



Technical Assistance Report

Project Number: 35246
December 2005

Technical Assistance People's Republic of Bangladesh: Preparing the Second Command Area Development Project (Cofinanced by the Japan Special Fund and the Poverty Reduction Cooperation Fund)

CURRENCY EQUIVALENTS

(as of 1 December 2005)

Currency Unit	–	taka (Tk)
Tk1.00	=	\$0.0152
\$1.00	=	Tk65.85

ABBREVIATIONS

ADB	–	Asian Development Bank
BWDB	–	Bangladesh Water Development Board
CADP	–	Command Area Development Project
FCDI	–	flood control, drainage, and irrigation
JMC	–	joint management committee
NGO	–	nongovernment organization
NWP	–	National Water Policy
O&M	–	operation and maintenance
TA	–	technical assistance
WMO	–	water management organization

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	Targeted intervention
Sector	–	Agriculture and natural resources
Subsector	–	Irrigation and drainage
Theme	–	Sustainable economic growth
Subtheme	–	Developing rural areas

NOTE

In this report, "\$" refers to US dollars.

Vice President	L. Jin, Operations Group 1
Director General	K. Senga, South Asia Department (SARD)
Director	F. C. Roche, Agriculture, Environment, and Natural Resources Division, SARD
Team leader	K. H. Ryu, Project Specialist (Water Resources), SARD
Team members	F. S. Begum, Social Development and Gender Officer, SARD
	P. Kamayana, Senior Country Programs Specialist, SARD
	S. Nebel, Poverty Reduction Specialist, SARD
	S. Ranawana, Environment Specialist, SARD
	A. K. Saha, Project Implementation Officer (Agriculture), SARD
	S. Tanaka, Senior Social Development Specialist, Regional and Sustainable Development Department

I. INTRODUCTION

1. In 2003, the Government of Bangladesh requested the Asian Development Bank (ADB) to provide project preparatory technical assistance (TA) for preparing the Second Command Area Development Project (CADP), which was included in the 2004 Country Strategy and Program Update.¹ An ADB fact-finding mission visited Bangladesh from 12 to 17 March 2005 and consulted with representatives of the Government, nongovernment organizations, and other development partners.² The mission reached understanding with the Government on the purpose, outputs, methodology, key activities, cost, financing, implementation arrangements, and terms of reference for the TA. The executing agency, the Bangladesh Water Development Board (BWDB), submitted its own prefeasibility study report for the Project to ADB on 31 October 2005. The design and monitoring framework is in Appendix 1.³

II. ISSUES

2. Water resources management is critically important for Bangladesh's agriculture, which faces the challenges inherent in intensifying agriculture and maintaining self-sufficiency in food grains for a land-scarce country with a population of 130.0 million people, expected to increase to 175.0 million by 2025. Access to water and its effective management for agricultural production is fundamental to the livelihood of the rural population. To address this issue, the national water policy (NWP), approved by the Government in 1999, sets new paradigms for the water sector that include participatory, integrated, and decentralized water management throughout the planning, implementation, and operation and maintenance (O&M) stages of developing water resources infrastructure.

3. To respond to the NWP, in March 2004, the Government approved the National Water Management Plan, which has three main categories of programs: cross-cutting programs, national-level programs, and regional programs. The cross-cutting programs include institutional development and the creation of an enabling environment conducive to efficient and equitable water resources management, whereas the regional programs focus on a participatory, integrated approach to water management and on enhanced management of existing public flood control, drainage, and irrigation (FCDI) schemes.

4. The NWP provides the directives and guidelines for fundamental reforms in the water sector and its key institutions. BWDB has made a good start toward achieving the objectives of decentralization, developing multidisciplinary skills, promoting beneficiary participation, and ensuring transparency and accountability in its operations. It has reduced its staff from 18,000 to 9,000 and improved management efficiency by adopting the 2000 BWDB Act. The Government has gradually increased O&M funds from \$10.0 million in 2001 to \$24.0 million in 2005. In 2005, BWDB allocated its limited O&M budget based on the performance of FCDI schemes by introducing a newly developed management information system into two priority schemes in each zone in 2005 and to all large schemes in 2008. However, full implementation of these reforms will need long-term support to produce widespread, tangible results.⁴

5. Having beneficiaries participate in and contribute to O&M is a core strategy for achieving the sustainability of water infrastructure. To this end, in 2002 the Government formulated guidelines for participatory water management pertaining to ownership transfer, management

¹ ADB. 2003. *Country Strategy and Program Update (2004-2006): Bangladesh*. Manila.

² Prior to the fact-finding mission, a reconnaissance mission was fielded from 28 November to 9 December 2004.

³ The TA first appeared in *ADB Business Opportunities* (internet edition) on 23 November 2004.

⁴ Specifically for O&M, investments are required in (i) training BWDB staff, (ii) establishing modern O&M management information systems, and (iii) establishing a staff performance evaluation system.

transfer, and joint management. Currently 5,809 water management organizations (WMOs) have been formed under 28 schemes, but these WMOs will need sustained support to develop fully. To support the BWDB Act, in 2003, the Government approved regulations for collecting irrigation service fees, which enable the Government to field-test innovative beneficiary participation methodologies. The regulations introduce a system and procedures for collecting fees for irrigation services in completed FCDI schemes and for ensuring that the responsible agency has put in place a system to provide irrigation services to beneficiary groups and has the resources to do so. An improved O&M system can become effective only after infrastructure has become functional and productive. No beneficiary participation can be expected if the infrastructure has become dysfunctional because of lack of proper maintenance in the past.

