

# Safer Cities 15

Case studies on mitigating disasters in Asia and the Pacific

## Community-based Earthquake Risk Management in Dhaka City

*Community empowerment for earthquake preparedness*

People of Bangladesh consider the occurrence of a massive earthquake in the country as a far off disaster. According to Roger Bilham a big earthquake is overdue in Himalayan region and Bangladesh is one of the countries that lies in active seismic fault zones. The United Nations International Decade for Natural Disaster – RADIUS Initiative, identified Dhaka as high-risk zone, considering its high population density, poor physical structure, poor economic condition and least response and recovery capabilities. The “Community-based Earthquake Risk Management Project” was a great challenge to generate public awareness about the country being highly at risk to earthquake disaster.

### Introduction

Earthquake is not a common disaster in Bangladesh as compared to flood, cyclone, tornado, draught etc. that cause huge damages of life and property. But the earthquake that struck Gujrat, India, on January 2001 with a magnitude of 6.9 causing massive destruction and life loss generated great concern among the policy makers of the neighboring country Bangladesh. Their concern resulted in a number of preparedness activities by the government. The most significant one is the National Sensitization Seminar on Response to Earthquake held in March 6 2002. Participated by all the departments under the Ministry

of Disaster Management and Food (MDMF) and relevant ministries, the seminar led to the need for developing a coordinated action plan for service providers (SPs) who will response in time of earthquake emergencies. The following year, 17 SPs drew out their contingency plans to be incorporated in the Standing Order of MDMF as earthquake component. To review the effectiveness of contingency plan a National Mock Demonstration was held in which all the 17 SPs tested their respective response actions. However to reinforce public awareness it was necessary to get organized at community level.

The Community-based Earthquake Risk Management Project initiated by BDPC and Oxfam, GB is the first of its kind in Bangladesh that calls for preparedness action at community level.



### Abstract

*This case study is about preparing the urban communities for earthquake hazard through organizing the communities and activating the service providers (organizations responsible for responding to earthquake hazard).*

*Being a pilot initiative, the project was intervened in 16 communities / wards of Dhaka City that were selected based on their receptivity and vulnerability through community participation.*

*It features the various approaches of empowering the communities through linking with service providers (SPs), raising peoples’ awareness, enhancing communities’ capacity and activating the service providers. The success of this initiative was involving the Ward Commissioners who played the lead role for organizing community activities and ensuing peoples participation.*

### The inside story

- 📁 Selecting communities
- 📁 Linking Communities and SPs
- 📁 Sensitizing on earthquake
- 📁 Conducting participatory vulnerability assessment
- 📁 Enhancing Capacity





## Issues to consider when implementing community-based initiatives

## questions to ask ?

What will be the criteria for community selection ?

How shall we convince people that their community is at risk to earthquakes ?

How shall we create the dialogue between the community and the service providers ?

How shall we prepare the community and ensure community participation ?

### Highlight 1: Selecting Communities

#### Setting criteria for receptive communities

##### Why receptive communities ?

Considering the fact that people of Bangladesh did not have any living memories of major earthquake, it was a great challenge to motivate people with regard to preparedness for such a disaster. Therefore, with due respect to communities' physical vulnerability, the community people's response to this initiative was also given high importance. The target was to identify 16 receptive communities and then work with 8 most vulnerable ones.

##### Defining an urban community

Since urban communities did not match the features of conventionally understood rural communities, it was important to set a relevant working definition for the urban community as **"A group of people with common interest residing within proximity"**. In line with this definition residential areas, high rise apartments, supermarkets, student dormitories, schools, hospitals, garment factories, staff quarters and office buildings were considered as community.

