2015, Resettlement Policy Framework for Bangladesh Weather and Climate Services Regional Project culminated in the Resettlement Policy Framework, which was somewhat limited in scope (please refer to discussion on this policy, in the latter portion of this document) and thus, not optimally conceived. However, there are two important Acts namely, Acquisition and Requisition of Immovable Property Ordinance, 1982 and Emergency Acquisition of Property Act, 1989. These two acts may be discussed as follows:

There are some important features of the 1982 Ordinance and 1989 Act that impinge strongly upon the acquisition of land, and it is delineated in the following paragraph.

According to the 1982 Ordinance, District Commission (DC) is the sole authority to acquire property if it appears to him/her that the property is needed for a public purpose. People's objection to the acquisition will be considered judiciously but in case of a complex situation or if the property is large, government will be responsible for the decision. There is provision of temporary and emergency acquisition under the law while compensation payments must be effectively disbursed before authorities acquire the land.

The 1989 Act was enacted with the aim of easing the acquisition of land on an emergency basis: to control inundation, floods, river erosion and storm upsurge. The DC has absolute power to acquire both movable and immovable property and there is no scope to rescind the acquisition.

Policies and Resettlement Strategies

Several policies (new and old) exist in order to mitigate the effects of climate change and gender rights. In the next sections of this working paper, we will take a brief look into five of these policies.

The following details have been collected from the original policy documents in order to make the existing strategies and their limitations more apparent. Improvements and recommendations have been suggested in the next section.

1. Bangladesh Climate Change and Gender Action Plan (2013)

A revised version of the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) was prepared in 2009 by the Ministry of Environment and Forests (MoEF). It gave significant importance to gender and climate change issues. In 2013, a complementary national action plan on gender and climate change was prepared. The Bangladesh Climate Change and Gender Action Plan (CCGAP) works within the framework of BCCSAP in order to operationalize the inclusion of gender across all key sectors.

The overall objective of the Bangladesh CCGAP (2013) is to mainstream gender concerns into climate change-related policies, strategies and interventions, ensuring access to, participation in, contributions towards and benefits for the diverse group of stakeholders for the sustainable and equitable development of Bangladesh.

Some of the proposed actions, as pertains to advancing gender equality and women empowerment are:

- **Food security, social protection and health** by training women on technologies to enhance alternative agricultural practices (e.g. bio-fertilizer, saline resistant crops, homestead gardening, etc.) and developing crop insurance for female farmers.

- **Comprehensive Disaster Management** by empowering women with essential skills such as rowing boats, bicycle riding and swimming. Women communities can be reached via TV programming and solar-powered radio.
- **Infrastructure**, by developing a women's network of local bodies and sectoral departments for efficient infrastructure management, as well as to comprise early warning systems. Women can be involved in transport by training women drivers, having women in transport maintenance and by including safe ticketing and waiting areas in bus and train terminals.
- **Mitigation and Low Carbon Development**, by creating women's cooperative societies for enhancing women's involvement in collection, management and processing of waste in rural and urban areas. This can also be done by expanding efficient and renewable energy practices by introducing biogas among women livestock enterprise owners.

2. National Environment Management Action Plan, NEMAP (1995)

Climate change and the rise of sea-level have been acknowledged in the NEMAP as long-term issues. Today, they pose a massive threat to Bangladesh and its citizens. Many precautions and commitments outlined in NEMAP needed to be fulfilled to mitigate the impact of climate change on the environment. Some of those precautions stated in the NEMAP still apply today. They include:

- Develop national inventories of the sources and sinks of greenhouse gases.
- Formulate programs containing measures to mitigate climate change and to facilitate adaptation.
- Promote and cooperate in the development of practices and processes that control, reduce or prevent greenhouse gas emissions.
- Promote sustainable management, conservation and enhancement, as appropriate, of sinks and reservoirs of greenhouse gases.
- Prepare for adaptation to the impacts of climate change; develop integrated plans for coastal zone management, water resource and agriculture.
- Take climate change into account in social, economic and environmental policies and actions.
- Promote and cooperate through scientific, research, related to the climate system.
- Promote and cooperate in the exchange of relevant information related to the climate system and climate change and to the socio-economic consequences of response strategies.
- Communicate to the Conference of the Parties, information related to implementation.

