Building Community Resilience through Climate Change Adaptation Project

Vulnerability, capacity, and perception in the changing environment

July - August 2012
Bangladesh facing persistent disaster events which deteriorating our resilience capacity to cope. People’s vulnerability increased in terms of their capacity and perception causing socio-economic instability. In order to address these BDRCS implementing ‘Building Community Resilience through Climate Change Adaptation’ project with the support from IFRC and Canadian RC. In addition to the roles specified in the BCCSAP 2009, SoD and the IFRC strategy 2020 the project takes into account the priorities and linkages with specific focus in climate change resilient community actions and services, knowledge management in DRR/CCA, showcasing best practices in CCA/DRR and their replication scaling up. This project is running in four districts for more than a year.

Under the knowledge management component this bi-monthly e-newsletter eC³ (second edition) is providing a platform for the researchers, practitioners and academician which gives Knowledge that require or to share in the field of adaptation to climate change and DRR. CCA team takes this opportunity to acknowledge and sincerely thanks to communities, researchers, government departments, officers, staff, volunteers and many other resource persons who contributed to this e-newsletter and will contribute in future.

Editors

M.A Halim, Director and Project Manager, CCA project, BRDCS

Khaled Masud Ahmed, Sr. Disaster Management (DM) Manager and Project Coordinator, CCA project, IFRC

Cover Page: Demonstration of Flood Marker in Huakua, Bogra

Photo credit: Subrata Biswas

Table of Contents

CCA project updates p4
Community Perception on vulnerability and risk p5
Articles p9
Case stories p12
CCA Project Updates (till August 31, 2012)

During the period, the following activities were conducted:

- Eight vulnerable communities have been selected in the four districts following a wider consultation with community people and based on the community risk and vulnerability profile.
- Required staff have been mobilized and placed at the BDRCS unit level and also at NHQs.
- Four day-long staff induction training from 12-15 November 2011 was organized and ended up with key outputs including unit level project implementation committee.
- Five days training has conducted on “Participatory Approach toward Risk Reduction at Communities (PARC)”.
- As part of VCA, the baseline/household survey in all eight communities has been completed; combining VCA findings baseline report has been produced.
- VCA exercise was conducted in each of eight communities following ‘VCA facilitators learning by doing VCA training’ done through BDRCS CBDRR programme. VCA exercise was ended up with a broader community Plan of Action (PoA) which was translated into community specific DRR/CCA activity plan.
- Draft Knowledge Management Framework for BDRCS has been prepared in cooperation with Red Cross Red Crescent climate centre endorsed at programme level, will be approved following a workshop with key staff and management people on second week of September 2012.
- Fellowship is being offered through three reputed universities of the country i.e. University of Dhaka, BRAC University and Jahangir Nagar University. The topic “Improving cyclone early warning services (last mile connectivity for women and children) of people at Nijuhmdwip through existing CPP network and organization” has been selected for 2012. Collaboration has been established between CCA and CPP programme on application of research findings. Research works of the fellowship was postponed due to travel restriction during cyclone season of April and May. However, Expression of Interest received through Universalities is being reviewed.
- Visibility materials such as the project brochure both in English and Bangla, 2012 calendar, and notebooks were developed and distributed among target beneficiary households, relevant institutions and actors for dissemination of the BDRCS CCA project thereby it establishes relationship with CC community in Bangladesh.

Community information board in Bogra

Sapling distribution of fruit bearing trees
• Offering the advanced course on CCA and DRR with the collaboration with some universities including University of Dhaka, BRAC University, IIED, Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland is under progress. A draft curriculum of the advanced course has been developed which is being tested and finalized with experts of BRAC University and IIED.

• Project Implementation Committee (PIC) comprising of Red Cross Youth (RCY) volunteers and community representatives in both the BDRCS unit level and community level were formed to facilitate project implementation. A project implementation guideline both in Bangla and English for individual activities has been prepared and disseminated to the unit level staff.

• All eight communities have been divided into 64 small geographical units ‘micro group’, who will take lead on identification and prioritization of needs and implementation.

• Three bi-monthly coordination meetings were held which was hosted by project units. The objective of this bimonthly coordination meeting to review progress, identify constraints/challenges and possible solutions to overcome those constraints/challenges.