6. As noted in ADB's review of the water sector in July 2003, public investment in water resources management has focused primarily on mitigating the negative effects of annual floods and river erosion. In total, more than \$3.0 billion has been spent on water infrastructure in 639 FCDI schemes. More than 13,000 kilometers of embankments incorporating 1,300 water control structures and about 3,500 kilometers of drainage canals have been constructed. The sector review identified major issues pertaining to water resources management, namely, unfinished reform of key water sector institutions and poor sustainability of benefits resulting from inadequate O&M.

7. The sector review gave the highest priority to a program to sustain the existing water management infrastructure and make it more efficient so that the country could realize economic benefits of past investments in the water resources management facilities as a result. A program of portfolio rationalization of BWDB, along with institutional reforms, would produce maximum benefits from past investments, and a system has to be put in place so that infrastructure is sustained through adequate O&M.⁵ To achieve this goal, a phased, sectorwide approach is needed along with the Government's long-term commitment for the O&M.

8. In 2005, based on the sector review, the results-based Country Strategy and Program for Bangladesh identified the development of a sustainable irrigation system as a priority for boosting agricultural productivity and encouraging livelihood diversification. The Country Strategy and Program supports the basic principles of integrated water resources management, sustainable service delivery, and user participation in water management. In addition to providing assistance for efficient public investment in large and small-scale water management systems, ADB will support the Government's efforts to decentralize system design and management and foster sustainable O&M by encouraging stakeholder participation and empowerment, integrating service delivery with other development services, and enhancing opportunities for disadvantaged groups to have access to irrigation. ADB support for developing larger irrigation systems will hinge on satisfactory implementation of the NWP.

9. The Government's national poverty reduction strategy highlights water resources management as a priority for targeted pro-poor growth. The participatory, integrated approach to water management has demonstrated that the rehabilitation of existing FCDI schemes can be complemented by targeted, poverty-focused interventions through small-scale fisheries and crop diversification activities. The integrated approach could further channel limited resources to benefit vulnerable groups. Mapping where the poor are concentrated would help measure geographic inequalities in well-being. Such poverty maps could identify pockets of poverty, thereby helping to identify target areas for schemes and livelihood activities for the Project.

⁵ Portfolio rationalization refers to prioritizing BWDB's investment program based on the National Water Management Plan.

10. The Government's recent policy actions reflect a bold, new commitment to sustainable water resources infrastructure. The major development partners in the water sector in addition to ADB—the World Bank and the Government of the Netherlands—are working in partnership to support the Government's reform of BWDB and of its policies for participatory water management and cost recovery. The Government's approach to integrated water resources management will also support the national poverty reduction strategy in poorer rural areas. Understanding from experience that sustainability depends on effective beneficiary involvement in O&M, the Government is committed to moving forward in implementing the new policies. Effective implementation will require sustained and well-coordinated support by its development partners in the coming years.

11. To support sustainable O&M of water resources facilities, under a twinning arrangement between BWDB and the Government of the Netherlands for 2001–2005, a 5-year action plan was prepared to improve O&M performance through stakeholder participation and strengthened institutional capacity. The action plan aims to improve O&M procedures and methods, financing and budget allocation, and monitoring and evaluation. Implementation of the action plan will begin with pilot testing in selected zones and will require close monitoring of the outcomes.

12. One lesson learned from the CADP was that inadequate and deferred O&M in large irrigation systems had seriously compromised the effectiveness of the schemes.⁶ Even if a system for collecting service charges for irrigation was introduced, beneficiaries were reluctant to pay service charges if they did not obtain satisfactory irrigation services in return. In addition to the challenges of rehabilitation, the large schemes face the challenge of ensuring proper O&M in the future with contributions from beneficiaries under the auspices of a joint management committee (JMC). Thus to achieve the full benefits of water infrastructure, proper rehabilitation is needed along with a system for collecting service charges. For this purpose, a participatory approach can establish a sustainable system for water and infrastructure management. However, WMOs require long-term institutional support for planning, investment, and business management. ADB's special evaluation study on the effectiveness of participatory approaches⁷ found that control of resources is the most critical factor, as it determines the location of decision-making power and enables beneficiaries to hold providers accountable. Compared with past institutional development of WMOs and capacity strengthening efforts by ADB and other donors, a JMC introduced in 2002 under the CADP has showed positive impacts as a sustainable water management system. However, JMCs' roles and responsibilities need to be extended and their links with existing local government institutions have to be further strengthened.

13. Lessons learned from the CADP show that to fully use the potential of past investments, command area development needs to strengthen service delivery under a joint management system and that project design should include water control, flood control, and river erosion mitigation measures to fully exploit the benefits of large FCDI schemes. In addition, project beneficiaries need to be involved in project planning and detailed design aspects of the Project. An integrated approach to water resources management is recommended to improve the efficiency of infrastructure through improved coordination among all relevant agencies. All these will be reflected in the project design and the feasibility study for the proposed Project.

⁶ ADB. 1995. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People's Republic of Bangladesh for the Command Area Development Project*. Manila.