##### The selection process

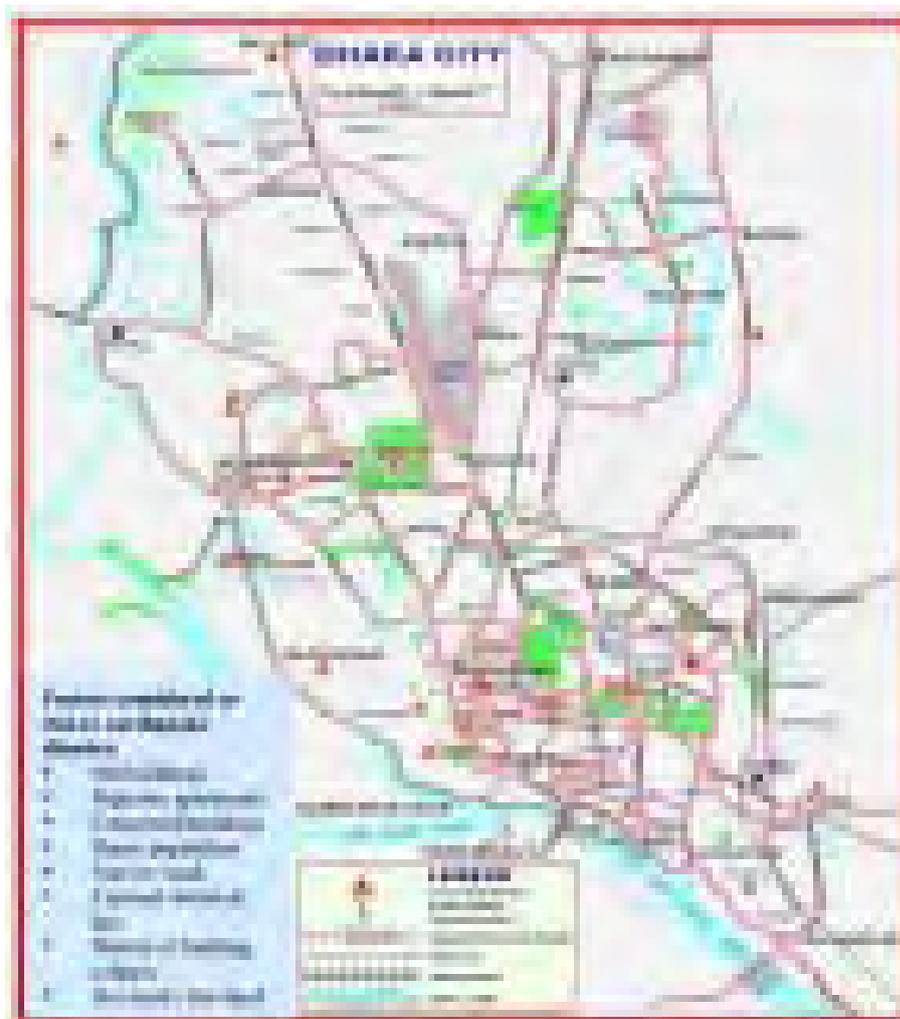
In keeping with the project need the selection process required to go through a number of stages to meet the selection criteria: 1) Communities' physical vulnerability and 2) Community peoples' interest in the project. Initially 30 communities were identified that reflected at least two physical risk factors

##### Step 1:

Stimulating awareness through leaflets inserted in daily newspapers in order to assess communities response. The leaflets contained messages related to earthquake in the form of questions, e.g. "Are you aware Dhaka City is at risk to earthquake? Do you know whether your building is earthquake resistant?" etc.

##### Step 2:

Making community inspection for verifying their response to step 1 with regard to community's risk associated to earthquake through



observation and triangulation method (for cross checking) with the help of a checklist as a tool. This approach was also very effective for identifying receptive community by assessing people's attitude towards this project

##### Step 3:

Analyzing findings and selecting 16 communities at primary stage that met the selection criteria.

##### Step 4:

Conducting participatory vulnerability assessment (PVA) for identifying 8 most receptive and vulnerable communities for capacity enhancement. Details on PVA are in Page 5.



