PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE

Report No.: AB282

Project Name	Water Management Improvement Project
Region	SOUTH ASIA
Sector	General water, sanitation and flood protection sector (75%); Irrigation and Drainage (25%)
Project ID	P040712
Borrower(s)	GOVERNMENT OF BANGLADESH (GOB)
Implementing Agency	Bangladesh Water Development Board (BWDB), WAPDA Building, Motijheel, Dhaka 1000 (Tel: 880-2-955 2194); and Water Resources Planning Organization (WARPO), Road 1, House 103 , Banani, Dhaka 1213 (Tel: 880-2- 988 0879)
Environment Category	[ ] A [X] B [ ] C [ ] FI [ ] TBD (to be determined)
Safeguard Classification	[ ] S_1 [X] S_2 [ ] S_3 [ ] S_F [ ] TBD (to be determined)
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1. Country and Sector Background

Bangladesh is the terminal floodplain delta of three large rivers (Ganges, Brahmaputra and Meghna) with over 90% of their catchment areas situated outside the country. These rivers combine within Bangladesh to form the world's third largest river, the Lower Meghna, before entering into the Bay of Bengal. More than fifty other rivers flow into Bangladesh, The combination of high rainfall during the monsoon season and full-flowing rivers results in extensive inundation of floodplain, compounded by slow, impeded drainage due to flat topography and often time coinciding with high tides of the sea.

Each year, about 20%-30% of the country is inundated, flooding over 6 million hectares to depths ranging from 30cm to 2m, and in every 10 years recurrence up to 37% of the area. This situation creates both opportunities and risks; opportunity for highly productive farming and fishing systems, but considerable risks from deep flooding, erosion and drainage problems. By contrast, the net availability of surface water during the dry season is significantly reduced and erratic pre-monsoon rainfall can cause serious soil-moisture deficits.

With a population of 133 million within an area of 144,000 sq. km and the intensive network, poverty is endemic and the country is prone to natural disasters like floods, erosion, cyclones and tidal surges which result in human casualties and economic loss at regular intervals. Poor households are relatively more vulnerable. The poor cannot afford disaster-proof housing and many of them settle on high-risk peripheral land, which makes them more susceptible to the vagaries of nature. Floods and cyclones aggravate poverty by destroying food stocks and scarce resources of poor households. Among poor households, women, children, elderly and the disabled are more vulnerable than the others.

Like floods, the drought also brings into focus the inherent discord among different uses of water. In the post-monsoon period, soil-moisture content declines rapidly and the deficit needs to be compensated by irrigation. Agriculture gets the lion's share of the available water and this in turn affects navigation, drinking water supply, environment, rural health and sanitation. Salinity intrusion, water logging and the contamination of the groundwater aquifer by arsenic are some of the more recent additions to the century-old problems caused by the water regime of the country.

Appropriate water resources management has thus played a major role in the growth of agriculture and consequent poverty alleviation in the country. Structural interventions in the coastal areas and the floodplains in the country have significantly reduced the vulnerability to natural disasters of the poor and have created economic opportunities for them by ensuring increased agricultural production. In total, about 9,000 km of embankments have been constructed by the government over the years, incorporating more than 12,000 hydraulic structures, such as sluice gates. Publicly constructed over 510 flood control and drainage (FCD) and flood control, drainage and irrigation (FCDI) schemes cover about 6 million hectares of land, encompassing nearly all the area where flood protection is needed and possible.

This approach has been effective in reducing vulnerability by reducing the magnitude of flooding and substantially increasing rice production during the monsoon season. On the other hand, it tends to block the annual passage of spawning fish into the floodplains, decreases traditional water transport on the smaller interior streams, confines the very high sediment loads to within the river channels instead of allowing these to be deposited on the floodplains, and restricts the annual renewal and flushing of ponds and *beels* with less polluted water. Early monsoon rainfall, in conjunction with early inundation of floodplains, provides the most ideal conditions for fish movement, migration and spawning, but it is now under threat due to incursions in the water regime.

