

Disclaimer

This report was compiled by an ADRC visiting researcher (VR) from ADRC member countries.

The views expressed in the report do not necessarily reflect the views of the ADRC. The boundaries and names shown and the designations used on the maps in the report also do not imply official endorsement or acceptance by the ADRC.



Mohammad Manirul Islam
ADRC Visiting Researcher FY2013E



Disaster Management System : Bangladesh

By

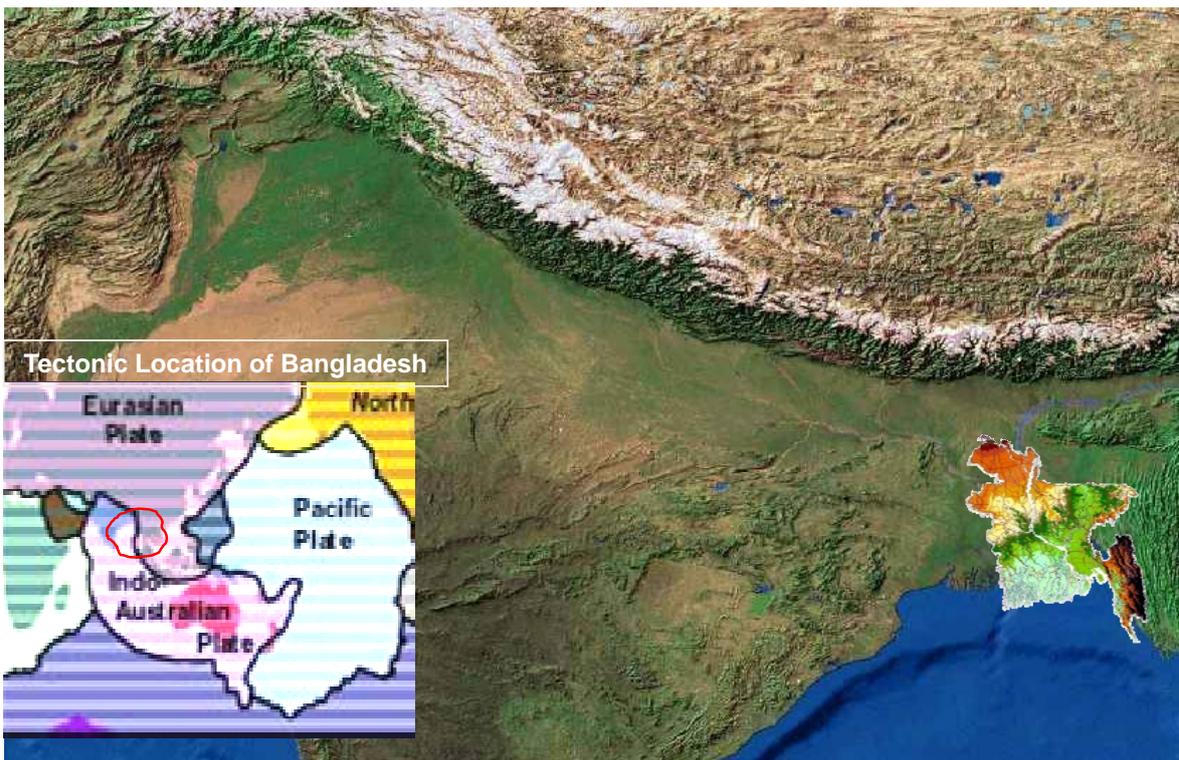
Mohammad Manirul Islam
Senior Assistant Secretary
Ministry of Disaster Management & Relief
Government of the People's Republic of Bangladesh



Mohammad Manirul Islam
ADRC Visiting Researcher FY2013E



Bangladesh: A south Asian country



MM1

Bangladesh is in between Bay of Bengal and Himalya and its geographical position not only provides live giving monsoon but also make it hazard prone. Bangladesh discharges almost entre runoff of western Himalyan catchment. The amount of water Bangladesh discharges in te bay, 92-93% are coming from upper catchment. Being the lower riparian country of te mighty rivers, Bangladesh has a graet deal of dependence on the rainfall and runoff , the variation of what constitutes major hazards for Bangladesh. Cyclone land fall and storm surges originating in te Indian ocean and or in to the bay was always there. One third of te country is under tidal excursiona and there by salinity.

MOHAMMAD MANIRUL, 2014/01/25



Mohammad Manirul Islam
ADRC Visiting Researcher FY2013E

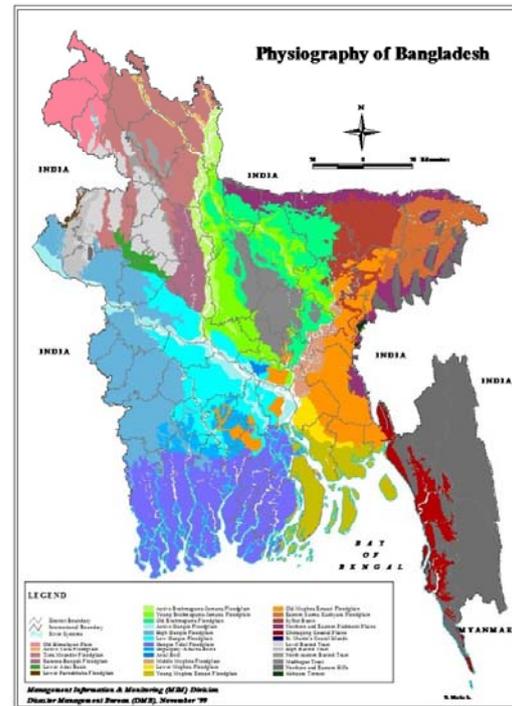


Country Profile: Bangladesh

- Total population : 165 million
- Total Geographic Area : 147,570 sqkm
- Population density in coastal areas : 1000/sqkm
- Flood plains: 80% of total areas
- Located at fragile deltaic flood-plain
- More than 300 rivers (57 Trans boundary rivers)
- High-risk country to recurrent natural disasters

