Disaster Management: Bangladesh Perspective
Floods
Asia and Pacific is the world’s most disaster-prone region

A person living in the region is 4 times riskier than those in Africa and 25 times than in Europe or North America.
Bangladesh suffers from

• Increasingly frequent and devastating natural calamities due to its –
  ✓ Geographical location
  ✓ Environmental situation
  ✓ Climate change
  ✓ Population density and
  ✓ Development stage.

About 68% of the country is vulnerable to flood

25 to 30% of the area is inundated during normal flood

Context

- Ranks globally among the most climate vulnerable
- Fifth rank in the world risk index 2012
A Land of Natural Disasters

Vulnerability due to Natural Disasters

Legend:
- International boundary
- District boundary
- Rivers
  - Normal Flood
  - Flash Flood
  - Severe drought prone area
- Surge Height above 1 meter
- Surge Height less than 1 meter
- 1 ppt salinity isoline

Bay of Bengal
Bangladesh rivers receive runoff from a catchment of 1.72 million sq-km, around 12 times its land area.
Climate Change Impact: Observed in Bangladesh

- **Population Vulnerable to Impact of Climate Change**
  - **Coastal Zone: Cyclone, Salinity**
    - 35.8 million (28% of total population), among these
      - 72 offshore islands with an area of 4200 km² and over 3 million people are extremely vulnerable.
  - **Haor Basin: Flash Flood**
    - 20 million population

Bangladesh looses 10,000 ha land annually during last 30 years due to river bank erosion

Displacement about 68,000 population/yr
# Earthquake

<table>
<thead>
<tr>
<th>Katmandu</th>
<th>Dhaka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area Katmandu valley 570 Sq Km</td>
<td>Total area Dhaka City 360 Sq Km</td>
</tr>
<tr>
<td>Total Population 2.5 million</td>
<td>Total Population 16 million</td>
</tr>
<tr>
<td>Building 2.2 million (approx)</td>
<td>Building 0.4 million (approx)</td>
</tr>
<tr>
<td>Cylinder Gas</td>
<td>Pipe Gas</td>
</tr>
<tr>
<td>Less soft soil area</td>
<td>Large soft soil area (65%)</td>
</tr>
<tr>
<td>More open spaces</td>
<td>Less open spaces</td>
</tr>
<tr>
<td>No Industrial area</td>
<td>Have number of Industrial area (Garments factory, chemical factory, boiler etc.)</td>
</tr>
</tbody>
</table>
Disaster Management Regulative Framework

DM Policy

National Plan for DM

SOD

Sectoral Polices
DRR Incorporated

Sectoral Plans
DRR Incorporated

Local Plans
Hazard Plans

Guideline Templates

Programming for Implementation
Legislation and policy

National Plan for Disaster Management
2010-2015

Standing Orders on Disaster
Cell Broadcasting (CB)
Early warning dissemination in flood prone and cyclone prone through Cell Broadcasting (CB) has been Successful.

IVR (Interactive Voice Response) Weather, flood forecasting and early warning for river port through IVR.

SMS
SMS service to disseminate disaster early warning during and after disaster instruction will be circulated to officials of relevant disaster management.
Capacity building in early Flood warning system

Flood Forecasting & Warning Step by Step

- 2012: Strengthening of FFWC with CDMP-II support
- 2009: Expansion of area coverage
- 1998 & 2007: Two big FLOODS
- 1996: Super Model
- 1992: Model based Flood Forecast
- 1987-88: Two big FLOODS
- 1972: FFWC established

Lead time in days:
- 54 points on 29 rivers: 5-days
- 38 points on 21 rivers: 3-days
- 30 points: 2-days
- 16 points: 1-day
- 1-day
Real Time Data Collection Stations:

- WL : 86
- Rainfall : 54

• Forecasting at : 50 locations
Community-based Early Warning (Cyclone Preparedness Programme)

A key factor to reducing cyclone-induced life loss from 300,000 in the 70’s to today’s negligible number

- Established in 1970’s at the request of UN General Assembly to the IFRC
- It has been institutionalised as part of national disaster management system
  - community education and awareness agents
  - Warning broadcasters
  - Evacuation facilitators
  - Rescue and relief frontlines
Volunteer