## Highlight 2: Linking Communities and Service Providers (SPs)

### Creating a Dialogue between the Communities and the Service Providers

In order to achieve project objective, the project was implemented through working with the community and the service providers and gradually creating the linkage between them in different stages.

#### The first stage:

Changing the mindset through sensitizing the service providers and the communities and bringing them together in a central level workshop to start the dialogue. This workshop, held in cooperation with Dhaka City Corporation resulted in getting the Ward Commissioners of the targeted communities involved in the project.

#### The second stage:

Creating an ownership through involving the ward commissioners for organizing sensitization meetings in their respective wards and conducting Participatory Vulnerability Assessment (PVA) in the community with people's participation

#### The third stage:

Enhancing the capacity of the community through formation of Ward Disaster Preparedness Committees headed by the Ward Commissioners of respective wards, training of the WDPC members and formulation of a contingency plan for WDPC, school orientation, blood grouping and development of a register. Integration of communities in service providers' preparedness activities and involving service providers in community meetings for ensuring the linkage created between the both parties.

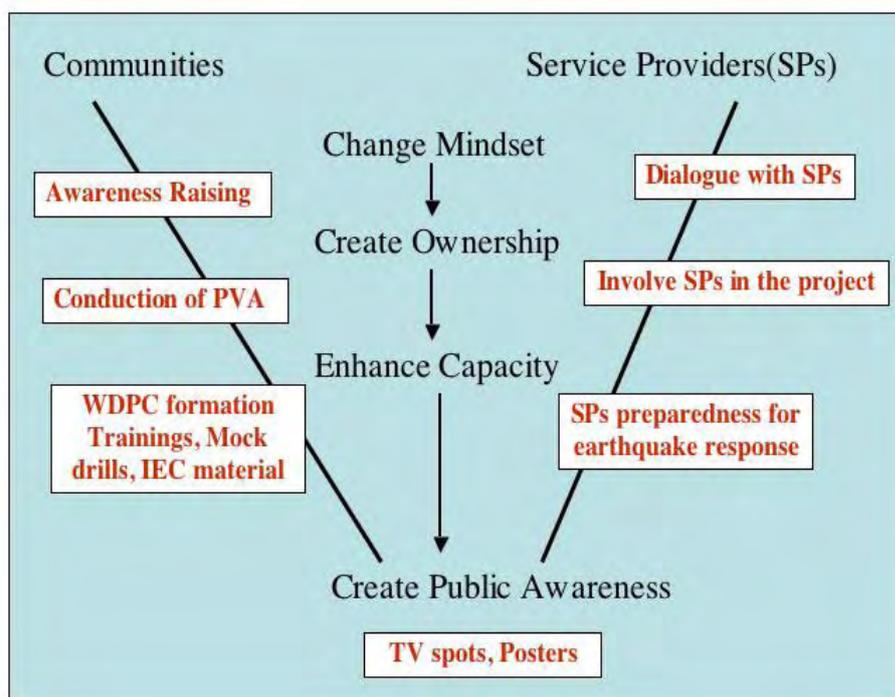
**“Integration of Ward 81 in the National Mock Exercise is a very good example of strengthening the linkage between communities and service providers making both the parties understand their responsibility towards each other”.**  
*Observation made by a member of the WDPC*

#### The fourth stage:

Raising awareness amongst a wider range of the public, which included development and distribution of leaflets and posters. To reinforce this awareness raising campaign a TV spot on earthquake preparedness has been produced for telecasting through national and private channels at appropriate intervals.

#### Initiating the Dialogue with the service providers (SPs)

The aim of getting the SPs involved was to activate them to refine preparedness based on their respective contingency plans to respond in time of an earthquake emergency through testing their plans in National Simulation Exercise. In addition, the SPs role



was very important at mobilizing the community people for taking initiatives in earthquake preparedness activities. Therefore it was very important to have individual meetings with the SPs to brief them about the project. Through these meetings the need for a big workshop at central level, to sensitize the public was identified.

