

ASIAN DEVELOPMENT BANK

TAR: BAN 34418

TECHNICAL ASSISTANCE
(Financed by the Japan Special Fund)

TO THE

PEOPLE'S REPUBLIC OF BANGLADESH

FOR PREPARING THE

SOUTHWEST AREA

INTEGRATED WATER RESOURCES MANAGEMENT PROJECT

January 2003

CURRENCY EQUIVALENTS

(as of 2 January 2003)

Currency Unit	–	taka (Tk)
Tk1.00	–	\$0.01728
\$1.00	–	Tk57.90

ABBREVIATIONS

ADB	–	Asian Development Bank
BFWMS	–	Bangladesh Flood and Water Management Strategy
BWDB	–	Bangladesh Water Development Board
FAP	–	Flood Action Plan
FGD	–	focus group discussion
IWRM	–	integrated water resources management
MOWR	–	Ministry of Water Resources
NGO	–	nongovernment organization
NWMP	–	National Water Management Plan
NWP	–	National Water Policy
O&M	–	operation and maintenance
PRRA	–	participatory rapid rural appraisal
WARPO	–	Water Resources Planning Organization
WMA	–	water management association

GLOSSARY

Sundarbans	–	The world's largest remaining continuous mangrove forests, in the southwest coastal region. Covering 6,000 square kilometers, the Sundarbans is recognized as a globally significant ecosystem with rich biodiversity, featuring habitats for fish, shrimp, birds, and other wildlife.
union	–	Lowest local government unit, corresponding to a subdivision of a subdistrict, and comprises villages in a designated area.

NOTES

In this report , “\$” refers to US dollars

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I. INTRODUCTION

1. The Government of the People's Republic of Bangladesh requested the Asian Development Bank (ADB) for technical assistance (TA) to prepare the Southwest Area Integrated Water Resources Management Project. ADB fielded a fact-finding mission in September 2002. The mission met with representatives of the Government, external funding agencies, nongovernment organizations (NGOs), and beneficiaries, and agreed with the Government on the TA objective, scope, cost estimates, and implementation arrangements. The TA is included in ADB's Country Strategy and Program Update (2002-2004).¹

II. ISSUES

2. Poverty reduction remains the central development challenge in Bangladesh, which had a per capita income of approximately \$360 in 2000. In 1999, about 50% of the population of over 130 million was poor, and 35% extremely poor,² although the poverty headcount ratios were reduced by about 1% annually in the 1990s. The human development index is also low, and Bangladesh ranked 132nd in the world in 1999. The Government has accorded the highest priority to poverty reduction in the 5-year plans, and is preparing a comprehensive national poverty reduction strategy comprising (i) pro-poor economic growth through stable macroeconomic management, improved governance, and development of key economic sectors and infrastructure; (ii) human resources and social development through improved education, health, nutrition, social protection, and participatory processes; and (iii) holistic management of natural resources and the environment.

3. As about 85% of the poor live in rural areas, the strategy emphasizes agricultural development and other rural activities. However, the country is in the low-lying floodplains of the massive Ganges-Jamuna-Meghna river system, which poses extraordinary challenges that fundamentally affect the livelihood of the rural poor. These include (i) massive monsoon floods, (ii) river erosion and sedimentation of water courses, (iii) severe water shortage in the dry season, (iv) periodic natural disasters such as cyclones, and (v) widespread groundwater arsenic affecting over 30% of the population. In general, high-poverty areas coincide with those with severe water management problems. Water is also vital for the vulnerable natural ecosystems, in particular the wetlands and the Sundarbans mangrove forest that are deemed among the richest in the world. Thus, effective water resource management is essential for sustainable agricultural and rural development in large parts of the country.

4. External funding agencies have provided substantial assistance to address these water sector problems. In particular, following the devastating floods in 1987 and 1988, major coordinated efforts involving 16 external funding agencies, including ADB, were initiated in 1990 under the Flood Action Plan (FAP). Twenty-six regional and thematic studies were undertaken to systematically address the country's flooding and other water management problems. While the FAP helped establish a substantial knowledge base on complex water management issues, FAP processes also revealed limited effectiveness of past interventions due to (i) overemphasis on a structural approach, (ii) insufficient stakeholder participation and agency coordination, (iii) lack of attention to diverse social and environmental water concerns in different livelihood activities, (iv) poor operation and maintenance (O&M), and (v) overall institutional weaknesses. The FAP was also criticized for its initial lack of attention to these issues, causing controversy with environmental and social lobby groups that campaigned against their preconceived

¹ The TA first appeared in the *ADB Business Opportunities* in September 2002.

