

Urban Risk Management in South Asia

Launch of Global Campaign on Making Cities Resilient

8-9, June 2010 - New Delhi



SAARC Disaster Management Centre, New Delhi

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SAARC DISASTER MANAGEMENT CENTRE, NEW DELHI

P.G.Dhar Chakrabarti, IAS
Director

8 June 2010

Preface

The year 2007 marked a watershed in human history when the world urban population touched the rural at 3.25 billion and from then on the urban population shall be spiraling to 4.6 billion in 2025 and 6.4 billion in 2050 compared to the decline of rural numbers to 3.1 billion in 2025 and 2.7 billion in 2050.

Of the 1.29 billion people that would be added to the cities during 2007-25, close to 890 million would be in the developing countries of Asia and Africa, of which 464.2 million would be in South Asia alone.

In absolute terms, India would take the lead with 300 million additional urban population during 2007-25, but in relative terms India's urban growth would be the lowest among all the eight South Asian countries. Pakistan would continue to maintain its current status of being the most urbanized in the region, followed by Maldives, India, Sri Lanka and Bangladesh. Annual urban growth during 2000-25 would be the highest in Bhutan followed by Maldives, Nepal and Afghanistan.

65 cities in South Asia today (Afghanistan:1, Bangladesh:3, India:52, Nepal:1 and Pakistan:8) have more than 1 million people each, of which 5 have more than 10 million (Dhaka, Kolkata, Delhi, Mumbai and Karachi), with four other cities (Chennai, Bangalore, Hyderabad and Lahore) closely following. No other region of the world has concentration of so many mega cities as in South Asia today. Every projection indicates that Mumbai will cross 20 million in 2010, Delhi in 2020 and Dhaka, Kolkata and Karachi by 2025.

The uncontrolled and largely unplanned growth of large cities in South Asia has had negative effects on urban dwellers and their environment. The provision of infrastructure facilities and services is lagging far behind the pace of urbanization, and in consequence the urban environment, particularly in large cities, is deteriorating rapidly. All the cities and towns of South Asia are facing serious shortage of power, water, sewerage, developed land, housing, transportation, communication and other facilities.

The imperfections in land and housing markets and exorbitant increases in land prices have virtually left the urban poor with no alternative except seeking informal solution to their housing problems, leading to mushrooming of slums. About one third of the urban dwellers are living below poverty line

under sub human conditions in the slums, which do not have the basic minimum facilities of drinking water, sanitation, medical care and public hygiene. The disparities in the living conditions between slums and other areas are a potential cause of crime and social unrest in the large cities.

Compounding the problems of urban growth are the natural hazards of floods, earthquakes, cyclones, landslides etc, and layers of physical, social and economic vulnerabilities that are exposing the people of many South Asian cities to increasing risks of disasters. Climate change and its impact on atmosphere, rainfall, water is further dragging the cities into new vortex of risks.

At the same time, South Asia is witnessing rapid economic growth and transformation, and its towns and cities are at the heart of this process. All over South Asia, growth is taking place in dynamic sectors such as manufacturing, information technology, high-end service industries, trade, retail, banking, insurance and finance, all of which are urban-centric. By the year 2011, the urban share in India's national income is expected to go up to 65%, even though only slightly more than 30% of the population will be urban by then. In Pakistan and Bangladesh, the hypertrophic cities of Karachi and Dhaka dominate the economy. The mega-city of Karachi, for instance, not only accounts for a twelfth of the total population of the country's 160 million people, but also generates 70% of national revenue and over 40% of the value added in manufacturing.

This growth would not be sustainable unless South Asian cities are able to adequately address the issues of urban management and urban risk management. A number of initiatives have been taken in the recent past to make the cities resilient to disasters with varying degrees of successes and failures.

This compilation of case studies on South Asian cities, drawn from various academic, research and field organizations is probably the first of its kind. We are grateful to the authors and institutions for contributing to the collections at a very short notice.

We are very happy to bring out this compendium on the occasion of the South Asia Launch of Global Campaign on Making Cities Resilient in New Delhi.



(P.G.Dhar Chakrabarti)

एस० जयपाल रेड्डी
S. Jaipal Reddy



मंत्री
शहरी विकास
भारत सरकार

MINISTER OF
URBAN DEVELOPMENT
GOVERNMENT OF INDIA



MESSAGE

Urbanisation is a key indicator of economic development and is one of the major transformations of the 20th Century. The urban population in India grew from 25.85 million at the beginning of the 20th Century to 285.35 in 2001. Similarly, the urban population in Bangladesh is likely to grow from 23 million in 1996 to 58 million by 2020. While the urban population in Nepal will grow from 2.6 million to 7.7 million during the same period, urban population in Sri Lanka will double to 8 million. These expanding urban areas are not only hubs for economic activity, but also present major challenges in providing good quality life for the residents.

