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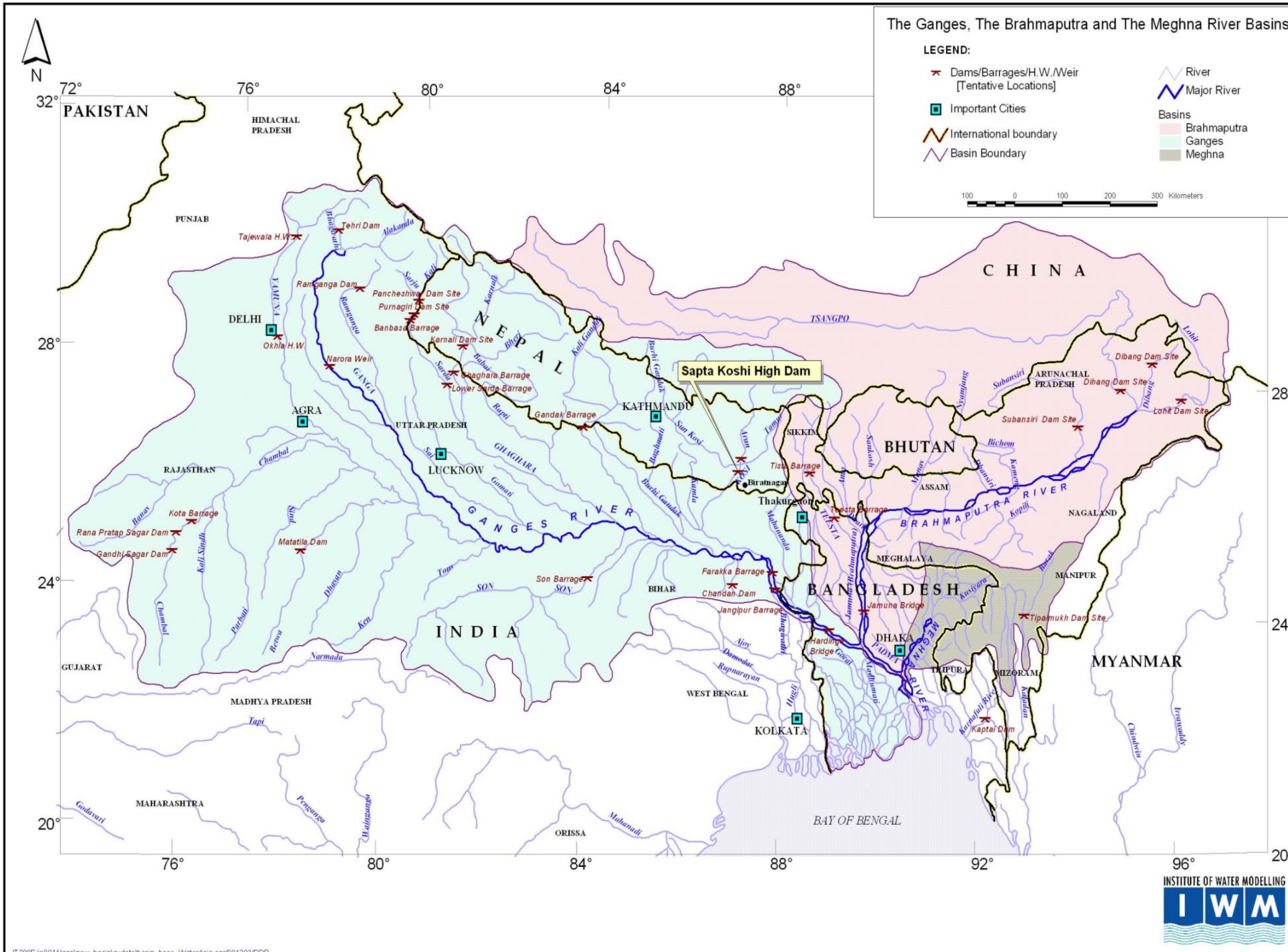
Regional & sub regional Co-operation for Integrated Water Resource Development & Management of the Ganges River Basin; Bangladesh Perspective

Joint Rivers Commission, Bangladesh
Ministry of Water Resources
Government of the People's Republic of Bangladesh


BANGLADESH
RUSSIA
KAZAKHSTAN
MONGOLIA
CHINA
INDIA
PAKISTAN
AFGHANISTAN
IRAN
IRAQ
SAUDI ARABIA
YEMEN
OMAN
U.A.E.
QATAR
BAHRAIN
KUWAIT
MYANMAR (BURMA)
THAILAND
CAMBODIA
MALAYSIA
SINGAPORE
PHILIPPINES
BORNEO (KALIMANTAN)
SUMATRA
Sri Lanka
MALDIVES
Arctic Circle
Tropic of Cancer
Scale 1: 50 000 000

INTRODUCTION

- Bangladesh is the lowermost riparian country of the three mighty Himalayan Rivers-**the Ganges, the Brahmaputra and the Meghna**;
- The total area of the Ganges-Brahmaputra and Meghna basins are 1.7 million sq. km. of which only **7%** lies in Bangladesh;
- 80% of the total flow occurs during the monsoon for a period of only five months (June-October);
- More than 80% of this monsoon flow comes from the outside of the country. On the other hand, water availability during the dry season is about 7% of the total annual flow and 80% of this dry season flow also comes from the outside of the country;
- As a result over abundance during the monsoon and scarcity during dry season is a stark reality in the water sector of Bangladesh;
- The sustainable planning and development of Water Resources of Bangladesh virtually depends on equitable sharing and management of the water of the Transboundary Rivers.