Since water touches almost every aspect of daily life, it has led to the evolution of a complex system of institutional arrangements for its management. On the basis of lessons learnt from previous interventions in the water sector, water has to be harnessed and used for the service of the communities, particularly the poor. In its strategies for economic growth, poverty reduction and social development, as articulated in the interim-Poverty Reduction Strategy Paper (I-PRSP), Government policy is to: (i) promote rational management, optimal use and access to water for production, health and hygiene; and (ii) ensure availability of clean water in sufficient quantities for multipurpose use and preservation of the aquatic and water dependent eco-systems.

Since the late 1980s, there has been growing awareness of the need for a more integrated, multi-sector approach to surface water management. A new approach to planning, construction, operation and maintenance (O&M) and management of FCD/FCDI schemes is also required to address the above issues satisfactorily. But most importantly, participation of all stakeholders from the outset is crucial in order to ensure the long-term integration of social and environmental considerations. The emphasis, therefore, has now shifted from flood control to water management; from purely structural (engineering) solutions to combinations of structural and non-structural measures, designed to meet a broader range of water management needs; and from

project development purely by technicians to stakeholder participation in all stages of the project development cycle.

2. Objectives

The primary Project Development Objective (PDO) of the proposed Project is to improve national water resources management by involving the local communities to play an expanded role in all stages of the participatory scheme cycle management, from planning and design to operations and management. The secondary objective is to enhance institutional performance of the country's principal water institutions, particularly BWDB and WARPO. This is expected to result in reduced vulnerability and enhanced livelihood opportunities for the beneficiaries, and will also create a favorable environment for improved water resources management by the core water institutions, in partnership with the beneficiaries. The PDO would be achieved by gradually changing a centralized top down approach to a more decentralized and participatory water sector management approach for efficient and sustainable operations and management of the existing FCD/FCDI and cyclone mitigation systems. The conceptual framework of outcome and output indicators, for which specific measurable indicators are being developed, is outlined below.

Outcomes	Outputs
• *Improved water resources management* • *Reduced vulnerability* • *Enhanced livelihood opportunities* • *Improved institutional performance*	• *Institutionalizing participatory water management through a process of participatory scheme assessment and rehabilitation/ improvement of existing BWDB schemes* • *Satisfactory operation and maintenance to promote sustainability for flood management and cyclone mitigation of existing BWDB schemes* • *Institutional improvement of two key national water sector institutions*

The objective of the Bangladesh Country Assistance Strategy Progress Report (CASPR) is to help the country achieve its poverty reduction goals by fostering an environment that promotes pro-poor economic growth and more effective delivery of public services in a transparent manner. The Bangladesh CASPR also highlights the importance of operationalizing of the National Water Policy, improving the performances of water institutions, and promoting community driven development models for water use and management.

The proposed project would contribute to CASPR objectives by: (i) contributing significantly to *integrated rural development* by promoting an integrated approach water resource management and thereby helping to increase agricultural and fisheries production and improve conservation of the ecology and progressively transferring local-level water management functions from the Government to water management organizations of local communities; and (ii) *reforming and strengthening key public sector institutions* viz., BWDB and WARPO, by promoting good governance, accountability, effective management and delivery of the core public service for improved flood management, drainage and cyclone mitigation. [Re. Section III, CASPR].

3. Rationale for Bank Involvement

The Government has adopted a new approach to water management that takes into account lessons from past experience. The main elements of this approach, as outlined in the Five Year Plan (1997-2002) document, are to reform and strengthen key institutions, particularly BWDB and WARPO; ensure local user community participation at all stages of the cycle of water management projects; encourage private sector participation in water management; minimize adverse effects of water sector interventions on fisheries and the environment; ensure environmentally sustainable utilization of existing facilities through rehabilitation and effective O&M, including the transfer of small-scale schemes or part of the schemes to WMOs and local governments; and the selective introduction of cost sharing policies to improve efficiency in water use.

The Bank has a comparative advantage in supporting such an approach since it has been playing a major role in defining the long-term water management strategy for Bangladesh through coordination of the Flood Action Plan; and support for the development of the National Water Policy, and the National Water Management Plan. The Bank also has a comprehensive view of sector development, a strategic focus and experience in implementing such projects through out the world. All the major donors in the water sector (Netherlands, ADB, CIDA, DANIDA and DFID) look to the Bank's role in providing leadership, particularly related to the policy and institutional reforms. Bank's support is therefore critical for redefining the role of the Government in the development and management of water resources, particularly with emphasis on decentralization and beneficiary participation.

