

Bangladesh

An Overview of Sea Level Monitoring Activities

Presented by-

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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.

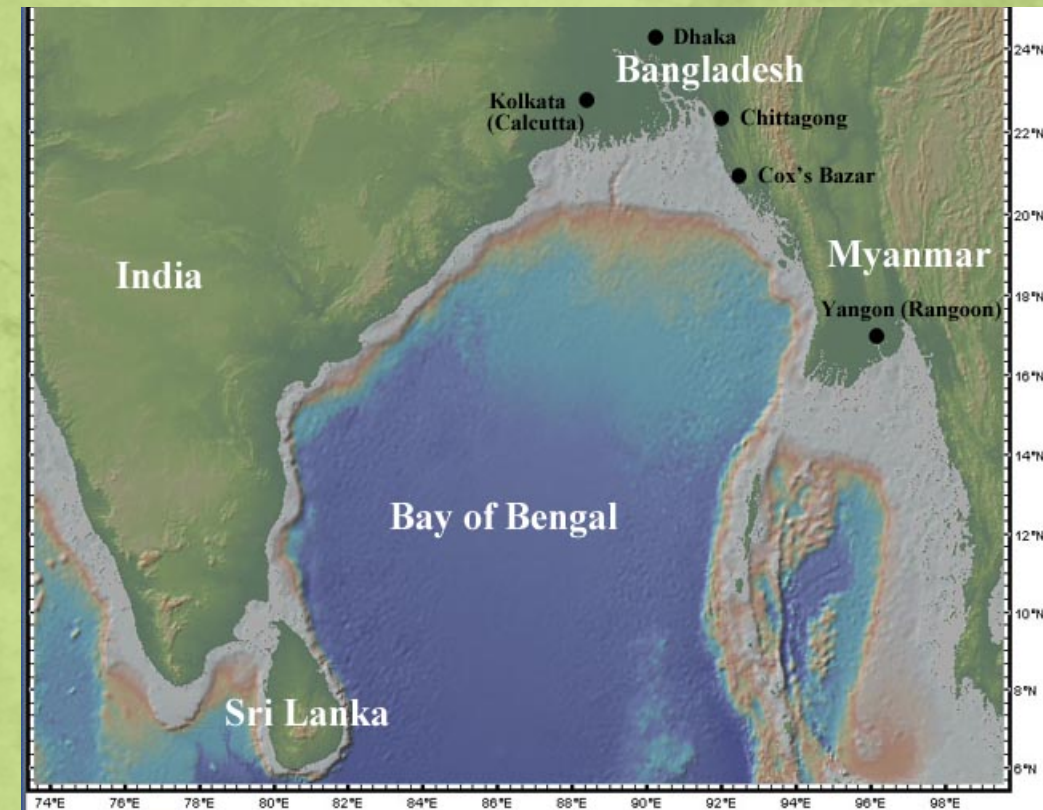


Common Natural Disasters in Bangladesh

- 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

Tsunami Vulnerability Zone of Bangladesh

