

building Safer Communities in South Asia

a series of case studies on Community-Based Disaster Management (CBDM) in South Asia (Jan 2008 Vol 1 No. 3)

Building on Local Knowledge for Safer Homes

BACKGROUND

Flood is an annual event in Bangladesh but the severity of its impact depends not only on the country's geophysical conditions but also on factors like high population density and land scarcity.

Due to the high dependence on agriculture as a primary source of livelihood, available lands including forests and river slopes are used for cultivation. This results to soil erosion that reduces the depth of rivers significantly, making them easily flooded and causing devastation on the settlements along the riverbanks. Moreover, due to the rise in sea level, the water from floods does not quickly flows to the ocean and remains in the land for longer period, thus causing a wider impact of the floods.

Evidently, the impact of such event is felt most by vulnerable communities. With scarce resources and little choice of alternate livelihoods, these communities continue to live on the river banks and be heavily affected by local natural hazards like floods and tornadoes year after year, losing their lands, homes and other assets.

Through the years, shelter is one of the most affected sectors with flood water often submerging houses and causing various degrees of damage from staining of walls to structural collapse. This also results to loss in livelihoods and health hazards.

The Bangladesh Red Crescent Society (BDRCS) has been working since the 1970s with vulnerable communities, particularly women through the Cyclone Preparedness Programme (CPP). As an auxiliary to the Government of

Goal of BDRCS' Disaster Management Programme

The goal of the disaster management programmes implemented by the Bangladesh Red Crescent Society (BDRCS) is to enhance and sustain the capacity of high-risk communities; particularly in flood, cyclone, tsunami, earthquake and conflict-prone areas of Bangladesh to mitigate the impact of these disasters on life and property.

Bangladesh (GoB), BDRCS is mandated to complement the government's effort in case of emergency situations by implementing disaster risk management programmes.

Since 2005, BDRCS has been implementing the Community-Based Disaster Management (CBDM) Programme in 80 flood-prone communities under 10 districts of Lalmonirhat, Kurigram, Sirajganj, Tangail, Jamalpur, Faridpur, Madaripur, Sariatpur, Munshigonj and Chandpur. This programme is supported by Hong Kong Red Cross and Department For International Development (DFID) through the International Federation of Red Cross and Red Crescent Societies.

To guarantee a community-led approach and reach the most vulnerable in the communities, the CBDM programme has formed community structures. These structures steer the implementation of the programme by reaching-out to the most vulnerable in the community, understanding their perception of risks, facilitating them to take decision on possible flood risk reduction interventions and advocating for hazard-resilient development in the community and with the local government and other stakeholders.

ABSTRACT



This case study demonstrates how the 10 flood-prone communities under four districts of Lalmonirhat, Kurigram, Sirajganj and Tangail strongly understand the disaster risk reduction concerns related to flood-resistant housing. The outcomes and lessons learned highlight that community-based initiatives empower the communities to build on their existing local knowledge and provide confidence to the most vulnerable to explore the long-term benefits of investing small amounts on flood-resistant construction towards making safer homes.

PROJECT

The CBDM programme has adopted the methodology to carry-out a detailed Vulnerability and Capacity Assessment (VCA) to involve the communities in their own decision-making process regarding interventions related to flood risk reduction. The VCA's were conducted in targeted communities led by Community Disaster Management Committee (CDMC) members and facilitated by BDRCS staff and volunteers. The findings of the VCA covered a wide aspect of issues concerning the communities such as local physical infrastructure, housing, livelihoods and need for capacity building.

The VCA identified housing as one of the most common issues faced by the communities during floods. The flood depth, duration, uplift due to soil saturation and horizontal force created by flood waves and currents, often damage the houses and leave the families without shelter. The direct flood hazard accompanied with secondary hazards such as high winds or storms, slope instability and ground settlement; only worsens the situation.

During the course of the VCAs, the communities identified that there are several existing local practices for living with floods like building a *machha* or raising the plinth of the homestead above the flood level, which if practised could reduce future flood risks. They felt that all disaster risk reduction interventions related to flood-resistant housing should be built upon the existing local knowledge and be promoted at the household levels.

As a result of the VCA process and the regular community meetings, awareness has been raised among the communities on raising of the plinth. Based on the height of the water from previous floods, many of the families have already raised the height of their plinth. Some of them are currently doing on incremental basis depending on availability of finances by constructing one room at a time.

Through the CBDM programme implementation, female micro group members are taking the initiative to bring the knowledge of plinth raising back home and to neighbourhoods beyond the targeted communities.

Accordingly, the CBDM Programme has been advocating among the communities on practising simple *local knowledge* on flood-resistant house construction.