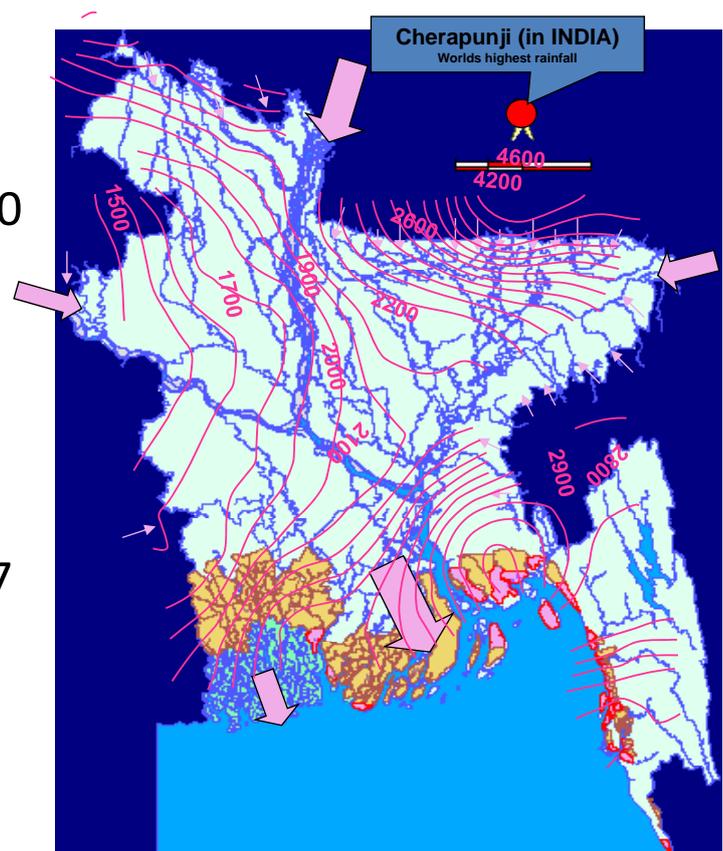
Physiography of Bangladesh

- Flood Plain
- Coastal forest
- Hilly area
- High land forest



A riverine country with 310 rivers

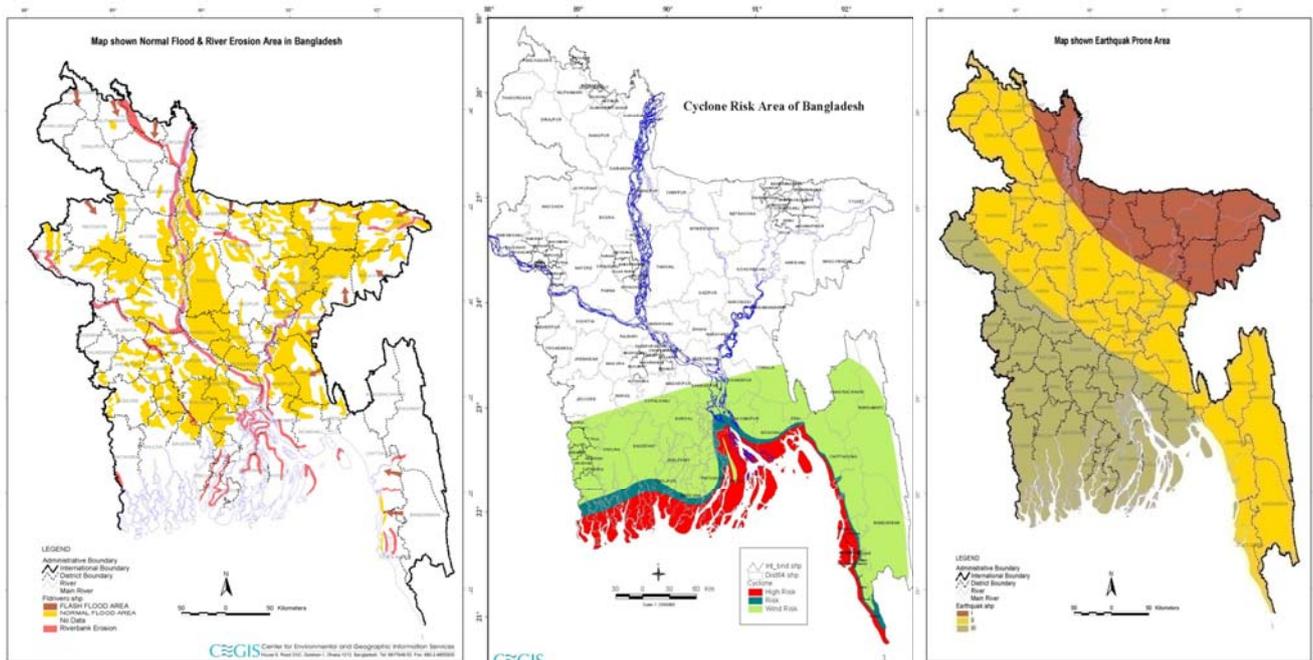
- Total river length : 24,000 km
- Annual Ave. Rainfall: 1200mm in NW and 5500mm in NE
- Trans-boundary rivers-57
 - 57 from India
 - 03 from Myanmar



Disasters in Bangladesh

	<u>Year</u>	<u>Disaster</u>	<u>Death</u>
◆ Flood	1970	Cyclone	300,000
◆ Tropical Cyclone	1988	Flood	2,373
◆ Storm Surge	1988	Cyclone	5,704
◆ Tornado	1991	Cyclone	138,868
◆ River Bank Erosion	1996	Tornado	545
◆ Drought	1997	Cyclone	550
◆ Earthquake	1998	Flood	918
◆ Arsenic	2004	Flood	747
◆ Fire	2007	Flood	1,071
◆ Landslide	2007	Landslide	129
	2007	Cyclone(SIDR)	3,406
	2009	Cyclone ('alia)	190
	2012	Landslide	119
	2012	Cyclone (Mahasen)	14

Flood/River Erosion, Cyclone and Earthquake Hazard Maps

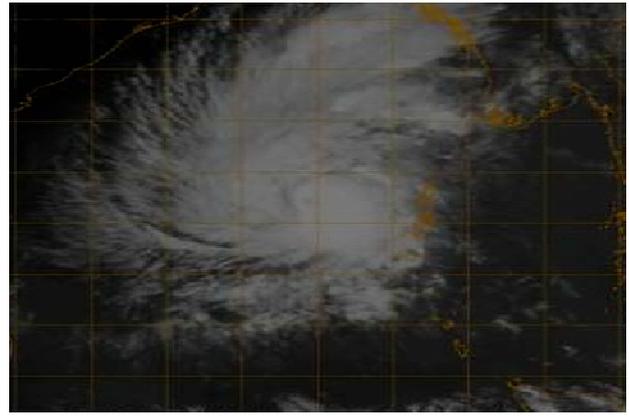


NATIONAL DISASTER CONTEXT

- Frequently hit by various natural disasters like Cyclones, Storm surges, Floods, Tornadoes, Droughts and other calamities.
- Monsoon flooding is an annual occurrence shaping lives and livelihoods.
- Almost 200 disaster events have occurred causing more than 500,000 deaths and leaving prolonged damage to livelihoods, infrastructure and the economy.
- Climate change is likely to cause significant impact in the form of severe floods, cyclones, droughts, sea level rise and salinity affecting agriculture, livelihoods, natural orders, water supply, health etc.
- The disaster vulnerable people demonstrates strong coping capacity to face the disaster challenges.