² Under the cost-of-basic-needs method.

structural bias. Nevertheless, the process eventually led to a consensus on the need to address the country's water sector problems in an integrated, strategic, and participatory manner while substantially strengthening the sector institutions. Accordingly, the FAP outcome culminated in a strategy paper in 1995 Bangladesh Flood and Water Management Strategy (BFWMS) — a 5-year initiative that aimed to (i) improve the sector policy and institutional framework by preparing the National Water Policy (NWP) and National Water Management Plan (NWMP) and reforming sector agencies, and (ii) implement a small number of the most critical investments.

5. Since its support to a FAP regional study,³ ADB has been associated with the southwest area on the south bank of the Ganges-Padma River with a population of 28.6 million. The area has faced increasingly acute water shortages and various associated social and environmental problems due to the increased upstream offtake from the Ganges. The problems were exacerbated after the expiration of the Ganges water-sharing treaty with India in 1988, until a new treaty was signed in 1996 that guaranteed sharing at the lowest diversion point in India, after which inflows were slightly restored, although fundamental shortages remain. The area also has a number of coastal and inland embankment systems for tidal surge and flood protection that face serious drainage congestion problems due to the sedimentation of tidal channels and/or system deterioration due to weak O&M. Groundwater arsenic is also the severest in the country. Following the FAP study, ADB gave BWDB a loan to improve drainage in the Khulna-Jessore area,⁴ and an engineering loan to rehabilitate seven large-scale flood protection and irrigation schemes.⁵ ADB also helped separate executing agencies set up small-scale water management structures,⁶ and conserve the Sundarbans.⁷

6. While these interventions generally resulted in a conducive environment for sector reform and improvement of the productive environment, BWDB's implementation of the two loans was affected by complexities in water sector and institutional weaknesses. Stakeholder consultation to finalize the design to improve drainage in the Khulna-Jessore area took considerable time and significantly delayed implementation, although the loan has generated significant economic benefits. Feasibility studies under the engineering loan were conducted with good stakeholder participation and design concept, but implementation was suspended pending demonstrated progress in the emerging policy and institutional reforms deemed essential to achieve and sustain the intended benefits.

7. In accordance with the BFWMS, the Government has undertaken a range of sector reforms since the late 1990s. The NWP, approved in early 1999, adopted the principles of integrated water resources management (IWRM) and sustainable service delivery through diverse stakeholder participation and decentralization. The National Water Resources Council was established as the highest sector apex body, with the Water Resources Planning Organization (WARPO) as its secretariat. WARPO also prepared a draft NWMP in early 2002, which provides a broad framework of sector strategy and priorities while expanding the cross-sectoral perspective of the FAP with a participatory approach. Institutional reforms of the

³ ADB. 1991. *Technical Assistance to the People's Republic of Bangladesh for the Southwest Area Water Resources Development*. Manila.

⁴ ADB. 1993. *Report and Recommendation of the President to the Board of Directors for a Proposed Loan to the People's Republic of Bangladesh for the Khulna-Jessore Drainage Improvement Project*. Manila.

⁵ ADB. 1993. *Report and Recommendation of the President to the Board of Directors for a Proposed Loan to the People's Republic of Bangladesh for the Southwest Area Water Resources Development*. Manila.

⁶ ADB. 1995. *Report and Recommendation of the President to the Board of Directors for a Proposed Loan to the People's Republic of Bangladesh for the Small-scale Water Resources Development Sector Project*. Manila.

⁷ ADB. 1998. *Report and Recommendation of the President to the Board of Directors for a Proposed Loan to the People's Republic of Bangladesh for the Sundarbans Biodiversity Conservation*, Manila.

Bangladesh Water Development Board (BWDB), the key service delivery organization, were also initiated in line with the direction of the NWP. A draft water act to comprehensively govern the use and management of water is under preparation.