## Highlight 3: Sensitizing on Earthquake

### Changing Mindset and setting the scene

#### Bringing the Communities and the Service Providers together:

The day long workshop on “Community Based Earthquake Risk Management for Dhaka City” held on 14 October 2004 was very effective for initiating a dialogue with the community people and the service providers. About 150 people, mainly high officials from the service providing departments under the Ministry of Food and Disaster Management (MFDM), Ward Commissioners and representatives from the community participated in the workshop.

The presence of Dhaka City Mayor as the Chief Guest and high officials from the service providing agencies including specialists from the field of disaster management as key speakers sensitized the participants about the gravity of the situation.

This workshop provided the opportunity for an open discussion among the service providers, community representatives and the Ward Commissioners to look at the present situation with regard to preparedness and response capabilities for earthquake disaster from their perspective. This helped the service providing agencies not only in identifying their respective role for providing support to the project but the commitment of the Ward Commissioners to get actively involved in all community activities.



**Dialogue between community people and the service providers**



**Sensitizing people at community level**

Organizing the workshop in cooperation with Dhaka City Corporation greatly helped rapport building with DCC which played the catalytic role in activating the Ward commissioners. DCC issued letters to the ward commissioners of the 16 primarily selected wards asking them to get actively involved in the project and provide all kind of cooperation.

#### **Sensitizing people at community level**

Sensitization meetings at the community level not only changed the mindset of community people regarding earthquake hazard but also provided a great opportunity to get the Ward Commissioners directly involved in project activities.

Sensitization meetings at community level included project briefing, presentation on Bangladesh situation on earthquake hazard. The video show on Bhuj Earthquake and Great Hanshin Awaji Earthquake was very effective in triggering peoples' perception on the need for preparedness to cope with earthquake. They participated actively during open discussion giving their views on their present situation and asking questions on how they could have access to information that could help them.

This whole process of sensitization supplemented through distribution of leaflets containing messages highlighting do's and

## Lessons Learned



### Things to consider during organizing community activities

- **Involve the key decision maker of the community**  
e.g. Direct involvement of the Ward Commissioners helped in community mobilization.
- **Plan the event according community peoples' convenience**  
e.g. At times community sensitization meetings were held at 09:00 – 10:00 PM
- **Encourage the community to be the host**  
e.g. Communities role as a host made them feel as their program and took the responsibility of ensuring peoples participation and providing necessary logistics.
- **Include items in the event that will serve your objective** e.g. Video shows on earthquake sensitized people making them realize the necessity of preparedness to cope with such a disaster.

don'ts during and after an earthquake, on pre earthquake preparedness and information on service providers and their emergency phone for taking actions in the event of an earthquake.

Prior to conducting the sensitization meeting it was necessary to visit all the communities to discuss and plan the event with community focal person and the ward commissioners. Involvement of the ward commissioners not only raised the credibility of the community people but this approach of participatory planning motivated communities to take the responsibility to organize the meetings at their respective communities. They also made token contribution towards arranging venue and providing light refreshments at their own expenses. They took this initiative as their own program where BDPC would only play the role of a facilitator.

### **Highlight 4: Conducting participatory vulnerability assessment**

*Creating Ownership among community people*

#### **Community people identify their vulnerability and capacity:**

Conducting Participatory Vulnerability Assessment (PVA) of communities was very effective in making people realize what was the status of their community with regard to risk at earthquake. The PVA especially the mapping exercise generated a lot of enthusiasm among the community people as it provided scope for them in identifying their community's vulnerability and capacity. The PVA exercise helped to indicate the main risk areas of respective

**“Though we know what earthquake is, we had no idea how much we the people of Dhaka are at risk. The leaflets you have distributed will be very useful for us because it provides information of what we should do or should not do during and after and earthquake. We never had this type of information before.”**

said Mr. M.A. Karim President, Adhunika Angan



communities, and also helped in identifying receptive communities based on the assessment of their participation and interest.