3. Bangladesh Climate Change Strategy and Action Plan, BCCSAP (2009)

The BCCSAP is a 10-year program (2009-2018) to build the capacity and resilience of Bangladesh to meet the challenge of climate change. The needs of the poor and vulnerable, including women and children, are mainstreamed in all activities under the Action Plan. The program comprises of six pillars:

- **Food security, social protection and health:** Climate change is likely to have the most severe impact on the poor and vulnerable. BCCSAP emphasizes that every effort will be made to

ensure such people receive protection in the form of food security, safe housing, employment, and access to healthcare services.

- **Comprehensive Disaster Management:** Comprehensive disaster management systems are to be further strengthened to deal with the increasingly frequent and severe natural catastrophes as a result of climate change.
- **Infrastructure:** It is imperative that existing infrastructure (e.g. coastal and river embankments) is well-maintained and fit for purpose and that urgently needed infrastructure (cyclone shelters, urban drainage) is put in place to deal with the likely short and medium-term impacts of climate change.
- **Research and knowledge management:** The timing and extent of climate change impacts on different sectors of the economy can be estimated through research. By establishing links between regional and national knowledge networks, the findings can be shared with the public.
- **Mitigation and low carbon development:** Even though Bangladesh's contribution to the generation of greenhouse gases is very low, reducing emissions is always favorable.
- **Capacity building and institutional strengthening:** To meet the challenge of climate change, the capacity of government ministries and agencies, civil society and the private sector will be strengthened.

Although the BCCSAP was reviewed and revised in 2009, climate refugees were not properly addressed. Therefore, there is a need to lobby and advocacy to include climate migration into both the BCCSAP.

4. Perspective Plan (2010-2021)

The Perspective Plan provides the road map for accelerated growth and lays down broad approaches for eradication of poverty, inequality, and human deprivation. Specific strategies and the task of implementation are articulated through the two five-year plans: Sixth Five Year Plan (2011-2015) and the Seventh Five Year Plan (2016-2020).

The plan highlights climate change, infrastructure, urban migration and gender balance to be major drivers for Bangladesh to successfully administer the seventh Five Year Plan and bring Vision 2021 to life.

5. National Plan for Disaster Management, NPDM (2010-2015)

The objectives of the NPDM (2010-2015) are to:

- Align the strategic direction of disaster management programs with national priorities and international commitments.
- Articulate the vision and goals for disaster management.
- Outline the strategic direction and priorities to guide the design and implementation of disaster management policies and programs.
- Create a cohesive and well-coordinated programming framework incorporating government, non-government and private sector.
- Ensure that disaster management has a comprehensive and all-hazards focus comprising disaster risk reduction and emergency response.

- Illustrate to other ministries, NGOs, civil society and the private sector how their work can contribute to the achievements of the strategic goals and government vision on disaster management.

The plan is based on a long-term perspective for risk reduction. It is country-driven, and as such promotes national ownership of strategies through broad based participation of government, NGOs and civil society. The plan is result oriented, and focuses on outcomes that will benefit vulnerable communities - especially women, the poor and socially disadvantaged. It acknowledges the multidimensional nature of risk reduction. The plan is partnership oriented - it involves coordinated participation of development partners (government, domestic stakeholders, and external donors).

Bangladesh has created a simplistic model (the Disaster Management Model) to guide disaster risk reduction and emergency response management efforts in Bangladesh.

6. Resettlement Policy Framework (2015)

In November 2015, Resettlement Policy Framework for Bangladesh Weather and Climate Services Regional Project was devised. The main objective of the proposed project is to strengthen the capacity of Bangladesh Government in delivering weather and climate information in priority sectors and to prepare for and respond to climate variability and hydro-meteorological disasters.

The project's activities are primarily based on upgrading existing stations and installing new instruments and modernizing hydrological observation network. All the new instruments will be installed at the upazila level in DAE offices. It will be unlikely that these will require any land acquisition. So, social impacts of the project will be minimal. Likewise, hydrological gauging stations will be in BWDB land, on the embankment or by the embankment. Although the project will intend to avoid and minimize land acquisition impacts and the implementation of the instruments are designed at this point within public land, the final land acquisition requirements will be determined based on site selection. Nevertheless, a Resettlement Policy Framework (RPF) is needed to guide the application of World Bank social safeguards policies for all sub-projects and activities. A screening of each sub-project will be conducted by all three Intervention Areas throughout project implementation, by way of Social Impact Assessments.

Future policy recommendations

Recommendations for resettlement due to climate change

Climate displacees and their situation have to be reviewed within the prevailing framework that apply to them. The existing frameworks need to be reassessed and redesigned, if needed. Turning a good resettlement policy into good resettlement action is difficult, due to implementation problems, because governments do not have adequate strategies, managers hesitate, and line agencies are not always willing to support financially, despite promises. Monitoring and implementation aspects need to be closely attended. Rural-urban linkages, resettlement planning decisions including the economic, social and cultural integration of the re-settlers must be given priority in long-term planning.