8. These reforms provide the essential basis to comprehensively address the country's water sector problems through effective IWRM and sustainable service delivery, the stated goal of NWP. However, the reforms are still in the formative stage, with a large gap remaining between the NWP principles and existing operational capacities and arrangements. In terms of IWRM, while integrated planning has been accorded priority, the draft NWMP remains as a broad framework plan, based on which more detailed integrated plans need to be prepared at subregional levels for operational purposes, in view of the diverse and complex environmental and social concerns, and of the vast opportunities to enhance investment benefits through cross-sectoral integration. Other appropriate IWRM functions such as coordination and/or regulation of service delivery operations should be defined, along with their suitable institutional arrangements. In terms of service delivery, NWP envisages that local governments and stakeholder organizations will play a greater role. To this end, effective work processes and arrangements to develop the required local institutions need to be clearly established, along with the capacities of the central agencies to support and manage these processes.

9. In the context of these ongoing and emerging sector policy and institutional reforms, the southwest area continues to require priority attention, given its severe water sector challenges that could be worsened by further economic growth in the Ganges river basin. Accordingly, the Government intends to establish sound water management and sustainable service delivery institutions and practices in this area on a priority basis, with effective coordination of the concerned external funding agencies.⁸ In accordance with NWP, specific activities that need to be put into operation include (i) undertaking integrated planning based on the draft NWMP and operationalizing other appropriate IWRM functions at the regional and subregional levels, (ii) implementing priority interventions while ensuring optimal and sustainable service delivery with stakeholder participation and rationalized agency support, and (iii) promoting necessary institutional changes and capacity development. The present TA and ensuing loan will develop and implement a package of interventions to support these processes, focusing on selected districts sharing common hydrological subregions in the southwest area. The package could serve as a model to implement the NWP at the field level. These actions are in line with ADB's Water Policy and the 2000 poverty partnership agreement between the Government and ADB, which prioritizes promoting sound water resource management.

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

10. The overall goal of the TA is to reduce poverty by improving water security and enhancing the socioeconomic status of people in the southwest area by helping the Government implement NWP and the draft NWMP. The immediate TA outputs are (i) integrated water management plans prepared for selected districts with intensive stakeholder consultation

⁸ Key activities being assisted include (i) pilot dredging and project preparatory works to restore the Ganges inflow to the Gorai River, funded by the Netherlands and World Bank; (ii) an integrated coastal zone management study by the Netherlands and United Kingdom; (iii) a proposed water sector management project for rehabilitation and management transfer of selected medium-scale infrastructure, by the World Bank; and (iv) pilot arsenic mitigation in selected districts, by Denmark and Japan. The southwest area has also been selected as a focal area for the proposed Rural Water and Poverty Action Program in Bangladesh, which is to be launched at the Third World Water Forum in March 2003, and will identify and prepare poverty-focused water sector interventions through collaboration by the interested external funding agencies, including ADB.

and following the draft NWMP, and (ii) an investment project proposal for possible ADB financing to implement priority interventions identified under the district plans and to strengthen relevant institutions in the regions and selected districts.

11. In light of the regional water management issues and corresponding NWMP priorities, the ensuing project will tentatively comprise (i) institutional development for IWRM, including integrated planning and other appropriate functions at the regional and district levels; (ii) strengthening sustainable service delivery, with a focus on optimizing the utilization of existing flood protection, drainage, and irrigation systems, to be provided by forming sound water management associations, rehabilitating critical infrastructure, expanding agriculture and fisheries, and developing the capacity of the concerned organizations; and (iii) any other poverty-focused and participatory priority interventions such as pilot rural arsenic mitigation, flood proofing, and other water-related livelihood support. Specific output targets and resource requirements will be examined based on the capacity assessment of the sector institutions.