2. One of the significant challenges faced by urban areas is to improve their resilience against disasters and calamities. Therefore, the need of the hour is to plan and implement schemes for mitigation of risks. This can happen only if the capacity of the communities, infrastructure, resources and governance mechanisms are enhanced to cope up with disasters. Innovative mechanisms have been used by cities for reducing their inherent risks. Many of these have proved to be very successful and need to be disseminated widely to encourage similar actions in other vulnerable cities.

3. I am pleased to note that the Global Campaign for making Cities Resilient is being launched from India. I am confident that the collective wisdom of experts from all over the world will enrich the Conference and the launch of the campaign. I am pleased that the National Institute of Disaster Management (NIDM) is bringing out a publication on this occasion on urban risk mitigation in South Asia. I hope it will be very useful for policy makers and civil society alike and encourage us to take the right steps towards making cities resilient.


(S. Jaipal Reddy)



Vice Chairman
National Disaster Management Authority
Government of India


FOREWORD

I am glad that the National Institute of Disaster Management (NIDM) in collaboration with Ministry of Urban Development, Government of India, SAARC Disaster Management Centre (SDMC) New Delhi and UN-ISDR, Geneva is organizing the International Conference on making cities resilient and launching a Global Campaign on 'Resilient Cities'.

While cities have provided the momentum of growth to the economy over time, they have also proved to be extremely vulnerable during disasters, resulting in heavy loss of life and assets. Nowhere is it more apparent than South Asia, where most of the large cities are vulnerable to one or more types of natural disasters, in addition to man-made emergencies like epidemics etc. Realising the need to look at risk reduction in cities differently, city governments and civil society organizations have taken up innovative measures to make cities resilient. Many of these measures could be replicated in other cities with similar problems.

I am glad that the National Institute of Disaster Management (NIDM), true to its mandate, has taken up the onus of disseminating these good practices as case studies from various South Asian cities. I am sure this publication will assist the disaster management professionals, city managers, researchers and the general public alike to build on the collective wisdom of all concerned for transition of these cities into disaster-resilience.

New Delhi
31 May 2010

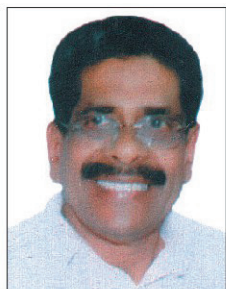


General NC Vij
PVSM, UYSM, AVSM (Retd)

MULLAPPALLY RAMACHANDRAN



गृह राज्य मंत्री
भारत सरकार
नार्थ ब्लॉक, नई दिल्ली-110 001
**MINISTER OF STATE FOR
HOME AFFAIRS
GOVERNMENT OF INDIA
NORTH BLOCK, NEW DELHI-110 001**



31st May, 2010

MESSAGE

I am happy to know that the National Institute of Disaster Management, in collaboration with the Ministry of Urban Development, Government of India, the United Nations International Strategy for Disaster Reduction, Geneva, and the SAARC Disaster Management Centre, New Delhi, is organizing an International Conference on Making Cities Resilient and launching a Global Campaign on Resilient Cities. I am delighted to know that the Mayors from a large number of cities in India and other parts of South Asia shall attend these events.

South Asia is witnessing an unprecedented urban growth in the recent years, mainly due to migration of people from the rural areas. This has put very severe stress on urban infrastructure, housing and environment and exposed a large number of people, particularly the urban poor, to the risks of different types of natural and man-made disasters. Every city must quickly put in place a system for assessing these emerging risks and take appropriate measures for mitigation and preparedness for reducing the risks of such disasters. I hope this Conference and the subsequent campaign will give a fillip to reducing urban risks in our region.

I wish this Conference and the Campaign a great success.


(Mullappally Ramachandran)

8 June 2010



Margareta Wahström

Special Representative of the Secretary-General for Disaster Risk Reduction

MESSAGE

3.3 billion people (nearly half of the world's population) now live in cities or urban centers. 2.2 billion of these live within 100 km of coast. Urban settlements serve as nations' economic engines; they are centres of technology and innovation. They embody our cultural heritage. Impact of global climate change is being increasingly experienced by urban populations as more intense hurricanes and cyclones, storm surges and floods are destroying years of GDP growth, livelihoods and future growth potential: Mumbai, Manila, Rio De Janeiro and New Orleans have all been severely ravaged by disasters in recent years which could have been prevented.

Unplanned urbanization, destruction of coastal ecosystems and urban infrastructure investments which are not hazard resilient, or based on proper assessment of hazard risks. In the last one year I have witnessed from close proximity the extreme vulnerability of urban citizens to natural hazards in Kathmandu, Port au Prince, Hanoi, Rio, and Mexico City. Failure to provide land use plans which cater to disaster safe low cost housing for poor is the root cause of disaster causing loss of homes and livelihoods of urban poor in many cities I have visited.

