Bangladesh
An Overview of Sea Level Monitoring Activities
Scopes

- Introduction
- Sea Level Station Monitoring Network
- Gauge Technology
- Use And Products
- BN Aspect
- Sources
- Conclusion
Geographical Location of Bangladesh

- Bangladesh is located at the northern tip of the Bay of Bengal. Natural disasters are common here, especially along its 710 km coast.
- The long continental shelf, shallow bathymetry, complex coastal morphology with many shoals & islets and long tidal range are well known feature for gathering highest storm surge.
- Flood and cyclone related losses all most every year create a major set-back for the sustainable development of the country.
- BMD is only Government designated organization for the provision of forecasts/warnings of all natural disasters including earthquake and tsunami to the Government and public for preparedness and mitigation.
Common Natural Disasters in Bangladesh

- Tropical Cyclones and Associated Storm Surges
- Nor’westers and Tornadoes
- Floods, Heavy Rainfall and Landslides
- Drought, Cold wave and Heat wave
- River Erosion and
- Occasionally Earthquakes
The active Andaman-Nicobar fault system is often capable of generating tsunami waves and Chittagong-Teknaf Coastline can be struck by the tsunami.

Due to the presence of Swatch of no ground Sundarban-Barisal coastline is vulnerable to local tsunamis.

Barisal-Sandwip Estuarine Coastline can be attacked by local tsunamis rather than regional/global tsunamis due to the presence of numerous islets and shoals in the upper regime of the continental shelf.
Tsunami Warning System in BMD

- Currently BMD has no system available for issuance of tsunami warning to the mariners and coastal zone users.

- BMD issues Tsunami warning / Watch message/bulletin after receiving tsunami related information from RTSP and RIMES and disseminates to the mariners and coastal zone users using the existing dissemination link of cyclone.

- Communication capability for handling the multi-hazard disasters including earthquakes/tsunamis has already been upgraded with the help of WMO.
Present Sea Level Monitoring Network
Overview Of The Gauge Technology

Gauge station:
- Total: 53 (52 is operated by BIWTA and 1 is by BN)
- Automatic: 27
- Acoustic type: 06
- Manual: 10

Software:
Processing software was provided by Institute of oceanography science, UK.
Analysis & prediction: Geo-tide & tide analysis (Geo-matrix company)
Primary use of tide gauge and tide data

As a government mandated organization, BITWA uses the network -

- To collect 24 h water level information
- Tide forecast
- Range of highest high water
- Range of lowest low water
- Range of everyday water level
- Sea level rise information and
- To produce Hydrographic charts.

Currently BMD is using a tide table published by BIWTA
Sea Level Activities: BN Aspect

- The Bangladesh Navy Hydrographic Department was formed in 1980.
- The BN has invested heavily in survey vessels mainly.
- General Interest of BN is hydrographic survey operation.
Tide Gauges Maintained by BN

- 02 Tide gauges at Chittagong
- 01 Tide gauge at Bagerhat
- Other Sources
GPS Network of BN

- Total 02 DGPS station
- Planning to establish more soon
Primary Use and Products

- Primary use is conducting Hydrographic Survey ops.
- Produces Charts (BN and Intl.) and tide tables.
Conclusion

1. Storm surge induced by tropical cyclone is one of the major threats to the life and property of the coastal regions of Bangladesh.

2. Bangladesh coast may be severely vulnerable if tsunamigenic earthquake occurs north of 15° N latitude.

3. Lead time of local tsunami is very short (only a few minutes).

4. BMD needs real time tide gauge information for increasing coast monitoring capacity and for improving more accuracy of the forecast for storm surge and floods.

5. Also BMD will be able to take appropriate decision for the case of issuing tsunami warning.
Thank You