



Ministry of Disaster Management and Relief  
Government of the People's Republic of Bangladesh



# MAINSTREAMING DISASTER RISK REDUCTION & CLIMATE CHANGE ADAPATION

within the Government of Bangladesh

## CONTEXT



Bangladesh has made considerable and significant development gains over the last 10 years, with economic growth averaging 6% for the last decade, poverty decreasing from 40% in 2005 to 24.7% in 2014 and achieving five out of eight of the MDGs. All of this progress has been achieved in the face of considerable vulnerability and exposure to natural and human-induced hazards. In fact between 1990 and 2008 Bangladesh incurred an average annual loss equal to 1.8% of the GDP due to natural disasters and was considered fifth most natural disaster prone country in the world (World Risk Report, 2012). This progress is a testament to the innate resilience of the Bangladeshi people, who continue to make developmental gains despite living with disasters and climate risk.

## MAINSTREAMING

The Ministry of Disaster Management and Relief's (MoDMR) vision is to bring about a paradigm shift in disaster management from the conventional approach of urgent response and relief to a more comprehensive and sustainable approach. The Comprehensive Disaster Management Programme (CDMP) under MoDMR is striving to enable long-term preparedness and risk reduction through engaging partners and establishing linkages and cooperation across the whole of the Bangladesh Government. Disaster risk reduction and management is not isolated to any one department, but impacts society across portfolios from health, education and energy, to environment, infrastructure and women's affairs.

Fundamentally, CDMP aims to create the right environment to ensure populations at risk have a better chance at preparing for and overcoming recurrent hazards. Concerted efforts for disaster management in all sectors, availability of timely warning of impending hazards and appropriate information for adaptive measures are at the heart of such a desired approach.

Phase-I of CDMP (2004-2009) laid the foundations for institutionalising the risk reduction approach and framework. Phase II was designed to further scale up and mainstream disaster risk reduction (DRR) and climate change adaptation (CCA) into all sectors, investing in policies and knowledge-building, and working with and through the government and disaster management committees.

The programme has channelled its support through government and development partners, civil society

and NGOs into people-oriented disaster management and risk reduction partnerships. The scope of CDMP is ambitious bringing together 13 different government bodies under their respective ministries to integrate DRR and CCA into sectoral policies, plans and budgetary frameworks. In doing so, CDMP has helped address the risk exposure of the most disadvantaged groups in 40 targeted vulnerable districts, directly impacting over 3.5 million people through structural interventions at the local level through the Local Disaster Risk Reduction Fund. Partnership building and DRR and CCA mainstreaming are at the heart of coordinated and successful disaster management. Disasters and climate change are borderless issues, which impact across sectors, and industries, and do not discriminate.

## PROGRAMME PARTNERS

A Letter of Agreement to mainstream DRR and CCA in selected sectors was signed between CDMP II, the Ministry of Disaster Management and Relief, and the below thirteen partners:

- Flood Forecasting and Warning Centre (FFWC) of the Bangladesh Water Development Board, Ministry of Water Resources
- Bangladesh Meteorological Division (BMD), Ministry of Defense
- Geological Survey of Bangladesh (GSB), Ministry of Power, Energy and Mineral resources
- Department of Environment (DoE), Ministry of Environment and Forests
- Department of Agricultural Extension (DAE), Ministry of Agriculture
- Department of Livestock Services (DLS), Ministry of Fisheries and Livestock
- Department of Fisheries (DoF), Ministry of Fisheries and Livestock
- Department of Public Health Engineering (DPHE), Ministry of Local Government, Rural Development and Cooperatives
- Fire Service and Civil Defense (FSCD), Ministry of Home Affairs
- Directorate General of Health Services (DGHS), Ministry of Health and Family Welfare
- Department of Women's Affairs (DWA), Ministry of Women and Children Affairs
- National Curriculum and Textbook Board (NCTB), Ministry of Education, and
- Ministry of Land

CDMP's vision is to bring about a paradigm shift in disaster management from the conventional programmes of urgent response and relief to a more comprehensive and sustainable approach.



