

Case Study: Gender Human Security and Climate Change in Bangladesh

This chapter¹ is based on a case study conducted by consultants Khurshid Alam, Naureen Fatema and Wahida Bashir Ahmed for ActionAid Bangladesh. It gives an overview of the climate change situation in Bangladesh and reveals the implications for women's livelihood security and gender equality. The vulnerability of women in Bangladesh is discussed in terms of how they cope with continued deprivation and poverty during and in response to climatic disasters. A review of national policies, institutional frameworks and adaptation measures from a gender perspective conclude this section.

1. Climate change in Bangladesh



Figure 1: Map of Bangladesh

With two extreme weather disasters, the year 2007 was unique in the disaster history of Bangladesh: widespread flooding occurred in July and August, quickly followed by the category-4 cyclone Sidr in November. The flood alone caused 3,363 casualties, affected 10 million people and reduced crop output by at least 13 percent. While the flood rehabilitation was underway, the coastal part of the country was hit again by a 240 kilometer-speed cyclone, Sidr, that affected 30 districts (out of 64),

¹ This chapter is excerpted from WEDO's study, *Gender, Climate Change and Human Security*, commissioned by the Greek chairmanship (2007-2008) of the Human Security Network. The report includes three country-specific case studies prepared by WEDO partners; the other country assessments are of Senegal and Ghana. Please see the full report for the references list.

impacting the lives and livelihoods of 8.7 million people, and damaging nearly 1.5 million houses and some 4.1 million trees.

There is consensus among scientists that South Asia is among the regions most impacted by climate change. The International Panel on Climate Change (IPCC) 4th Assessment Report (2007) defines the following as the main climate change impacts in the region: increased frequency of droughts and floods affecting local production negatively; sea-level rise exposing coasts to increasing risks, including coastal erosion and increasing human-induced pressures on coastal areas; and glacier melt in the Himalayas, increasing flooding and rock avalanches. Crop yields could decrease up to 30 percent in Central and South Asia by the mid-21st century. Within South Asia, Bangladesh is the most vulnerable country because of its regional connectivity through geo-physical and hydrological features and its livelihood reliance on trade.

Bangladesh is experiencing a moderate temperature increase in post-monsoon seasons and strong warming (0.1° C -0.3° C/ per decade) during monsoon seasons. The regional temperature is also rising; there has been a general rising trend in surface temperature in the order of 0.5° C \pm 0.1° C over the entire South Asian region during the past century. The available predictions suggest an increase of 0.5 to 2.0° C by 2030, and the sea level is expected to rise by 30 to 150 cm by 2050.

Most modeling predicts an increase in average rainfall from 8 percent to 15 percent by 2030. Increased rainfall is already resulting in flooding within the country and throughout the region. Bangladesh will be highly susceptible to increased flooding, both in terms of extent and frequency.

With the highest disaster mortality rate in the world (UNDP Vulnerability Index), Bangladesh lost 516,239 men, women and children between 1970-2005, during 171 disaster events. Its geographical location as a delta of the major river systems of the Ganges, Brahmaputra² and Meghna, lack of adequate governance structures and an impoverished population are three major contributors to Bangladesh's vulnerability to disasters.

Floods and flooding

The current trend of flooding in Bangladesh is changing: frequency, length and intensity of floods is increasing, with more damage to people, homes, crops and other assets; floods have become more unpredictable in terms of onset and scale (Alam 2007); sources of vulnerability have changed (i.e. collapsing embankments and structures and faulty design of structures); and the flood plains are extending.

"The flood pattern has changed a lot...The laws that used to hold earlier are no more there. We are not able to understand the strange things God is showing us... When summer is supposed to be over and monsoon is supposed to begin, the fields are still burning with heat. But by the time the rain starts and we try to sow seeds, by then there is flood. We are engulfed by trouble from all sides." Komela Khatun, 56, female headed household (FHH), Char Banktarpur, Pabna.

² Studies have indicated that the impact of snow melting in the high Himalayas will lead to flood disasters in Himalayan catchments. Impacts will be observed more in the western Himalayas as the contribution of snow to the runoff of major rivers on the western side is about 60 percent compared to 10 percent on the eastern side (IPCC 2001).