DISASTERS



DISASTERS

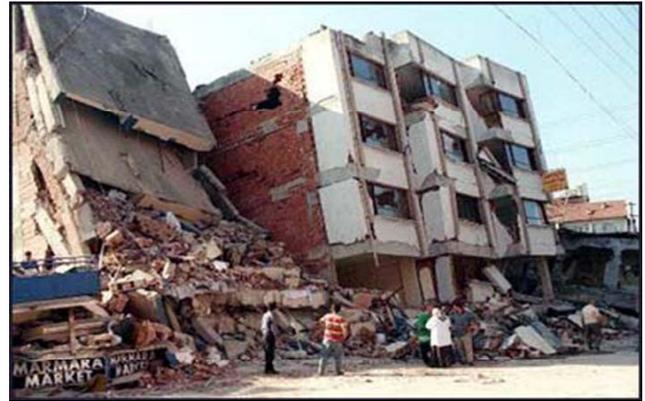


Cyclone Devastated Area





Mohammad Manirul Islam
ADRC Visiting Researcher FY2013E



Mohammad Manirul Islam
ADRC Visiting Researcher FY2013E



DISASTERS





Key Factors of Vulnerability

Global Warming and Climate Change

Geographical location

Dominance of floodplains

Low elevation from the sea

High population density

High level of poverty



Bangladesh DM History

- Soon after 1991 cyclone which caused huge damage and loss, the country has realized that the reactive response to disaster is no longer an option for Bangladesh
- The country has adopted a paradigm shift from reactive response to comprehensive DM approach that includes a number of strategies and mechanism/policy decision
- SOD formulated in 1997 – SOD recognized every bodies roles and responsibilities in DM and those are spelt out in the document. SOD also created and institutional
- CDMP was formulated in 2000 and launched in 2004
- Government also adopted a new DM vision
- A Bangladesh DM model has been created/developed and adopted – the model gave main emphasis on disaster risk reduction



GoB Vision on Disaster Management

To reduce the vulnerability of people, especially the poor, to the effects of natural, environmental and human induced hazards to a manageable and acceptable humanitarian level.

Mission of The MoDMR

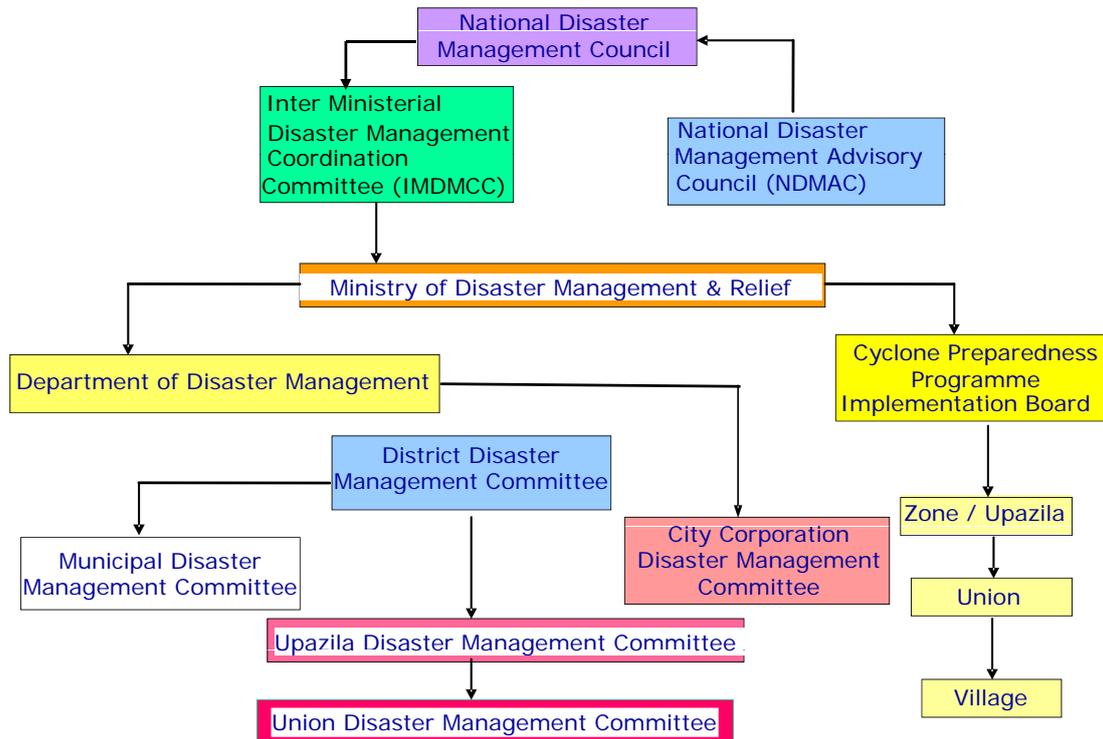
To bring a paradigm shift in disaster management from conventional response and relief to a more comprehensive risk reduction culture and to promote food security as an important factor in ensuring the resilience of the community to hazards.



GoB Capacity in Disaster Management

- Specialized **Ministry for Disaster Management & Relief**
- Creation of **Department Disaster Management** : shifting focus from relief to disaster management specially to risk reduction culture.
- **ECNEC Decision as part of Mainstreaming of Disaster Risk Reduction.**
- Issuance of **SOD (Standing Order on Disaster)**: establishing mechanisms and procedures for effective response at all levels during disaster emergency
- Initiate formulation of '**Comprehensive Disaster Management Framework**' involving all disaster stakeholders including donor community
- From 2000 onwards – introduction and **mainstreaming of risk reduction**

Disaster Management Institutions in Bangladesh



CDMP

CDMP is a strategic institutional and programming approach that is designed to optimize the reduction of long-term risk and to strengthen the operational capacities for responding to emergencies and disaster situations including actions to improve recovery from these events.

CDMP is now implementing programmes:

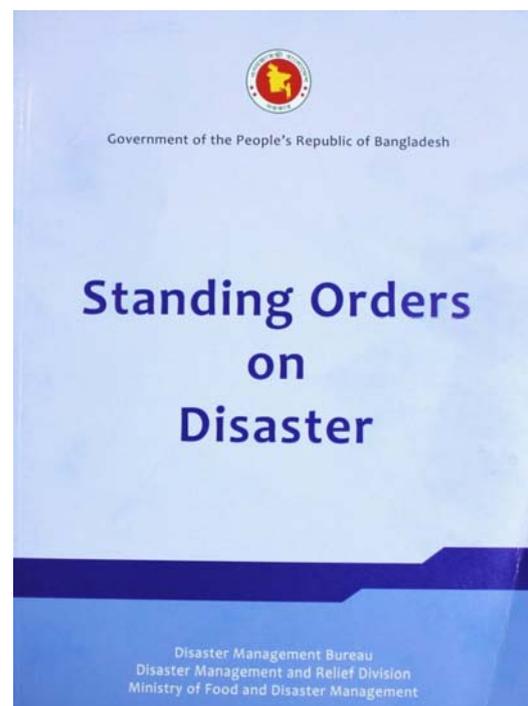
- Capacity building
- Partnership development
- Community empowerment
- Response management through its 12 components

DRR Institutions

- DDM
- DOE
- BMD
- CPP
- FFWC
- IWM
- SPARRSO
- SOB
- BARC
- DAE
- CEGIS
- AFD

Standing Orders On Disaster

- The standing order creates the opportunity to establish disaster management committee at every level.
- The standing orders for disaster management provide ample scope for the Government, NGOs and private sectors to think locally and plan need based program involving the community.