110 million cell-phone users now have direct access to early warnings of approaching hydro-meteorological disasters by dialling 10941.

## BANGLADESH METEOROLOGICAL DEPARTMENT

The Bangladesh Meteorological Department (BMD) plays a significant role in the early warning of hazards. It is the sole authorised government agency to deliver routine forecasts for all extreme events, agricultural advisory to farmers and policy makers, climate data and information dissemination, earthquake information dissemination and tsunami warning to relevant public and private stakeholders.


The Programme's activities have thus far focused on enhancing on-location and time-specific forecasts for all weather events; making forecast products more accessible, presentable and end-user friendly; establishing a database for archiving and sharing climate data; and enhancing the capacity of BMD officials in using updated and improved equipment and software.



## KEY RESULTS

1. Weather and early warning information is now available to over 110 million mobile phone subscribers through the innovative public-private partnership between BMD and cell phone providers. The Interactive Voice Response based hotline accessible from any cell phone by dialling the number "10941" provides critical, easy to understand weather and warning information. A pilot initiative on availing the IVR for flash flood forecast has been implemented in Sunamganj district.
2. Previously, all data were collected and entered manually. Now data generated from the observatories are archived automatically and can be easily accessed for any year, date and area, with weather stations backed up by solar power installations.
3. The process of information sharing from the observatories has been entirely digitized and accessible via the redesigned BMD Website ([www.bmd.gov.bd](http://www.bmd.gov.bd)).

## FLOOD FORECASTING AND WARNING CENTRE

 Bangladesh is one of the most flood vulnerable countries in the world, experiencing widespread damage in rural and urban areas that repeatedly sets back the country's effort in poverty alleviation. Although it has been demonstrated that flood forecasting and early warning services can mitigate flood damage and loss, past flood protection measures (based on 72 hours of lead time of flood forecasting) have proven inadequate. The focus of the partnership with the Flood Forecasting and Warning Centre (FFWC) of the Bangladesh Water Development Board (BWDB) has thus been to increase the warning lead time as well as produce location-based flood forecast generated at 54 stations across the country.



## KEY RESULTS

1. Flood forecast lead time has been increased from 3 to 5 days, potentially saving the lives, livelihoods and assets of the 88 million people living in four river basin areas. The Asian Development Bank advised that communities can save more than 70% of their movable resources/capital goods, if they get five days advance warning on flood events (ADB, 20061)
2. Around three million people benefit from easier access to improved early warning of and response to cyclones through expansion of the Cyclone Preparedness Programme to five new upazilas of two districts (Khulna and Satkhira).
3. For those without cell phone access, radios and batteries were distributed by CDMP II. Community radio broadcasting stations are being assisted to produce radio programming on DRR and CCA, enabling thousands of people to receive weather forecasts.



540 Officials Trained on meteorological services and ICT

1. ADB (2006) "Bangladesh: Early Warning Systems Study", Technical Assistance Consultant's Report, Project Number: 38625 (TA 4562)

## CYCLONE PREPAREDNESS

Monu Miyah is no stranger to cyclones. "I have survived several cyclones but the memory of losing my family members to them stays with me," says the fisherman from Moheshkhali. He comes from an impoverished community of fishermen, people so poor that purchasing mobile phones available in Bangladesh that come with some of the lowest tariffs in the world is viewed by them as a luxury.

Speaking of the 1991 cyclone that had claimed more than 100,000 lives in Bangladesh, Monu Miyah recalls, "When Gorky hit, I couldn't warn my family and neighbors to take necessary precautions; but the situation is different now as the community radio Naf has been airing regular information updates, warning messages and awareness programmes on disaster." In an effort to reach out to as many listeners as possible, some programmes are aired in widely used local dialects.

Monu Miyah now believes his family is prepared to seek refuge at the nearest cyclone shelter when required and store their important belongings in a safe location. This is now possible only due to the numerous awareness raising messages they regularly receive through the radio. He states "Cyclones have taken many loved ones from me. Now I will take everyone away from it."