The United Nations International Strategy for Disaster Reduction is working with its partners to raise awareness and commitment for sustainable development practices that will reduce disaster risk and increase the well being and safety of citizens - to invest today for a safer tomorrow. Building on previous campaigns focusing on education and the safety of schools and hospitals, ISDR partners have launched a new campaign in 2010: Making Cities Resilient.

Mayors from cities all over the world are now committing themselves to safeguard the future of their citizens. Mayor and Local authorities are pledging to implement Ten Essentials for Making Cities Resilient and to work alongside local activists, grass roots networks and national authorities.

Urban risk reduction delivers many benefits. When successfully applied as part of sustainable urbanization, resilient cities help reduce poverty, provide for growth and employment, and deliver greater social equity, fresh business opportunities, more balanced ecosystems, better health and improved education.

Today's gathering of over 100 Mayors from India and leaders from major cities of South Asia is an opportunity to join efforts at Making My City Ready. The Ten Essentials for Making Cities Resilient are both simple and comprehensive: risk assessments, city level budgeting for risk mitigation, investing in strengthening schools, hospitals and drainage systems to reduce earthquake, floods and landslides. These actions have stood the test of time in cities which rigorously applied them: Kobe, Istanbul, Mexico City, San Francisco etc.

As elected leaders of local authorities, you are closest to citizens and represent the most articulate citizens of the world. Your energy and courage will certainly safeguard the future of your citizens from disasters.

(Margareta Wahström)

Community Empowerment and Disaster Risk Reduction in Chittagong City

Asian Disaster Preparedness Centre, Bangkok

Some cities in Asia are experiencing rapid population growth. Densely populated cities like Chittagong have difficulty providing informal settlements access to basic services, mobility to urban centers, livelihood opportunities and social development. Prevailing natural hazards and potential risks compound the problem of urban poor community further. However, communities in these areas can be more resilient and show cohesiveness in dealing with natural hazards.

To help a community face disaster is a challenge that requires empowerment. While relief funds and goods will always alleviate suffering, their effect is temporary. There is also a danger that a community will not learn to help itself. The experience in Chittagong of repeated heavy flooding could have been enough to make people feel helpless. However, the community empowerment approach for disaster management helped create a more proactive stance and attitude among the people. Community empowerment is a type of capacity development where its members decide on the goals and strategies for disaster risk management, contribute some (if not all) of the resources needed, and monitor their performance.

Rather than outsiders managing a community's risk on their behalf, the members instead struggle to understand why they are at risk to flooding disasters, try to build consensus on the ways to reduce their risk, set priorities, and then participate in the measures needed to keep their risk low. Some of the inputs can come from outside donors, including the government. However, the community members should realize that they must put in their own time and money, even to the point of sacrifice. This process of struggle is what strengthens community, facilitates first-hand learning and understanding about disaster risk management, and promotes confidence that they can help themselves through adversity.

What is a Typical Urban Poor Community in Chittagong?

To get a good idea of how difficult the initial conditions were in Chittagong, here are snapshots of three of the wards: Chawk Bazar (Ward 16), North Potenga (Ward 40), and South Potenga (Ward 41).

Table 1 : General profile of the Wards

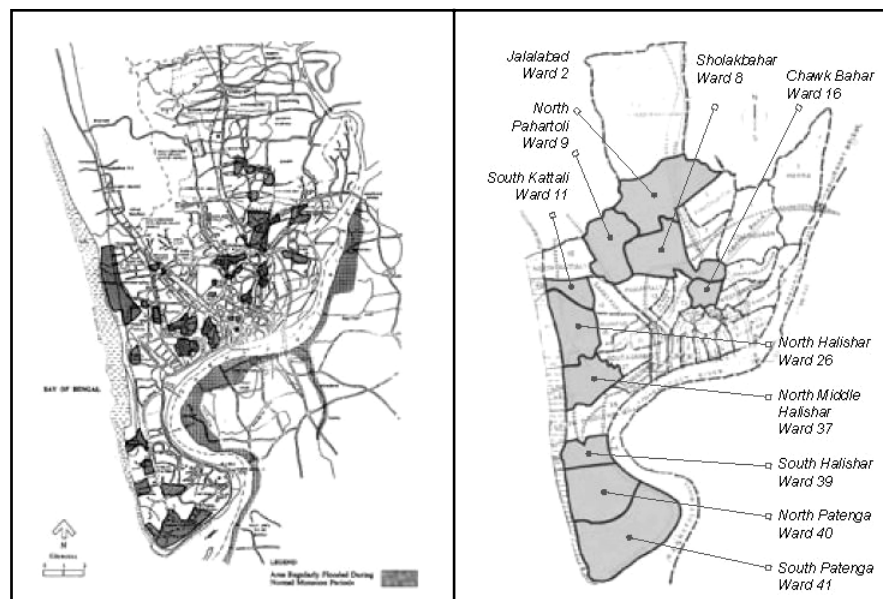
Area	0.68 mi ²	3.7 mi ²	3.9 mi ²
Total population	59,488	94,366	64,311
Occupation	Service sector, day wage laborers, small businessmen	Farmers, day wage laborers, govt. service, small and petty businessmen	Factory workers, small traders, farmers, fishermen, day wage laborers