B. Methodology and Key Activities

12. The TA will focus on the selected districts sharing common hydrological subregions in the southwest area.⁹ The TA will ensure the participation of diverse stakeholders, including beneficiaries and potential affected persons, with the engagement of experienced NGOs, and by undertaking intensive participatory rapid rural appraisals and workshops held at various levels. Intensive collaboration with other external funding agencies will be maintained to ensure complementarity of interventions in the southwest area, as well as to explore the possibilities to cofinance the ensuing project.¹⁰ The TA has two phases:

13. **Phase 1 — Preparing Subregional Integrated Water Management Plans (6 months).** During phase 1, the TA will (i) refine and strengthen the regional strategy and priority actions and programs of the draft NWMP, with a focus on rural areas; and (ii) prepare district-level integrated water management plans in light of the refined regional strategy and priorities, and of the stakeholders' concerns, proposals, and priorities. On the basis of this, possible priority interventions, including institutional actions to be supported under the ensuing project, will be identified through intensive stakeholder consultation and workshops.

14. **Phase 2 – Preparing the Southwest IWRM Project (6 months).** During phase 2, the TA will undertake feasibility studies and prepare an investment project to implement the identified priority interventions, which will take a bottom-up and demand-based approach involving stakeholders to resolve local water management problems while sustaining O&M through local resource mobilization. The investment project will provide comprehensive support to maximize the investment benefits while ensuring specific benefits to the poor, and supporting capacity building for IWRM and service delivery institutions. Environmental, social, gender, resettlement, and economic assessments will be prepared in accordance with government and ADB guidelines. The summary initial poverty and social assessment is in Appendix 1.

C. Cost and Financing

15. The TA is estimated to cost \$1.125 million equivalent, comprising \$519,000 in foreign exchange cost and \$606,000 equivalent in local currency cost. ADB will provide \$900,000

⁹ Including the whole or part of the Faridpur, Jessore, Magura, Narail, and Rajbari districts. These include three flood management and drainage rehabilitation projects assessed under the engineering loan in footnote 5.

¹⁰ In this context, the TA will also coordinate with the preparation process of the Rural Water and Poverty Action Program for Bangladesh, which was mentioned in footnote 8.

equivalent on a grant basis from the Japan Special Fund, funded by the Government of Japan, to finance the total foreign exchange cost and \$381,000 equivalent of the local currency cost. The Government agreed to finance the balance of the total cost of \$225,000 equivalent, by providing counterpart staff, office facilities and administrative support, local travel and vehicles for counterpart staff, studies, surveys, data analysis, and reports. The cost estimate and financing plan is in Appendix 2. The Government has been informed that TA approval does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

16. The TA will be implemented over 12 months commencing in April 2003. WARPO and BWDB under the Ministry of Water Resources (MOWR) will be the co-executing agencies. WARPO and BWDB will appoint one TA manager each to lead phases 1 and 2, respectively. A steering committee will be established, chaired by the MOWR secretary, and with participation by MOWR; Ministry of Land, Planning Commission; and the departments concerned with local government engineering, public health engineering, agriculture extension, cooperatives, environment, fisheries, forestry, and livestock. A working group headed by TA managers and comprising appointed staff from these organizations will work with the consultants. In each district, a coordination committee comprising district representatives of the line agencies and active NGOs will be convened, with the deputy commissioner as chair, the executive engineer of the concerned BWDB division as member secretary, and a WARPO representative as an advisor. Stakeholder representatives will also join district committees.

17. The TA will be conducted by an international consulting firm in association with a local firm to be engaged by ADB in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB on the engagement of domestic consultants. The consultants will be selected following the quality- and cost-basis selection procedure with full technical proposal. The TA requires (i) 18 person-months of international consulting services comprising specialists in water resource management (team leader), natural resource economics, institutions, water supply, environment, and resettlement; and (ii) 47 person-months of domestic consulting services comprising a water resource engineer (deputy team leader), water resource planner, participatory development specialist or sociologist, water supply and sanitation specialist, agricultural economist, agronomist, fishery specialist, environmental specialist, and resettlement specialist. The outline terms of reference are in Appendix 3. Equipment will be procured by the consultants following ADB's *Guidelines for Procurement*.

18. The consultants will submit (i) an inception report within three weeks of TA commencement, (ii) a draft district integrated water management plans with proposed scope for ensuing loan project within 5.5 months, (iii) an interim phase 2 report within eight months, (iv) draft final report within ten months, and (v) a final report upon completion of the TA. National-level workshops will be held at the inception and draft final stages to reflect the views of the stakeholders and local and international experts in the TA implementation and outputs.