### Issues emphasized during PVA

- \_ Geographical location
- \_ Environmental condition
- \_ Physical structure
- \_ Socio-economic condition
- \_ Community people's view on Services Providers earthquake disaster response capacity
- \_ Community people's perception on earthquake disaster
- \_ Community people's perception regarding policy matters

Conducting PVA in the primarily selected 16 communities not only provided baseline information on their vulnerability and capacity, their perception related to earthquake preparedness and response, but also helped in identifying the 8 most receptive communities.

At the end of the project period, conducting post PVA in the same 16 communities helped in assessing project impact in terms of people's level of awareness.

### What did we learn about community people from PVA?

Even though people know what earthquake disaster is and how destructive it can be, they still regard earthquake as a far off disaster where Bangladesh is concerned. With regard to their vulnerability in terms of unplanned and poor physical



**Shop owners are participating in PVA at Lutfun Shopping Complex, a high-rise commercial building**

structure, they felt helpless in retrofitting their buildings considering their economic condition. However they felt that the project has made them realize the importance of following the building code and soil testing during construction of buildings.

According to the people, the policy makers need to give high priority for preparing the country for an earthquake disaster through strict monitoring on enforcement of building code and during approval of building plan. In addition the capacity of the organizations responsible for responding during an earthquake disaster need to be strengthened in terms of sufficient equipment, skills and manpower.

Conducting PVA in the primarily selected 16 communities not only provided baseline information on their vulnerability and capacity, their perception related to earthquake preparedness and response, but also helped in identifying the 8 most receptive communities.

### One of the most vulnerable communities

Communities situated in the old town of Dhaka City consist of buildings that are more than 100 years old. Originally the buildings were two or three storied, and the upper 4-6 floors have been constructed on the old structures. These buildings are used for residential and commercial purpose as well. All the houses are very tightly built with very narrow stairways. The width of most of the buildings is 5-6 feet. 8-10 families reside in one 4-6 storied building. One such community is Shakahari Bazar, Ward 72 & 73, where a building collapsed on 9 June 2004 that killed 19 people.



### Things to remember while designing a PVA exercise

- ❖ Methodology capable for generating peoples' participation in the PVA
- ❖ Respondents group are local residents and equity in gender
- ❖ Relevant subject to meet project need
- ❖ People need to be briefed what is the objective of the PVA.
- ❖ During mapping, people's perception of their communities vulnerability and capacity need to be emphasized
- ❖ Reporting format need to specify the vulnerability and capacity of the communities.



Initially community people's attitude towards the Service Providers was very negative particularly with regarding to their poor response in time of an emergency. They felt that the SPs lacked sense of responsibility toward the community people. However during project activities both the parties had the opportunity to share each other's problems and experiences. This has changed peoples' attitude towards more positive side, as they now understand the limitations of the SPs. As for the SPs part they too realize that they need to act according to their contingency plan in order to respond effectively in time of an earthquake emergency.

### Highlight 5: Enhancing the capacity at community level

*Organizing the community and activating the service providers*

#### The community recognizes the need for getting organized and capacitated

This was the outcome of the workshop held earlier in cooperation with Dhaka City Corporation. The Ward Commissioners took the initiative in forming the Ward Disaster Preparedness Committee (WDPC). The WDPC consisted of 11 members and 12-15 volunteers. The WDPC members were respected people of the community such as teachers, Imams, social workers, local elite and businessmen, while the volunteers groups were from the younger generation including scouts and guides.



