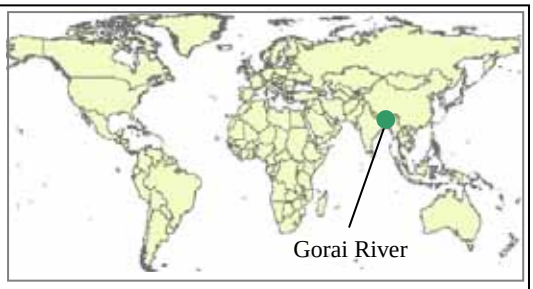
Restoration of Gorai River (Bangladesh)

Most rivers in southwestern region (SWR) of Bangladesh depend on water flow from Ganges River. The flow volume declines during the dry-season and it impacts the region. Many of the branch rivers of Ganges River are blocked off from Ganges River due to the water intake at the upstream Indian Farakka Barrage that was built in 1975. Gorai River, a branch of Ganges River, is one of the major sources of freshwater supply to SWR and is the only one remaining branch river. However, in at least these twenty years, its flow volume in the dry-season (December – April) has been declining. It has a serious environmental impact: especially along the coastal areas around the sanctuary forests where the salty water has increasingly been intruding. In December 1996, the Bangladesh government decided to implement "Gorai River Restoration Project (GRRP)" to meet the urgent need of dredging Gorai River to restore the dry-season's flow volume in SWR and the regional ecological balance. The research has been in progress through EGIS (Environment and GIS, Dhaka) for the problem of the Gorai River's declining flow volume, and various alternatives and technological solutions have been studied (by the School of Geography, University of Leeds, UK). The Gorai River's inflow point used to be closed in the dry-season, but thanks to the dredging with the PPW (Pilot Priority Work) Program, through the investments by the Dutch and Belgian governments, it has come to be kept in an open condition.

◆ Key to Restoration

- Gorai River Restoration Project (GRRP)
- Water control system by Bangladesh Water Development Board (BWDB)

◆ Overview of the River



SWR is composed of 15 sections, occupying 17 % of the suburban areas of Bangladesh. The land's 62 % is farmland, its 15 % is covered with mangrove forests (Sunderbands), and its 13 % is water areas. The land is formed with the Ganges River's sediments, which include marine-derived sediments. Gorai River normally has 15 % of Ganges River's annual flow volume. The mangrove forests in Sunderbands are a designated area under the Ramsar Convention. When Gorai River has water in dry-season, the salt levels in the river are usually low, and the salt content in the sea has only a limited effect on the river. But when the flow volume declines, more salty water intrudes in the coastal area of Sunderbands, and it impacts the environment very seriously. If the dry-season flow volume further declines, it is concerned that it may lead to a big environmental problem.

◆ Project Efforts for Restoration

【Gorai River Restoration Project (GRRP)】

The project aims at preventing environmental deterioration in southwestern region (SWR) of Bangladesh, especially around the Khulna District, the Mongla Port, the coastal areas, and the mangrove forests in Sunderbands. It is expectedly achieved by (1) increasing the dry-season inflow volume from Ganges River and maintaining the water volume by dredging at the inflow point, (2) improving the system to effectively utilize the inflowing freshwater, and (3) increasing the organizational power, based on sustainability, to manage and maintain the restored water systems.

【Water control system by Bangladesh Water Development Board (BWDB)】

The water resource management in dry-season Bangladesh aims mainly at maintaining the water resource needed for domestic use, industrial use, agricultural use, and for environment conservation. In rainy season, it is important to supply appropriate flood control and drainage functionality. In SWR where many rivers have been destroyed, the main discussion point is restoration and improvement of the natural river system for maintaining the freshwater inflow volume to this region. The political and institutional main points are: establishing and implementing the satisfying institutional and policy frameworks for water resource management, improving the effectiveness of the water management sector agencies, and properly operating and maintaining the water infrastructure.

Source: Case examples in the international symposium "River Restoration." Published by Foundation for Riverfront Improvement and Restoration. 2003.3.