IV. THE PRESIDENT'S DECISION

19. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance, on a grant basis, to the Government of Bangladesh, not exceeding the equivalent of \$900,000 for preparing the Southwest Area Integrated Water Resources Management Project, and hereby reports such action to the Board.

SUMMARY INITIAL POVERTY AND SOCIAL ANALYSIS

A. Linkages to the Country Poverty Analysis

Sector identified as a national priority in country poverty analysis?	Yes	Sector identified as a national priority in country poverty partnership agreement?	Yes
Contribution of the sector/subsector to reduce poverty in Bangladesh: <p>Poverty remains a serious problem, with 50% of the population of over 130 million living under the poverty line in 2000 (following cost-of-basic-needs method). Since about 85% of the poor live in rural areas and engage in agriculture and related non-farm activities, enhancing agricultural and rural development is key to reduce poverty in the country. Access to and control of water is of fundamental importance, as it is the foundation of many rural poor livelihood activities, including agriculture, fisheries, boat transportation, rural industries, and water supply, among others. Given the extraordinary challenges posed by the major river system (massive floods, acute water shortages, river erosion, salinity intrusion, and widespread groundwater arsenic); diverse and conflicting social interests among different livelihood activities; and the vulnerable natural environment, it is essential to promote the management of water resources in an integrated, strategic, and participatory manner. Promoting sound water resource management has also been given high priority in the poverty partnership agreement between the Government and the Asian Development Bank (ADB).</p>			

B. Poverty Analysis

Proposed Classification: Poverty Intervention

During phase 1 (preparing district-level integrated water management plans), the TA will identify and analyze the diverse stakeholders, status and causes of poverty, priority development concerns, and possible negative impacts of the identified interventions, through participatory rapid rural appraisals (PRRAs) and focus group discussions (FGDs) with the engagement of experienced nongovernment organizations (NGOs). Interventions with minimum social and environmental conflicts will be prioritized in the district-level integrated plans. These will include a synthetic poverty reduction strategy that will ensure the poverty reduction impacts of the priority interventions, to be designed in the next phase.

During phase 2 (preparing an investment project to implement priority interventions while promoting integrated management of water resources and sustainable service delivery), detailed poverty and social analysis will be undertaken focusing on the most vulnerable groups, including female-headed and/or lowest-income households, and measures to increase incomes and jobs, empower the vulnerable in decision-making processes of the relevant institutions, promote gender development, and protect the vulnerable from external shocks. A detailed institutional analysis is needed to develop a framework to manage and coordinate the diverse stakeholder interests while protecting the interests of the most vulnerable.

C. Participation Process

Stakeholder analysis:

During phase 1, the TA team, including qualified NGOs, will conduct intensive field consultation using PRRA and FGD techniques over 4 months to identify and analyze diverse stakeholder concerns and development priorities in all the concerned village unions. The findings will be integrated into the district-level integrated water management plans through further consultation at subdistrict, district, regional, and national levels.

During phase 2, the concerned stakeholders, including the most vulnerable, will form groups and regularly work with the study team to review the project design and advise the team on it. For some of the identified priority interventions, initial steps will also be taken, following the Government's guidelines for participatory water management developed with ADB assistance, to form formal stakeholder associations that will drive the demand-driven approach. They will mobilize substantial stakeholder support before design, implementation, and operation and maintenance (O&M), and should take the lead role in these with the government line agencies that will provide services based on the performance of stakeholder participation, including local resource mobilization.

Participation strategy required:

Not required. However, specific poverty reduction strategy and measures will be developed to ensure that the poor in the identified subproject area will obtain enhanced poverty reduction impacts through targeted interventions such as culture fisheries and social forestry, use of public water bodies and lands, arrangements to ensure the poor's empowerment in project institutions, and other appropriate measures.