**Volunteers presenting WDPC work plan during training session at Jatrabari**

#### WDPC and volunteers training

The training was planned on the basis of time constraints of community people and existing fund. As such the daylong session mainly aimed at

- Improving their knowledge on earthquake disaster
- Motivating them for preparedness to cope with earthquake
- Producing a work-plan for WDPC

#### WDPC Training Topics

- ❖ Introduction on Disaster
- ❖ Earthquake and Bangladesh
- ❖ Earthquake Disaster Management in Bangladesh
- ❖ Community based Disaster Risk Management
- ❖ Awareness on Risk Reduction
- ❖ Earthquake and Service Providers
- ❖ WDPC work-plan

For urban people it was the first time they received this type of training. Applying brainstorming session, group work and group presentation was very effective for building confidence among the participants. The work-plan they developed and presented, included further initiatives for awareness raising in their area, which was a clear indication that they now believed that community preparedness is important to cope with a disaster and they had a responsibility towards making their community safe.

#### Blood grouping program

The aim of this program, facilitated by SHANDHANI on of the SPs, was to promote blood donation by community people in time of an emergency. Community people voluntarily came forward for blood grouping and getting their name enlisted in the register as potential donors. Due to fund



**Ward Commissioner at Lalbag, Ward # 61 inaugurating the Blood Grouping Program**

limitations this program was carried out in only two communities. At present Lalbag, ward # 61 and Lutfun Shopping Complex, Badda ward # 21 maintain register with list of 200 names and blood group. This initiative will help community people mobilize required blood from within the community in time of emergency

#### Service Providers participate in community coordination meetings

Involving the service providers in community-based activities motivated them to refine preparedness based on their respective contingency plans to respond in time of an earthquake emergency through testing their plans in National Simulation Exercise.

Through participating in community coordination meetings, the SPs not only discussed their role with regard to response in time of an earthquake disaster but also explained their limitations referring to some recent building collapse incident. However they assured about refining their respective response plans through testing their plans in National Mock Exercise.

Earlier community people always had a negative attitude towards the SPs response capacity (PVA exercises in these communities revealed the same – page 5). However, through sharing problems and experiences helped them in identifying their respective roles in supporting each other in time of an emergency.

These meetings strengthened the linkage created between the SPs and the communities making people feel more secure. The SPs included the Fire Service and Civil Defense, WASA, DESA, TITAS Gas Company and Shandhani.

### Community Mock Drama held at Lalbag, on 28 April 2005

Al Haj Nasiruddin Ahmed Pinto, MP was present as the Chief Guest and Haji Altaf Hossin, Ward Commissioner of Ward 61 chaired the event. The event included a video presentation of the National Mock Drill that generated awareness to a great extent about the roles and responsibilities of the SPs with regard to emergency response.

A total of 90 school students from three schools in that area performed in the Mock Drama. The students performance and the realistic effects of an earthquake disaster overwhelmed the audiences making the drama a great success in generating community awareness.



*"I am very happy that the people of my community have got the opportunity to receive this useful training. However I would like to request you to provide training on search and rescue and first aid so that we know how to help people when earthquake strikes until the rescue party arrives"*

said Ms. Arjuda Bashar Laki, Ward Commissioner of Ward # 44 Shershasuri Road Mohammadpur

### Integration with National Mock Exercise

Integrating with the National Mock Exercise held at Dhoopkhola Maath, Ganderia, Ward 81 was very effective in ensuring the linkage with the community and the service providers. Ward 81, was one of the 8 selected receptive communities, where project activities had been undertaken. The WDPC took the responsibility of mobilizing community people for participating in the National Mock Exercise. Ward 81 took pride in participating in such a National event. The demonstration was so realistic that

the venue (Shaista Khan Kalyan Kendra with capacity for 800 people) free of cost.