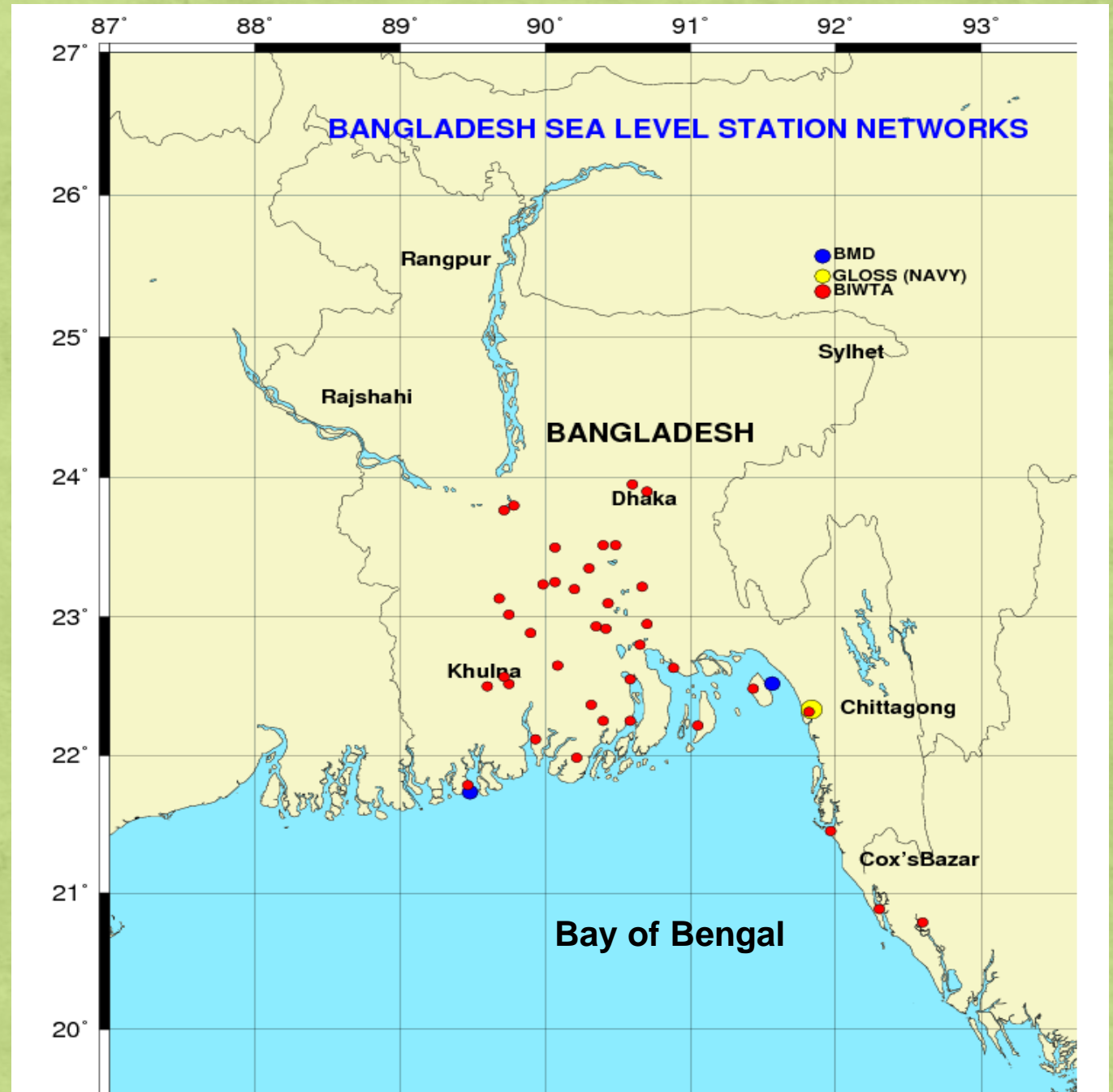
- The active Andaman-Nicobar fault system is often capable of generating tsunami waves and **Chittagong-Teknaf Coastline** can be struck by the tsunami.
- Due to the presence of Swatch of no ground **Sundarban-Barisal coastline** is vulnerable to local tsunamis.
- **Barisal-Sandwip Estuarine Coastline** 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.