⁷ ADB. 2004. *Special Evaluation Study on Effectiveness of Participatory Approaches*. Manila.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

14. The overall goal of the TA is to enhance rural livelihoods by improving integrated water resources management through implementation of the NWP in selected FCDI schemes. The outcome of the TA will be a feasibility study of the selected FCDI schemes and an investment project proposal for possible ADB financing to implement participatory water management principles corresponding to the NWP's priorities. The possible project activities may consist of (i) institutional development of BWDB; (ii) institutional strengthening of WMOs and JMCs; (iii) improvement of service delivery by means of improved flood control, drainage, irrigation, and river erosion mitigation facilities; (iv) integrated agriculture and fisheries development; and (v) poverty-focused interventions and other water-related livelihood support.

B. Methodology and Key Activities

15. The TA will prepare a feasibility study of three or four schemes selected from the nine large irrigation schemes recommended by the Government. The TA has two phases. The first phase is a prefeasibility study to select the project schemes. The second phase is a feasibility study of the selected schemes to prepare an investment proposal. The TA will ensure the participation of diverse stakeholders in the TA and the subsequent project, including beneficiaries, local government institutions, and people likely to be affected, along with that of nongovernment organizations. The initial poverty and social analysis is in Appendix 2. Intensive collaboration with other development partners will be maintained to ensure the complementarity of interventions in the sector, as well as to explore possibilities for cofinancing the Project.

16. **Phase 1 (4 Months), Selection of Project Schemes.** Based on BWDB's prefeasibility study of nine FCDI schemes, the TA will prepare a detailed prefeasibility study to select three or four schemes of the nine schemes, namely, the Monu River, Karnafuli, Mufuri, Ganges-Kobadak, Teesta, Chandpur, Kurigram south and north, and Sirajganj schemes. The consultants will prepare selection criteria for the prefeasibility study, undertake the prefeasibility study, and recommend schemes for the feasibility study. The consultants will review and recommend institutional reforms of BWDB for sustainable O&M through a joint management system.

17. **Phase 2 (10 Months), Feasibility Study of Selected Schemes.** The TA will undertake a feasibility study and prepare an investment project to implement the identified priority interventions. These interventions will strengthen participatory water management in the selected, large FCDI schemes to introduce a sustainable water management system by mobilizing local resources under a joint management system. The Project will ensure sustainable O&M, capacity building of BWDB and JMCs, specific benefits to the poor, and enhanced service delivery to beneficiaries. Environmental, social, gender, resettlement, and economic assessments will be prepared in accordance with Government and ADB guidelines.

C. Cost and Financing

18. The TA is estimated to cost \$1.2 million equivalent, comprising \$495,000 in foreign exchange costs and \$705,000 equivalent in local currency costs. The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan, for an amount equivalent to \$600,000 and by the Poverty Reduction Cooperation Fund for an amount equivalent to \$350,000, with the funding administered by ADB, covering the total foreign exchange cost and \$455,000 equivalent of the local currency cost. The Government of Bangladesh has agreed to finance the balance of \$250,000 equivalent by providing counterpart

staff, office facilities, local travel and vehicles, topographic surveys and hydraulic data collection, data analysis, and reports. The cost estimates and financing plan is in Appendix 3. The Government has been informed that approval of the TA does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

19. The TA will be implemented over 14 months commencing in March 2006 and with an estimated completion date of April 2007. BWDB will nominate the project director and will provide in-kind contributions to the TA consultants. A steering committee will be established, chaired by the Secretary, Ministry of Water Resources, and with participation by representatives of the ministries of agriculture, communications, fisheries and livestock, environment and forest, finance and planning, land, local government, rural development and cooperatives, and women's affairs. In each subproject area, a JMC will be established consisting of district representatives of line agencies and representatives of beneficiaries. The Government will provide a technical support team consisting of six experts in irrigation, design, social development, environment, water management, and economics.

20. ADB will recruit an international consulting firm in association with local firm(s) to conduct the TA in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for engaging domestic consultants. The consultants will be selected following the quality- and cost-based selection procedure with full technical proposal. The TA consulting services under the Japan Special Fund financing require 13 person-months of international consulting services comprising two specialists, a water resources development specialist (team leader) and an agricultural economist, and 46 person-months of nine domestic consultants: an irrigation engineer, a resettlement specialist, an institutional development specialist, a financial management specialist, a natural resources economist, an agricultural extension specialist, a fisheries development specialist, a gender and development specialist, and an environmental specialist. The TA consulting services under the Poverty Reduction Cooperation Fund financing will involve three consultants, including an international social development specialist, a domestic poverty reduction specialist, and a domestic participatory development specialist, to be recruited individually by ADB. The outline terms of reference are in Appendix 4. Equipment will be purchased by the TA consultants under the Japan Special Fund financing following ADB's *Guidelines for Procurement*.

21. The consultants will submit (i) an inception report within 1 month of TA commencement, (ii) an interim report within 4 months, (iii) a draft final report within 13 months, and (iv) a final report on completion of the TA. National and regional workshops will be held during the interim report and draft final report stages to reflect the views of stakeholders and experts in relation to the TA's implementation and outputs.