• A field assessment has been conducted in Bogra for identifying community needs in terms of climate change and DRR.

• A meeting has been conducted with FFWC for developing a strategic partnership to develop a community based flood early warning. A field testing for flood early warning dissemination has been conducted in Bogra and Manikganj.

• Sapling distributed in six communities in three districts among mostly in household level and also in some institution (school).

• Established community centres in four community with all facilities so that the community could exchange, share information related to climate change and flood early warning.

• Court yard discussions were held among the micro groups on different aspects on CCA and DRR.

• In Bogra, school orientation on CCA and DRR accomplished with the help of the school authority.

• Advice support on Agriculture, health, Fisheries conducted in 8 communities of the four districts.

• CDMC orientation on leadership.

• Installation of information board in 8 communities of the four districts completed with full community information.
Community Perception on Vulnerability and risk

Bangladesh is recognized to be highly vulnerable to climatic manifestations, both in short and long-term, especially the low-lying deltaic coastal region. Millions of people are affected every year by climatic manifestations, forcing them into abject poverty and vulnerability. Adaptation to climate change and its manifold affects is thus pivotal to Bangladesh for its future development prospects and sustainability.

The VCA exercises and baseline questionnaire surveys were carried out in the 8 villages, selected from different parts of the country and vulnerable to the adverse impact of climate change. These findings will then feed into the activities of the ‘Building Community Resilience through Climate Change Adaptation’ project of the BDRCS, currently being implemented in 8 upazilas in disaster prone areas of Bangladesh.

<table>
<thead>
<tr>
<th>Disaster/hazards</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverbank erosion</td>
<td>is a menacing threat for the village and often damages households and crops. The trees, crops and entire tracts of arable lands are devoured by the mighty river, leaving people landless, homeless and out of jobs.</td>
</tr>
<tr>
<td>Water logging</td>
<td>every year leads to multiple problems, affecting livelihoods and leading to seasonal unemployment. People cannot commute safely and this also has huge negative impact on their lives and livelihoods.</td>
</tr>
<tr>
<td>Floods</td>
<td>are particularly devastating for fishermen or fish-farmers, as the waters wash away captive fish in ponds. Floods are the result of incessant rains, often accompanied by hailstorms and these totally damage crops in the fields. The people owning cows or small scale dairy are also faced with the problem of relocating their animals to raised and dry areas. Farmers growing fruits have also reported loss of yields because of flooding.</td>
</tr>
<tr>
<td>Cyclones</td>
<td>occur seasonally, but affect people’s lands as well as the infrastructures such as their homesteads and culverts. The aftermath of cyclones is the most difficult time for the locals, since they need to start all over again.</td>
</tr>
<tr>
<td>Fog</td>
<td>in winter spoils the fruits and vegetables and it is reported to have become more intense over the years. In winter, this coupled with illness/days lost from work create havoc in people’s lives and children and the elderly fall ill, leading to extra expenses for medical care. Sometimes, fogs are accompanied by cold waves and this destroys potatoes as well as tomatoes.</td>
</tr>
<tr>
<td>Droughts</td>
<td>lead to the damage of crops and fruits and during this time there is also serious shortage of water. Those engaged in fisheries experience loss in their businesses, as fish also die in the dried-up water bodies. Farmers suffer losses, because their seedlings are damaged in the extreme heat. The water table in this area has also receded, before ground water could be harvested at depths of about 30 feet and now, they have to dig up to 45 feet in many areas, for harvesting the water.</td>
</tr>
</tbody>
</table>

Bogra

The Huakua village is situated in the Pakulla union of the Shonatola upazila under Bogra district. The Bangla River flows through the village from the south-western side and it is surrounded by other villages. The total land area is estimated to be about 220 ha, out of which 180 ha are used for agricultural purposes; 70% of the population are engaged in farming (source: Department of Agricultural Extension, upazila level office). The major threats in Huakoa area are: riverbank erosion, flooding, drought, pest infestation, fog, excessive rainfall, water logging, hailstorms, etc. Unhygienic conditions, moribund lakes and ponds add to the risks. As the data suggests, only a fraction of the families live in pucca or concrete housing, while majority live in tin-shade structures. This renders the population more vulnerable to flooding and cyclonic winds.
**South Dighalkandi** village is situated in the Shariakandi Upazila of the Bogra Zila. The Kaliganga River flows on the south-western side of the village. Almost 200 years ago, there was geo-morphological change in the village. The total land area of the village is 653.12 acres, out of which khas lands make up 12.7 acres. Agricultural lands are spread over 365.56 acres (source: Union Land Office). Majority of the households have their own tube-wells. Most of the people in the village have latrines, which are right behind their homes. Sand deposition in this area has created major havoc in the lives of the farmers. However, they are already practicing some adaptive agriculture by planting cereals or jute.