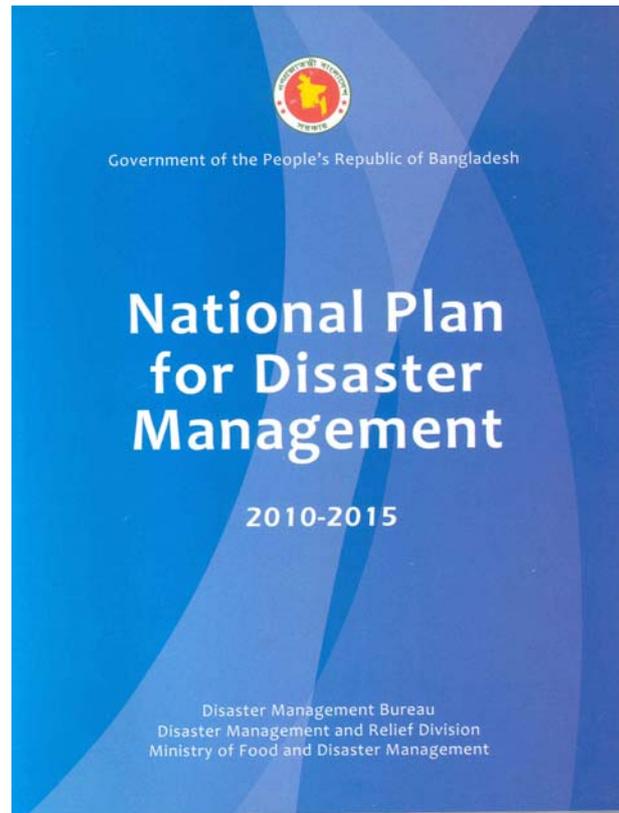
Committees under SOD

- National Disaster Management Council (NDMC)
- Inter-Ministerial Disaster Management Co-ordination Committee (IMDMCC)
- National Disaster Management Advisory Committee (NDMAC)
- Cyclone Preparedness Program Implementation Board (CPPIB)
- Disaster Management Training and Public Awareness Building Task Force (DMTATF)
- Focal Point Operation Coordination Group of Disaster Management (FPOCG)
- NGO Coordination Committee on Disaster Management (NGOCC)
- Committee for Speedy Dissemination of Disaster Related Warning/ Signals (CSDDWS)



Local Level DM Committee

- ❖ **District Disaster Management Committee (DDMC)** headed by the Deputy Commissioner (DC) to co-ordinate and review the disaster management activities at the district level
- ❖ **Upazila Disaster Management Committee (UZDMC)** headed by the Upazila Nirbahi Officer (UNO) to co-ordinate and review the disaster management activities at the Upazila level
- ❖ **Union Disaster Management Committee (UDMC)** headed by the Chairman of the Union Parishad to co-ordinate, review and implement the disaster management activities of the concerned union
- ❖ **Pourashava Disaster Management Committee (PDMC)** headed by Chairman of Pourashava (municipality) to co-ordinate, review and implement the disaster management activities within its area of jurisdiction
- ❖ **City Corporation Disaster Management Committee (CCDMC)** headed by the Mayor of City Corporations to co-ordinate, review and implement the disaster management activities within its area of jurisdiction.



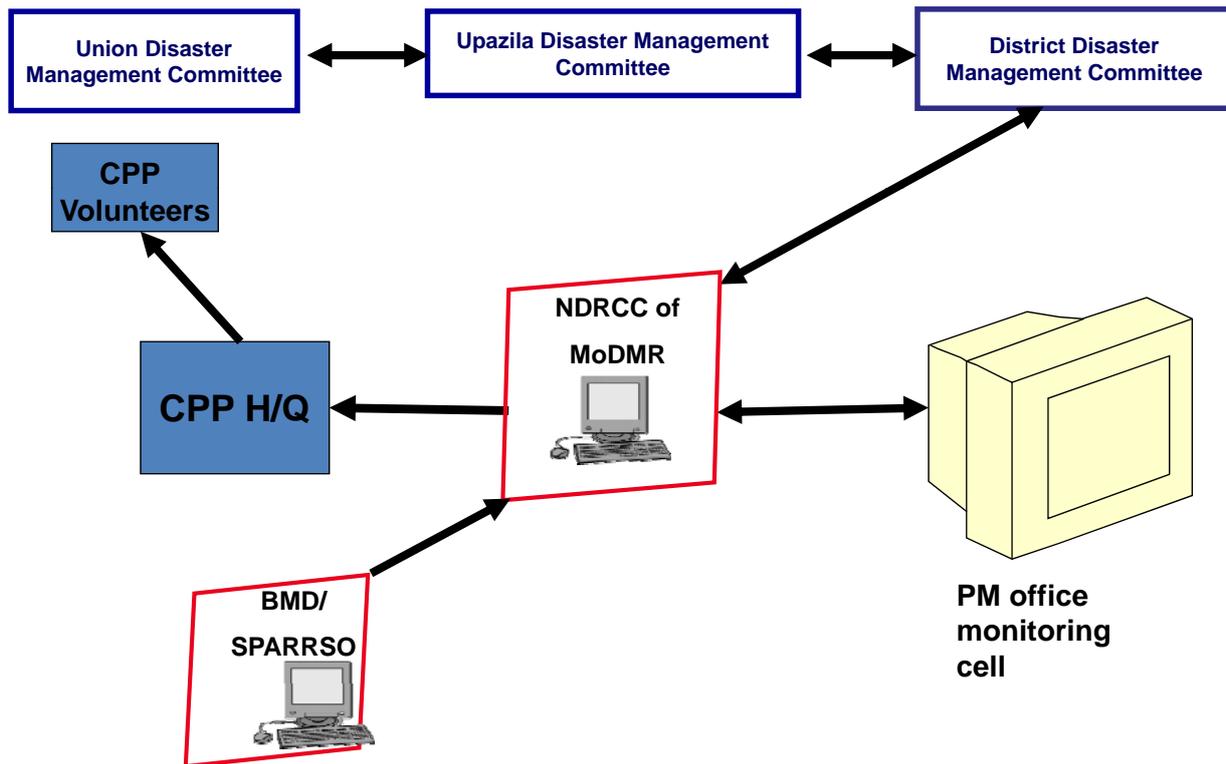
INFORMATION MANAGEMENT FOR COORDINATION

Disaster Management Information Centre (DMIC) has been established to support information management and coordination.

