Overview of Disaster Management in Bangladesh

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Ministry of Disaster Management & Relief
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
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
Major Hazards in Bangladesh

- Flood
- Tropical Cyclone
- Storm Surge
- Tornado
- River Bank Erosion
- Drought
- Earthquake
- Arsenic
- Fire
- Landslide
<table>
<thead>
<tr>
<th>Year</th>
<th>Disasters</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>Cyclone</td>
<td>10,00,000</td>
</tr>
<tr>
<td>1988</td>
<td>Flood</td>
<td>2,373</td>
</tr>
<tr>
<td>1988</td>
<td>Cyclone</td>
<td>5,704</td>
</tr>
<tr>
<td>1991</td>
<td>Cyclone</td>
<td>138,868</td>
</tr>
<tr>
<td>1996</td>
<td>Tornado</td>
<td>545</td>
</tr>
<tr>
<td>1997</td>
<td>Cyclone</td>
<td>550</td>
</tr>
<tr>
<td>1998</td>
<td>Flood</td>
<td>918</td>
</tr>
<tr>
<td>2004</td>
<td>Flood</td>
<td>747</td>
</tr>
<tr>
<td>2007</td>
<td>Flood</td>
<td>1,071</td>
</tr>
<tr>
<td>2007</td>
<td>Landslide</td>
<td>129</td>
</tr>
<tr>
<td>2007</td>
<td>Cyclone (SIDR)</td>
<td>3,406</td>
</tr>
<tr>
<td>2009</td>
<td>Cyclone (Alia)</td>
<td>190</td>
</tr>
<tr>
<td>2012</td>
<td>Landslide</td>
<td>119</td>
</tr>
<tr>
<td>2013</td>
<td>Cyclone (Mahasen)</td>
<td>16</td>
</tr>
<tr>
<td>2015</td>
<td>Cyclone (Komen)</td>
<td>1</td>
</tr>
<tr>
<td>2016</td>
<td>Cyclone (Roanu)</td>
<td>27</td>
</tr>
</tbody>
</table>
Floods
Drought

About 25% of the country suffer water stress in dry season
Bangladesh looses 10,000 ha land annually during the last 30 years due to river bank erosion. Displacement about 68,000 population/yr.
Building Collapses
Rana Plaza Experience
Fire Incidents
Landslide:
- In Bangladesh, landslides are mostly triggered by heavy rainfall.
- Underlying causes of landslide include deforestation, hill cutting, unregulated development work.
- Recently landslide has emerged as a major hazard.
- Large and small landslides occur almost every year.

Earthquake:
- The north and northeastern parts of Bangladesh are the most active seismic zones.
- The tectonic set-up of three converging lithospheric plates with the presence of seismogenic faults makes vulnerable to earthquake.
- Bangladesh faced major earthquakes and faced moderate shakes every year.
Sediment Deposition

Scarcity of surface water
Loss of Navigability
Less ground water recharge
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.
Government of the People's Republic of Bangladesh

Disaster Management Institutions in Bangladesh

National Disaster Management Council

Inter Ministerial Disaster Management Coordination Committee (IMDMCC)

National Disaster Management Advisory Council (NDMAC)

Ministry of Disaster Management & Relief

Department of Disaster Management

Cyclone Preparedness Programme Implementation Board

District Disaster Management Committee

City Corporation Disaster Management Committee

Municipal Disaster Management Committee

Upazila Disaster Management Committee

Union Disaster Management Committee

Zone / Upazila

Union

Village
Legal Framework for Disaster Management

- Disaster Management Act 2012
- Disaster Management Policy
- Standing Orders on Disaster
- National Plan for Disaster Management
- Earthquake Contingency Planning
Disaster Management Regulative Framework

Government of the People’s Republic of Bangladesh

Disaster Management Act

DM Policy
National Plan for DM
SOD

Sectoral Policies (DRR Incorporated)
Sectoral Plans (DRR Incorporated)
Local Plans Hazard Plans
Guideline Templates

Programming for Implementation
# Early Warning Institutional Mechanism

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Dedicated institution according to the Government of Bangladesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclone, Storm, Drought, Cold and Hot wave</td>
<td>Bangladesh Meteorological Department (BMD)</td>
</tr>
<tr>
<td>Riverine Flood, Flash Flood</td>
<td>Flood Forecasting and Warning Center (FFWC)</td>
</tr>
<tr>
<td>Agro Forecasting</td>
<td>Bangladesh Meteorological Department (BMD)</td>
</tr>
<tr>
<td>Epidemic Advisory</td>
<td>Director General of Health Services</td>
</tr>
</tbody>
</table>
Early Warning Dissemination Process

By IVR, Phone, Fax, email, SMS, Website & Social networking media

Government of the People’s Republic of Bangladesh

Prepared by Mohammad Manirul Islam, Senior Assistant Secretary, MoDMR
Early Warning Dissemination

Cell Broadcasting (CB)
- Piloting of early warning dissemination in flood prone Sirajganj and cyclone prone Cox’s Bazar through Cell Broadcasting (CB) has been Successful.