- Database
- Scouts
- BDRS
- Ansar and Village Defense (Para Military)
- Bangladesh National Cadet Core
- CPP
Exercise
Mainstreaming DRR

Education
- DRR issues incorporated in 31 text books of class III to XII
- Supplementary learning materials on DRR
- 18 million students reached through National Curricula Textbook Board

Agriculture
- Flood, Salinity tolerant crop varieties etc.
- Continue improvement in food production

Health Sector
- Improve medical and hospital preparedness
Major Achievements

• Shifted the paradigm from response/relief-oriented to comprehensive approach and risk reduction culture
• Pro active community based early warning system
• Disaster Management Committee system at all level
• Wider social safety-net programme
• Vibrant Development partner/NGO
• Academic Sector:
  • Graduate Courses/Institutions
  • Research
Major Achievements

• Improvement of disaster risk reduction measures, early warning system

• Coastal afforestation, Cyclone and Flood shelters

• Regular Exercise

• Polders & Embankment in the coastal belt

• River embankment for flood

• Evacuation routes, killahs (High Land)

• Hyogo Framework for Action (HFA) 2005-2015

• Sendai Framework
Four Priorities of Sendai

- Understanding disaster risk
- Strengthening disaster risk governance to manage disaster risk
- Investing in disaster risk reduction for resilience
- Enhancing disaster preparedness for effective response, and to «Build Back Better» in recovery, rehabilitation and reconstruction
Looking forward

✓ Develop new generation of early warning system in line with best practices and with use of advanced technology.

✓ Develop the use of simulations exercises to regularly stress-test emergency response and coordination mechanisms and continue to raise staff awareness and skills.

✓ Optimize supply-chain planning (from planning to sourcing and tracking of relief items) to improve emergency response

✓ Enhanced focus on disaster preparedness for urban disasters (including earthquakes).

✓ Expand evaluations and lessons learning of disaster response and share lessons and experience in related regional and international forums as well as Development Partners, WFP, UNDP etc.

✓ Development Capacity for mega disasters
Forecast-Based Emergency Preparedness - Climate Risks Project
Forecast-based financing – workshop Geneva Dec 2015
OBJECTIVES

- Identify priority climate risk scenarios with the Government and assess effectiveness of EWS & SODs and identify gaps in preparedness
- Enhance/support national emergency preparedness capacity to better response to disasters (Climate induced) – Operational oriented
Forecast-Based Emergency Preparedness Project
Bangladesh

Areas Prone to Floods, Cyclones and Riverbank Erosion

Legend
- District boundary
- Thana boundary
- Main river

Cyclone risk area
- High risk
- Medium risk
- Low risk

Flood and river bank erosion
- Flash flood
- Normal flood
- Riverbank erosion

BANGLADESH

Sylliet
Cox's
Khulna
Floods
Cyclone
Cyclone
Forecast-Based Emergency Preparedness Project
Bangladesh

Emergency Preparedness and Response

Climate risk scenarios

Staff development Coordination & SC Optimization

Trainings & Simulations Planning & Operational support Research, Studies & innovation

Enhancing Emergency Response to Disasters
Forecast-Based Emergency Preparedness Project
Bangladesh

Key activities

• Identify areas of improvement in preparedness – EWS & Standing Orders on Disaster (SOD) linked to extreme weather forecasts (floods, cyclones)

• Complete and analysis of emergency Supply Chain response for large scale emergencies and identify areas of improvement

• Identify thresholds and resources to trigger actions (SOPs?)

• Improve supply chain response to natural disasters

• Deliver trainings and simulations for enhancing staff skills to better response to disasters

• Activities will concentrate on building the capacity of the central level (MoDMR, DDM) and some Districts prone to disasters.
Forecast-Based Emergency Preparedness Project
Bangladesh

Way forward & Timeline

2015-Mars 2016
• Identify priorities scenarios with the Government stakeholders
• Deliver climate risk simulations for identifying areas of improvement

2016
• Conduct a study on EWS and SODs systems and identify thresholds for action
• Improving SODs/SOPs for Climate risks forecasts
• Improving supply chain response to disasters

2017
• Finalizing implementation of activities