Source: CCC 2001 Population Census

Landslides, cyclones and floods occur frequently in Chawk Bazar. A small community of 100 households of day wage laborers and their families live on high ground where the problems occur more frequently than in the rest of the ward. They share one toilet between all these households; no other water and sanitation facilities existed prior to 2008, causing great discomfort for women and children who therefore resorted to defecating out in the open. This particular community did not have safe drinking and was generally under-served.

North Potenga is a low-lying area situated at the edge of Chittagong, close to the banks of Karnaphuli river and the Bay of Bengal. Flooding is common during the monsoon season when the Karnaphuli overflows its banks. Some basic services are absent, such as water and sanitation.

South Potenga is situated near the sea, and its available groundwater has a high salt content. There is no other source of safe drinking water for household consumption. This community learned how to drink and cook with saline water. Families from the poor households would walk down 5 km. a day to get safe drinking water. They relied upon a rain-fed pond for bathing and washing that was heavily polluted because the water was stagnant and people dumped waste in it. Skin diseases, diarrhea and other water-borne diseases were common in this community.



Flood map of Chittagong Source: R. Karim

PROMISE Wards in Chittagong City

Socio-Economic Profile of Chittagong

Chittagong City Corporation (CCC), Bangladesh's second largest city, has a major seaport and is considered the heart of all commercial and business activities. The national government declared Chittagong as the commercial capital of the country. The majority of people in Chittagong are involved in the import-export business, trade, and various related industrial and business activities. Forty per cent of

heavy industrial activities of the country are located in Chittagong city and its adjacent areas. At present, the city's land area occupies around 157 km² inhabited by about 4 million people (2001 CCC census).

There are 41 wards where people elect their ward commissioner to serve the community or five years. CCC has positions for 14 female ward commissioners to represent their respective urban communities. These city wards have a ward office, primary schools, high schools, colleges, dispensaries, hospitals, markets, mosques and other urban and civic facilities.

In the last few years, Chittagong has experienced rapid urban growth because of the significant expansion of the port and other industrial developments. People from the surrounding areas migrated into the city in search of livelihood opportunities and better economic prosperity. However, with limited capacity to offer basic urban facilities, the city was not prepared to accommodate this inflow of migrants. Unplanned growth, shortage of housing, traffic congestion, interrupted power and water supply, rapid growth of slum areas, flooding and poor drainage, unemployment and environmental pollution are the resulting problems.

Table 2 : Contribution of Chittagong in accommodating National Urban Population Growth

Population	1981	1991	2001
National Population	89,900,000	109,900,000	123,151,246
Urban Population	14,091,000	21,550,000	28,808,477
Percentage of National	15.7	19.7	23.39
Chittagong	1,391,000	2,343,000	3,202,710
Percentage of Urban	10.0%	11.0%	13.34%

Source: Population Census, 1991 and 2001.

Hydro-meteorological Hazards in Chittagong

Chittagong has a historical profile related to hydro-meteorological hazards such as floods, earthquakes, cyclones, landslides and flooding. The city is surrounded by a hilly terrain, the Karnaphuli river and the Bay of Bengal. The increasing demand for urban land and existing dense urban population had, over-time, forced the vulnerable communities to settle on hazard-prone areas. Communities and local authorities have limited capacity to respond to the existing hazards in terms of disaster preparedness and mitigation.

During the monsoon period, access to basic services (schools, colleges, safe drinking and sanitation facilities) and livelihood opportunities are affected by flash floods and flooding. A lack of community-based organizations, weak linkages among the local organizations, and limited awareness of disaster risk reduction were the common features.