**Nijhum Dweep, Hatia, Noakhali**

The **Bandartila** village is an offshore area, situated in the Nijhum Dweep union of the Hatiya Upazila of the Noakhali district. Because of its location next to Meghna River and the Bay of Bengal, it is highly vulnerable to cyclone. The total area of agricultural land is almost 20 acres (source: Upazila Agriculture Office). Since there is no embankment that protects the village, there is salt water intrusion into the land and production and output of agricultural crops is limited. Almost 400 families live in this village, out of which 80% are fishermen (source: Upazila Agriculture Office). There are two non-formal primary schools in the village, but classes are not held regularly. There is one bazaar that trades in basic commodities. And because of the limited connectivity of the village to mainland, people have to buy goods at very high prices.

The **CDSP** village is a remote island, situated in the Nijhum Dwip, Hatiya upazila in the coastal regions of Noakhali. The CDSP community is surrounded by Bandartila on the south, rivers on the east and planted forests on the west.

The main risks and disasters of both the communities are: cyclones, tidal surge, water logging, floods, drought, pest attack, salinity intrusion, excessive rainfall, attack from rodents, etc. The risks and vulnerabilities are accentuated by unhealthy situations, dead ponds and water bodies, unsafe water, dirty latrines. During disasters, women and children are more vulnerable. Women have no access to medical care and children fall sick during disasters, with skin problems and water born diseases. Schools and playing grounds are often under water and so the normal life cycles of children are largely affected.

The availability of safe drinking water is a huge problem in the village, since the sources of sweet water are very restricted. In both the dry and wet seasons, the villagers have to travel up to one kilometre for collecting water. Only a small fraction of the villagers have tube-wells or water sources in their households.

Because of lack of sanitation and open latrines, water borne diseases are common. People suffer from diarrhea and other illnesses quite often. Only basic illnesses can be treated through the mobile clinic there, otherwise medical care is almost non-existent. Especially for expecting mothers, it is difficult to avail medical care and they often die during childbirth.

In most cases, the latrines are common and many users go to the same toilet. Another large number of people have latrines right behind their houses, but hygiene practices are questionable. In case of waste disposal, the villagers in the CDSP area just litter in the forest. These may have additional health implications in the event of climate.
During disasters, the expenditure of families changes largely. The major disasters in this area occurred in 1970, 1985, 1987, 1991, 2007, SIDR and AILA and thousands of lives and natural resources were lost in these calamities. The cyclone shelter and schools (where people can also take shelter) are not enough; they cannot accommodate the entire population of the village. There are no current practices to alert people during disasters, except for a few services by BDRCS. During SIDR and AILA, the people in this village were not at all prepared and did not receive any warnings.

**Gopalganj**

**Dumuria** village is situated in Tungipara Upazila mouza in Gopalganj. This is situated at the banks of the Shoiladaho River. The area of agricultural land is about 20 acres (source: Upazila Agriculture Officer). A total of 2317 families live in the village and almost 80% of the families are dependent on agriculture for a living (source: Upazila Agriculture Officer). Water and sanitation and disposal of waste in Dumuria are all very risky. Waste for instance is disposed off in an unplanned manner and these can be hazardous in times of disasters such as waterlogging.

![One of the few remaining fish sanctuaries in Gopalganj](image)

**Pabnarpar** community is found in the Kotalipara Upazila of the Gopalganj Zila. The community is spread over 3 villages, namely Pabnarpar, Jatia and Teehati villages. The Shoiladaho or Ghagor River flows on the eastern side of the Pabnarpar and neighboring village. There are over 500 families that live in the 3 villages, making up the Pabnarpar community. Out of which, 397 families are included in the CCA project. Agriculture is affected in all seasons, similar to flash floods, intense fogs in winter also damage crops. People in the Pabnarpar area produce alternative and adaptive agriculture such as nuts.

