

Round table Discussion by
Fk Network, Bangladesh

Climate change impacts and access to safe
water: learnings from AILA

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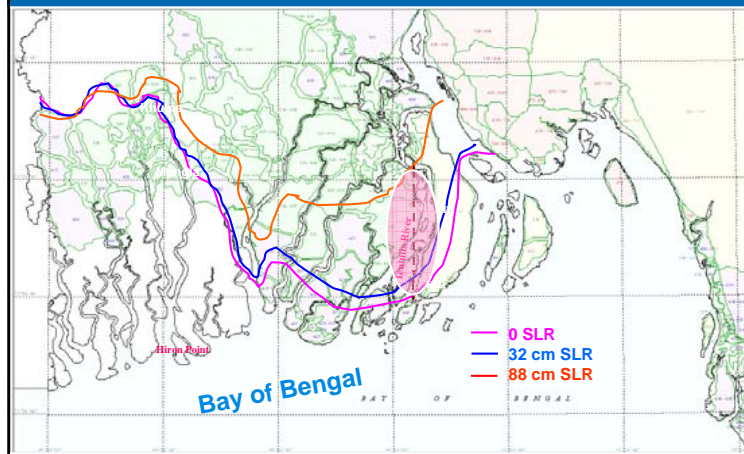
Climate Change and Bangladesh

- Bangladesh is the most vulnerable to tropical cyclones, 6th most vulnerable to flood in the world
- During 1984 to 2007, the physical damage from 6 floods worth around US\$ 15.178 billion including thousands of deaths

Immediate impact	Results
More erratic rainfall in the GBM basin in the monsoon	Higher river flows; Drainage congestion, flooding in rural /urban areas
Lower rainfall at other times of the year	Droughts and scarcity of drinking water
Melting of Himalayan glaciers	Higher river flows in short to medium term
Sea level rise	Coastal embankments overtopped, saline intrusion into rivers and groundwater
Warmer and more humid weather	Increased water-borne and air-borne diseases

Impact of SLR on Salinity Intrusion

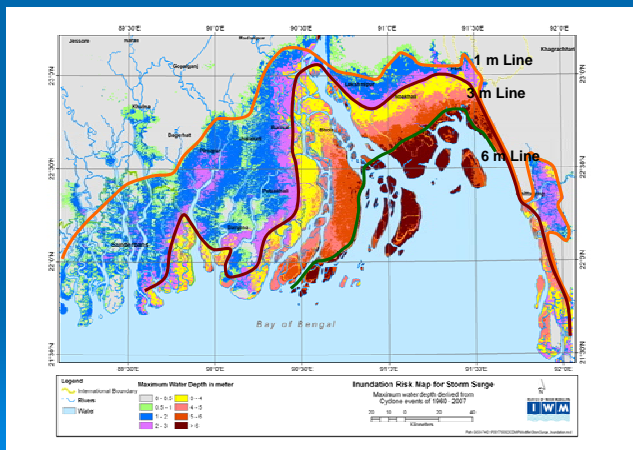
Movement of 5 ppt Salinity line



Increase of Sea level will Cause backwater effects
on tides and increase in Salinity intrusion



Storm Surge Inundation Risk Map



Miseries of AILA affected people



Affects of AILA on the Coastal Embankments

- ❑ Lives and livelihoods of AILA affected people dependent on this embankment
- ❑ Inside embankments, food production increased remarkably in expanded 1.4 million hectare land
- ❑ Due to embezzlement of the allocated funds for regular maintenance of embankments and afforestation, illegal pipes/holes made by shrimp cultivators made embankments vulnerable to any pressure of storm surges
- ❑ Due to delay in the reconstruction of the embankments in the dry season, around 0.32 million people in the affected areas have been passing their miserable lives for the last one year
- ❑ Around 0.2 million people took shelter in the unbroken portion of embankments
- ❑ Last year there was no Aman and Boro production in 24,000 hectares of land due to delay in reconstruction of the damaged embankments in proper time.