### Conclusion

The implementation of this project was very timely in generating public awareness (June 2004 – May 2005) considering some recent incident of building collapse (Shakahri Bazar, June, 2004 and Savar, April 2005) that have created great sensation among the people of Dhaka City making them concerned about their safety. In addition the Indian Ocean Tsunami in December 2004 also changed people's perception about earthquake as being a far off disaster in the region. However, the fact remains that rapid urbanization of Dhaka City with unplanned high rise and multistoried buildings in congested communities, exposed and risky electrical lines definitely pose a serious threat to the people of Dhaka City with regard to earthquake disaster. Moreover considering Bangladesh with high population density, low socio-economic condition and least emergency response and recovery capabilities, we have a long way to go in enhancing our capacity to cope with a disaster like earthquake, should it happen. To strengthen the process of earthquake risk management

### National Mock Exercise held at Dhoopkhola Maath on 12 April 2005

Chief Guest in the event was the Hon. President of the People's Republic of Bangladesh, while the Minister for Food and Disaster Management, the Mayor of Dhaka City Corporation and Deputy Minister for Food and Disaster Management were present as Special Guests. The National Mock Exercise mainly focused on response measures after an earthquake by concerned departments.

A total of 17 Government Departments (Service Providers) and 150 community people participated in the National Mock Exercise. The National Mock Drill was indeed a timely and successful event for activating the Service Providers and testing their respective contingency plan and generating public awareness on emergency response after an earthquake disaster.



during Media coverage in the TV channels, general public at first thought that an actual earthquake had struck the city.

**Mock Drill is very effective for raising awareness as well as capacity enhancement especially in the field of disaster preparedness and response. It is also an effective way of learning with entertainment.**

### Community Mock Drama

The Community Mock Drama was held at Lalbag, participated by school students. The Mock Drama mainly reflected on roles and responsibilities of the community people with regard to earthquake preparedness and awareness raising activities at community level and community response after an earthquake disaster. The Ward Commissioner and the members of WDPC of Ward 61 took the responsibility of mobilizing the students, arranging planning meeting and rehearsal, organizing the final event and inviting community people and the Chief Guest. The WDPC also provided

in Bangladesh there is an urgent need for:

- Incorporation of earthquake component in the Standing Order
- Integration of disaster management in city planning
- Development of contingency plan by Ward Commissioner's office
- Massive public awareness raising through mass media.
- Monitor and ensure enforcement of building code and soil testing
- Enhancement of response capacities of the responsible departments
- Training on first aid and search and rescue for community people.
- Incorporation of earthquake chapter in educational curriculum
- Cultural shows rallies etc. that will help children to learn with fun.

**"Unless and until disaster strikes we tend to give less priority to prepare for that disaster."**

**Replication of similar projects in other urban areas will be very effective to accelerate the whole process or earthquake risk management at all levels**



### Further References

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 Bangladesh Disaster Preparedness Centre (BDPC)  
 Tel: 880-2-8815074, 8816296  
 E-mail: [bdpc@glintel.com](mailto:bdpc@glintel.com)

“Community-based Disaster Risk Management  
 Project-Earthquake”  
 CDRMP-Earthquake in Dhaka City  
 June 2004- May 2005, BDPC  
 Tel: 880-2-8815074, 8816296  
 E-mail: [bdpc@glintel.com](mailto:bdpc@glintel.com)

CDRMP-Earthquake in Sylhet City  
 2004-2005  
 Friends In Village Development Bangladesh  
 (FIVDB)  
 Central Office  
 Khadimnagar, Sylhet – 3100  
 Tel: 0821-760466, 761221  
 E-mail: [Fivdbhsyl@sol-bd.com](mailto:Fivdbhsyl@sol-bd.com)

### Editorial Board

Safer Cities 15 has been reviewed by:  
 Dr. Suvit Yodmani, ADPC  
 Mr. Earl Kessler  
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 Mr. Rajesh Sharma, ADPC  
 Ms. Shalini Sharma Kanwar, ADPC  
 Mr. M. Saidur Rahman, BDPC  
 Mr. BMM Mozharul Huq, BDPC

Author: and Designer: Ms. Shereen Khan

### About the Project

Initiated by BDPC and Oxfam, GB the “Community-based Risk Management Project (CDRMP) – Earthquake” and funded by the European Commission Humanitarian Aid Office (ECHO), was the first community based approach in Bangladesh related to earthquake preparedness. The project aimed at preparing the urban communities of Dhaka City to earthquake hazards by ensuring dialogue between community-based groups and service providers (SP) through mainstreaming the overall earthquake-risk-management activities of the country.