Measures have been taken to improve the responsiveness to flooding, resulting in a decreased flood-related mortality rate, but an increased impact on the economy. A pluralistic institutional environment has been developed, where diverse public and private actors are engaged in preparedness and quality post-disaster services.³ However, women interviewed felt that the recurrent flooding during recent years has increased loss, since people hardly had time to recover from the first flood when the second hit.

"In earlier times, flood water used to come gradually and Aman paddy used to grow with flood water. But this year (2007), because the water came at once, the entire paddy was destroyed. The water of this year's flood has lasted more than ever and there has been two floods in a year, though we also faced two floods in 1998 which were also severe. But if we had not increased our plinth level, then the damage from this year's flood would have been double of that in 1998." Shukorjan, 60, FHH, Gulzar Mondol, Faridpur.

Cyclones and tidal surges

Over 5 million Bangladeshis live in areas highly vulnerable to cyclones and storm surges.⁴ Roughly 55 percent of the coastal population lives within 100 km of the 710 km-long coastal belt of Bangladesh. The majority of those living in this area are low-income agricultural workers; 70 percent of whom are landless and relatively asset-poor.

The country faced 48 major cyclones between 1584 and 2007. In November 1970, between 300,000 to 500,000 people died, and 400,000 houses and 3,500 schools were damaged. During a storm in May 1991, about 140,000 people died, and damage and displacement caused an estimated loss of US\$2.4 billion. By most estimates, the intensity and frequency of cyclones is likely to increase. Mirza (1992) estimated that the frequency of cyclones rose from 0.51/year in 1877-1964 to 1.12/year during 1965-1980. The IPCC projected intense and more frequent tropical cyclone activity with extreme high sea level (excluding tsunamis) (2007).

Sea level rise and salinity

Sea-level rise will lead to a potential loss of 15,668 km² land, which is expected to affect 11 percent of the population or 5.5 million people. If the sea level rise goes up by one meter, the implications will include a 20.7 percent land loss, affecting 14.8 million people. The direct and indirect consequences of sea level rise include saltwater intrusion into surface and groundwater systems, drainage congestion, decreased water logging potential and devastating effects on mangroves. About 2.8 million hectares of coastal soil has already become salinized due to heavy withdrawal of surface water and groundwater for irrigation and intrusion of seawater.

2. Position of women and their vulnerabilities

Roughly half of Bangladesh's population is made up of women (48.9 percent in 2004, according to the World Bank gender profile), 80 percent of whom live in rural areas (BBS 2001). Women bear

³ There is a general consensus that the response after the 1998 floods was more effective than in 1988. Bacos et al (1999: 55) summarizes, "There was a general feeling of immense success, especially in those agencies with institutional memories dating back to the floods of 1988. The 1998 response was faster, much more comprehensive and better organized, and in the end truly served the victims of disaster."

⁴ But the number is certainly higher, as the recent category IV cyclone, Sidr, has hit more inland, and even in the capital city Dhaka. This is considered a recent phenomenon.

multiple responsibilities at home, including food preparation, provision of cooking fuel, health care, and caring for children and their education.

Women play an important role in a wide range of income-generating activities, but their contribution to the national economy is largely unaccounted for. Women in low-income households are heavily involved in economic activities, mostly around homestead-based production, which contributes up to 16 percent of the household income in Bangladesh (CPD 2004). Independent livelihoods managed by women-headed households are also an important aspect of the rural economy of South Asia and contribute to 15 percent of the rural households in Bangladesh (CPD 2000). Neither of these percentages are accounted for in the GDP.

Women's contributions to rural production activities include raising seedlings, gathering seeds, post-harvesting, cow fattening and milking, goat farming, backyard poultry rearing, pisciculture, agriculture, horticulture, food processing, cane and bamboo works, silk reeling, handloom weaving, garment making, fishnet making, coir production and handicrafts. A significant number of rural women, particularly from extremely poor landless households, also engage in paid labor in construction and earthwork and field-based agricultural work, activities that traditionally have fallen within the male domain.