Embankments and access to safe water

- ❑ About 2 lakh (200,000) people have been forced to use polluted/salted water
- ❑ People have been forced to purchase water at Tk.20-25 per drum and Tk. 3.00 per Kolosh (pitcher)
- ❑ Intrusion of saline water due to storm surge accompanied by heavy rainfall inundated ponds previously used for drinking water
- ❑ Crisis of drinking water is the major problem in this area. Affected people need 15 lac litre every day whereas they are getting only 1-1.5 lac litre supplied by some NGOs
- ❑ Main sources of water used in the affected areas are community managed ponds that are now filled up with saline water; until rain starts these ponds will be out of use
- ❑ 150 tube-wells have been set up privately and 70 tube-wells by government
- ❑ Around 60-70 thousand people are either forced to travel 2-6 hours by engine boat or walk on foot to fetch fresh water.
- ❑ Affected people especially children and women have been affected by dysentery, skin liaison, diarrhea and other water-borne diseases



Challenges to ensure safe drinking water at AILA areas

- ❑ Due to AILA, salinity in the land has increased from 64 percent to 75-80 percent in Satkhira region (Source: Agriculture extension office)
- ❑ Due to scarcity of water, poultry and cow farms can not be started
- ❑ Currently, Public Health Engineering Department with assistance from UNICEF is supplying 10,000 liters of water in 4 villages
- ❑ Projects that are being implemented to fight water scarcity in public-private sector are insufficient compared to the demand. Oxfam and European Commission are supplying water to some areas by trailer.
- ❑ Lack of reconstruction of the broken points of embankment which is the main protection to intrusion of saline water into reserved ponds
- ❑ Centralized authority and unprecedented bureaucratic delay in disbursing fund during emergency situation like cyclone
- ❑ Misuse/embezzlement of the allocated fund for the protection of embankments by the concerned stakeholders
- ❑ The secret collusion between WDB staff and shrimp cultivators, making illegal sluice gates and setting pipes into embankments

Challenges to ensure safe drinking water at AILA areas

- ❑ Absence of earlier plan of actions by national and local authority to address such an extraordinary crisis of water
- ❑ Not raising the height of the boundary as well as taking scientific measures to the outer sides of reserved ponds so that saline water cannot enter
- ❑ Leasing out of the public ponds and water bodies, main sources of water for specific communities, to vested interest groups
- ❑ Affected areas are termed as 'saline desert'
- ❑ People are inclined to provide land to dig ponds, but further steps were not taken by the concerned authority
- ❑ Plans to introduce supply water through pipes were found not feasible
- ❑ Though Pond Sand Filters (PSF) were set up by NGOs to purify the water of ponds but those are not working now
- ❑ Govt. requested in last July'10 for about Tk.11,000 crore as donation for rehabilitation, establishment of embankments and cyclone center and arrangement of work opportunity for the people of coastal areas
- ❑ Only 2 European Countries promised to donate 50 million dollar and Japan donated Tk.114 crore to build water treatment plant in Aila affected area.