### About BDPC

Bangladesh Disaster Preparedness Centre (BDPC) established in 1992, has pioneered in the role as a facilitator, providing guidance, advise, inputs and knowledge towards capacity development of actors and institutions engaged in disaster management, risk reduction and preparedness activities. BDPC is solely engaged in the whole gamut of disaster management programs aimed at reducing risks of people vulnerable to disasters enabling them to establish their rights to access public resources and other entitlements.



### Project Facilitators

Urban Planning Department  
 Dhaka City Corporation  
 E-mail: [upddcc@agni.com](mailto:upddcc@agni.com)

Bangladesh Red Crescent  
 Society  
 Youth and Volunteers Program  
 E-mail: [bdrcs@bangla.net](mailto:bdrcs@bangla.net)

SANDHANI Central Committee  
 Bangabandhu Sheikh Mujib  
 Medical University  
 E-mail: [center@sandhani.org](mailto:center@sandhani.org)

### Safer Cities

*Safer Cities is a series of case studies that illustrate how people, communities, cities, governments and businesses have been able to make cities safer before disasters strike. The series presents strategies and approaches to urban disaster mitigation derived from analyses of real-life experiences, good practices and lessons learned in Asia and the Pacific. This user-friendly resource is designed to provide decision-makers, planners, city and community leaders and trainers with an array of proven ideas, tools, policy options and strategies for urban disaster mitigation. The key principles emphasized throughout Safer Cities are broad-based participation, partnerships, sustainability and replication of success stories.*

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### AUDMP

*The Asian Urban Disaster Mitigation Program (AUDMP) is the first and largest regional program implemented by ADPC. The AUDMP started in 1995 with core funding from USAID’s Office of Foreign Disaster Assistance (OFDA) until 2005. The program was developed with the recognition of increased disaster vulnerability of urban populations, infrastructure, critical facilities and shelter in Asian cities. In an environment where good governance and decentralization are high in most countries’ political agenda, AUDMP aims to demonstrate the importance of and strategic approaches to urban disaster mitigation as part of the urban development planning process in targeted cities of Asia.*

*AUDMP supports this demonstration by building the capacity of local authorities, national governments, NGOs, businesses and others responsible for establishing public and private sector mechanisms for urban disaster mitigation as part of city management. AUDMP also facilitates knowledge sharing and dialogue between key stakeholders to promote replication of AUDMP approaches to other cities and countries worldwide. Currently, the AUDMP approaches have been introduced and sustained by national partner institutions in targeted cities of Bangladesh, Cambodia, India, Indonesia, Lao PDR, Nepal, Philippines, Sri Lanka, Thailand and Vietnam.*

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### ADPC

*The Asian Disaster Preparedness Center (ADPC) is a regional resource center dedicated to safer communities and sustainable development through disaster risk reduction in Asia and the Pacific. Established in 1986 in Bangkok, Thailand, ADPC is recognized as an important focal point for promoting disaster awareness and developing capabilities to foster institutionalized disaster management and mitigation policies.*

For more information, please get in touch with us at:

Asian Disaster Preparedness Center  
 P.O. Box 4, Klong Luang Pathumthani  
 12120  
 THAILAND  
 Contact: [audmp@adpc.net](mailto:audmp@adpc.net)

Tel: (66-2) 516-5900 to 10  
 Fax: (66-2) 524-5350  
 E-mail: [adpc@adpc.net](mailto:adpc@adpc.net)  
 URL: <http://www.adpc.net>