<< **Raising of plinth:** A plinth raises a house up. In Bangladesh the plinth of the kutchas is build of earth, which tends to get completely washed away during floods. But if along with soil, a little cement and some pieces of stone and brick are mixed, it makes the plinth strong enough to last through repeated floods. Though this may raise the expenses a little, but in the long-term would reduce the vulnerability and cost incurred in frequent maintenance. (Photo: West Hatiya community, Kurigram district)

In some poorest communities, families usually collect soil from adjacent ponds or other nearby bodies of water to raise household plinth during the dry seasons. The community raises the height in installments yearly to reduce risks even with their difficult economic situation.

"River Embankment is very costly and a long-term development activity but we are advocating to the local government. Raising the plinths is the real need of the community."

- Ujjawal, CDRT member from Gunergati community, Tangail district



<< **Building Machha:** Machha are wooden or bamboo platforms built inside houses, and normally used as storage space. During floods it serves as a raised refuge area particularly for children, elderly and women. (Photo: Balrampur community, Sirajganj district)

Reinforced Cement Concrete (RCC) Columns:

The reinforced concrete columns used at the four corners of the room provide a secure frame and are able to withstand high winds and many of the effects of flooding, and to resist termite attack. (Photo: CDMC office in Sirajganj district) >>



Under the CBDM programme, RCC columns were used by the communities to build an office for the CDMCs. With the common space provided, the office is used for monthly meetings of CDMC and CDRT and also would act as shelter for the most vulnerable in future floods.

"In the community, every house and toilet should be built above the water-level, during this flood (2007) I took shelter in the raised roadside. However, next year I will make a machha and raise the plinth of my home. By doing this, during future floods, I would feel safe and would not have the need to evacuate."

- Jhahangir Alam, community member from Balrampur community, Sirajganj district

Indicative Cost for a room of 12 feet by 16 feet		
Cost Heads	Unit Cost	Total (Taka)
- Soil of plinth raising (3.5 feet)		- 5,000
- RCC columns (7 pieces)	- 800 each	- 5,600
- Wooden door		- 5,000
- Window	- 2,500 each	- 5,000
- Labour cost (2 plinths; 2days)	- 200 each	- 800
- Wood		- 3,000
- Wire		- 200
- Bamboo fence		- 4,000
- Nails and etc.		- 300
- CI Sheet	- 2,500 per bundle	- 5,000
- Labour Cost (room repair)		- 2,000
- Bamboo machha (10 pieces of bamboo)	150 each	- 1,500
TOTAL		- 37,400 (US\$ 600 approximate)

source: BDRCS 2007



Bhabani or better known as Bhabani master in the community, from Madhyarajpur in Lalmonirhat district has invested BTK 40,000 (US\$ 650) in raising the plinth of his entire homestead. This would not only protect the rooms of his house, but also the plants and vegetable garden around his house from the future floods.

Awareness has been raised on the following:

- Central part of the courtyard should be its highest point, sloping gently to the edges to allow drainage;
- Creating drainage channels connected to nearby water bodies to prevent stagnation of water within the homestead, especially around the edges of buildings;
- Main entry into the compound should be raised to allow access during flood.

OUTCOMES



- The VCA process by bringing the community together helped the individuals understand the benefits of investing on mitigation activities like flood resistant construction of houses. This along with the advocacy by the BDRCS on indigenous techniques of flood proofing made it easier for the communities to buy-in the process of investing on activities like raising the plinth of their houses.

- Typically in Bangladesh both men and women are involved in weaving the mats for the walls. However, the women are more involved in raising the plinth of their homes. Hence, the active involvement of women in the CBDM programme helped them realize the importance of mitigation activities and their roles to make small investments to reduce their risks.

- Since floods are often accompanied by secondary hazards like windstorms and cyclones, it is realized by the communities that along with flood proofing, it is equally essential to make the houses cyclone and wind-resistant.

"During every flood my house used to go under water and cause damage to my belongings. Through the training organized by the CBDM program of the BDRCS, I have come to know that if the level of homestead is raised, it would keep my family and all our belongings safe from flood water. Now I have raised the plinth of my house and hope that it would be free from flood water in the coming years."

- Md. Ruhul Amin, Modhuram Community, Lalmonirhat district

- The experience of the CBDM programme also helped in the decision making and design of the early recovery interventions of cyclone Sidr which devastated thousands in Bangladesh in November 2007. It is also envisaged that the learnings from the ongoing cyclone-resistant shelter work in Bangladesh, would be vital inputs for future interventions and advocacy of the CBDM programme in the flood-prone districts.