Objectives:

- ❖ Enhance disaster management coordination through improved facilities and information sharing capacities of DMIC during normal and emergency periods
- ❖ Improved capacity of information sharing during normal (non-emergency) periods
- ❖ EOC more effectively and efficiently coordinated during disasters

Information Flow during Emergency Response



CYCLONE PREPAREDNESS PROGRAMME (CPP)

Covered coastal area

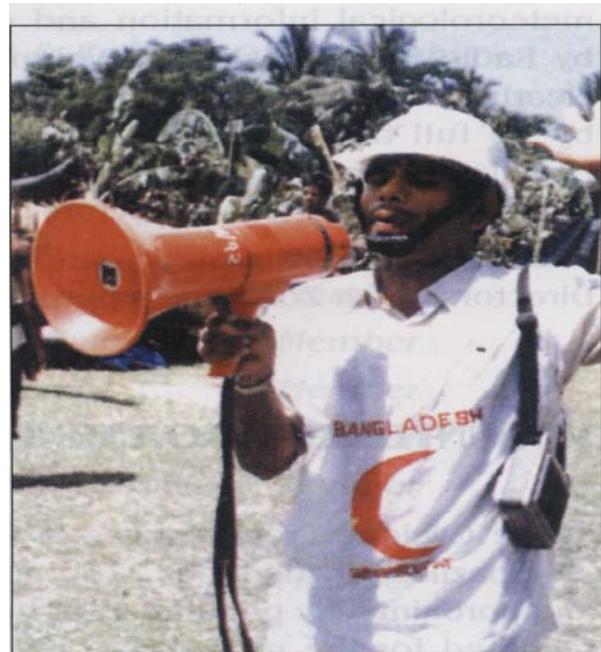
District- 13

Upazila- 37

Union- 321

Unit- 3281

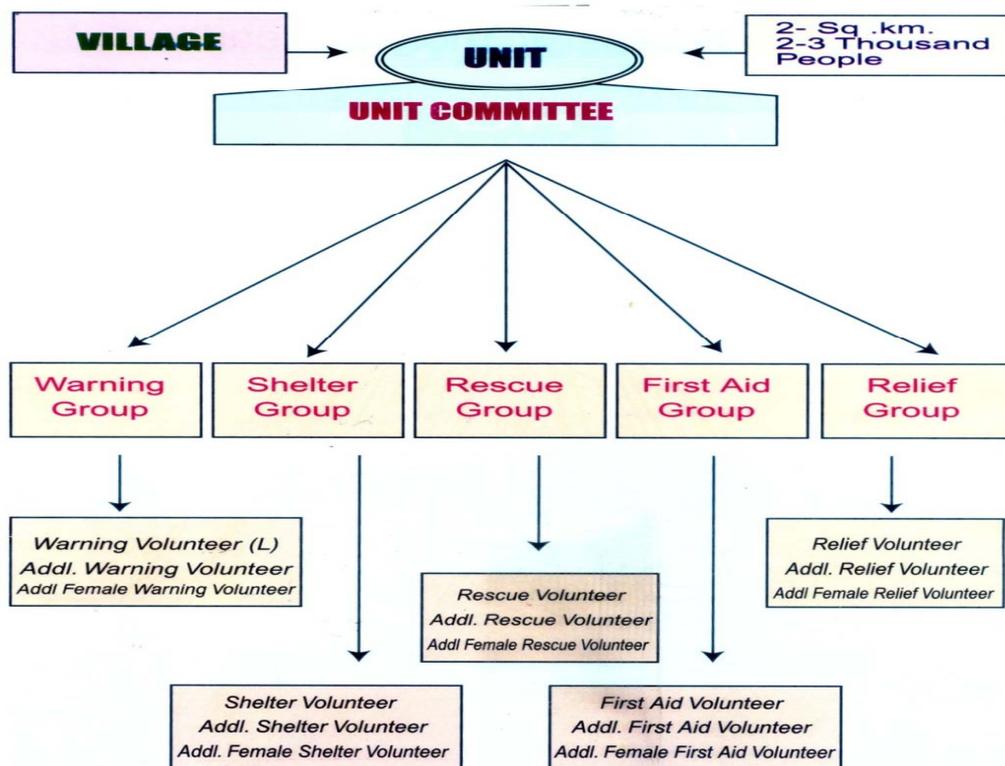
Volunteer- 49,215



The Main activities of Cyclone Preparedness Programme

- Disseminate cyclone warning signals to local residents;
- Assist people in taking shelter.
- Rescue victims affected by a cyclone.
- Provide first aid to people injured by a cyclone.

CPP is now a worldwide renowned organization for its' dedicated volunteers and effectiveness in emergency response during disaster especially in cyclone.





Early Warning Dissemination

BMD and FFWC generates Early warnings

Ensure receipt of warning signals of imminent disasters by all concerned officials, agencies and mass communication media

Publish daily bulletins during disaster period for foreign embassies and UN Missions

CPP plays vital roles disseminating EW to community level

Committees under SOD ensure EW dissemination at all level



Lines of Defense

- **Structural**
 - Cyclone shelters
 - Embankments
 - Polders, evacuation routes, *killahs*
 - Houses and building retrofitting (cyclone resilient)
- **Non structural**
 - Institutional preparedness
 - Warning system
 - Response preparedness
 - Community & civil society mobilization



Evacuation and Rescue Operation

Instruct local authorities for evacuation and rescue operations

Undertaking evacuation measures in risk areas by Local DM
Committees

49000 CPP Volunteers and the Community Leaders in the risk
areas play important roles in evacuation to shelters

AFD, CPP and DMC members take part in rescue operation

Emergency Responses by GO, NGOs and Others

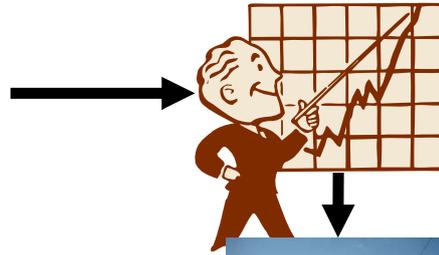


Immediate Assistance & Needs

- Search and rescue operation
- Supply of instant food
- Medicare
- Water and sanitation
- Humanitarian Assistance Programme
- Temporary shelter for displaced people
- Restoration of livelihoods
- Safety Net Programmes