Over the years, a gradual change in social attitudes has allowed many women to take advantage of new economic and social opportunities, adding significantly to improvements in key development indicators. Participation of women in the wage labor force has increased, particularly in the ready-made garment (RMG) sector, where women make up over 90 percent of the 1.5 million workers that currently contribute approximately 70 percent of the country's foreign currency earnings; these earnings also enhance the incomes of many families (CPD cited in ADB 2004). Women migrants, mostly from female-headed households (FHHs), now contribute a major share of the informal urban labor market⁵. Increased access to microfinance also has helped transform women's household labor into cash contributions to household income.

Due to increased access to services and cash, more women are able to use health services. As a result, female life expectancy has increased from 58.1 years in 1997 to 60.9 years in 2001, while that of men has increased from 58.2 percent in 1997 to 60.1 in 2001 (UNDP 1999 and 2003; ADB 2004). Female adult literacy rates have also increased from 27.4 percent in 1997 to 30.8 percent in 2001, while that of men has remained steady at 49.9 percent (Ibid). Increased literacy directly relates to increased employment opportunities for women. The rate of enrollment of girls in primary school is similar to the rate of enrollment of boys which reflects a change in the family and community attitudes towards the value of girls and their rights.

Women's participation in politics and administration, which has been negligible in the past, has also increased. At present, there is a provision for 3 out of 12 seats (25 percent) to be reserved for women in the Union Council and 3 to 5 out of 12 to 15 for municipalities. The country has had two women prime ministers to date.

⁵ Migration to cities is a coping/adaptation strategy for many single women. The trends suggest that the majority of migrants come from the areas most affected by weather disasters.

However, although women play a key role in household and community disaster recovery, discussions on the impact of disasters and recovery support favor livelihoods dominated by men⁶. The policy assumption remains that women benefit once men's livelihoods are secured. This assumption is not well verified because of limited research on how women's own lives and livelihoods are affected by climate change and disasters.

3. Impacts of climate change on women

This section will describe the actual and potential impacts of climate change on women's lives and livelihoods.



Photo 1: Life during disaster

Impact on the lives and health of women

While there has been a significant decrease in disaster-related deaths in Bangladesh, data is gender-neutral, limiting the ability to determine how men and women are affected. But a few studies following the cyclone and flood disasters of 1991 revealed that, among women aged 20-44, the death rate was 71 per 1000, compared to 15 per 1000 for men (UNEP 2005).

In a cyclone, even if a warning is issued, many women die while waiting for their relatives to return home and accompany them to a safe place. A study conducted by the Bangladesh Centre for Advanced Studies (BCAS) after the devastating cyclone of 1970 revealed that 25-30 percent of the

⁶ For example, see *Daily Prothom Alo* (Bengali daily in Bangladesh), 5 September 2005.

women in the affected areas had died from the cyclone (Mirza, 1992). Similar threats exist during flooding.

Deaths, diseases and injuries occur from waterborne diseases, snake bites, drowning, slipping, large trees and structures falling on women, lack of medical facilities, malnutrition, lack of uncontaminated drinking water and lack of proper sanitation facilities. Women and adolescent girls suffer as sanitation systems are destroyed: many women reported that they refrain from using the toilet during the day and consequently suffer from urinary tract infections. Pregnant women, lactating mothers and differently disabled women suffered the most, as they found it difficult to move before and after the cyclone hit.

Anxiety for her unborn child

Begum, from Kolubari village of Sapleza union, Mothbaria Upazila, tied herself to a tree trunk to survive on the night of the cyclone. She was pregnant and suffering from malnutrition. After a while, she was unable to stand due to pain in her lower abdomen. The child in her womb stopped moving. She did not have any money to go to a doctor. She was panicked, doubting whether her unborn child would see the light of the world, even if she herself survived (SIDR assessment report, CARE, 2000).

With increasing climate variability, salinization of drinking water sources is becoming a major problem for the people of southwest Bangladesh. During the dry season, when lack of potable water becomes an acute crisis for households, it becomes the responsibility of women, irrespective of their physical condition, to provide drinking water for their families. Since water sources in the neighborhood are all affected by high salinity, women need to travel long distances, sometimes up to ten kilometers on foot every day over rough terrain, in search of water. This consumes an enormous amount of their time.

“Male members do not go to bring non-saline water. I walked around 2 kilometers to fetch water even before the day I gave birth to this daughter (4 years now). Just two days after her birth, I had to start fetching water again and now I am suffering from physical problems.” Laily Begum, Shathkhira.

