

**Introduction:** Bangladesh is located in the northeastern part of South Asia between 23°34' and 26°38' north latitude and between 88°41' and 92°41' east longitude, and covers a total area of 147 570 km<sup>2</sup> with an estimated population of 140 million. Together with West Bengal province of India, Bangladesh constitutes the largest delta in the world, which is the creation of three of the greatest rivers of South Asia, namely the Ganges (called Padma in Bangladesh), the Brahmaputra (called Jamuna in Bangladesh), and the Meghna. The three river systems are often called GBM systems for their confluence and integrated impacts on life, culture, economy and environment of Bangladesh before falling into the Bay of Bengal.

**Climate:** Bangladesh has a humid, warm, tropical climate with significant variations in rainfall and temperature throughout the country. Average annual rainfall in the country varies from 1950 mm to 2900 mm. About 80% of the rainfall occurs during monsoon season, while the dry period of the country suffers from severe moisture stress due to negligible rainfall. The average annual temperature ranges from 19°C to 29°C with extremes of 4°C and 43°C. The country is regularly subjected to drought, floods and cyclones due to the geographic and climatic factors.

**Water resources and river systems:** Bangladesh is basically a land of rivers. Around 230 rivers crisscross the country most of which are either tributaries or distributaries to the GBM river systems. The total length of the river courses is approximately 24,000 km and their area covers 7% of the country. There are 57 cross-boundary rivers in Bangladesh, 54 are shared with India and the rest are shared with Myanmar. The GBM river basin extends over Bhutan, Nepal, India, Bangladesh and China with total area of 1.72 million km<sup>2</sup>. The floodplains of Bangladesh comprise only 8% of the total area of the GBM catchment, but more than 92% of the annual run-off generated in the GBM catchment area drains to the Bay of Bengal through Bangladesh.

**Water related problems:** Floods are considered the largest natural disaster in Bangladesh. As a result of flat and low topography of the floodplain, and the hydrology of GBM river systems, floods occur almost every year in Bangladesh. About 70% of the country is vulnerable to severe flooding. When the peak water levels of the all three major rivers of the country occur at the same time, as in 1954, 1974, 1987, 1988 and 1998, severe floods occur. River bank erosion, often associated with widespread floods, is another common and severe hazard in the country.

**Prospects:** Adopting and exercising watershed-scale best management practices in agriculture, forestry, urbanization, river mastering and flood control can achieve solutions to the water-related problems. Since Bangladesh is a small part of a larger hydrodynamic system that comprises several countries in the region, mutual understanding and cooperation among the co-riparian countries is required for long-term and permanent solutions to the problems.