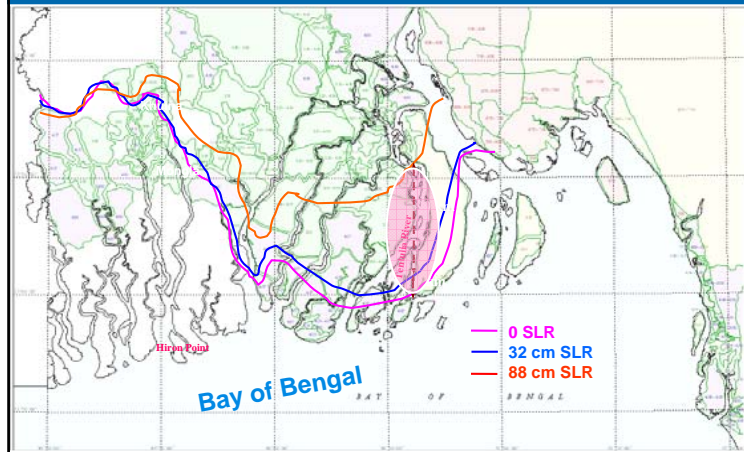
A Way Forward

- ❑ Under the Climate Change Adaptation and Mitigation **Integrity Pact (IP)**, to finalize the design, construction and maintenance of the embankments with the participation of the local communities, LGIs, media and other concerned people should be ensured and a **third party monitoring** system should be introduced to monitor and guide, where applicable, the climate change adaptation programs
- ❑ Decentralize of the authority to local level, adequate fund and infrastructures for disaster responses
- ❑ To give the priority of applying indigenous knowledge and experiences in all development activities especially planned for addressing climate changes
- ❑ To ensure at least one planned and protected pond with right design at each ward of the coastal areas so that even high storm surge/flood the saline water cannot enter into those ponds
- ❑ With the participation of communities, rain water harvesting should be ensured at wide-scale

Redefining the design criteria of flood embankments considering increased water level and frequency of floods under climate change scenarios



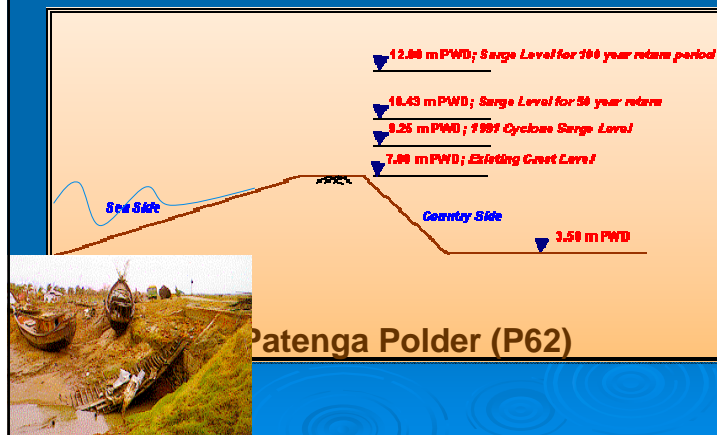
Alternative water supply sources should be searched in the event of increased salinity in coastal areas;
Alternative treatment technology adopted



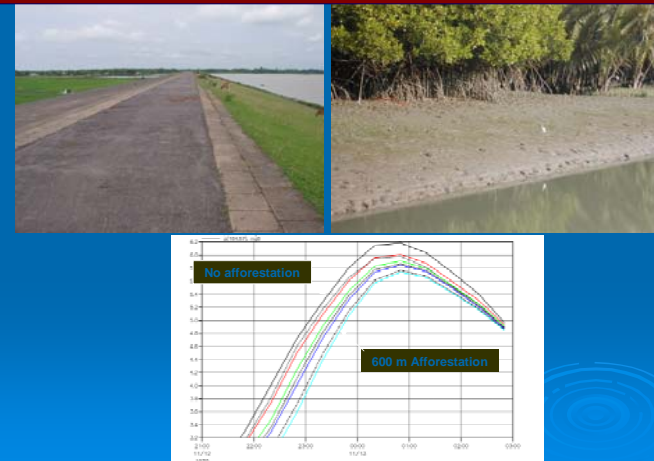
A Way Forward

- ❑ To stop the lease out of the public ponds to vested interest group and also ensuring those ponds as sources of safe drinking water
- ❑ To stop also the lease of the culvert, sluice gates and box-pipes to the vested interest groups
- ❑ To conduct regular survey and research on the demand for water, availability of water in the water bodies, coping strategies and choice of alternatives sources
- ❑ To prepare environment-friendly shrimp farming policy immediately
- ❑ To ensure the reflection of the local level needs and experiences in the disaster managements
- ❑ To form the skilled and well trained volunteers at the climate change affected areas to face any disasters

SLR should be considered in designing of sea dyke section and height



Afforestation width of 600m reduces the Surge Level by 50cm



Cyclone Shelters



Thanks