**Manikganj**

**Patgram** is situated in Manikganj district and sits on a char land. This is an offshore island and has no land connection or road connectivity with the mainland. This char is relatively new; during the 1980s people started establishing habitats there. The GoB established a ‘guccha gram’ concept in this area. Patgram is about 6kms away from the Harirampur upazila. About 4,000 people reside in Patgram and there are roughly 500 families. Most of the people here engage in agricultural activities and there are also boatmen, fishermen, blacksmiths, small businessmen, barber, goldsmiths, bull-cart pullers, etc. River transport is the major way of getting to the upazila and for inland movement, there are some horse carts and a few motor bikes. The level of education in this village is unfortunately very low.

There is only 1 primary school in the village and most families live as single units and not as joint family. Early marriages often take place and people here are unaware of family planning techniques. Health services are not reaching them properly. Almost all the respondents have said that they have latrines right behind their house. However, sanitation and hygiene remains a big issue. They also dispose off their waste in the bushes and this is not healthy.
The Boinna village is situated in 52 no. Mouza of Jionpur union of the Doulatpur Upazila in Manikganj. The Kali Ganga River flows on the north-western side of the village. Riverbank erosion has destroyed the lands and property of many parts of the village and this has affected the lives and livelihoods of the people of the village. There is a pucca (concrete road) in the village, which connects it to the Upazila. There is a market at the village, which has transactions twice a week. Although majority of the villagers are Muslim, there is a large group of Hindu castes in the village. There is religious harmony in the village and no conflicts between the religions.

The total land area of the village is 653.12 acres, out of which the amount of khas lands is 12.07 acres. Agricultural lands make up another 365.56 acres of the village area (source: Union Land Office). About 500 families live in the village and the total number of farmers is 367 (source: Upazila Agriculture Office). There are also fishermen, horse-cart pullers, van pullers, rickshaw pullers, day laborers, carpenters, etc. The terrain of the village is undulated and there are some lands at the banks of the river, where there is some agricultural activity. Almost all the houses in the village have thatched roof (made of jute stalk) and there are a few tin-shade houses. There are a lot of bamboo groves in the village and also fruit trees such as mango, jack-fruit and betel nuts.

The main disasters in the area are: riverbank erosion, floods, droughts, and cold waves, insect attack on crops, rats and burrows in homesteads made by rodents. There are also dried ponds and unhygienic practices which lead to more risks. Often during or after disasters, child marriages and child labor are seen.
From Disaster Risk Reduction to Adaptation to Climate Change

By Dr. Saleemul Huq, Director, ICCCAD

The global community on humanitarian disasters has a long history of dealing with climate related disasters such as floods, cyclones and droughts (as well as non-climate related ones like earthquakes or volcanoes). These have culminated in a global agreement under the Hyogo Framework and global networks such as the Global Forum on Disaster Risk Reduction (GFDRR) as well as national level DRR efforts, in which the IFRC has played a key role together with national societies such as BDRCS.

In the case of Bangladesh the government has also developed and is implementing a major Comprehensive Disaster Management Programme (CDMP).

In recent years, it has become apparent from the scientific community, through the reports of the Intergovernmental Panel on Climate Change (IPCC) that the climate will change in future due to emissions of greenhouse gases (and indeed it may already be changing due to past emissions). This means that future climate related hazards, such as floods, cyclones and droughts are likely to become even more severe than those in the past. In some cases they may also become more frequent.

At the policy making level the United Nations Framework Convention on Climate Change (UNFCCC) agreed in 1992 and the Kyoto Protocol agreed in 1997 provided a legal obligation by all countries to reduce their emissions of GHGs but despite some efforts to do so, the global concentrations of GHGs have continued to rise as has global mean temperature in the atmosphere.

This led to the realization that reducing emissions of GHGs, while necessary, was not sufficient and that a certain amount of mitigation will avoid some level of climate change and related impacts. This has led to an additional response option called adaptation to climate change (ACC).
ACC and DRR

There are clear links ACC and DRR as climate change will make weather related hazards more intense, and also in many cases more frequent. Hence the DRR community needs to understand the additional risks due to climate change and incorporate ACC into DRR.