Climate displaced people need to be properly addressed by national policies. Existing national laws and policies should be comprehensively reviewed. Foreign policy of Bangladesh must support such initiatives as well.

Migration needs to be treated as part of a solution, but there is need for improved data and knowledge. AUN and NGO working group on climate displacement can be formed. There is a need for increased collaboration between national and international donors. There is need for improved coordination between the affected communities, the government and civil society in order to properly mainstream the issues associated with climate displacement. National and international communities should improve their support and engagement with local communities of climate displaced people. It can be used to implement effective Return, Relocation and Rehabilitation programs and help mainstream urban management and disaster management with proper adaptation policies. An effective climate displacement monitoring mechanism could be implemented, and several resettlement programs could be designed in order to improve accessibility.

Climate change affects the right to adequate housing, which is a basic human right. Government initiatives should be taken in order to improve the support available for displaced people. For example, there could be effective, transparent and just distribution of government 'Khas' land to accommodate the needs of displaced persons. The use of community land trusts should be encouraged. Special land acquisition and land set aside projects could also be undertaken.

A rights-based national plan should be developed to resolve climate displacement. There needs to be design and implementation of laws and policies based on the basic rights of every citizen of Bangladesh. Climate displacement programs and policies must be implemented with transparency so that they are corruption-free. Incorporation of the rights of climate displaced persons into the existing climate change law and policy. Rehabilitation policy needed to stop further displacement, with provision of safe drinking water, sanitation, shelters and services.

Demanding better mitigation of greenhouse gas emissions by industrialized countries through the UNFCCC process and other channels would be a good practice in trying to slow down the climate change process. Financial mechanisms should be designed to address climate-induced migration.

Recommendations for gender roles due to climate change

- Women Empowerment and Education

Women need to be empowered. It is crucial for women to become leaders and participate in climate change decisions that can impact their lives. Inclusiveness and appreciation of different perspectives can bring forth new ideas and new solutions. The productive potential of women needs to be mainstreamed in order to make their voices heard. Only then can the particular challenges and vulnerabilities of women be identified, acknowledged, and accounted for.

- Improve quality and quantity of gender-disaggregated research

It is important to properly identify the gendered impacts, coping strategies and adaptation priorities of women and men. There is a need to use gender-disaggregated data in order to find out how differently each gender contributes to, and are affected by climate change. Findings of such data need to be common knowledge. This will allow the affected people to shed light on climate change impacts, adaptation techniques and mitigation strategies. It can be spread as everyday knowledge of coping with severe climatic events.

- Improve studies in urban areas

Notably, much of the existing research on gender and climate change focuses on rural communities over urban areas. There is need for greater participatory research in order to find out the impact of climate change in urban surrounding. The studies can be performed on the basis of gender in/equality, and similarities/differences in coping strategies and priorities of women and men in urban scenarios.

- Research on impact identification on gender at the household level

There has not been enough research carried out at the household level to study climate change's impact on gender. There is a need to identify similarities and differences in priorities of men and women, as far as climate change is concerned. This can help in the design of programs and policies to respond to different vulnerabilities and preferences. Further research can help involve women at the community level to using environmentally sound technologies in order to improve mitigation and adaptation to climate change.

A report on Women and Climate Change, published by the Georgetown Institute for Women, Peace and Security (2015), carries the following statement-

“Policies that purport to be gender-neutral are, inherently, discriminatory because they fail to take into consideration the different ways in which men and women experience the effects of climate change, as well as how they adapt”

The roles and rights of women need to be acknowledged by all – including NGOs, government institutions and social welfare organizations. The term “gender-neutral” is essentially a façade – each gender has special needs and requirements which need to be accounted for.

Local communities can be strengthened by mainstreaming gender issues. Policy makers can then address different gender-specific problems and cater to expectations – including provisions for climate change, food security, and financial aid.

Climate change is a legitimate threat. New York Times reports that scientists have said 2015 was the hottest year in historical record. The impact of climate change can take many forms. In order to address each of those forms, attention must be paid to every distinct group – and that includes the voices of women. Women's voices and experiences and perspectives about the difficulties of climate change, especially in a disaster-prone land like Bangladesh, can be used to take long and effective strides towards dealing with the deteriorating climate of not only the country, but the world today.

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