Impact on women’s physical security and dignity

Women in Bangladesh still experience various types of violence⁷, and physical, sexual and emotional violence increases during and after a disaster.

a.) Domestic violence

As psychological stress increases during disasters, and more men are left without employment, male relatives of many women have been reported to vent this increasing frustration via abusive language or exertion of physical force. Reasons given for this abuse range from women not being able to manage resources properly, to not serving food on time, to not being able to procure relief materials.

Domestic violence as a result of inability to procure relief

Nasima, 25, from Madartake, Nandi Para, used to provide domestic help to neighboring households. “I am unable to work now due to having headaches all the time. When my husband gets angry, he hits me in the

⁷ The UNDP Human Development Report of South Asia, 2002, ranked Bangladesh third of the countries in which violence against women is highest and most regular.

head". Nasima says that, although her husband has been violent since their marriage began, "it has increased after the flood of 2007. My fault is that I was not able to get relief... Whenever he is angry, he hits me in the head, waist and legs and asks, 'How do other women receive 20/30 kg of rice?' 'Why don't you beg for rice from the Commissioner?' He does not give us food regularly but is regular in beating." Nasima feels that as long as he can feed the family, she is willing to digest all his beating (Mabbuba Nasreen, 2007 for ActionAid Bangladesh).

b.) Harassment and loss of privacy in flood and cyclone shelters

Many women refrain from going to shelters during a disaster or when a warning signal is issued in fear that they would have to share a room with strange men. Pregnant women and nursing mothers tend to be reluctant to share space with or nurse in front of strangers. Some women with disabilities also mention facing some form of violence in shelters, including mental abuse and physical torture.

c.) Harassment in relief queues

Women often face additional physical insecurity and loss of dignity while collecting relief during or after a disaster. In many cases, they have to walk long distances through water, their wet clothes clinging to their bodies, to collect relief. During collection they have to stand in long queues with male strangers. Sexual harassment is often reported.

Impact on women's economic livelihoods

Floods and cyclones damage livestock (i.e. cows, goats, buffaloes), poultry (i.e. chickens, ducks), fisheries, trees, crops (i.e. rice, wheat, nuts, chilies, lentils), seeds and animal fodder. Productive tools such as ploughs and nets are also washed or blown away. Increased salinity after a cyclone and the difficulty in plowing wet soil after flooding decreases soil productivity. Sand deposition as a result of flood and river erosion affects production of crops such as nuts. During and after weather disasters, the lack of fodder for livestock and poultry results in reduced milk and meat production.

The impacts of floods and cyclones on the livelihoods of women specifically include:

- Housing and homestead: The destruction of houses by floods and cyclones is a common impact in disaster prone areas.
- Crop production loss: Bangladeshi women, who control homestead-based livelihoods, lose income when crops are blown or washed away.
- Livestock death: Cows and goats are the most valuable assets of poor people in flood-prone areas. During flooding, collection of fodder for livestock is a significant challenge, particularly for goats who need green grass (which often becomes flooded.) It also becomes difficult for veterinarians to visit the villages or for villagers to travel to buy medicine.
- Loss in productivity: Flood water and sand deposition decreases soil productivity.
- Supply shortage and price of inputs: Shortages during flooding leads to increased prices for inputs such as seeds, fertilizers, oil for running irrigation pumps, fodder for animals, transport costs and veterinary fees.
- Limited access to market: With damages to infrastructure and communications systems, women cannot access the market to buy or sell food such as milk, eggs, vegetables or other products. Women are forced to trade within the village or accept lower prices offered by male buyers from other areas.
- Loss of income, savings and employment: Loss in production, lack of storage and destruction of access roads result in assets (e.g. cattle) or products (e.g. milk) being sold at low prices. The selling price decreases while the shortage in supply induced by floods results

in increased prices for essential goods. Moreover, floods and cyclones reduce employment opportunities, especially for women working in agricultural fields. As a result, there is a net loss in income which, in turn, leads to a loss in savings, thus making it even harder for households to cope with disasters.

“The price of everything goes up after a flood. The price of seeds, fertilizer and oil all increase. The price of food for man and animals also increases... We have to eat less and feed our livestock and poultry less.” Aleya Khatun, 42, MHH, Baktarpur, Pabna.