Resource Mobilization System

MoDMR



Department Of
Disaster
Management

DC Offices



UNO Offices and
Union Parishad



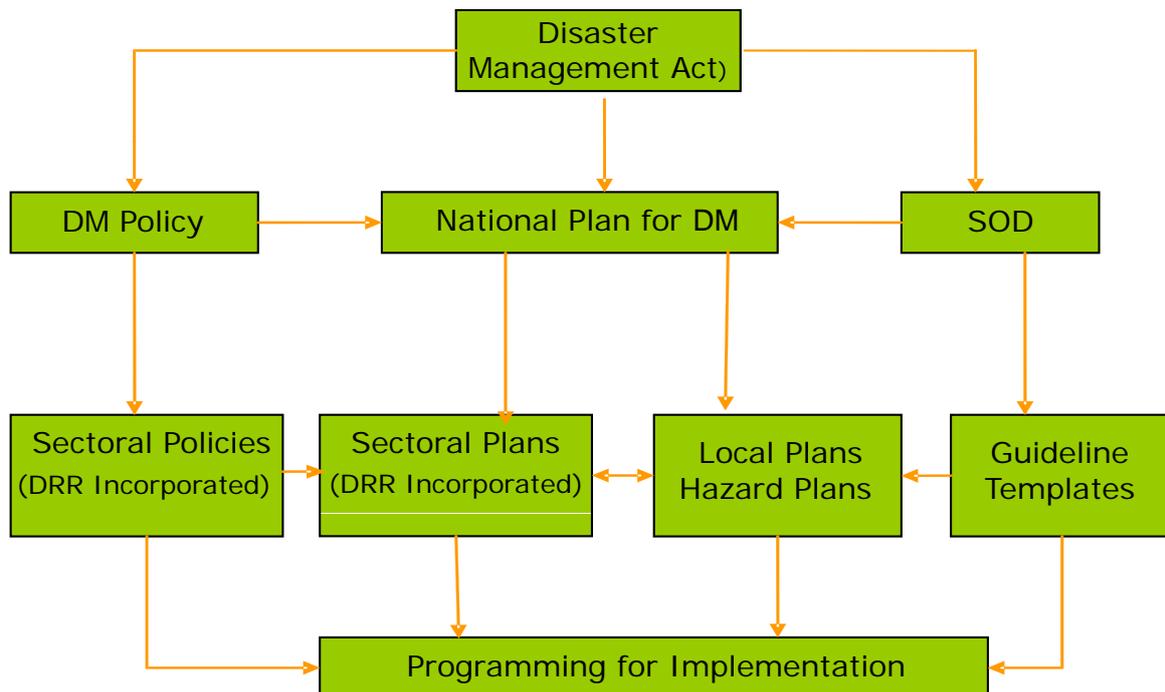
FIELD

Cyclone Shelter

- Total Number of Cyclone Shelters-2975
- Total Number of *Killas*- 137



Disaster Management Regulative Framework



INTERNATIONAL COOPERATION

- Chair, SDMC (SARRC Disaster Management Centre).
- Focal Point, HFA Progress Monitoring and Reporting.
- Development of close collaboration with Asian Disaster Preparedness Centre (ADPC) of Thailand, Asian Disaster Reduction Centre (ADRC) of Japan, Federal Emergency Management Agency (FEMA) of America, Institute of Disaster Risk Management (IDRM) of Philippines, Emergency Management of Australia etc.



Bangladesh

National progress report on the implementation of the Hyogo Framework for Action (2009-2011)

Priority for action 1

“Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation”

PROGRESS:

- ✓ A new ministry established to deal with disaster management affairs exclusively named Ministry of Disaster Management & Relief (MoDMR)
- ✓ National Disaster Management Plan (2010-2015) approved in April, 2010 linked with Vision 2021 and 6th Five Year Plan
- ✓ Revised Standing Orders on Disaster (SOD) , which explicitly outlined the DRR & CCA business for GO, NGO, public representatives & citizens
- ✓ National Disaster Management Act has been published in 2012



Priority for action 02

“Identify, assess and monitor disaster risks and enhance early warning”

- ✓ Updating of the risk assessment 12 guidelines in revised SOD
- ✓ Specific Sectoral Disaster Risk Reduction guidelines develops by CDMP
- ✓ Detailed risk assessment mapping for earthquake and tsunami for three cities Dhaka, Chittagong & Sylhet prepared and planned for new eight cities
- ✓ DRR budget now 4.5% of national Budget
- ✓ Climate Change Fund (CCF) US \$ 100m/Year
- ✓ Bangladesh Climate Change Resilience Fund (BCCRF) US \$ 110m
- ✓ Resource allocation increased to all line ministries towards DRR
- ✓ Development Partners support increases towards national DRR initiatives



Priority for action 03

“Use knowledge, innovation and education to built a culture of safety and resilience at all levels”

- ✓ Bangladesh DM Education Research and Training (BDMERT) established
- ✓ Key ministries, research institutions and civil society organization established website for sharing of disaster related knowledge
- ✓ DMIC established network with 64 Districts HQ and planned to expand to all 485 Upazilas by 2012
- ✓ BMD, FFWC, CPP, BTV, Radio, mobile phone companies & Other electronic and print media contributing significantly in dissemination of early warning and disaster Messages
- ✓ Disaster & climate risk information are included in text book from elementary to higher secondary level
- ✓ DRR education & special course in universities, institutions, armed forces div, civil service college etc



Priority 04

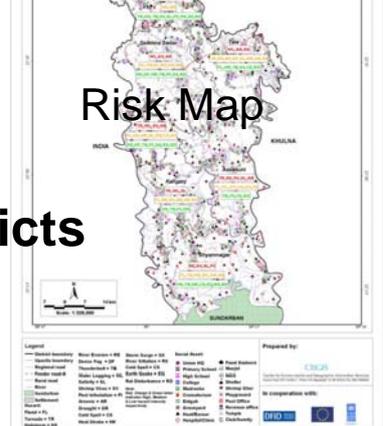
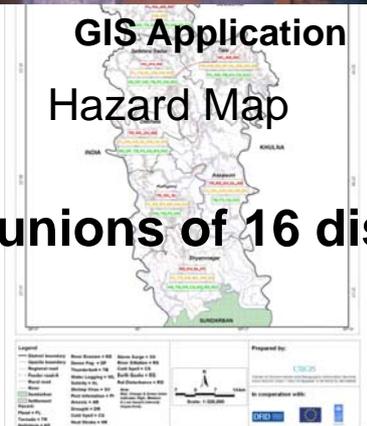
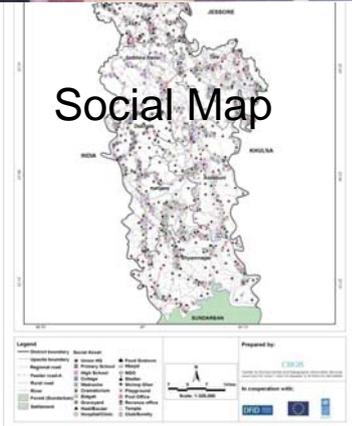
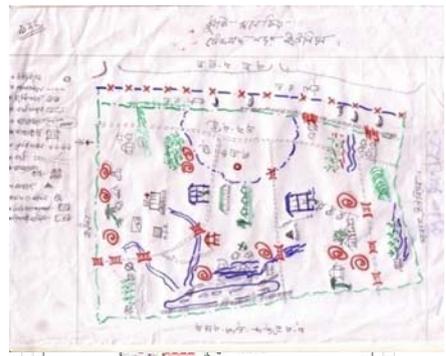
“ Reduce the underlying risk factors “