## FIRE SERVICE AND CIVIL DEFENCE

In Bangladesh, earthquakes are not as frequent as floods and cyclones, nevertheless there have been eight major earthquakes in the last 250 years. According to the UN-IDNDR-RADIUS report (2000), Tehran and Dhaka are the most vulnerable cities to earthquake not only due

to tectonic behaviour but also as a result of unplanned urbanisation, lack of coordination between relevant institutions, lack of experience in urban search and rescue, and inadequacy of rescue equipment.

The Fire Service and Civil Defence (FSCD) is one of the Government's-mandated first responders to urban disasters in Bangladesh.

## RANA PLAZA RESPONSE

Habib-ul-Is lam Sumon, Chief Volunteer Coordinator, had responded to FSCD's call and quickly organised a team to assist the search and rescue operations. Within hours he had 180 trained volunteers en route to the collapsed building in Savar.

Sumon and his team of volunteers have received training from the FSCD in urban disaster response, including fire and earthquake response operations. These urban volunteers have been called into action many times before the Savar tragedy, responding to fires across the city, also being instrumental in evacuating a dilapidated building in Shakhari Bazar. However, nothing could have prepared them for what they had encountered in Savar.

"Our team took buses to reach the disaster site, and only after we arrived did we realise the scale of the tragedy. Our training kicked in and we used the search and rescue techniques that we learned from the training," said Sumon. "We did what any person would have done, the only difference is that we were able to work in a coordinated manner using our training, facilitating the search and rescue operations efficiently. The volunteers worked round the clock in 8-hour shifts putting the lives of others before theirs. I salute them." The team comprised ordinary citizens like Sumon, trained in post disaster rescue operation with CDMP's support and driven by a zeal that saved 2,500 lives from the rubble.



## KEY RESULTS

1. 30,000 urban community volunteers have been trained across six major cities (Dhaka, Chittagong, Sylhet, Rangpur, Khulna and Cox's Bazar) for disaster preparedness and response.
2. Volunteers are taking on a leading role in community response to disasters. Over 920 volunteers were activated for search and rescue operations during the Rana Plaza collapsed in April, 2013, working shifts for 19 days.

## GEOLOGICAL SURVEY OF BANGLADESH

The GSB is a leading scientific and research organisation mandated for all geological, geophysical



and geo-morphological mapping, and urban and environmental engineering and natural geo-hazard assessments. It is also mandated to carry out research work related to geophysical, geotechnical and engineering geological mapping and modelling of the country.

CDMP has built the capacity of GSB personnel in earthquake and landslide risk identification and assessment, assisting them to apply the necessary technology, knowledge, expertise and experience to their disaster related projects.

### KEY RESULTS

1. The GSB has successfully facilitated land use planning as well as detailed physical city planning by providing risk information generated from seismic hazard assessments and mapping. It has developed earthquake risk maps and ward-based contingency plans for nine targeted major cities, including microzonation maps for Dhaka, Chittagong and Sylhet, mapping the vulnerability of infrastructures in these cities.
2. Staff of the Geological Survey of Bangladesh are now equipped to identify active faults in the country.
3. Seismic technology now available to GSB to assist in detection of earthquakes to other seismic activity.

## DEPT. OF AGRICULTURAL EXTENSION, DEPT. LIVESTOCK SERVICES AND DEPT. OF FISHERIES

Agriculture is a key economic sector in Bangladesh, accounting for nearly 17 % of the GDP and 44% of the labour force. Incomes and livelihoods, particularly rural livelihoods in this country, are greatly dependent on assets such as crops, livestock, fisheries, forestry. However, these sectors are at the mercy of nature and climatic conditions including floods,

droughts, and water logging, with farmers, fisherfolk, daily laborers and women are all affected in terms of reduction in natural, financial and physical capital. For example in 2007, cyclone Sidr caused damage and loss worth BDT 30.3 billion in the agriculture, fisheries and livestock sectors. Climate change and variability also bring great risks and create

negative impacts on productivity and represent a major challenge for Bangladesh in achieving sustainable development.