“The roads get submerged and slippery. Even if I have paddy at home I can’t go to the market to sell it. We are also unable to sell the milk and the vegetables we produce. So we have to accept low prices from buyers within the village or external buyers who approach us.” Momena, 45, FHH, Gulzar Mondol, Faridpur.

4. Women’s current coping strategies and adaptation

Long term monitoring and research is needed to have a full understanding of whether the current coping strategies of poor households, and particularly of women, are significantly or sufficiently contributing to adaptation to climate change. The factors responsible for success or failure of these coping strategies may be relevant for future planning.



Photo 2: Violation of security, dignity and privacy



Photo 3: But life goes on...

The following are some of the micro-strategies used by poor women in Bangladesh to cope with frequent disasters.

Avoidance or Prevention Strategies

People living in the disaster-prone areas of Bangladesh employ an array of measures to safeguard their lives and property against disasters. The majority of the people do have a clear understanding about the effectiveness of each of the preparedness measures, as well as their limitations. Often these measures do not help them because of the magnitude of disasters.

a.) Predicting and preparing for disasters

In the flood-prone areas, vulnerable people have used their own science and arts to predict floods. This traditional tool is becoming of little help, however, due to the changing nature of disasters, leaving the community with no choice but to rely on whatever early warning system is in place.

b.) Protecting houses and homesteads

Before the flood or cyclone season, families try to make their houses more resilient to disasters by reinforcing walls and roofs with locally available resources, increasing the plinth level of households and elevating the level of cow sheds. More financially secure households raise the level of tube wells.

c.) Storing essential items

Women preserve fuels, matches, dry food (such as rice, peas, puffed rice, flattened rice and molasses), ropes and medicine at home and prepare portable mud stoves for future use. Women often collect firewood to store in dry places for later use.

“You can borrow some rice from a neighbor’s house, but how do you manage firewood? People may have the grains to cook, but if they do not have fuel, they cannot eat anything.” Female participant from Sonatani Char, Sirajganj.

Women also store fodder for domestic animals, seeds, food, harvest, blankets and valuables on machas (high wood or bamboo structures for storage), which are also used to protect goats and poultry from flood water. Many women store cooking utensils, productive assets (i.e. ploughs, fishing nets) and other valuables under the soil to protect them from being washed away by cyclones.

d.) Teaching children

Educating the younger generations about how to protect themselves has been a key strategy employed by households living in disaster areas. Teaching life-saving skills such as swimming and understanding cyclone signals are examples of how parents prepare their children. No formal mechanism for teaching children disaster preparedness exists, however; children usually learn from family discussions or meal-time conversations. Various other activities such as animal rearing, grazing and taking part in plantation work with their parents, during which children have an opportunity to learn their parents’ indigenous knowledge, are additional examples.

Managing Strategies

a.) Safety of family members

During disasters, women must constantly look after children, elderly and disabled family members, and animals to ensure their safety. In flood-prone areas, women prepare elevated platforms for family members with disabilities, using the *chouki* (traditional bed) and bamboo. Often, to ensure that young children remain safe and are not carried off by flood water, parents construct a ‘fence-in’ to keep toddlers in one place.

b.) Ensuring food security

Since most households are dependent on agriculture, flooding season is particularly threatening. In general, there is an overlap between flooding time and the crucial rice harvesting period. If a flood

comes early in the monsoon season, it destroys the standing crop, which results in food shortages⁸. Disasters also affect the local economy, which is vital for generating employment opportunities for non-farmers in both rural and urban areas.

When a household faces a food crisis during or after a disaster, women are responsible for adjusting household food consumption by changing the type of food eaten (instead of consuming rice, for example, they resort to alternate foodstuffs such as *kaisha* or *kolmi*, local vegetation,) or by consuming less. Various studies acknowledge that since women's work is closely related to agricultural production, family food and income generation, the burden of food shortage falls on them.

c.) Protecting assets

When flood water reaches the level of the livestock shed, people no longer keep their animals at home. In some cases, they send their cattle to relatives. Some poor families try to sell livestock in an attempt to hold cash security, preparing against the possibility that regular income could be jeopardized.