IV. THE PRESIDENT'S DECISION

22. The President, acting under the authority delegated by the Board, has approved (i) ADB administering a portion of technical assistance not exceeding the equivalent of \$350,000 to be financed on a grant basis by the Poverty Reduction Cooperation Fund, and (ii) ADB providing the balance not exceeding the equivalent of \$600,000 on a grant basis to the Government of Bangladesh for preparing the Second Command Area Development Project, and hereby reports this action to the Board.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impact Enhance rural livelihoods by improving water resources infrastructure</p>	<p>Increased gross domestic product and established, sustainable water management systems in large flood control, draining, and irrigation schemes by June 2013</p>	<p>Baseline survey data during the technical assistance</p> <p>Bangladesh Bureau of Statistics reports</p> <p>Project completion report</p>	
<p>Outcome Feasibility study and an investment proposal agreed to by the Government and ADB</p>	<p>Memorandum of understanding signed by the Government and ADB during an appraisal mission in November 2007</p>	<p>Memorandum of understanding</p>	<p>Assumptions</p> <ul style="list-style-type: none"> • National poverty reduction strategy is approved. • Project will be completed on schedule. • All stakeholders are committed to the Project and capable of implementing it. <p>Risk</p> <ul style="list-style-type: none"> • Project implementation may be delayed beyond the project period.
<p>Outputs Technical assessments completed</p> <p>Project design requirements accomplished</p>	<p>Draft final report submitted to the Government and ADB by November 2007</p>	<p>Consultants' inception, mid-term, and quarterly reports</p>	<p>Risks</p> <ul style="list-style-type: none"> • Government approval of project documents is delayed. • Agreement on development options is delayed.
<p>Activities with Milestones</p> <ol style="list-style-type: none"> 1.1 Submit inception report (by April 2006) 1.2 Select project schemes (by August 2006) 1.3 Conduct topographic survey for selected schemes (by July 2006) 1.4 Prepare feasibility studies (by September 2006) 1.5 Prepare draft final report (by November 2006) 1.6 Prepare final report (by January 2007) 			<p>Inputs ADB: \$600,000 PRF: \$350,000 Government: \$250,000</p>

ADB = Asian Development Bank, PRF = Poverty Reduction Cooperation Fund.

INITIAL POVERTY AND SOCIAL ANALYSIS

A. Linkages to the Country Poverty Analysis

Is the sector identified as a national priority in country poverty analysis?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sector identified as a national priority in country poverty partnership agreement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>Contribution of the sector or subsector to reduce poverty in Bangladesh:</p> <p>Bangladesh is overwhelmingly rural, densely populated, and extremely poor. Even though available poverty data indicate that poverty is declining, about 50% of the population lives below the official poverty line and Bangladesh is one of the poorest countries in the world. The slow progress in income poverty reduction since the early 1980s stands out as the challenging feature of Bangladesh's development. Despite the increase in per capita income from 2.0% per year in the 1980s and early 1990s to 3.8% over the last 3 years, this has not resulted in significant poverty reduction.</p> <p>Economic development and poverty reduction are the country's overriding development priorities. The 2000 household expenditure survey reveals that about 77% of the population and some 85% of the poor live in rural areas, that 42% of rural households are below the poverty line as measured in terms of caloric intake (2,212 kilocalories/day/person), and that 19% of rural households are below the hardcore line (1,805 kilocalories/day/person).</p> <p>For the rural poor, access to and control of water resources is of fundamental importance, because water is the foundation for many livelihood activities, including agricultural production, fisheries, and forestry. The national poverty reduction strategy addresses the development of rural infrastructure as a critical factor in increasing on- and off-farm employment and income, especially for the rural poor and women. Additional key priorities are income-generation activities and microfinance for employment opportunities in the on- and off-farm sectors.</p> <p>As agriculture accounts for more than a quarter of gross domestic product and employs almost 60% of the labor force, it is important to sustain agricultural production and accelerate diversification and other livelihood improvements in rural areas. As Bangladesh gets too much water during the monsoon season and little water during the dry season, agricultural development has faced major bottlenecks in sustainable water management. Improving water resources infrastructure through participatory operation and maintenance (O&M) is essential for meeting the agriculture development requirements, as emphasized in the Government's national water policy. As part of its targeted, pro-poor growth strategy, the national poverty reduction strategy has identified the key areas of intervention, which include alleviating flood and drainage congestion, salinity, erosion, and improving irrigation, which in relation to poverty reduction is particularly important for small farmers and wage laborers. Participatory water management could improve the sustainability of agricultural production and integrated water management could accelerate crop diversification and income-generating activities.</p> <p>Developing efficient and sustainable flood management and irrigation systems is central to boosting agricultural productivity and encouraging livelihood diversification. The management of water resources has adopted basic principles of integrated management, sustainable service delivery, and beneficiary participation. In addition to providing assistance for efficient public investment in flood control, drainage, and irrigation schemes, the Project will support the Government's efforts to decentralize system design and management and foster sustainable O&M by encouraging stakeholder participation and empowerment, integrating service delivery with other development services, and enhancing opportunities for disadvantaged groups to have access to irrigation. In addition, the rehabilitation of water resources infrastructure will help increase agricultural production and improve food security.</p> <p>In particular, the development of infrastructure for water resources plays a significant role in poverty reduction, both directly and indirectly. In direct terms, it provides immediate cash incomes and job opportunities: estimates indicate that the cost of hiring local, unskilled labor accounts for about 20% of the total costs of water resources development projects and such projects provide substantial employment opportunities to farmers and rural populations in infrastructure construction and O&M. Indirectly, improved infrastructure can reduce the cost of agricultural products, increase prices paid to farmers for their products, and help the diffusion of agricultural technology.</p>			