PROMISE-Bangladesh Intervention

Bangladesh Disaster Preparedness Center (BDPC) undertook the Bangladesh demonstration project under the "Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Asia" (PROMISE). Central to this project is to empower the community, which should reflect the positive changes taking place in the process of developing individual or group capacity to address vulnerabilities. The communities were assisted to adopt a proactive approach in taking decisions and action, with active

participation of the all the stakeholders, especially the vulnerable individuals. The project team was composed of the Chittagong City Corporation as the local partner, Bangladesh Disaster Preparedness Centre (BDPC) as the implementing agency, the Asian Disaster Preparedness Center (ADPC) as the regional coordinating organization, and the U.S. Agency for International Development (USAID) as donor. The objectives of this project were:

- ◆ Adoption of specific hydro-meteorological disaster preparedness and mitigation measures to manage hydro-meteorological disaster risk by stakeholders in the project area.
- ◆ Increased stakeholder involvement and further enhancement of strategies, tools and methodologies related to community preparedness and mitigation of hydro-meteorological disasters in urban communities.
- ◆ Strengthened networks and links among relevant risk management institutions/organizations within the city for improving potential and capacity for application and dissemination.

Based on a preliminary hazard assessment, the PROMISE-Bangladesh project selected the ten most vulnerable wards of Chittagong: 2, 8, 9, 11, 16, 26, 37, 39, 40 and 41. These wards are generally affected by the natural hazards like cyclone, tidal surge, water logging and, in some cases, by landslide. The community-based efforts were geared up after a baseline survey and followed by a preliminary assessment on hazards and vulnerability done by the communities themselves in each of the selected wards.

CBDRM Efforts in Chittagong City

In the beginning of the project, the ward commissioner was the only individual representative in terms managing the internal and external affairs of the community. This limited the advocacy for disaster preparedness and mitigation at community level, mobilizing the project's partners to undertake community-based disaster risk management.

Community-based disaster risk management tries to integrate disaster risk factors into development planning at all levels so that the disaster management would not stand apart from development process. The community empowerment process instills in all its members the desire and capability to protect each other from future risk. This encourages them to channel the participatory efforts towards responding to the specific problems or natural hazards/disaster. Any assistance coming from people outside the community (such as local and national government agencies, NGOs and humanitarian agencies) cannot be a complete success without the sustainability offered by community empowerment.

This case study highlights some of the pilot projects initiated by PROMISE-Bangladesh which have been largely formulated by the community to act upon those. The PROMISE-Bangladesh project has adopted the steps mentioned below to enhance the community's abilities to identify the hazards based on the severity of damage, and then to take proper actions in response.

Participatory Vulnerability and Capacity Assessment (PVCA)



Community risk map of Ward 26

When a hazard occurs, elements at risk (such as people, crops, buildings and services) may be lost, damaged or disrupted. These elements are normally identified after a disaster has happened in a 'damage and needs assessment'. The action taken is to distribute relief items to meet immediate needs. This action does not address the reasons why the disaster happened. The affected community could therefore be hit by another disaster in the future when the same or a different hazard strikes.

While a needs assessment after a disaster looks at the immediate effects of the disaster on elements in the community, a vulnerability assessment looks at the potential for elements to be at risk in future scenario. By acting on this type of information, it is possible to reduce the risk of the disaster happening in the first place. Each ward assessed and listed their vulnerabilities related to hydro-meteorological hazards, and their capacity to address these.

Workshop on Community Risk Assessment Findings

Following the participatory risk assessment, community-level planning workshops were conducted and the main objective of the workshops was to prepare their community-level action plans. Participants described their risks and vulnerabilities, as well as prepared action plans for their respective communities defining specific roles and responsibilities (see Table 3). The community identified some of the initiatives for reducing community vulnerability related to natural hazards/disaster:

- ◆ Providing professional skill development training
- ◆ Ensuring proper sanitation and water supply facilities in the shelter
- ◆ Advocacy with service providing agencies for increasing their services
- ◆ Formation of skilled volunteers group
- ◆ Creating awareness on disaster preparedness.
- ◆ Installation of the shallow tube well
- ◆ Identification of makeshift shelters and increase the sanitation and water supply facilities
- ◆ Make people aware about the services available from CCC and enable them to establish their right to access those services
- ◆ Provide disaster preparedness training for disaster management committee.

Formation of Ward Disaster Risk Management Committee

Most of the selected wards are densely populated, and each ward commissioner acting alone was not enough to address the hydro-meteorological hazards at all levels. Community-level Ward Disaster Risk Management Committees (WDRMC) emerged to manage natural hazard/disaster risks. Ten WDRMCs were constituted with 15 members comprised of community members, school teachers, ward commis-

sioners and local elite. The committees normally met once in a month to discuss the routine work to facilitate the ward-level activities, and were designed to work around-the-clock during the emergencies. CCC later formalized the committees by integrating them into their existing disaster response structure, and renamed them as Ward Disaster Management Committees (WDMCs).

Formation of Change Agents

To support the WDMCs, groups of volunteers called change agents (CAs) were identified and trained in emergency response. The main roles and responsibilities of the change agent were to keep the WDMC members well-informed on relevant developments, and facilitate CBDRM at ward/household levels.