d.) Household work

Workload distribution within the family disproportionately affects women during a disaster. When husbands or male members become unemployed, daily work for women increases even more as they have to manage resources, feed the family and look after the elderly. In most cases, caretakers for people with disabilities are also female. However, new studies have also documented that work distribution is changing: a significant number of female participants mentioned how their husbands changed their usual habits during flooding; many cook at home or take care of children (Alam 2007).

e.) Managing finance by borrowing credit, selling and mortgaging assets

In order to meet household financial needs, assets such as livestock, poultry and boats are often sold. Selling other valuables, mortgaging, or borrowing against assets, or borrowing from neighbors are other common strategies for survival. Many women in rural areas are now part of microfinance organizations, using their memberships to access loans.

f.) Migration and alternative employment

In many cases, especially in FHHs, women migrate as an adaptation strategy. Migration⁹ for employment increases after disasters, when people move out of areas with job deficits in search of work. Female migration, mostly from FHHs, contributes a major share of the informal urban labor market¹⁰. The major activities that employ women in urban areas include serving as domestic help, brick breaking, sewing, jute bag making, ash selling, fish and vegetable vending, selling rice cakes and working in the RMG industry. For earning, they sometimes compromise with their values and dignity (i.e. begging). Women who have alternative livelihood options prefer not to migrate as laborers; households that have boats, for example, earn incomes by ferrying people. Some even open

⁸ According to the assessment reports of the 1998 flood, 15.6 percent of flood-exposed households became food insecure.

⁹ A study conducted by the CLP in the Gaibandha Chars found that between 70 percent and 90 percent of extremely poor households had at least one member migrating seasonally. For the village as a whole, as per the CLP baseline survey, it was found to be 33 percent. Day laborers were the most severely affected: their employment fell sharply from 19 days per month in 1997 to only 11 days per month in July through October 1998.

¹⁰ Migration trends suggest that the majority of people come from areas affected by weather related disasters, but other social dynamics exist, as well.

small shops on the boats. Selling advance labor for money is another common practice; farmers often view this as ensuring future employment, although it also makes for financial shortages in the future since they have already been paid.

Recovery Strategies

Rebuilding houses, re-stocking livestock, securing an income, repaying borrowed money, treating affected family members, and restoring other aspects of life such as children's education are all parts of recovery from disasters. In all of these activities, women are actively involved.

5. Women's constraints in coping with disasters

"Because this flood lasted longer, people have suffered more than in the past. If the soil doesn't dry, we can't cultivate onions, garlic or any vegetable. Now we'll have to plant a month late and reap a month late. So there'll be less money. Our day labor has also stopped because of the flood, so there's even less cash in our hands. Everything is costly now. On top of that we were attacked by flood twice this year. We had barely managed to meet finances from the first round when the second round hit us." Momena, 42, FHH, Gulzar Mondol, Faridpur.

As mentioned above, the social, economic and political context for women in Bangladesh makes them overall more vulnerable to climate change. The following factors are among those exacerbating women's difficulty in coping with climate disasters: limited access to early warning information; lack of preparedness¹¹; limited access to critical services and facilities (i.e. shelters with adequate spaces for women and with proper sanitation); lack of access to financial security (i.e. loans provided to women often have highly unfavorable repayment conditions); limited market and communication access; limited access to decision-making arenas; social expectations of "appropriateness" for women's actions; increased responsibility to the household; difficulty in accessing relief goods; and physical constraints¹².

"During these tense moments, women cannot manage their clothing and hair because of the wind. On top of that, they head towards shelter with their children in one hand and household goods in the other, all of which becomes difficult to manage and, in many cases, becomes the cause of their deaths. Many children cannot run because they refuse to get down from their mothers arms, as a result of which the mothers cannot run either. That's why women and children suffer more." Marium, 60, Char Kukri Mukri.

6. Opportunities for women's participation in disaster preparedness and response

Although women in Bangladesh are generally more vulnerable than men, gender related perceptions are changing in the community. Women's involvement in activities outside of the home, such as participation in meetings, standing for election and leading of community mobilization, is widely accepted. Community and religious leaders generally acknowledge that women's awareness and participation must be increased for disaster reduction.