### KEY RESULTS

1. The Dept. of Agricultural Extension (DAE) has introduced a new curriculum in the 156 Climate Field Schools (CFS) in the CDMP intervened upazilas and districts. The curriculum covers issues such as climate change, disasters and their impacts on agriculture, suitable adaptation technologies etc. Through the CFS (90 of which are now fully furnished and have the necessary agri-equipment for demonstration sessions), thousands of farmers are being trained by DAE personnel in the implementation of different CCA and DRR technologies.



2. Climate change adaptation technologies are being well demonstrated and implemented. The agri machinery provided has enabled the farmer groups to accumulate savings of up to 2-300,000 BDT (US \$2600-3900) and to trial group loans at low interest rates.
3. Thousands of farmers and officers have been trained in a cross sectoral collaborative effort between the Dept. of Fisheries, DAE and the Dept. of Livestock Services supported by CDMP. Ten model villages have been set up with integrated interventions in the three sectors, and over 25,000 agricultural adaptation interventions have been demonstrated.
4. Fish farmers used to practice a single crop throughout the year, which carried high risks. Now with the introduction of the safe aquaculture method, they have successfully learnt how to harvest two types of fish crops in short term twice a year.



## NATIONAL CURRICULUM AND TEXTBOOK BOARD

The National Curriculum and Textbook Board (NCTB) has reviewed the available literature and educational materials on disaster and climate change with financial and technical support from CDMP. A revised curriculum based on a comparative analysis of the curricula of different countries has been developed and endorsed by the Ministry of Education. The new textbooks (31 total, nine for primary, 14 for secondary and eight for higher secondary level) now include a chapter on disaster risk identification; risk prevention, mitigation and treatment; emergency response; global warming; and climate change along with adaptation techniques.

### KEY RESULT

Over 18 million students (8 to 17 years of age) now have access to DRR and CCA knowledge.

## DEPARTMENT OF PUBLIC HEALTH ENGINEERING

The DPHE is the national lead agency for ensuring provision of safe drinking water, sanitation and hygiene promotion, including waste management. It has specific responsibilities to ensure clean drinking water for the population during disaster periods as well as to establish a water supply system for regular supply of safe drinking water in today's changing natural environment.

Climate change is threatens all previous achievements of the country in the water and sanitation sector. Water quality deteriorates drastically during floods, cyclones and storm surges; while during droughts, most of the usual water sources dry up forcing people to travel long distances to collect water to meet their basis requirements.



## RESULTS

1. More than 550,000 women now have improved access to safe drinking water, as a result of which the risk of acquiring water-borne diseases has been reduced. Their domestic workload (traveling long distances to fetch water and having to make do with very little water for household chores) has been reduced along with cases of abuse associated with disaster periods.
2. Rainwater harvesting units installed at household and community levels are benefiting the people in areas where deep tube wells cannot be installed due to low water tables. Rainwater harvesting units ensure safe drinking water for the community year round.



Over **1 million** cyclone *Aila* affected people (550,000 are women) now have access to safe drinking water.

## CONCLUSION

Significant work has gone into integrating disaster risk reduction and climate change adaptation across the Government of Bangladesh. The impacts of disasters and climate change on achieving sustainable development and eradicating poverty is significant. Unless all levels of government across Bangladesh are able to undertake risk informed policy planning, programme development and financial planning, the hard fought development gains will be undermined. CDMP has supported the Government to begin integration and harmonisation of disaster risk and climate change into institutions, laws, budgets and policies to build a safer more resilient Bangladesh. Despite the disaster risks the country faces it has managed to reduce poverty levels from 40 % in 2005 to 24.7 % in 2014, demonstrating the importance and value of mainstreaming in protecting development progress, and achieving socio economic progress.

## Comprehensive Disaster Management Programme (CDMP II)

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