"Since river embankment is beyond our community's capacity, mitigation work such as raised house plinths, machha, RCC columns and planting of soil-binding trees is the only way to reduce the damage and the impact of floods and winds. It also helps to adapt to the changing climate. The CDRTs are reinforcing these measures by spreading awareness messages in the community and also providing support with the livelihood programme"

- Haider Ali, 72 year-old elderly community member in Choto Gunegati, Tangail district

"I have lost my father recently. The poor financial condition has been worsen by the floods. But thankfully, due to the CBDM programme my mother has received a sewing machine and sewing lessons, as part of its livelihood support. I have requested her to build a machha and raised the plinth of our house with this income. Hence, in the future I would not be required to take shelter elsewhere, leaving my mother all alone in the house. I would support her to reduce our risks and strengthen our socio-economic status."

- Jhonur, a young 11 year-old girl from Bashaliya community, Sirajganj district



LESSONS LEARNED

Awareness raising on indigenous methods of building cost-effective flood-resistant house helps to change the mind set of the communities that with a small amount of investment and with local skill they would be able to make their homes safer from the floods.

Since the whole process under the CBDM Programme is led by the communities, decisions on flood-resistant housing taken and implemented by the members, it helped in empowering the communities. It also provided confidence to the most vulnerable to invest in small amounts on flood-resistant construction and to plan for a community emergency fund for risks reduction.

Since floods and cyclones are the country's most common hazards, it is essential to adopt techniques on flood and cyclone-resistant construction. Since the BDRCS has been implementing programmes for both cyclone and flood risk reduction, it could act as a vital source of knowledge for enabling cross fertilization between the different programmes. Interventions in cyclone prone-areas should also consider flood risk reduction features and vice-versa.

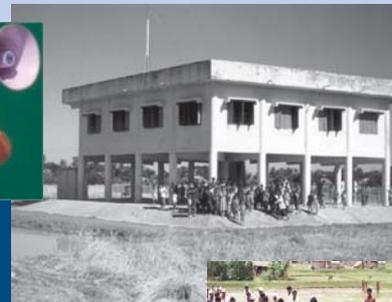
THE WAY FORWARD



The community structures namely CDMCs and CDRTs formed under the CBDM programme would be instrumental in taking ahead the initiatives identified regarding shelter. On raising the plinth, the CDMCs would lead the process of forming small community groups to collect earth from local silted river banks or alluvial deposits and to ram the piled earth. With the help of BDRCS, the CDMC would continue to facilitate a dialogue among the vulnerable households to plan for a community-led emergency funds and explore other local micro credit organizations for availing loan for flood and cyclone-resistant house construction. The BDRCS would help establish the linkages between the communities and other stakeholders who are involved into community-based shelter programmes.

"This DRR programme must continue in our community. I have learned a lot on mitigating the impacts of floods such as preparing the sand bags and putting them in the river banks and advocating with the local government for risks reduction in our community. This CBDM programme has brought change in my community's mindset, thus making it safer and more resilient."

- Manual, a young 15 year-old boy



Cyclone Preparedness Programme (CPP)



The lessons learned from the years of CPP programme implementation have successfully fed into the CBDM programme. It is expected that this chain of lessons learned will further contribute to the on-going early recovery phase of cyclone Sidr, where the Red Cross and Red Crescent Societies are currently involved in providing cost-effective technical solutions to the communities on building cyclone-resistant shelters. This would provide the BDRCS with an excellent opportunity to facilitate knowledge sharing and capacity building initiatives derived from the cyclone affected districts to the targeted districts under the CBDM programme.



BANGLADESH RED CRESCENT SOCIETY (BDRCS)

The Bangladesh Red Crescent Society (BDRCS) offers a range of services to deal with both national and international emergencies. As a National Society within the International Movement of the Red Cross and Red Crescent, the BDRCS has access to the largest voluntary network in the world and is also among the oldest humanitarian organisations in the world. Throughout its history, the BDRCS has enjoyed tremendous public support and has played a pioneering role in many areas of health care, social work and education. The society has steadily grown stronger and is now the premier humanitarian agency in the country. For more information, please visit: www.bdracs.org.



DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (DFID)

The Department for International Development (DFID) is the part of the UK Government that manages Britain's aid to poor countries and works to alleviate extreme poverty. It is headed by a Cabinet minister, one of the senior ministers in the Government. This reflects how important the Government sees reducing poverty around the world. It has two headquarters (in London and East Kilbride, near Glasgow) and 64 offices overseas.

DFID's values define the way in which they intend to live up to their strategic aim of halving world poverty by the year 2015 and also provide a framework for improved performance. The core values are: ambition and determination to eliminate poverty, diversity and the need to balance work and private life, ability to work effectively with others, desire to listen, learn and be creative, and professionalism and knowledge. Their policies and processes support and underpin these values.