Citizen volunteers were identified for each section of the selected vulnerable wards to assist the WDMC in facilitating the disaster preparedness and mitigation activities in their respective wards. These volunteers were accepted and recognized as change agents by the ward commissioner and community members. During meetings, the list of change agents/volunteers were approved by ward commissioner in presence of the residents of the locality.



The community develops their action plan.

Training of Trainers on CBDRM

After the identification and formation of WDMC and CAs, training on CBDRM was conducted at ward level to build the capacity of these representatives to conduct the participatory vulnerability and capacity assessment in each of the vulnerable wards. The main purpose of this training was to develop the skills and knowledge of the selected change agents to enable them assessing community's vulnerabilities and capacities and preparing community level action plan. The training was held on 14-16 March 2007 at Karnaphuli HRDI UTSA training center, Chittagong. This training was attended by 30 change agents, selected from 10 wards of CCC. This training focused on: concepts of hydro-meteorological hazards and urban disaster; concepts of urban disaster risk management; and participatory hazard and vulnerability mapping and tools. It brought out cross-cutting issues (gender, environment and health), and arranged for a field visit to PROMISE wards.



Before and after the toilet construction in Chawk Bazar.

Small-Scale Disaster Mitigation Projects

Based on community priority and potential risk, each of the selected wards identified preparedness and risk mitigation measures to reduce the impact of hazards. Community-level consultations were held with the WDMC, change agents, ward commissioners, water and conservancy department, engineers and city planner to formulate small-scale disaster mitigation projects. The purpose of these small projects is to provide a suitable platform for the community to own a project, increase involvement of the stakeholders at all levels, and strengthen networks and links among relevant risk management institutions/organizations. Let's examine the projects in the wards in our snapshot (Chawk Bazar, North Potenga and South Potenga).



Before and after the canal re-excavation in North Potenga

In Chawk Bazar (Ward 16), the Ward Commissioner and members of the Project Implementation Committee consulted the slum dwellers of the ward and selected a suitable place for the installation of the latrine and a tube well to reduce vulnerability to water-borne diseases. In North Potenga (Ward 40), community laborers were engaged to excavate the canal and raise the banks for drainage improvement. In South Potenga (Ward 41), the community decided to install a pond filter to generate safe drinking water. An orientation for community masons was held in February 2008 on the filter's design and the construction technique; NGO Forum provided resource persons. Box 1 has a story about its impact.

Monitoring measures and follow-up actions were instituted at the community level to sustain the projects for the long-term impacts and benefits. In Chawk Bazar, the beneficiaries would deposit 10 BDT(USD 0.15) per household to maintain the water and sanitation facilities. The households near the canal in North Potenga have taken up the responsibility to monitor if anyone should throw the garbage into the canal, and make a report to the WDMC. The poor community of South Potenga decided to protect the pond filter water area from intrusion by any individual. The local community and WDMC will monitor the activities around the pond area.

Prepared for the Worst

The port city of Chittagong and some of its surrounding areas experienced a devastating disaster in the morning of 11 June, 2007, which left 126 people dead and hundreds of others injured. The deaths were mainly due to a series of landslides caused by torrential rains. The city also experienced unprecedented flooding that caused suffering for the city dwellers. The cause of the landslide was heavy down-pour, while the main indirect cause was indiscriminate removal of sections of the hill slopes.

Table 3 : Excerpt from Ward 40's Draft Action Plan, developed on 7 April 2007

Activity	Responsible agency/ Stakeholder	Duration (in 2007)	Follow-up / Monitoring
Awareness-raising	BDPC, NGOs, CBOs, CAs	May to December	WDRMC, CAs
Advocacy	BDPC, NGOs, CBOs, Ward Office J	July to September	WDRMC
Construction of deep well	Department of Public Health and Engineering, WatSan Committee	July to December	WDRMC, CC, CAs, BDPC

Source : PROMISE-Bangladesh

Box 1: Water for Fatema

Like other dwellers of South Potenga, Fatema Khatun, a 45-year old housewife, used to fetch water from a place three kilometers away from her home. This was difficult for her. She and other women would instead fetch water from the pond water for cooking and drinking, and they therefore suffered from water-borne diseases. There is a tube well for every 4 or 5 houses, but the water was salty and contained a lot of iron. Very often, the families were compelled to buy drinking water at a high price. The installation of the pond sand filter brought an improvement in the life of the community. Fatema said, "I feel satisfied that clean drinking water is available here. Now I can spend more time with my family. When I notice people from inside and outside the community come and stand in a queue to collect this water, it is truly a nice feeling." Every day, around 200 people collect the filtered water from the pond for their daily use.