The Ganges, The Brahmaputra and The Meghna River Basins
LEGEND:
Dams/Barrages/H.W./Weir [Tentative Locations]
Important Cities
International boundary
Basin Boundary
River
Major River
Basins
Brahmaputra
Ganges
Meghna
100 0 100 200 300 Kilometers
N
72° 76° 80° 84° 88°
32° 28° 24° 20°
PAKISTAN
HIMACHAL PRADESH
PUNJAB
CHINA
NEPAL
BHUTAN
BANGLADESH
INDIA
MYANMAR
Sapta Koshi High Dam
DELHI
AGRA
LUCKNOW
KATHMANDU
Biratnagar
Thakurgaon
DHAKA
KOLKATA
UTTAR PRADESH
RAJASTHAN
GUJARAT
MADHYA PRADESH
MAHARASHTRA
ORISSA
BIHAR
WEST BENGAL
SIKKIM
ASSAM
ARUNACHAL PRADESH
NAGALAND
MEGHALAYA
MANIPUR
TRIPURA
MIZORAM
BAY OF BENGAL
GANGES RIVER
BRAHMAPUTRA RIVER
MEGHNA RIVER
PADMA
TSANGPO
Tehri Dam
Tajewala H.W.
Ramganga Dam
Pancheshwar Dam Site
Purnagiri Dam Site
Banbasa Barrage
Karnali Dam Site
Okhla H.W.
Narora Weir
Ghaghara Barrage
Lower Sarda Barrage
Gandak Barrage
Kota Barrage
Rana Pratap Sagar Dam
Gandhi Sagar Dam
Matatila Dam
Son Barrage
Farakka Barrage
Chandan Dam
Jangipur Barrage
Hardinge Bridge
Tista Barrage
Teesta Barrage
Jamuna Bridge
Tipaimukh Dam Site
Kaptai Dam
Subansiri Dam Site
Dibang Dam Site
Dihang Dam Site
Lohit Dam Site
YAMUNA
GANGA
GHAGHARA
SON
Chambal
Betwa
Ken
Tons
Narmada
Tapi
Godavari
Penganga
Wainganga
Mahanadi
Damodar
Rupnarayan
Ajoy
Hugli
Bhagirathi
Mahananda
TISTA
Kusiyara
Subansiri
Lohit
Dibang
Manas
Sankosh
Kopili
Chindwin
Irrawaddy
76° 80° 84° 88° 92° 96°
INSTITUTE OF WATER MODELLING
IWM
IT208E:\p0011\gnp\new_basin\avdata\basin_base_WaterAsia.apr/081203/DDR

The Ganges River Basin

- The Ganges rises from the Gangotri glacier in the Himalayan at an elevation of about 7010 meter near the India-China border;
- The Ganges basin lies in **India, Nepal, China and Bangladesh**;
- Total area of the Ganges basin is 1087300 sq.km. of which only **4%** (46300 sq.km) **lies in Bangladesh**;
- The rivers from **Nepal contribute about 71% of the dry season** flows and **41% of the total annual flows** of the Ganges;
- The Ganges Dependent Area (GDA) in Bangladesh is almost **one-third of the country** habitat of more than **55 million people** largely depend on agriculture sector.

Key Challenges in Water Resources Sector of the Ganges Basin in Bangladesh

Augmentation of dry season flow

- The dry season availability of the Ganges water has decreased over the years due to population booming, industrialization and upstream withdrawal and utilization;
- To maintain adequate/reasonable flow in the downstream areas (Bangladesh), dry season flow augmentation is a big challenge;
- To meet up the future water demand in the changed climate scenario.

Mitigation of Water Related Hazards

- Flood, drought, river bank erosion, sedimentation, salinity intrusion, river pollution etc.

Existing Cooperation in the Ganges Basin

The Ganges Water Sharing Treaty, 1996

- The government of **India & Bangladesh** signed a Treaty for sharing the Ganga/Ganges waters at Farakka on 12 December, 1996 for a period of 30 years.
- The two countries have been sharing the Ganga/Ganges waters at Farakka since 1997 during 01 January to 31 May every year.

Hydrological data sharing for Flood Forecasting

- **Bangladesh** receives hydrological data from the upstream stations of the Ganges in **India and Nepal** to generate flood forecasting.

Existing Cooperation in the Ganges Basin

Framework Agreement on Cooperation for Development

- A Framework Agreement on Cooperation for Development was signed between **Bangladesh & India** and in 2011;
- Both sides have inter-alia agreed to enhance cooperation in sharing of the waters of common rivers and explore the **possibilities of common basin management** of common rivers for mutual benefit.

Bangladesh-Bhutan-India-Nepal (BBIN)

- Bangladesh, India, Nepal and Bhutan initiated a sub-regional cooperation, including others water resources management are being discussed as a priority issue under this umbrella.

Way forward

- The Eastern Himalayan Region offers vast opportunities for optimal water resources development and management through collaborative efforts.

- To augment the Ganges flows, the **tributaries in Nepal** are the most effective sources as their **dry season contribution at Farakka is about 71%** and annual contribution is 41%.

- **Sub-regional or basin scale cooperation** is most important to address the challenges of the Ganges River basin in a holistic approach as well as jointly harnessing of water resources.

Thank You!