B. Poverty Analysis**Targeting Classification: Targeted Intervention****What type of poverty analysis is needed?**

Poverty Analysis. The most direct economic measure of poverty is based on income or expenditure. Such data are commonly collected through sample surveys, such as household income and expenditure surveys. The small area estimation technique will provide ways to improve poverty estimates by combining limited survey data with more comprehensive datasets that do not include income or expenditure data. Regression parameters are then applied to the larger dataset to estimate income (or expenditure) for households, and the predicted income data permit estimating poverty at the district level. Previously, the incidence of core poor as measured by the headcount index and based on direct caloric intake has shown an annual growth rate of 1.5% in the areas designated for the water resources infrastructure development project.

Poverty Mapping. Poverty maps will provide a geographic picture of poverty in the districts where large schemes are located. The poverty maps will combine survey and census data to generate poverty and inequality profiles at low levels of aggregation. The maps will be useful for generating an overview and for undertaking or confirming general targeting for selected project schemes.

Distribution Analysis. To improve the impact of poverty reduction efforts, distribution analysis of project benefits will assess the equity of project effects and show how the Project's cost and benefits will be shared among the poor and other stakeholders. Poverty impact analysis will estimate the proportion of the net economic benefits designed for the poor compared with total net economic benefits. During the feasibility study, the distribution analysis will identify (i) how the costs will be incurred and the benefits realized, (ii) how the gains from the Project will be distributed, (iii) how the cost burden can be made acceptable to those who will pay irrigation service fees, (iv) how the project benefits a target group on equity considerations, and (v) how the project design and components can be modified to enhance the impact on target beneficiaries.

Analysis of Vulnerability and Access to Livelihood Assets in Selected Schemes. The Project will focus on multiple aspects of the rural livelihood assets of poor people. Analysis will provide a contextual understanding of the conditions under which selected livelihood practices can reduce rural poverty. The technical assistance (TA) will provide a comprehensive picture of rural poverty in the project area, focusing on selected schemes and formulating options for enhancing and developing income-generating activities.

C. Participation Process

Is there a stakeholder analysis? Yes No

Is there a participation strategy? Yes No

The Project will implement a participation strategy that will go beyond consultations with beneficiaries and aim at empowering beneficiaries to participate in decision making pertaining to project design and implementation and resource flows and control. A stakeholder analysis will assess the interests of various stakeholders, their capacities, and how best to involve which stakeholders at different stages of the project cycle.

The TA will prepare a comprehensive strategy to develop the mechanisms for beneficiary participation and for their contributions to the O&M of project facilities. The involvement of farmers, fishers, landless wage laborers, and other disadvantaged groups in the project cycle will have positive effects on the Project's outcomes and on the sustainability of the intervention by facilitating ownership of and accountability for O&M.

The Project will look into livelihood enhancement for various stakeholders, including the poor and landless. The participation strategy will outline how best to address livelihood enhancement activities and how to address the needs and concerns of disadvantaged groups. The integrated water resources management approach of the Project will focus on enhanced management and rehabilitation of flood control, drainage, and irrigation schemes.

D. Gender Development

Strategy to maximize impacts on women:

Women account for nearly 50% of the population in the project area, most of them engaged in farm household activities. The TA will analyze their needs and suggest ways to address gender concerns in activities related to improving the management of water resources facilities. The TA will suggest that the ensuing Project create scope for participation by women in project activities, beginning with participatory project planning and continuing through implementation, monitoring, and evaluation. It will suggest how to generate employment opportunities for women by involving them in construction and maintenance through labor contracting societies, tree planting, and other activities; how to facilitate linking rural women beneficiaries with different resources to sustain their livelihoods; and how to build institutional capacity among women. A gender action plan, including activities and a budget, will be prepared as an output of the TA.