IVR (Interactive Voice Response)
- Initiative have been taken to weather, flood forecasting and early warning for river port through IVR. The Service is available through all mobile subscribers.
- IVR Hot Line - 1090

SMS
- SMS service to disseminate disaster early warning during and after disaster instruction will be circulated to officials of relevant disaster management.
Community-based Early Warning

- Established Cyclone Preparedness Programme (CPP) by Father of the Nation Bangabondhu Sheikh Mujibur Rahman
- It has been institutionalized as part of national disaster management system
- A key factor for reducing cyclone-induced life loss from 500,000 in the 70’s to today’s single number
Cyclone Preparedness Programme (CPP)

- Community education and awareness agents Warning broadcasters
- Evacuation facilitators
- Rescue and relief frontlines
Early Warning Dissemination by CPP

TELECOMMUNICATION NETWORK

DISSEMINATION OF CYCLONE WARNING SIGNALS

HQ CYCLONE PREPAREDNESS PROGRAMME

SWC (BMD)

RADIO BANGLADESH

HF

VHF

HF+VHF

ZONAL OFFICE

ZONAL OFFICE COX'S BAZAR
ZONAL OFFICE CHITTAGONG
ZONAL OFFICE NOAKHALI
ZONAL OFFICE BHOLA
ZONAL OFFICE BARSAL
ZONAL OFFICE BARGUNA

UPAZILA

A A A A A A A A

B B B B B B B B

C C C C C C C C

D D D D D D D D D D D D D D

VECTOR FOR MESSAMONE SIREN
P. A. SYSTEM

DIRECT CONTACT

VHF, TEL.

HF

H.F.
Community-based Early Warning

Practicing and Promoted volunteerism both in urban and rural

- Scouts
- Urban Volunteer
- Ansar and Village Defense (Para Military)
- Bangladesh National Cadet Core
- Flood Volunteers
Cyclone Tracking for Warning for Cyclone

[Map showing Cyclone Tracking and previous position projected path with symbols for different storm categories and zones.]
This river monitoring system, which’s used in Japan and some other countries including Bangladesh, enables you to observe remote locations and detect signs of disaster like flood. It will be helpful for early warning to mitigate damages from disaster.
River Monitoring & Early Warning

- Solar panel
- Main system:
  - Camera
  - Communication module
- Battery box:
  - Solar charge controller
  - Battery

Can be customized to add other optional sensors:
- Water level sensor (Rader type)
- Water flow sensor
- Weather sensor
- Rain gauge
Deployment in Bangladesh

Sylhet City

Kanaighat
RETURN PERIOD-WISE OUTPUTS

Flood Assessment, Modelling and Mapping being done return period-wise

• 25-year return period
• 50-year return period
• 100-year return period
• 150-year return period

Ultimate output will be union-wise/upazila-wise maps on flood prone areas of Bangladesh
Flood inundation map for 100 year return period

Legend
- Country Boundary
- Division Boundary
- District Boundary
- River/Sea/Lake
- Sundarbans

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- Country Boundary
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Flood Depth (m)
- Not Affected
- 0.0 - 1.8
- 1.8 - 3.6
- > 3.6

Government of the People's Republic of Bangladesh
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
Way Forward

- Automation of Data Collection & Processing
- Increasing Lead Time (may be seasonal scale)
- Introduction of multi-hazard early warning system
- Dissemination improvement at community level
- Improvement of Flood Map Generation
- Capacity development of NDRCC, BMD & FFWC (persons, skill and equipment)
- Cooperation, knowledge & skill sharing at REGIONAL level
THE FASTEST GROWING
REFUGEE CRISIS

The latest influx in last two months (Since Aug 25)
603,000

The number is rising every day as exodus continues

320,000
Children in need of humanitarian assistance

20,770
Orphans, among the new arrivals

TOTAL ROHINGYA REFUGEES NOW
815,000

“Bangladesh is not a rich country... but if we can feed 360 million people, another 500 or 700,000 people, we can do it.”

PRIME MINISTER SHEIKH HASINA

“As we witness the unfolding horror we pray for you [Tam 164] to be courageous and resilient. Again... for you to speak out for justice, human rights and the safety of your people.”

ARCHBISHOP DESMOND TUTU

“The situation has spiralled into the world’s fastest developing refugee emergency, a humanitarian and human rights nightmare.”

UN SECRETARY GENERAL ANTONIO GUTERRES

3,000 acres of forestland allocated for setting up new camps.

257,839
Refugees registered till Oct 22

$434m needed for UN humanitarian response over the next six months

$340m received from countries and international organisations till yesterday

Textbook Case of Ethnic Cleansing

With the exodus streaming into Bangladesh fleeing a brutal crackdown in Myanmar’s Rakhine State, the UN rights body chief denounced the atrocities as a “textbook example of ethnic cleansing.” There have been multiple reports of security forces and local vigilantes burning Rohingya villages, shooting unarmed civilians and raping women. Myanmar’s de facto leader Suu Kyi and the military keep facing the condemnation of the global community which calls for an end to the violence against one of the most persecuted minority groups in the world. The Bangladesh government and the local community in Cox’s Bazar bordering Rakhine State have been widely praised for the response to the unprecedented influx, especially for keeping the border open. However, a lot of challenges lie ahead as the registration of the refugees doesn’t look like something that’s going to happen anytime soon.
Thank You All