D. Potential Issues

Subject	Significant, Not Significant, Uncertain, None	Strategy to Address Issues	Plan Required
Resettlement	Likely to be insignificant	The prioritized physical intervention will focus on rehabilitating water management schemes, which will not have significant resettlement impacts. For cases where land acquisition and resettlement are unavoidable, a resettlement plan (or resettlement framework) will be prepared.	Full or short resettlement plan, or resettlement framework
Gender	Not significant	A gender development strategy and action plan will be developed to ensure effective participation of women under the Project.	None (gender strategy and action plan to be prepared)
Affordability	Not significant	The impacts of local resource mobilization for sustainable O&M on poor households will be analyzed.	None
Labor	None	Not applicable	None
Indigenous People	None	Not applicable	None
Other Risks/ Vulnerabilities	Not Significant	Sustainability risk of stakeholder institutions and facility O&M will be pursued by (i) promoting socially inclusive development by engaging NGOs and community-based organizers, and (ii) establishing local institutions to operate under transparent and accountable rules and regulations with the participation of a significant majority of stakeholders. These will be integrated into specific institutional and O&M sustainability plans to be agreed on during project preparation.	None (institutional and O&M sustainability action plan to be prepared)

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Foreign Exchange	Local Currency	Total Cost
A. Asian Development Bank Financing^a			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	398	0	398
ii. Domestic Consultants	0	193	193
b. International and Local Travel	55	40	95
c. Reports and Communications	0	6	6
2. Equipment ^b	10	0	10
3. Training, Seminars, and Conferences			
a. Facilitators ^c	0	67	67
b. Training Program	0	3	3
4. Technical Surveys	0	19	19
5. Miscellaneous Administration and Support Costs	0	15	15
6. Representative for Contract Negotiations	4	0	4
7. Contingencies	52	38	90
Subtotal (A)	519	381	900
B. Government Financing			
1. Office Accommodation and Transport	0	90	90
2. Remuneration and Per Diem of Counterpart Staff	0	50	50
3. Others ^d	0	85	85
Subtotal (B)	0	225	225
Total	519	606	1,125

^a Financed by the Japan Special Fund.

^b Includes two computers and peripherals, a photocopier, and a fax machine, to be turned over to the Government after technical assistance completion.

^c Includes participatory rapid rural appraisal (\$27,000); socioeconomic survey and poverty assessment (\$20,000); and national, district, and subdistrict workshops (\$20,000).

^d Includes local travel and vehicles for counterpart staff, studies, surveys, data analysis, and reports.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. General

1. The consultants will provide the following inputs during the two phases of the TA: (i) preparation of integrated water management plans at the district level, and (ii) preparation of the Southwest Area Integrated Water Resources Management Project.

Table A3-1: Consulting Services Inputs

Expertise	Person-Months		
	Phase I	Phase II	Total
A. International			
Water Resources Management Specialist	4.0	4.0	8.0
Natural Resource Economist	2.0	1.5	3.5
Water Resources Institutional Specialist	1.0	2.0	3.0
Water Supply & Sanitation Specialist	-	1.5	1.5
Environmental Specialist	-	1.0	1.0
Resettlement Specialist	-	1.0	1.0
Subtotal	7.0	11.0	18.0
B. Domestic			
Water Resources Engineer	5.0	4.0	9.0
Water Resources Planner	5.5	-	5.5
Participatory Development Specialist/ Sociologist	5.0	4.0	9.0
Water Supply & Sanitation Specialist	2.5	2.0	4.5
Agricultural Economist	2.5	2.5	5.0
Agronomist	2.0	2.0	4.0
Fishery Specialist	2.0	2.0	4.0
Environmental Specialist	2.0	2.0	4.0
Resettlement Specialist	-	2.0	2.0
Subtotal	26.5	20.5	47.0
Total	33.5	31.5	65.0

B. Phase 1 — Integrated Water Management Plans at the District Level

2. The consultants will (i) refine the regional development strategy and priorities, and (ii) develop district integrated water management plans with intensive stakeholder participation.¹¹

1. Regional Water Management Strategy and Priority Actions and Programs

3. The consultants will develop regional water management strategy and priorities on the basis of the draft National Water Management Plan (NWMP), other relevant sector policies, plans, and outputs of ongoing programs. Assessment should cover water management (integrated planning, quantity and quality management, and social and environmental aspects) and service delivery (flood control, drainage, irrigation, and water supply, including arsenic mitigation) functions. Specific activities include the following:

- (i) Review and summarize the status, trends, prospects, and development issues of the natural resource setting, infrastructure, agriculture, fishery, and urbanization.