Disaster Risk Reduction Programme Phase II is a three-year programme (May 2005 to April 2008) in seven countries and in particular three countries in South Asia: Bangladesh, India and Nepal and is implemented together in collaboration with the International Federation of Red Cross and Red Crescent Societies, DFID and British Red Cross. The programme aims to develop community resilience, to strengthen national society and community preparedness for response and to establish networks and develop knowledge sharing. For more information, please visit: www.dfid.gov.uk.



EUROPEAN COMMISSION'S HUMANITARIAN AID DEPARTMENT (ECHO)

The European Commission's Humanitarian Aid department (ECHO) is one of the biggest sources of humanitarian aid in the world that has funded relief to millions of victims of natural and man-made disasters outside the European Union. Aid is channelled impartially to the affected populations, regardless of their race, ethnic group, religion, gender, age, nationality and political affiliation. Part of the department's mission is to raise public awareness of the issues at stake.

For humanitarian aid, the Commission works with about 200 operational partners, including specialised United Nations agencies, the Red Cross and Red Crescent movement and non-governmental organizations (NGOs)

The Commission under the DIPECHO programmes also funds disaster preparedness and mitigation projects in regions prone to natural catastrophes. It has recognized the vital importance of community preparedness to respond to disasters in the period before aid agencies arrive at the disaster site. Currently, DIPECHO programme is supporting the International Federation of Red Cross and Red Crescent Societies, South Asia Regional Delegation to implement Building Safer Communities in South Asia region programme.



ASIAN DISASTER PREPAREDNESS CENTRE (ADPC)

Established in 1986, ADPC is a leading regional, non-profit organization based in Thailand, mandated to promote safer communities and sustainable development through disaster risk reduction. ADPC's programs and projects demonstrate a wide diversity in applications, address all types of disasters, and covers all aspects of the disaster management spectrum-from prevention and mitigation through preparedness and response, to damage and needs assessment, rehabilitation and reconstruction endeavors. ADPC thematic focus areas are Climate Risk Management (CRM), Community-based Disaster Risk Management (CBDRM), Disaster Management Systems (DMS), Early Warning Systems (EWS), Public Health in Emergencies (PHE) and Urban Disaster Risk Management (UDRM). For more information, please visit www.adpc.net.

BDRCS COMMUNITY-BASED DISASTER MANAGEMENT PROGRAMME IN FLOOD-PRONE AREAS

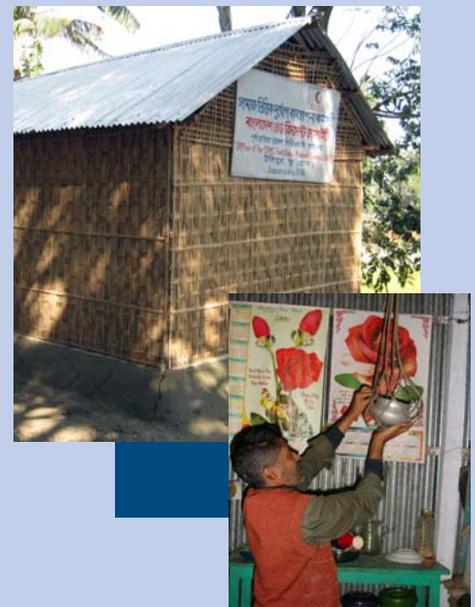
The purpose of the programme is to prepare high-risk communities, particularly women at household level in flood-prone areas, to manage impacts of severe floods. It is working with 80 communities in 10 selected districts which are most prone to severe riverine flooding due to their location across the large rivers of the country namely Jamuna, Brahmaputra, Ganges/Padma, Teesta and Meghna. Based from the flood-prone area map prepared by the Government of Bangladesh in collaboration with World Food Programme in 2004, the target beneficiaries are the communities at riverbanks in the districts of Lalmonirhat, Kurigram, Jamalpur, Sirajganj, Tangail, Faridpur, Madaripur, Shariatpur, Munshiganj and Chandpur.

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Building Safer Communities in South Asia is a series of case studies on Community-Based Disaster Management (CBDM) in South Asia, as part of the International Federation of Red Cross and Red Crescent Societies - South Asia Regional Delegation's (SARD) programme. The programme is guided by the International Federation's Disaster Management strategy and standards in line with the Hyogo Framework for Action (HFA). It aims to draw together regional experiences and knowledge to harmonize and standardize Red Cross Red Crescent risk reduction trainings, approaches, systems and tools.

The case studies illustrate processes adapted and lessons learned during the CBDM programme implementation to promote and facilitate a more coherent cooperation among partner national societies, volunteers, international NGOs and local community groups. This is essential to increase the quality and reach of risk reduction measures that create better prepared, more resilient and self-reliant communities. These are written and developed in partnership with the Asian Disaster Preparedness Centre (ADPC) based in Thailand.



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