The IFRC recognized this link and has set up the Red Cross Climate Change Centre based at in the Netherlands who have been doing capacity building in the RC community across the world on ACC+DRR.

BDRCS as well as many NGOs have also been piloting ACC+DRR initiatives in Bangladesh. At the community level, this has led to the emergence of a new community of practice called Community Based Adaptation (CBA) who have been holding a series of international conferences. The sixth international conference (CBA6) was held in Vietnam in April 2012 and CBA7 will be held in Bangladesh from 18th to 25th April 2013.

The two most important elements in linking ACC with DRR are firstly to take a long-term time horizon, as climate change will occur coming decades and will require long-term planning. The second new dimension is to make a linkage with the science of climate change with future adaptation actions, as knowledge from the scientific community will be essential for taking appropriate actions.

Interestingly while ACC and its linkages to DRR is still very new, Bangladesh is very much at the forefront in this field and BDRCS has the potential to take a lead in the IFRCS family on this issue.
A stream of moving people was leaving the cyclone Aila affected areas, especially from Shyamnagar, Dacope and Koyra Upazila of the southwest coastal region of Bangladesh, and it was happening in mid-2009 before the eyes of journalists, development activists and the authorities. What are the causes behind the scene and where were they going? What are the situation they facing in new places? These are the key questions from where this study started.

Climate Change is one of the major issues which are shaking the world and deteriorating all of the natural and manmade elements which are essential to the human being for civilization. Continuously increased temperature of the globe is creating climate catastrophes and Bangladesh is one of the most vulnerable countries which are facing the adverse impacts like cyclone, tidal surges and riverbank erosion. The weather pattern has been changed and is affecting traditional agriculture and natural resource dependant peoples, who are the poorest and deprived part of the society. All of the Shyamnagar, Dacope and Koyra Upazilas are adjacent to the Sundarbans, the largest single tract mangrove forest in the world, and exposed to the Bay of Bengal. Most of the inhabitants of these areas are small and marginal farmer, fisher, forest resource dependent communities and indigenous Munda people. Taking the opportunity of salinity intrusion, influential people started brackish water shrimp farming with active support from MDBs and GOB. It changed the total scenario. The marginal farmers, share-croppers and agricultural labourers were forced to shift their livelihoods to shrimp-fry collectors.

This region has been suffering from flooding of saline water since last couple of decades. Added to that, due to sea level rise, the high-tide level has been raising and collapsing coastal embankments, which causes these floods and expanding day-by-day. In last week of May 2009 the cyclone Aila hit the said Upazilas and caused death of 193 people. Though death of human being cannot alter with any cost, the severity of Aila was exposed in different forms. More than 700 kilometre of embankment breached and more than 300 thousand people were displaced. Among them, more than 100 thousand people became refugee and took shelter in nearby towns and cities including the neighbouring country.

A few researches and studies have been done on environment and/or climate change induced or forced migration, refuge and displacement in Bangladesh (Ahmed et al. 2008; Ali et al. 1998; Elahi et al., 1990; Haque, 2003). Almost all of the studies used secondary data for socioeconomic, scientific and policy analysis and recommendations. This study may be the first step to examine the socio-economic situation of the refugees through a participatory approach.

Lovely Begum (Age 34) is living in South Dighalkandi community for more than sixteen years. She has two sons and one daughter. Her husband, Md. Shahjahan works in an insurance company, is based at Dighalkandi.

Observing the erratic rainfall pattern and temperature variations, Lovely knows that something has changed. She understands that these anomalies are affecting our daily life, crop production, health, and education. Flood is the major hazard and disaster risk in her community. It damages crops, sanitation systems, education, roads, etc. She realizes the nature of the flood has changed in recent times. It comes earlier, stays longer and sometimes comes in unusual time. Diseases like dysentry, skin irritation, etc. increased compared to the past. She has seen people become poor to poorer coping with these recurring flood events. They could not get the time to be prepared for the flood. In the past they used to raise their house plinth, made floatable latrines, store some dry foods anticipating timing of the flood. All these helped them to cope in the flood season, but in recent period their anticipation goes in vain. Flood becomes surprising events for them. People borrow money to cultivate again, buy nets to put around the pond to keep their fishes, repair houses. They have to prioritize their expenses when buying books (which drown in the flood water) goes beyond their capacity. As a consequence, drop out from school or early marriage of their daughter can happen.