- ✓ National Adaptation Program of Action (NAPA) & Bangladesh Climate Change Strategy & Action Plan has already prepared
- ✓ Bilateral & multilateral donors exploring the possibilities of creating multi-donor trust fund to accelerate financing for research and adaptation
- ✓ Climate change Cell established and focal points identified for each ministries
- ✓ DRR & CCA link developed with the introduction of various program launched by different ministries i.e sustainable land management program, climate resilience crop varieties, cyclone resistance house etc
- ✓ Strong institutional arrangement for implementing social protection program
- ✓ National committee for updating national building code, land use plan
- ✓ Disaster risk reduction & EIA for all development projects

Priority for action 05
“strengthen disaster preparedness for effective response at all levels”

- ✓ National Plan for DM, DM Act, SOD mentioned tasks for all sectoral safety preparedness
- ✓ For existing structure, retrofitting techniques are being introduced to combat earthquake
- ✓ Mock drill guidelines for school and hospitals safety
- ✓ Earthquake contingency developed for AFD, FSCD, DGHS & DRR
- ✓ 30,000 members of local DMCs imparted training on comprehensive DM
- ✓ DMB established damage, loss and need assessment cell
- ✓ 60,000 volunteer are working 13 cyclone prone district
- ✓ Search and rescue equipment
- ✓ Adequate reserve of relief materials in each district

Community Risk Assessment (CRA) Process



12 unions of 16 districts

Risk Reduction Interventions Come-out through CRA



Construction of Community Shelters



Renovation of existing shelter



Construction of road to go to Shelter



Community people raised the ground height of the village and protected the entire village with bamboo and Chailla



Seed distribution in flood affected area



Construction of dug-well for drinking water

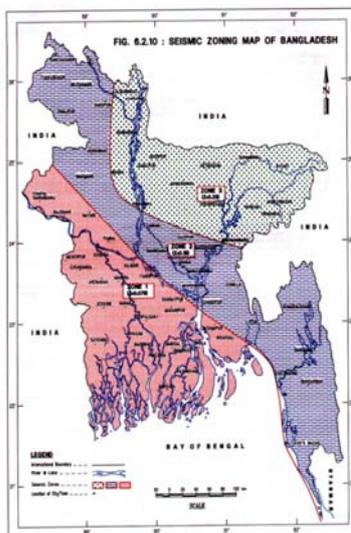
What Made the Difference

- ✓ Improvement of disaster risk reduction measures including early warning system.
- ✓ Active leadership role in the field level Disaster Management Committees
- ✓ Coastal afforestation projects
- ✓ Cyclone and Flood shelters
- ✓ Embankments in Coastal Belts(3433km)
- ✓ 18000 Urban Volunteers.
- ✓ Cyclone Preparedness Programme (CPP) having 49,000 volunteers.

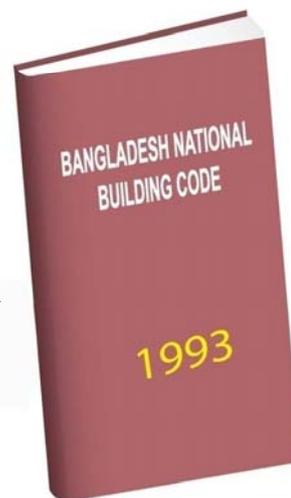
Comparison

Cyclone	Population Death
1970	>300,000
1991	>140,000
SIDR 2007	3,406
Aila 2009	190
Mahasen 2013	16