Compared to the 1980s, barriers to women's involvement in decision-making have been largely removed, although women still face challenges in influencing processes that matter most to them. Since the 1991 cyclone, many women in Bangladesh are now involved in various disaster committees at the local level, initiated by the government, the Red Cross and NGOs.

¹¹ Studies have shown that many families have a high level of awareness about flood preparedness but they do not have the ability or resources to implement actions (Alam 2007).

¹² During disasters, women in general face greater trouble while swimming or moving in the presence of wind and water since their saris tend to float away; their long hair often gets tangled with their body and other nearby objects, making it difficult for them to maneuver. Women often have small children who cling to their bodies, making it even harder for them to move.

The opportunity for participation in and access to local political power spheres are critical for women, but most women report that during or after a disaster, they are not consulted in any community-level decision-making. They said that their participation in the community's decision-making processes could help highlight women-specific problems, as well as potential solutions.

Women's leadership

Numerous case studies suggest that women play a lead role in the recovery of their households after a cyclone. Evidence also suggests that many communities are now ready to see women leading their cyclonic risk reduction. However, the unaddressed specific vulnerabilities of women mentioned above are the barriers to women playing meaningful leadership roles at community level.

Some initiatives have already been taken by Community Disaster Preparedness Committee (CDPC) members; for example, the vice chairperson of CDPC of Char Kukrimukri has formed a small women's group:

"I have already facilitated the formation of a small group at my constituency. At first, my female neighbors were not willing to form a group, but I motivated them. I told them that in order to save our lives we need to be organized. They did not want to give their name and asked how they would be benefited as a committee member, and I told them that four meetings will be held in a month and you will get snacks and allowance. I told them that their enrollment in the committee means they will get something and they will be given priority in receiving relief goods in time of cyclone. They will learn about cyclone preparedness and share their learning with others." Fatema, Vice Chair, CDPC, Kukrimukri.

7. Policy framework and institutions on climate change in Bangladesh

Climate change became a focus when it was first integrated in the National Environmental Management Action Plan (NEMAP), which was prepared in 1995 in order to initiate the process of addressing climate change issues as long-term environmental concerns for Bangladesh.

Bangladesh signed onto the United Nations Framework Convention on Climate Change (UNFCCC) on 9 June 1992, ratified it on 15 April 1994 and ratified the Kyoto Protocol on 22 October 2001. The country is a non-Annex I Party to the Protocol, which means that it is not bound by specific targets for greenhouse gas emissions. The Department of Environment within the Ministry of Environment and Forestry is the focal point for the UNFCCC and coordinates climate-related activities in the country. Now a Climate Change Cell (CCC) has been established to address several issues, including adaptation.

Several institutions are involved in technical analyses of climate change including the Bangladesh Meteorological Department, the Flood Forecasting and Warning Center, the International Centre for Diarrheal Disease Research Bangladesh, the International Training Network Centre (dealing with water management issues), Climate and Environment Geographical Information Services and the Bangladesh Centre of Advanced Studies.

Bangladesh was one of the first countries to finalize a National Adaptation Programme of Action (NAPA) in accordance with the UNFCCC. The NAPA was completed in 2005 and is the first official initiative for mainstreaming adaptation into national policies to cope with climate change and vulnerability. The NAPA suggests a number of adaptation strategies, such as the provision of

potable water to coastal communities, including climate change issues in education, and mainstreaming climate change across sectors and into the planning of infrastructure.

Bangladesh has already included most elements of mainstreaming climate change adaptation into its recent 2005 Poverty Reduction Strategy Paper but as yet, there has been little progress in implementing the stated goals and targets of the NAPA.

Although it contains brief references to gender and women, the NAPA does not include women as stakeholders or actors in proposed adaptation actions. In developing the NAPA, “indigenous women” were noted as consultants, but no details are provided as to the ratio of male to female participants, and no women’s rights or gender-equality organizations or gender experts are mentioned as contributors. Women are repeatedly referred to as one of the most vulnerable groups, yet no statistical or factual evidence is provided on gender-differentiated income levels, occupations or demographics. Particularly striking is the omission of women in discussing the public health situation of the country (i.e. no mention of gender-differentiated access to health care, differences in life expectancy or breakdown of government expenditures by gender). The NAPA presents women as victims of climate impacts; women are not considered active participants in adaptation to those impacts (WEDO 2008).