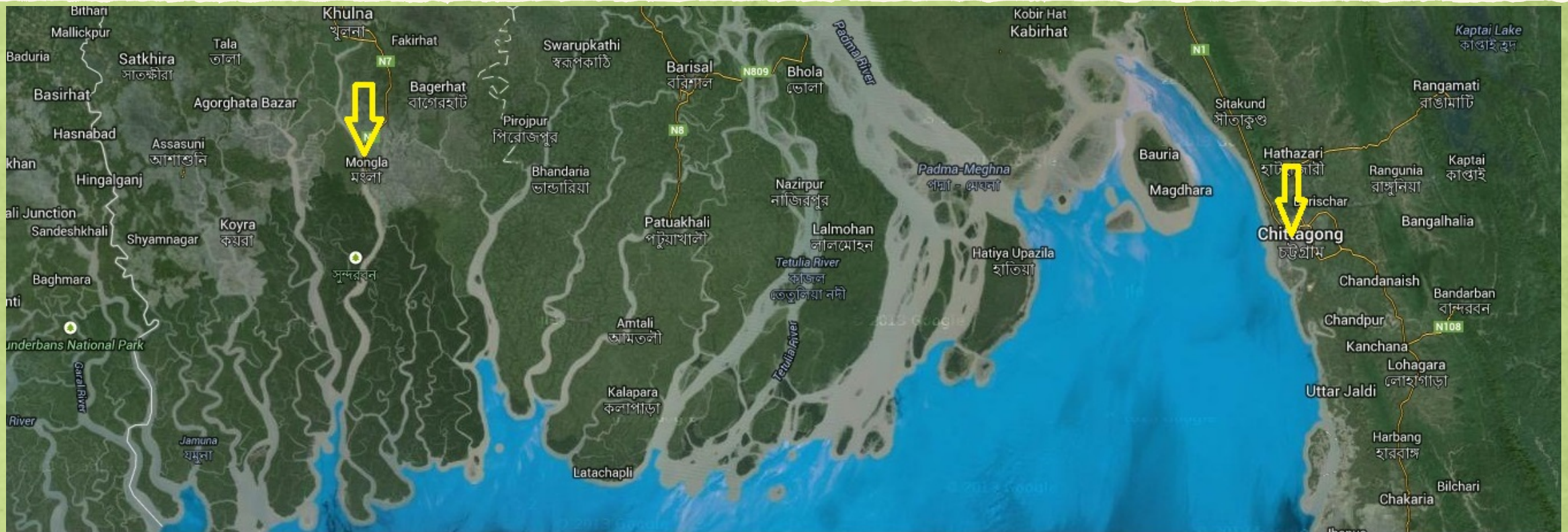
Currently BMD is using a tide table published by BIWTA

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.