Has an output been prepared? Yes No

E. Social Safeguards and Other Social Risks

Item	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Resettlement	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	The interventions being examined under the TA are not expected to result in significant land acquisition. Social and economic impacts caused by the acquisition of land and other fixed assets or by changes in the use of land will be examined. Based on the prefeasibility study, short resettlement plans will be prepared for each scheme, as the resettlement impacts may not be significant for each scheme selected. In case of voluntary land donation, an action plan to comply with involuntary resettlement policy safeguards will be prepared.	<input type="checkbox"/> Full <input checked="" type="checkbox"/> Short <input type="checkbox"/> None
Affordability	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	The affordability of irrigation service fees for the beneficiaries will be analyzed during the TA implementation period. The impact of local resource mobilization on poor households for sustainable O&M will also be analyzed.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Labor	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None	Given that civil works are the main source of income for the poor, the labor strategy is to remove gender discrimination through equal wage for equal work and improve employment and working conditions of unskilled labor.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Indigenous Peoples	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	The TA will examine the effects of the proposed project activities in the areas of significant settlement by indigenous peoples. Specific actions for targeted indigenous peoples will be proposed, if required.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Other Risks and/or Vulnerabilities	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	Ownership of and commitment to project strategies and interventions will be ensured through extensive stakeholder consultations and the use of participatory approaches in project planning and design in order to address risks to potentially vulnerable groups.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Foreign Exchange	Local Currency	Total Cost
A. Asian Development Bank (ADB) Financing^a			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	320.0	0.0	320.0
ii. Domestic Consultants	0.0	138.0	138.0
b. International and Local Travel	10.0	20.0	30.0
2. Equipment (computer, printer, etc.) ^b	20.0	0.0	20.0
3. Topographic Surveys and Design ^c	0.0	22.0	22.0
4. Reports and Communications	0.0	20.0	20.0
5. Contingencies	30.0	20.0	50.0
Subtotal (A)	380.0	220.0	600.0
B. Poverty Reduction Cooperation Fund^d			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultant	100.0	0.0	100.0
ii. Domestic Consultants	0.0	30.0	30.0
b. International and Local Travel	5.0	20.0	25.0
2. Topographic Survey and Poverty Map ^c	0.0	130.0	130.0
3. Consultation Workshops ^e	0.0	20.0	20.0
4. Miscellaneous Administrative Support Costs ^f	0.0	15.0	15.0
5. Contingencies	10.0	20.0	30.0
Subtotal (B)	115.0	235.0	350.0
C. Government Financing			
1. Office Accommodation	0.0	60.0	60.0
2. Remuneration and Per Diem of Counterpart Staff	0.0	30.0	30.0
3. Facilities for Workshops and Meetings	0.0	40.0	40.0
4. Topographic Survey and Hydraulic Data Collection	0.0	50.0	50.0
5. Data Analysis and Reports	0.0	70.0	70.0
Subtotal (C)	0.0	250.0	250.0
Total	495.0	705.0	1,200.0

^a Financed by the Japan Special Fund, funded by the Government of Japan.

^b The equipment to be purchased includes three computers, three printers, three photocopiers, three air conditioners, one multimedia projector, and one facsimile machine for use by the consultants and to be turned over to the Bangladesh Water Development Board upon completion of the technical assistance.

^c Including contracts for poverty mapping, surveys, and design for local consulting companies.

^d Administered by ADB.

^e Includes costs for subcontracting local nongovernment organizations and facilitators.

^f Includes office utilities and supplies and secretarial expenses.

Source: ADB estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Overall Outcome

1. The main outcome of the technical assistance will be a feasibility study report for preparing the Second Command Area Development Project to be financed by the Asian Development Bank (ADB) and development partners. The consultants will cooperate closely with a technical support team that will be provided by the Bangladesh Water Development Board (BWDB), the executing agency.

2. The report will cover the scope and implementation arrangements for the Project, an assessment of implementation capacity, a distribution analysis of project benefits, and a number of poverty and social analyses. It will include a capacity development plan, a description of an infrastructure maintenance system, the requirements for consulting services for the Project, and the terms of reference for the consultants. The report will also include a project framework, the details for the proposed results-based monitoring and evaluation system, and an action plan for large irrigation schemes. The technical assistance (TA) consultants will ensure effective participatory planning in the operation and maintenance (O&M) of flood control, drainage, and irrigation (FCDI) schemes. On the basis of the feasibility study, stakeholder workshops will be conducted in relevant districts and a national workshop will be held in Dhaka to finalize the study.

B. Consulting Service Requirements under the Japan Special Fund

3. The consulting services under the Japan Special Fund will require two international consultants for 13 person-months and nine domestic specialists for 46 person-months, all with substantial experience relevant to water resources development in Bangladesh.

1. **Water Resources Development Specialist and Team Leader** (international, 10 person-months; 3 person-months for phase 1 and 7 person-months for phase 2)

4. The team leader will manage the team, coordinate with counterpart staff, arrange for the collection of relevant documents and socioeconomic data, review lessons learned from other projects, review the sector's policy environment, and propose specific policy actions to achieve the ensuing Project's objectives. The team leader will (i) prepare prefeasibility studies of the nine large FCDI schemes; (ii) prepare the inception, interim, draft, and final reports detailing the project proposal; (iii) prepare a comprehensive project proposal, including a logical framework, cost estimates, and a financing plan, in a format suitable for further ADB loan processing; (iv) review the 5-year O&M action plan, in particular, in relation to its procedure and methods, financing and budget allocation, and monitoring and evaluation system; (v) analyze water sector policy and institutions; (vi) assess the effectiveness, key constraints, and lessons learned from past and ongoing water sector interventions; (vii) develop a water management strategy and priorities that encompass physical investments and institutions; (viii) prepare selection criteria for the project schemes and investment options in consultation with all stakeholders; (ix) identify policy dialogue issues and monitor and evaluate ongoing sector reforms; and (x) prepare a feasibility study report that includes compliance with safeguard policies.

2. **Agricultural Economist** (international, 3 person-months; 1 person-month for phase 1 and 2 person-months for phase 2)

5. The agricultural economist will (i) assess the economics of irrigation using various irrigation methods in the large irrigation scheme areas; (ii) review lessons learned in relation to

the impact, distribution analysis, sustainability, and cost-effectiveness of improving water management facilities; (iii) conduct economic analysis, poverty impact assessment, and distribution analysis and determine the Project's benefits in accordance with ADB's *Guidelines for the Economic Analysis of Projects*¹ and *Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects*,² (iv) conduct a sensitivity analysis of rates of return to changes in key assumptions and parameters; and (v) prepare cost estimates and a financing plan for the Project.