The CAs and WDMCs formed under the PROMISE-Bangladesh project took active part in the search-and-rescue operation in their respective wards, and thereby proved their enhanced capacity to respond to hazard events. The volunteers rescued the people from the water-logged area. They moved the elderly and pregnant women to safe places. The CAs of ward 16 assisted the people in moving from one place to another by knotting strong ropes across the roads in the areas where roads were badly damaged. A group of CAs went to the Medical College Hospital and took part in providing first aid to the injured persons. The CAs of ward 26, ward 37 and ward 40 collected dry foods, drinking water, clothes and distributed those to survivors. They protected the ponds used for the purpose of fisheries by netting the four banks of the ponds and thereby stopping the fish from escaping.



Before and after pond filter for South Potenga; drinking the filtered water

After the rains, the WDMCs arranged for draining out the water with the assistance of the CCC personnel and military. They conducted a cleanliness drive after the water receded. The CAs of ward 41 assisted the joint forces in rebuilding the damaged houses with bamboo pillars.

A 3-day community-based emergency response course (C-BERC) was given in March 2008 to enhance the skills of community volunteers and support the emergency response structure at city level. A total of 28 participants attended: 20 CAs (two from each PROMISE ward), and representatives from CCC, the Fire Service and Civil Defense, schoolteachers and PROMISE-Bangladesh project staff. Participants learned CPR; dealing with bleeding, shock, fractures and dislocation; triage and mass casualty management; and improvising stretchers and other rescue equipment from locally-available material.

North Potenga has CBOs that got involved: Ekta, a formal organization for promoting social and cultural spirits; Ashok Club, a group of volunteers, and World Vision Bangladesh. Ashok Club and World Vision Bangladesh provide free safe drinking water to the poor communities during crisis situations. CBDRM mobilized both of these institutions to participate for the benefit of the community. The leader of Ekta also represents the WDMC, and actively participated in the whole process of project formulation and motivated other community members to realize the problem. CBO involvement has given the community the confidence to convince the nearby refinery to join up to re-excavate the canal in their area and stop pollution.



Mock drill of the community

Mock Drills

A guideline was prepared to conduct a mock drill to address issues and priority considerations for cyclone preparedness of the coastal community. From the outset, BDPC project staff consulted with different organizations (Cyclone Preparedness Program and World Vision) that have credible experience in conducting mock drills. A guideline and a CD containing the script of the drill were prepared for implementing the final event. The script focused mainly on the dissemination of the warning signal and practicing the actions to be taken in response to the warning signal; ensuring special care for pregnant women, the elderly, children, the disabled and ill during evacuation; and first aid. Ten mock drills were organized for the selected wards of Chittagong City to create the desired awareness of effective preparedness measures and dissemination of warning message at community level. The fire and civil defense services participated in the drill, and committed to provide their services during future emergencies.

City-Level Actions

PROMISE-BANGLADESH has successfully showcased actions at the city level. Liaising with the city corporation to foster an enabling environment for DRR, encouraging media partnerships, building the capacity of local authorities, and developing IEC (Information, Communication and Education) tools are some of the highlights of this initiative.

School Safety Program

In 2007 and 2008, awareness-raising sessions and simulation drills were conducted in the campuses of South Potenga City Corporation High School, Kapashgola City Corporation Girl's High School and College, Haliashahor Munishipara High School, and Pashlaish City Corporation Girl's High School. The main purpose of this session was to create awareness about the importance of having a school disaster management plan to save lives and reduce vulnerabilities. Around 500 participants comprising students, teachers, members of the school management committees, representatives from different community based organizations participated in each event. The schools constituted Disaster Management Committees with representatives from school children, teachers and parents. These committees developed their respective comprehensive school disaster management plans.

City-level Action Planning Workshop

A city-level workshop "Development of City Disaster Management Plan" was held on 23 April 2008; the city mayor inaugurated the program. A total of 71 representatives from different key departments of the city participated in this event. The event had two parts: a technical session where resource persons made presentations on various natural hazards and climate change issues, and a workshop where the participants worked in groups to identify the activities and responsible authorities for the disaster management. The workshop addressed the structural and non-structural components of disaster risk reduction through plenary sessions.

"Clean and Green" Chittagong

CCC undertook a series of projects under the heading of "Cleaning and Greening" the city. These projects included: civic awareness generation for household garbage management, healthy city program, encouraging healthy sanitation programs, drainage development and preservation of natural canals, etc. Environmental pollution at the low-lying areas in the city because of a combination of restricted drainage, sediments loosened by landslides, solid waste, and chemical by-products of various urban activities. The small-scale demonstration projects that addressed persistent problems related to drainage, sanitation, and waste management were able to contribute to the city's Clean and Green drive.

Development of IEC materials

To strengthen CBDRM at community level, information, education and communication (IEC) material was developed to disseminate the standing orders on early warning system to the community including the most vulnerable. Family-level disaster preparedness-related information and cyclone warning messages were disseminated through flip charts and calendars.