After joining the project “Building Community Resilience through Climate Change Adaptation”, Lovely has come to know the reasons behind all these miseries is climate change. For the last one year working as Community Organizer in this project, she recognizes their vulnerabilities to climate change impacts; as well as capacities and gaps to cope with the changing environment. In court yard discussions, Lovely talks with community people regarding these vulnerabilities, their capacities, preparedness and small mitigation measures. She shares her learning and sometimes advise them concerning preparedness and mitigation measures.
Case Story: 2

Mim Shaikh (Age 19) works as an active Red Crescent Youth (RCY) Volunteer of BDRCS Gopalganj unit for the last couple of years. She lives with her mother, sister and grandmother in Gopalganj town.

Mim knows that Bangladesh is one of the most vulnerable countries to climate change impact and prone to disasters. She understands that increase in temperature and excessive rainfall is causing devastating flood and water logging, reducing crop production, and degrading our natural environment. In the coastal areas, frequency and intensity of cyclone and tidal surge have increased. She learnt about all the recent catastrophes and the negative consequences of the changed environment through participating in different events organized by Bangladesh Red Crescent Society (BDRCS), from books, newspapers, and through satellite TV channels.

Mim realized the vulnerabilities of at-risk population after her visit to a real community observing people’s adverse situation. Crops are damaged persistently, fish is vanishing from the ponds due to recurring flood events. Various types of diseases have increased in the area. Damages to trees and houses are common. Lands are eroded due to river erosion. Education becomes expensive, children cannot go to school or even play for flood water. People cannot cope with this damages because they do not have money. At most, they can afford only food and repairing of homes. Sometimes, they make a boat for their movement. Mim did not know what to do and how to help her community. She was searching for opportunities to help her people.

BDRCS has taken an initiative to involve RCYs in the project “Building Community Resilience through Climate Change Adaptation”, opening the opportunity for Mim. She is currently involved with a number of activities of this project. This enables her to raise awareness within her community regarding disasters, climate change, preparedness and small disaster mitigation measures. She can advise them to plant trees, garden in court yards, develop necessary skills etc.

Over the last nine months she has worked, Mim’s realization about people’s vulnerability, perceptions and coping has developed. Before joining this initiative she did not know how to mix properly with the community people, how to talk with them, how to identify the linkages between climate change impacts and peoples livelihood. Now she understands them better and can find the linkages between climate change and adaptation while working with the community people. Learning from their behaviour and cultural practices she can comprehend their opportunities and inconveniences also.

Mim Sheikh collecting baseline data
Editorial board:

Editorial body:
- K. Jakaria Khaled, Deputy Secretary General, BDRCS
- Sajit Menon, Preparedness and Resilience Unit Coordinator, IFRC
- Nasimul Haque, CCA/DRR, National expert
- Maherin Ahmed, Reporting and Communication officer, IFRC
- Dr. Rezia Jobed, In-charge & DD, Communication & Public Relation, BDRCS

Editors:
- M. A Halim, Director and Project Manager, CCA project, BDRCS
- Khaled Masud Ahmed, Sr. Disaster Management (DM) Manager and Project Coordinator, CCA project, IFRC

Assistant Editors:
- Shahjahan Saju, Program Officer, CCA project, BDRCS
- Tahmina Yasmin, Knowledge Management Officer, CCA project, IFRC
- Kamrul Islam, Technical Officer, CCA project, BDRCS
- Harun-Ur-Rashid, Technical Officer, CCA project, BDRCS

Graphic Designer:
- Subrata Biswas, Web Developer/IT officer, CCA project, IFRC

Contact

Building Community Resilience through Climate Change Adaptation Project
Bangladesh Red Crescent Society (BDRCS)
684-686, Red Crescent Sarak, Bara Moghbazar, Dhaka 1217
Phone: 01811458510, 01713173248
E-mail: halim.ma@bdrcs.org; khaled.masud@ifrc.org
URL: www.bdrcs.org