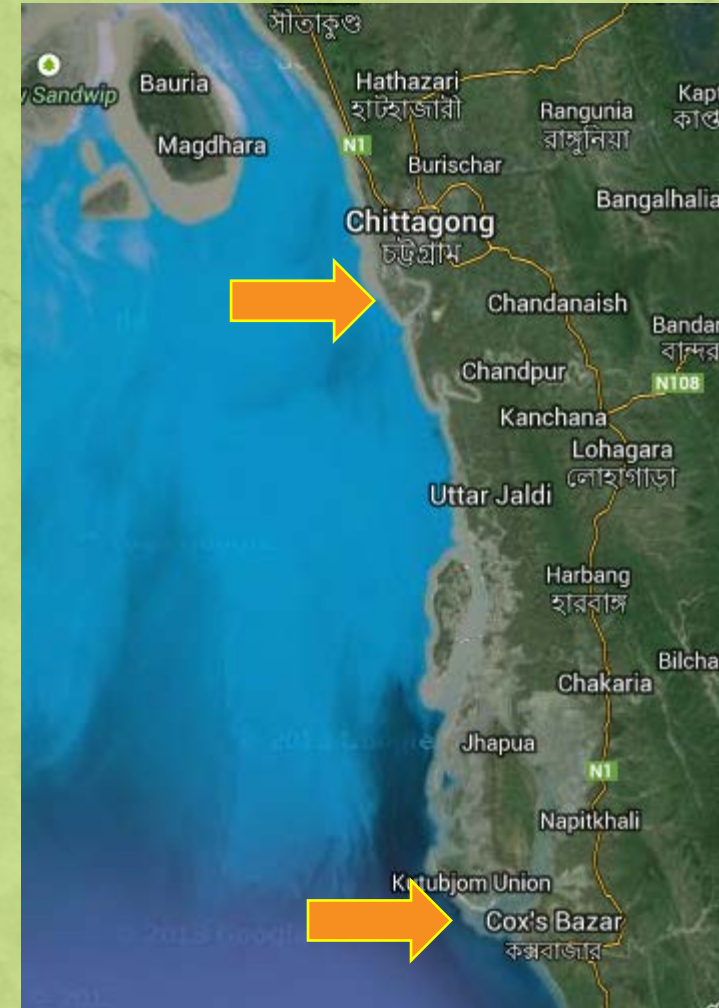
Tide Gauges Maintained by BN



- 02 Tide gauges at Chittagong
- 01 Tide gauge at Bagerhat
- Other Sources

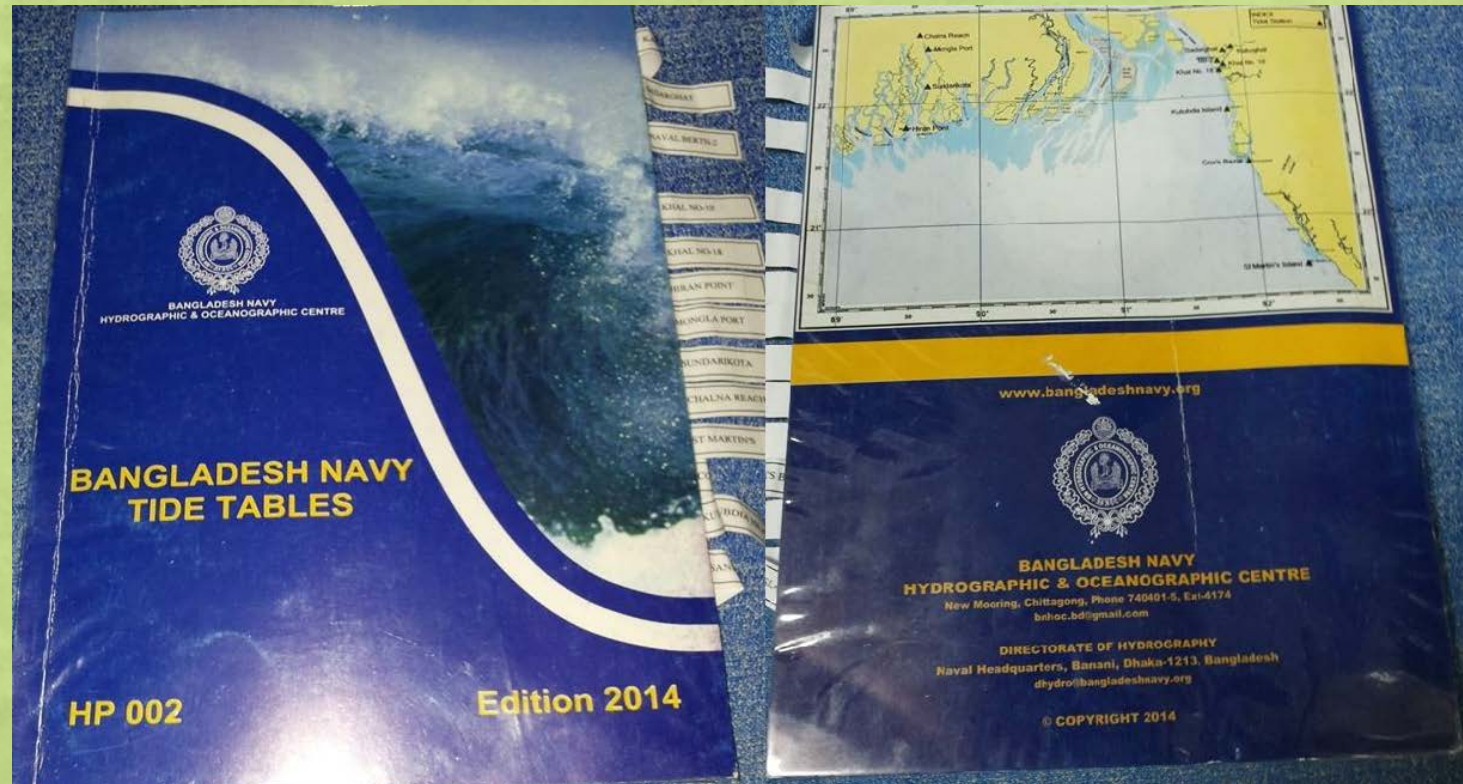
GPS Network of BN

- 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

- Storm surge induced by tropical cyclone is one of the major threats to the life and property of the coastal regions of Bangladesh.
- Bangladesh coast may be severely vulnerable if tsunamigenic earthquake occurs north of 15° N latitude .
- Lead time of local tsunami is very short (only a few minutes).
- 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.
- Also BMD will be able to take appropriate decision for the case of issuing tsunami warning.

Thank You