The proposed Water management Improvement Project (WMIP) would act as an anchor for the Bank and other donor-supported water operations in Bangladesh, focusing on key institutional reform issues that would institutionalize the best practices for water resources management in Bangladesh. Other major donors supporting the water sector have expressed an interest in either co-financing this project, or in linking their operations to satisfactory progress on institutional reforms supported by the proposed Project.

4. Description

The project deals with the new approach to water resource management with stakeholders' participation and is implemented through the following three components: (i)

System Improvement and Management Transfer (SIMT); (ii) O&M Performance Improvement (OMPI); and (iii) Institutional Improvement (II).

Component 1: System Improvement and Management Transfer (Tentative Cost US$65.0 million): This component would support rehabilitation and improvement (R&I) of about 74 existing medium and large FCD and FCDI schemes of BWDB, covering approximately 270,000 ha. The project schemes will be selected by following a set of selection criteria to enhance the project impact. The R&I procedure will follow a systematic approach of Participatory Scheme Cycle Management (PSM). Important design features of the component include: (i) the participatory process in scheme cycle management, which is based on the Guidelines for Participatory Water Management adopted by the Government; (ii) a resource database survey, GIS and mathematical modeling tools that would be used in screening and auditing FCD/FCDI schemes; and (iii) an annual process of selecting eligible batches of medium and large FCD/FCDI schemes located in a particular hydrological unit.

The component would provide support for technical assistance for PSM and for screening and training; works; and incremental costs associated with implementing the System Improvement and Management Transfer of selected FCD/FCDI schemes. The component would also support the establishment and strengthening of water management organizations (WMOs) and subsequent mainstreaming and upscaling of the PSM approach to BWDB. The project would support social mobilization and capacity building to assist WMOs to become fully functional and sustainable and to enable BWDB field offices to be able to implement PSM approach. The WMOs would be established under the Cooperative Societies Act. The WMOs will consist of, depending on the size of the FCD/FCDI scheme, WMG (Water Management Group), WMA (Water Management Association) or WMF (Water Management Federation).

Component 2: O&M Performance Improvement (Tentative Cost US$35.0 million): This component would support measures to improve O&M performance of about 77 BWDB schemes, which are "technically functional" and do not require R&I. In order for medium and large FCD or FCDI schemes to be included in this component, the scheme must have existing functioning WMOs or similar beneficiary organizations that have the experience of working with PSM approach. The component would also aim to improve culture and practice of O&M planning and execution within BWDB. The project schemes for O&M will be selected from BWDB Circle(s) or Division(s) of the BWDB's seven Zones.

The objective of this component is to ensure the sustainability of those schemes that are currently functioning well and have undergone major rehabilitation and improvement under component 1 (or gone through a similar process under a projects funded by GOB or other donors). The project would finance O&M requirements on a declining basis (starting with 80% in year 1). In all the selected schemes, Government's matching funds are expected to be made available on timely basis. The scheme performance will be monitored in the year following the introduction of the O&M performance improvement practices in the scheme. However, no further funding will be made available for this component if GOB fails to provide the timely matching funds, performance of the schemes are judged to be poor and there is a failure in management transfer to the WMO. The component would also support technical assistance and training associated with O&M improvement.

A program of new initiatives to foster improvements in O&M planning and financing would consist of mechanisms for prioritizing allocation of expenditure between types of activities and between schemes; improved O&M execution methods, including contracting mechanisms; and monitoring mechanisms to measure FCD/FCDI scheme performance and to judge O&M efficiency and effectiveness through annual assessments against agreed performance standards and by third-party audit.

Component 3: Institutional Improvement (Tentative Cost US$ 20.0 million): This component would support the institutional improvement of BWDB and WARPO, which are the two major national Government institutions that deal with the nation's water resources. The component would finance technical assistance, including consultants for change management, capacity building and training; computers, office equipments, vehicles, survey and monitoring equipments, and other required physical facilities.