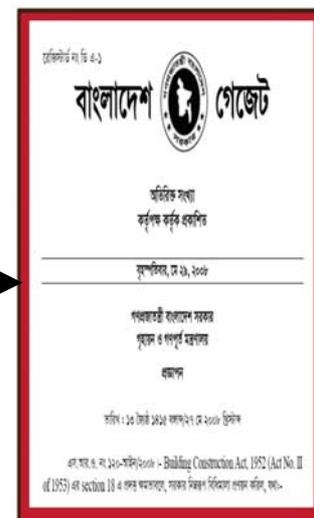
Vulnerability Mapping for Earthquake



Seismic Zoning Map of Bangladesh

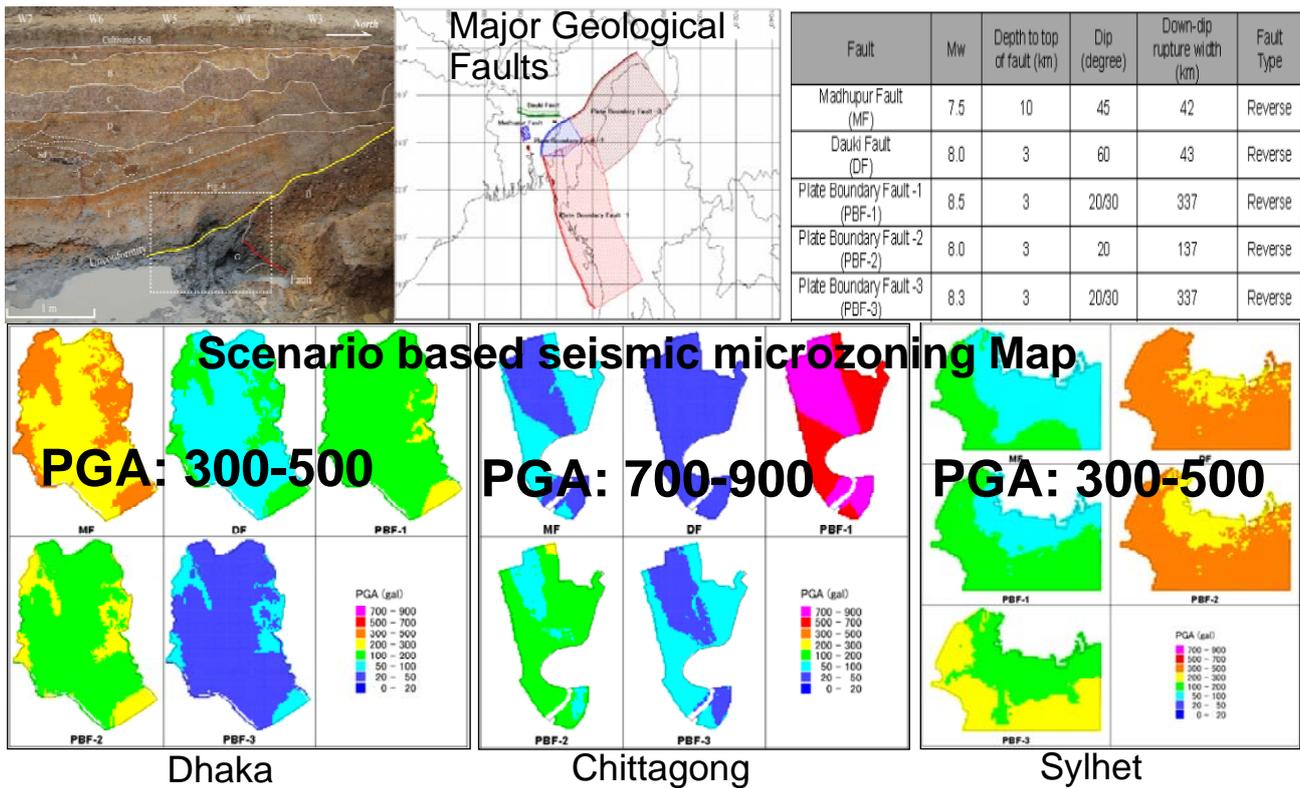


National Building Code



Regulations endorsed by parliament on Nov. 2006 for implementing building code

SEISMIC MICROZONING MAP OF MAJOR CITIES UNDER CDMP



Bangladesh: The Good Practices

- Established the DM Regulatory Framework – identified the actors and their roles related to DRR and Emergency Response
- Professionalizing the DM system – inclusion of disaster and climate risks in education curricula at primary, secondary and tertiary levels
- Introduction of a bottom up approach in development planning (CRA and RRAP)
- Seismic vulnerability mapping and contingency planning (ADPC acted as a technical partner)
- Information sharing through DMIC network from central to community level (ADPC acted as a technical partner)
- Promoted volunteerism both in urban and rural (ADPC acted as a technical partner)



National Priorities for 2011-2020

- Implementation of the National Plan for Disaster Management (2010-2015)
- Strengthen institutional capacity of all actors as per the revised SOD
- Coordinated social safety net to reduce vulnerable population
- Strengthen mechanisms for sectoral and local level implementation of DRR/CCA measures



Regional Priorities for 2011-2020

- Coordination of regional agendas for global representation and national level leveraging
- Establishing/utilization of common resources/mechanisms for enhancing national risk reduction coordination
- Establishing a regional response plan/mechanism for catastrophic disasters



Achieving the Cultural Shift!!

- Mainstreaming Disaster Risk Reduction
- Developing medium to long term milestones
- Developing broad and logically sequenced PPRR strategies that target all levels
- Capacity Building
- Policy Reform
- Legal Framework



Risk Reduction Challenges

- Early warning with adequate lead time in community language;
- Integrated framework for Earthquake preparedness and post-Earthquake response.
- Resilient embankment, green belt along the coast;
- Expansion of disaster management information network
- Mainstreaming disaster risk reduction and climate change adaptation in development process
- Strengthening linkage with regional and international organizations involved in DRR in line with HFA.
- Mainstreaming disaster risk reduction and climate change adaptation in development process



Research Topic

An Integrated Framework for the Earthquake Preparedness: An Assessment of the Applicability of Japanese Experience in Bangladesh.



Background of Research

- Bangladesh, a densely populated country in the World.
- Tectonically, Bangladesh stands on the junction of three tectonic plates - the Indian plate, the Eurasian plate and the Burmese micro-plate.
- The north and north-eastern parts of Bangladesh are the most active seismic zones.
- Two major earthquake caused severe damage.
- About 20 moderate earthquakes occurred in Bangladesh, and surrounding areas in the years 1833 to 1988.
- Recently every years Bangladesh has experienced 5.0 to 5.5 magnitude earthquakes.



Justification of Research

- In Bangladesh, Earthquake are still unreachable at the point of preparedness, emergency response and risk reduction.
- Nation shall have time bound implementable National Earthquake Risk Reduction Plan.
- The occurrence of earthquakes in Bangladesh and neighbouring regions are poorly documented. Few records of them are available in published and unpublished literatures.



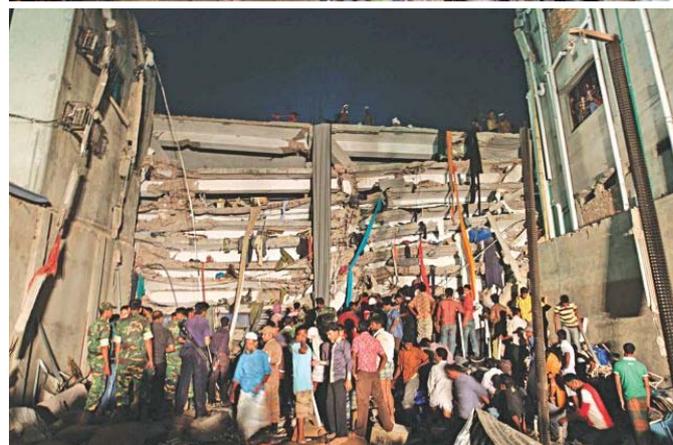
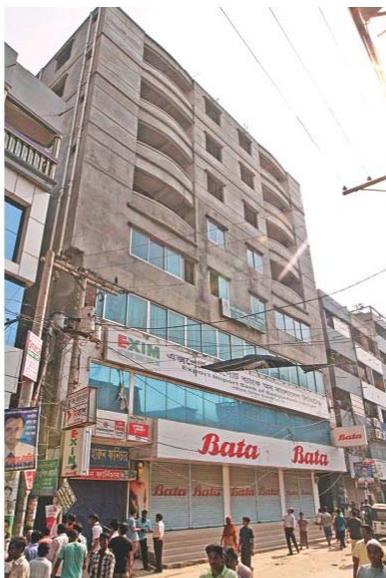
Specific Aims of this Research

- To understand tools and processes on earthquake preparedness at a national and local level in Japan.
- To review response models and ways of working with other key responders.
- To asses applicability of Japanese experience on earthquake response and recovery in Bangladesh.
- Replicating Japanese vast experience on earthquake risk reduction in Bangladesh.
- To prepare recommendations for improvement of the National Earthquake Risk Reduction Plan in Bangladesh.

Expected Outcomes

- The research will provide necessary information and guidelines to facilitate tools, processes and models on managing earthquake;
- identify inadequacy and gaps of earthquake management and preparedness in Bangladesh;
- pave the way to find specific mechanisms to apply Japanese experience in Bangladesh regarding earthquake management preparedness;
- introduce an integrated framework for the earthquake preparedness.

Rana Plaza Experience





Mohammad Manirul Islam
ADRC Visiting Researcher FY2013E



Thank You