Training on Urban Governance

A training course on Urban Governance and Disaster Risk Reduction was held from 30 September to 2 October 2007 to build a better understanding of governance issues in relation to disaster risk reduction at local level. It was conducted jointly by the Bangladesh Disaster Preparedness Centre and the National Institute of Local Government (NILG). This training was organized under PROMISE-Bangladesh; 22 participants came from six city corporations and other municipalities, NILG and other development

organization including CARE, and public service agencies such as the public health department, fire service and civil defense. The course featured the National Standing Orders on Disaster Management.

Media Workshop

BDPC has successfully completed a day-long workshop on Role of Media in Disaster Risk Management on 21 November 2007 to orient the media on CBDRM and develop strategies for their involvement. The workshop showcased the small-scale disaster mitigation projects.

Lesson Learned: Empowered Communities is a Step Towards Disaster Risk Management and Urban Development

Chittagong saw an increase in the participation of all stakeholders who influence the decision making process at all levels, especially at the community level. Formation of ward disaster mitigation committee (WDMC), which now works as per the national standing orders on disaster management has become a resource for the community and Chittagong City Corporation in order to aware the community on disaster preparedness and mitigation especially related to hydro-meteorological hazards. Participation in the process of the project formulation, willingness in the implementation such as offering man days labor for the construction of the pond filter and re-excavation of canal have shown "we feeling". The WDMC in South Potenga had successfully mobilized the community for the common concern on disaster management. It developed an linkage between the local water service providers, the water and sanitation committee, the Water Conservancy Department (WCD), Chittagong City Corporation and BDPC. It has also become a facilitating agent to step into the disaster preparedness and mitigation activities with the active involvement of all the stakeholders.

Community empowerment for disaster risk reduction is a good strategy for a city that wants to resolve such problems as flooding, unsafe drinking water and waste management while promoting an eco-friendly environment, and sanitation at micro-level. A detailed action plan-draft (DAP) had been prepared for the Chittagong Metropolitan Master Plan (CMMP) in January 2008. The DAP discusses how flooding is an annual threat and is an urban development issue that cuts across all (socio-economic) sectors. This case study shows the strength of communities to deal with complex urban problems (floods, drainage and drinking water) in a sustainable manner.

People's Stories

"I will sacrifice my shop"

During participatory vulnerability assessment in Chawk Bazar, the community decided to formulate project on water and sanitation facilities in the ward. But there was no space left in the ward to construct the facilities. Then Shaymol, a petty shop owner in the ward, said that he will close his shop for the sake of construction of sanitation facilities. This generosity is a humbling sign of empowerment.

"I have learned how to respond"

Mr. Suman is an active member of a voluntary group called Blood Friend's Organization. He is closely associated with the PROMISE-Bangladesh project, and facilitates activities as a change agent. He recounted that there was a significant change in his mind set and attitude after attending the CBDRM, WDMC and CBERC trainings. He used to be an observer during the previous natural disasters like cyclones, floods and landslides. The training had provided him insight into the vulnerability to and potential risk of natural hazards and disasters. Suman admitted very honestly that he feels happy to assist people to prepare for the future impact of hazards.

During cyclone Sidr, Suman helped rescue people of Chawk Bazar and took many people to a nearby safe shelter. Afterwards, he traveled to Barkuna (that was severely hit) to join the military in assisting the survivors there. Suman and his group identified more than 1000 households who needed relief goods and other basic necessities. During the identification of those households, he requested to have one representative from each of the family members to expedite the relief process. It took him almost three days to organize the households for relief material and distribution to the real beneficiaries. He gave credit to the CBDRM training where he learned to identify the vulnerable in the community.

Suman owns a telecommunication shop where he now uses the Internet and other tools to raise community awareness of natural hazards and disasters.

"I am prepared for the disasters"

Md. Nurul representative of socio-cultural organization and member of Ward Disaster Risk Mitigation Committee of Ward 40 as well, has attended all the trainings like CBDRM, CBEVRC and others conducted by the City Corporation, World Vision and PROMISE-Bangladesh. After attending CBDRM training, he became prepared to respond in the event of cyclones or floods. While preparing for cyclone Sidr in 2007, he applied the skills he learned from the training. He saved his family members first, and then



set out to help others. Since the Ward did not have any cyclone shelters, he identified nearby multi-storied buildings and asked the building owners to provide shelter in case of need.

The day the cyclone hit, access to the Ward was completely blocked by fallen trees and debris from damaged houses. Nurul prepared the essential items for distribution like food and first aid kits, and called his friends around midnight to go to the remote places of the Ward. Later, Nurul loaded a van with the food and clothes and donated the items for relief and rehabilitation of other Sidr survivors.

Mr. Nurul has become a local leader. When it comes to mobilizing the community for disaster preparedness and mitigation, Mr. Nurul always stands in front.

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