(a) BWDB (Tentative Cost US$8.0 million): BWDB: The project would support implementation of BWDB reforms, focusing primarily on implementation of decisions already made by the Government to restructure and strengthen BWDB as a water resources management agency rather than just a development agency; and support initiatives to make its operations more effective, efficient and transparent, including human resource development. MOWR has already reviewed its staffing requirements and is implementing a policy decision to downsize its staffing to about 8860 by 2006 through attrition from an earlier number of 18032. However, given the types of activities that BWDB would need to carry out, BWDB has initiated the process of determining skill requirements of BWDB and staff the organization with appropriately skilled staff with a mix of engineering, environment, water management, drainage, community mobilization, agricultural extension and related skills. Training, capacity building and reorientation and change management inputs to staff, along with recruitment of appropriately skilled staff, would also be strengthened as part of this project.

The specifics of the time-bound action program agreed with IDA include: (i) further rationalization of BWDB staffing and improvement of the staff skill-mix; (ii) design and implementation of need-based staff training programs; (iii) phased devolution of authority to Zonal Chief Engineers to foster the concept of integrated management of local water resources; (iv) improvement of transparency and accountability through improved procurement system and contract administration practices; better budgeting and financial management systems; enhanced monitoring and evaluation functions; and timely preparation and disclosure of financial and performance information; and (v) implementation of the initial phase of modernizing BWDB's operations through computerization/ information systems in functional areas.

(b) WARPO (Tentative Cost US$ 12.0 million): The various responsibilities assigned to WARPO by the National Water Policy (NWP) can be sub- divided into "Core Functions" and "Periodic Functions". Four core functions include: (i) maintenance, updating and dissemination of the National Water Resources Database (NWRD); (ii) upkeep of water resources assessments; (iii) monitoring implementation of National Water Management Plan (NWMP); and (iv) functioning as a "clearing house". The periodic functions include: (i) periodic update of the NWMP; (ii) contributions to national plans; (iii) ad-hoc advice on policy, strategy, institutional and legal issues; and (iv) special studies and research, as required from time to time. The project

would support only those 'core' and 'periodic' functions that are consistent with the overall project development objectives of the proposed project.

5. Financing

Source:		($m.)
Borrower/Recipient (GOB)		20
International Development Association (IDA)		80
Government of Netherlands (GON)		20
	Total	120

6. Implementation

The Government of the Netherlands (GON) has indicated its willingness for co-financing the proposed project that will compliment the Dutch-funded Integrated Planning for Sustainable Water Management (IPSWAM) project that is about to start, and the on-going Twinning Arrangement between the MOWR in Bangladesh and the Dutch Ministry of Transport, Public Works and Water Management.

WMIP would be implemented over a period of 6 years (or 7 years), starting FY 2005. It has been designed as a framework-type project, with an overall framework of objectives, components and specific criteria to select schemes that will be included in project components 1 and 2. WMIP would be implemented by the main organizations of the water sector, i.e. BWDB and WARPO. In other words, the project will be implemented by the existing water agencies under the direct supervision and responsibility of MOWR. Past experience has shown that excessive reliance on TA has adversely affected the sustainability and did not really increase the capacity of the sector organizations to execute their mandated tasks. In this project, TA will be aimed at initiating the project activities, and simultaneously focusing more on the capacity building towards mainstreaming the principles of participatory water management. An appropriate exit strategy is in-built so that BWDB can take over the responsibility during the implementation period.

The implementation arrangements are designed to use the existing set-up, to the extent possible, with only a coordination arrangements proposed during implementation. Considerable attention will therefore be given to the planning, monitoring and evaluation procedures of WMIP. The project components 1, 2 and 3(a) will be implemented by BWDB and component 3(b) will be implemented by WARPO. Two overarching policies have dominated the overall implementation framework i.e. building up a participatory water management system and strengthening the water sector institutions. Based on these principles, the implementation arrangements consist of the establishment of Program Steering Committee (PSC), Program Coordination Units (PCUs) and Water Management Organizations (WMOs). The project would provide appropriate technical assistance to facilitate its implementation.