3. Irrigation Engineer and Deputy Team Leader (domestic, 12 person-months; 3 person-months for phase 1 and 9 person-months for phase 2)

6. The irrigation engineer will (i) collect and compile information on the physical, socioeconomic, and institutional setting of large irrigation schemes; (ii) assess the performance of and issues pertaining to each scheme; (iii) prepare an inventory of existing structures that includes their status and location maps; (iv) collect information on the ongoing and proposed interventions for the schemes; (v) identify the priority investment requirements for each scheme; (vi) organize district and national workshops and discuss the feasibility study outputs with stakeholders; and (vii) help the team leader prepare the prefeasibility study of the nine schemes and the feasibility study for an investment project.

4. Natural Resources Economist (domestic, 5 person-months; 1 person-month for phase 1 and 4 person-months for phase 2)

7. The natural resources economist will (i) help the agricultural economist estimate the project cost, counterpart fund allocation, and beneficiary contribution; (ii) conduct economic analysis of subprojects according to ADB's *Guidelines for Economic Analysis of Projects*; (iii) conduct a poverty impact assessment of subprojects and prepare a distribution analysis according to ADB's *Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects*; and (iv) undertake sensitivity analysis and describe the major project risks, their potential impacts on project feasibility, and safeguards to be incorporated in the project design.

5. Institutional Development Specialist (domestic, 3 person-months for phase 1)

8. The specialist will (i) assess the institutional capacity of BWDB; (ii) review BWDB's institutional reforms and their progress; (iii) identify institutional weaknesses of BWDB; (iv) recommend institutional strengthening activities and their financial requirements; (v) review the facilities of BWDB training centers and their training materials and programs; (vi) prepare a capacity development program for BWDB and cost estimates and implementation arrangements for the program; and (vii) prepare guidelines for improving the operational efficiency of BWDB in relation to sustainable maintenance of water resources infrastructure.

6. Financial Management Specialist (domestic, 3 person-months for phase 1)

9. The specialist will (i) verify beneficiary survey results; (ii) define standard financial parameters for water resources development; (iii) estimate the net value of increases in agricultural production expected from upgrading works proposed for the Project; (iv) undertake appropriate economic and financial analyses for selected options and for the Project as a whole;

¹ ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila

² ADB. 2001. *Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects*. Manila.

(v) undertake financial analysis in line with the *Guidelines for the Financial Management and Governance of Investment Projects Financed by ADB*,³ (vi) update cost estimates taking into account the potential impacts of inflation and fluctuations in foreign currency exchange rates; (vii) conduct cash flow projections and compute the financial internal rate of return and weighted average cost of capital where applicable; (viii) complete a financial management assessment of BWDB, including a review of its accounting, auditing, financial reporting, budget, and internal control systems; (ix) prepare an action plan that would address financial management issues identified by the initial assessment; (x) review and update the financing plan, including assessing counterpart financing requirements; and (xi) recommend measures to improve project implementation arrangements.

7. Agricultural Extension Specialist (domestic, 5 person-months; 1 person-month for phase 1 and 4 person-months for phase 2)

10. The specialist will (i) prepare a capacity development plan and training programs for relevant staff, including nongovernment organization (NGO) facilitators and Department of Agriculture Extension staff; (ii) provide inputs for the prefeasibility study of the nine schemes by participating in field observations and preliminary assessments; (iii) assess the performance of the agriculture sector in the selected schemes; (iv) identify priority investment opportunities for the selected schemes in relation to agricultural development; (v) prepare agriculture development plans for the subprojects; and (vi) provide inputs for the feasibility study in relation to agricultural activities.

8. Fisheries Development Specialist (domestic, 5 person-months; 1 person-month for phase 1 and 4 person-months for phase 2)

11. The specialist will (i) prepare a capacity development plan and training programs for relevant staff, including NGO facilitators and Department of Fisheries staff; (ii) provide inputs for the prefeasibility study of the nine schemes by participating in field observations and preliminary assessments; (iii) assess the performance of the fisheries sector in the selected schemes, including production and marketing constraints; (iv) identify priority investment opportunities for the selected schemes in relation to fisheries development; (v) prepare fisheries development plans for the subprojects; and (vi) provide inputs for the feasibility study in relation to fisheries activities.

9. Resettlement Specialist (domestic, 5 person-months; 1 person-month for phase 1 and 4 person-months for phase 2)

12. The specialist will prepare a resettlement framework and resettlement plans for selected schemes to ensure compliance with ADB's resettlement policy. The plans will be disclosed to those affected and the resettlement framework will be endorsed by BWDB. The specialist will (i) review applicable policy and legal instruments for land acquisition and resettlement; (ii) identify any socially negative impacts of water management infrastructure resulting from permanent land acquisition; (iii) assess risks and opportunities; (iv) prepare livelihood regeneration strategies and options; (v) prepare an entitlement matrix; (vi) consult with the people affected; (vii) develop specific measures to improve the status and incomes of vulnerable groups; (viii) prepare detailed budgets, implementation schedules, and management arrangements; (ix)

³ ADB. 2003. *Guidelines for the Financial Management and Governance of Investment Projects Financed by ADB*. Manila.

identify requirements for capacity building for resettlement staff; and (x) prepare a mechanism for internal and independent monitoring and evaluation.

