Welcome to the Presentation on Country Input to AWCI Phase 2 Implementation Plan: Bangladesh




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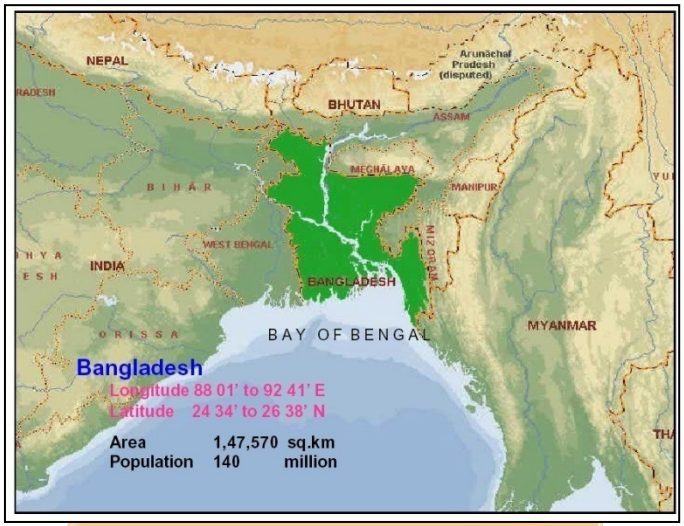
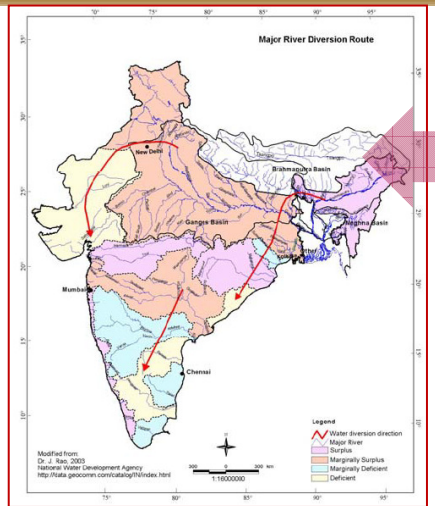
BANGLADESH AT A GLANCE



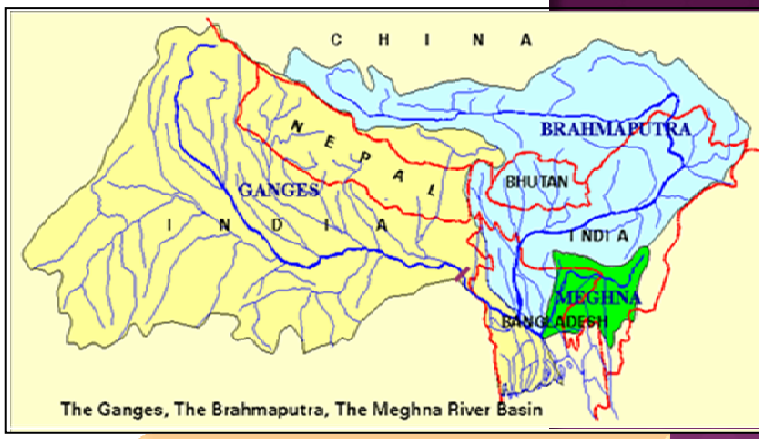
Geo-physical setting

Indian River Linking



Key Points:

- 140 million population
- 1,47,570 km^2 area of flat topography
- 57 major rivers enter either from India or Myanmar
- 92% of the catchment areas are outside Bangladesh
- Bangladesh drains water from an area 12 times its own size



Brahmaputra, Ganges and Meghna Basin: Constitutes 80% of the floodplain

Impacts of water scarcity and cyclones

New threats to country's WR:

- River linking project by India together with the impact of climate change
- Desertification
- Frequent natural calamities
- Salinity intrusion
- Sea-level rise

CRITICAL AND SPECIFIC ISSUES

River Bank Erosion

Issues of Bangladesh:

- landslides / erosion
- Sea level rise
- Temperature rise
- Depletion of ground water
- Hydropower
- Trans-boundary and international coordination (MRC)
- Biodiversity

Floods

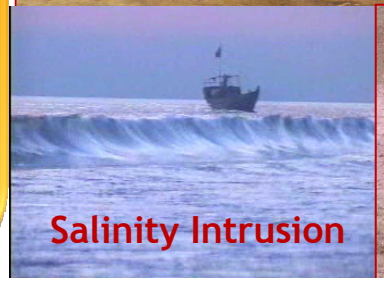
Damage to biodiversity of Sundarbans

WRM Vulnerabilities:

- Biodiversity of the deltaic country is immensely affected by the activities in the upstream
- WR management becomes a challenge under climate variability and resource constraints

Effects of water diversion and climate change

Effect of Farakka



Salinity Intrusion

Loss of navigability

NEED FOR RESOURCES

Available Resources/Capabilities:

- Discharge measuring stations
- Water level measuring stations
- Groundwater level measuring stations
- Satellite images by SPARRSO
- Weather forecast by BMD
- Flood forecasting system by FFWC
- Well trained personnel of BUET & MoD
- Linkages with national & international organizations
- In-house training facilities

Lack of Capability:

- Improvement of climate & flood models
- Tools for impact modeling and assessment
- Vulnerability and risk assessment tools to various sectors
- Analytical tools to describe weather extremes and variability

ISSUES RELATED TO WATER NEXUS

Water-Agriculture Nexus:

- Huge demand of food for huge population
- Scarcity of surface water
- Over exploitation of groundwater for irrigation and drinking
- Arsenic contamination of groundwater and Arsenic in the food chain pose health risk
- Damage to agricultural land in the coastal region due to salinity intrusion

Water-Biodiversity, Ecosystem Nexus:

- Reduced dry season flows
- Upstream diversion of river water across the borders
- Damage to ecosystem in the rivers and biodiversity of Sundarbans
- Increased concentration of inland surface water

ON-GOING PROJECTS & PROGRAMS

Agriculture:

- A number of small and large irrigation projects undertaken by BWDB, BADC, LGED, Barendra Authority
- GK, Teesta, Meghna-Dhonagoda, Barendra Irrigation, Thakurgaon Deep Tubewell Projects are mentionable

Energy:

- Kaptai Hydropower station
- Ganges Barrage with hydropower generation facilities

Health:

- A number of projects for providing arsenic free water

Urban:

- Water supply, sanitation and sewerage system development projects
- Upgrading urban drainage and rainwater collector system
- Rainwater harvesting projects for households

Ecosystem and Biodiversity:

- Ganges Barrage Project
- Gorai River Restoration Project
- North-Western Irrigation Project

Infrastructure:

- Different structures for flood protection, river bank protection, irrigation pump stations and water supply schemes

RESPONSE TO SOME QUESTIONS

How can we address seasonal variability at national level?

- Assessment of future climate variability using GCM/RCM output
- Water sharing between two boarder countries
- Invention of crops tolerant to climate variability and water logging

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How can we manage water resources in proper way between upstream and downstream and among different sector uses: hydropower, irrigation, water supply?

- Sharing of water in Trans-boundary rivers
- Guidelines by Joint Rivers Commission
- Regular meetings and discussions
- Agreement with guarantee clause

How can we address seasonal variability at national level?

- Dissemination of information through national level agencies i.e. BUET, MoD
- Modification of design criteria considering climate change impact on flood, cyclones, drought etc
- Develop inter-organizational cooperation

SPECIFIC NEEDS FOR BANGLADESH

Observation:

- Modernization and expansion of existing data collection network
- Remote Sensing data at finer scale

Models:

- Distributed models (MIKE SHE)
- Hydrodynamic models

Data Access:

- Access to real time data is required
- Easy access to global data is essential

Platform for sharing data and knowledge:

- Regional approach

Management Systems:

- Forecasting (Flood and Drought)
- Early warning (Flash flood, cyclones)

COLLABORATION AT NATIONAL LEVEL

Holistic approach, well-organized body, regional seminars:

- Inter-agency & inter-ministerial approach to be adopted headed by MoD
- Involvement of experts from both national & international level
- Regular seminar/workshops to disseminate knowledge

Maintaining quality of data:

- Regular training of human resources through BUET
- **Capacity building in data recording, modeling and forecasting with introduction of modern technologies through BUET & MoD**

IMPLEMENTATION PROPOSAL

Framework developmental approach:

- Inter-ministerial committee for project implementation
- Involvement of technical person and stakeholders
- Technical support through AWCI and private sector participation

Strategic approach:

- Coupling experiences from completed projects of a country and demonstrated projects by AWCI
- Use results from a well calibrated and validated model for the concerned basin

Technical approach:

- Modeling for climate change impact assessment using downscaled data
- Technical supports for manpower training, modeling software and data access (AWCI, GOESS)
- Model validation, downscaling of climate data, use of competent models etc

Capacity development:

- BUET organizes various training programs throughout the year
- Trainings/seminars/workshops can be organized at BUET jointly with MoD with support from AWCI
- Any international collaboration can be well maintained by BUET
- BUET & MoD are capable enough to organize such workshops as per requirement

THANKS FOR YOUR ATTENTION