7. Sustainability

Experience world-wide has demonstrated that the most important requirement for sustainable water management is satisfactory institutional arrangements, stakeholder participation in all aspects of water management, and an O&M regime which has assured source of funding (including cost sharing) and efficient operating mechanisms. Stakeholder participation is even more important in Bangladesh given the multiple, and sometimes divergent, interests of the various stakeholders. The project is designed to establish these conditions for successful outcomes. The project will support change management and technical expertise to assist BWDB leadership to carry out the reforms, communicate the reforms, and build consensus and support for reforms.

The proposed project will further refine the PSM approach, that has been piloted in several water sector projects in Bangladesh, in order to improve its sustainability as follows: (a) Provision of TA with a clearly articulated exit strategy; (b) Involvement of NGOs for building capacity of community organizers/extension overseers and promoting development of partnership between BWDB and the WMOs but with a declining role of the NGOs over time through a carefully developed exit strategy; and (c) Formal coordination mechanism with the GON-supported Integrated Planning for Sustainable Water Management Project (IPSWAM) project that is expected to go into operation in the next few months in order to incorporate lessons learned from the implementation of IPSWAM into the implementation plans for the proposed project.

8. Lessons Learned from Past Operations in the Country/Sector

The National Water Policy indicated that future interventions in FCD/FCDI schemes would involve integrated natural resources management within the system of a natural hydrologic boundary. Lessons learnt from past water management efforts and those that have been factored into the project design include: focus of water resources management must go beyond just flood control, drainage and irrigation; more attention must also be given to social dimensions that promote participation of stakeholders and transfer of appropriate water management activities to local communities; environmental considerations must be integrated into water resources management; need for reforming water institutions has become even more pronounced; establishment of community organizations through a social engineering process is a very time consuming process and should be factored into project implementation planning; and flood embankment designs should be based on a study of the overall river basin development, rather than of merely the project area located within the river basin.

9. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[x]	[ ]
Natural Habitats (OP/BP 4.04)	[x]	[ ]
Pest Management (OP 4.09)	[x]	[ ]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[ ]	[x]

Involuntary Resettlement (OP/BP 4.12)	[x]	[ ]
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	[ ]	[x]
Forests (OP/BP 4.36)	[ ]	[x]
Safety of Dams (OP/BP 4.37)	[ ]	[x]
Projects in Disputed Areas (OP/BP/GP 7.60)	[ ]	[x]
Projects on International Waterways (OP/BP/GP 7.50)	[x]	[ ]

10. List of Factual Technical Documents

(i) The World Bank, (June 30, 2003), Bangladesh- Country Assistance Strategy Progress Report.

(ii) Government of Bangladesh, (March 2003), Bangladesh: A National Strategy for Economic Growth, Poverty reduction and Social Development (I-PRSP).

(iii) The World Bank, (February 2003), Water Resources Sector Strategy: Strategic Directions for World Bank Engagement. Agriculture and Rural Development Department (ARD).

(iv) The World Bank, (October 31, 2002), Reaching the Rural Poor: Strategy and Business Plan. Agriculture and Rural Development Department (ARD).

(v) Government of Bangladesh, (December 1998), Bangladesh: National Water Policy.

(vi) Government of Bangladesh, (December 2001), Bangladesh: National Water Management Plan. Water Resources Planning Organization.

(vii) Government of Bangladesh, (2000), Bangladesh: Guidelines for Participatory Water Management.

(viii) Government of Bangladesh, (June 2003), Final Preparation Study Report Water Management Improvement Project. Bangladesh Water Development Board.

(ix) Government of Bangladesh, (March 2000), Final Report Water Sector Improvement Project. Bangladesh Water Development Board.

(x) Government of Bangladesh, (June 2003), Draft Environmental Management Framework (Water Management Improvement Project). Bangladesh Water Development Board.

(xi) Government of Bangladesh, (December 2001), Draft Framework for Land Acquisition and Resettlement (Water Management Improvement Project). Bangladesh Water Development Board.

(xii) Cowater (Canada), (August 29, 2002), Manual for Financial Management (Water Management Improvement Project).

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