10. Gender and Development Specialist (domestic, 3 person-months for phase 2)

13. The specialist will review lessons learned from ongoing water resources development projects and BWDB's gender development strategy to develop a gender action plan for the Project. The specialist will (i) develop mechanisms whereby women can be consulted effectively, review BWDB's practices in this regard, and identify needed improvements; (ii) assess the possible areas and extent of women's participation in the Project; (iii) identify women's needs; (iv) identify measures that will enable women to benefit from project investments; (v) recommend steps for incorporating gender-based criteria and indicators into the project impact monitoring system; (vi) identify areas for capacity building for BWDB and beneficiaries to facilitate women empowerment; (vii) prepare a gender action plan for the Project; and (viii) prepare a budget for gender and development activities.

11. Environmental Specialist (domestic, 5 person-months: 1 person-month for phase 1 and 4 person-months for phase 2)

14. The specialist will (i) assess the potential environmental impacts of the proposed Project; (ii) conduct a comprehensive appraisal of the environmental impact of the Project's activities in line with ADB's Environmental Assessment Guidelines, 2003;⁴ (iii) propose appropriate mitigation measures for the identified environmental impacts; (iv) prepare an initial environmental assessment for the Project; (v) indicate whether a full environmental impact assessment is required based on the initial environmental assessment and, if so, provide the terms of reference; (vi) undertake specific environmental assessments for each scheme; (vii) review all infrastructure designs to identify any potential adverse environmental impacts; (viii) prepare environmental assessment and review procedures in consultation with the Department of Environment and BWDB; (ix) analyze BWDB's capacity to conduct environmental reviews and monitor investment projects; and (x) prepare an environment capacity improvement program for BWDB so that its staff can undertake adequate environmental monitoring and management of the Project.

C. Consulting Service Requirements under the Poverty Reduction Cooperation Fund

15. The consulting services under the Poverty Reduction Cooperation Fund will require one international consultant for 4 person-months and two domestic specialists for 10 person-months, who will be recruited individually by ADB.

1. Social Development Specialist (international, 4 person-months, 1 person-month for phase 1 and 3 person-months for phase 2)

16. Based on ADB's *Handbook on Poverty and Social Analysis*,⁵ the specialist will (i) collect social data as required; (ii) analyze the socioeconomic data; (iii) carry out a rapid stakeholder analysis; (iv) develop the stakeholder participation process for the nine FCDI schemes; (v) develop poverty and social selection criteria; (vi) prepare an overall poverty profile and map of the districts in the project area; (vii) prepare poverty criteria for prioritizing project investments

⁴ ADB. 2003. Environmental Assessment Guidelines. Manila. See http://adb.org/documents/Guidelines/Environmental_Assessment/default.asp

⁵ ADB. 2001. *Handbook on Poverty and Social Analysis*. Manila.

so as to maximize poverty reduction impacts; (viii) identify potential areas and mechanisms for developing livelihood opportunities for the poor; (ix) design focused-poverty interventions activities; (x) review participatory water management activities in water resources management projects in Bangladesh; (xi) review group formation activities and propose appropriate forms of community participation in joint management committees (JMCs); and (xii) develop detailed guidelines for resolving structural and functional problems of water management organizations based on lessons learned from other water resources management projects in Bangladesh.

2. Poverty Reduction Specialist (domestic, 5 person-months; 1 person-month for phase 1 and 4 person-months for phase 2)

17. The specialist will (i) use the conceptual framework of the livelihoods approach and assess the access of the rural poor in the project districts to capital assets to identify opportunities and risks for livelihood enhancement; (ii) assess the requirement for income generation, including skills, available resources, financial capital, organizational arrangements, and physical facilities for adopting, operating, and sustaining relevant income-generation activities; (iii) assess the demand for microfinance, requirements for innovative credit schemes with realistic access conditions, and existing microfinance institutions and NGOs; (iv) prepare a poverty reduction manual that includes livelihood analysis; and (v) prepare poverty reduction action plans for possible future on- and off-farm income-generating activities that include stakeholders' responsibilities and time-bound, measurable indicators for stakeholders.

3. Participatory Development Specialist (domestic, 5 person-months; 1 person-month for phase 1 and 4 person-months for phase 2)

18. The specialist will be responsible for organizing stakeholder workshops to search for ways to effectively manage water resources infrastructure and establish procedures for ensuring the full involvement of beneficiaries in line with the Government's guidelines for participatory water management. The specialist will (i) conduct community needs assessment activities, including measures to strengthen the capacity of JMC members to perform their roles; (ii) establish a long-term participatory monitoring system for JMCs, in particular, for sustainable O&M; (iii) facilitate the stakeholder workshops; (iv) develop procedures to monitor and evaluate community involvement; (v) prepare training plans; (vi) undertake stakeholder analysis; (vii) prepare a participation plan to establish capacity for participatory development approaches; (viii) examine issues pertaining to indigenous peoples and ethnic minorities in areas of significant settlement by indigenous peoples; (ix) ensure participation by indigenous peoples and ethnic minorities in project design and implementation; and (x) propose specific actions for affected indigenous peoples to ensure that benefits will accrue to them and that negative impacts will be mitigated.