¹¹ During the process, coordination with other external funding agencies providing assistance in the southwest area will be maintained, including collaboration to prepare the Rural Water and Poverty Action Program. It will be launched at the Third World Water Forum in March 2003, as a regional initiative to identify and implement poverty-focused water sector interventions through external funding agencies collaboration and cofinancing.

- (ii) Review and summarize the (a) overall regional issues for economic growth and poverty reduction; and (b) past and ongoing initiatives, interventions, and projects to address those issues from a regional economic development perspective.
- (iii) Analyze (a) water sector policy and institutions; (b) status and prospects for water availability, use, and quality, including groundwater arsenic; (c) the inventory of key water resources and related infrastructure; and (d) key water sector issues in the region.
- (iv) Assess the effectiveness and key constraints and lessons of the past and ongoing water sector interventions to address the identified sector issues, with diagnostic analysis of relevant organizations and other enabling environments.
- (v) Derive the regional water management strategy and priorities encompassing physical investments and institutions, including the framework to develop and operationalize integrated planning and other integrated water resources management (IWRM) functions in a decentralized way.

2. District-Level Integrated Water Management Plans

4. The consultants will prepare integrated water management plans in the selected districts, taking a consultative approach. Nongovernment organizations (NGOs) will be engaged for participatory rapid rural appraisal (PRRA) and focus group discussions (FGDs). The activities will include the following:

- (i) Collect and compile information on the physical, socioeconomic, and institutional setting, including hydrology, water availability and quality, land use, population, poverty and other human development indexes, income, gender, and occupational patterns.
- (ii) Assess the performance and issues of the district's economic activities, including agriculture, fisheries, forestry, roads and transport, water supply and sanitation, and forestry and other natural resources.
- (iii) Prepare an inventory of the existing infrastructure related to water resources, along with their status and location maps.
- (iv) Collect information on the ongoing and proposed interventions in the district for water and relevant sectors, including those considered by the Government, NGOs, ADB, and other external funding agencies.
- (v) Undertake PRRA at union and subdistrict levels and assess (a) development status, needs, and priorities; (b) water-related problems, their causes, and proposed solutions; (c) stakeholders' views on the ongoing and proposed initiatives; and (d) stakeholders' willingness to contribute to construction and operation and maintenance (O&M).
- (vi) Identify and select the priority investment requirements at each district, and undertake prefeasibility assessments of the relevant interventions.
- (vii) Derive (a) district integrated water management plans comprising a strategy, and priority programs; and (b) the scope for the follow-on investment project, which could include flood and drainage control; irrigation; agriculture and fishery extension; rural water supply, arsenic mitigation; and institutional strengthening.
- (viii) Organize district and national workshops and discuss the proposed district plans and scope of the ensuing loan project among key stakeholders.

C. Phase 2 — Preparation of the Southwest Area Integrated Water Resources Management Project

5. The consultants will prepare an investment project by undertaking feasibility studies for the priority interventions or subprojects identified under the district plans.

1. Participatory Project Planning and Design Framework

6. The consultants will undertake the following:

- (i) Define a stakeholder representation mechanism to ensure the coordination of diverse stakeholder interests during the preparatory process.
- (ii) Undertake supplementary PRRA in the identified subproject areas as necessary.
- (iii) Among the identified subprojects for which feasibility studies are undertaken, identify focal subprojects and/or their focal subunits, and develop a list of beneficiary households and their economic status such as family size and farm operational size.¹²

2. Technical Survey and Design

7. The consultants will undertake the following:

- (i) Define the scope of technical data required for the feasibility studies, and arrange the necessary data collection, technical survey, and analysis, including topography, hydrology, hydrogeology, water quality, and other data.
- (ii) Identify and assess various alternative technical options, based on the dry and wet season water flows and water tables, tidal impacts, and other local water management conditions; and identify the most appropriate option.
- (iii) Based on the review of and recommendations on the planning and design standards, determine design values of the selected design options and prepare preliminary engineering designs in consultation with the stakeholder groups.

3. Design of Subproject Production Support Systems

8. The consultants will undertake the following:

- (i) Examine and analyze the performance of the agriculture and fishery sectors in the subproject areas.
- (ii) Review and assess past and ongoing programs to enhance agriculture and fishery production.
- (iii) Assess the production and marketing potential of agriculture and fisheries, and identify and design necessary production support systems, which will culminate in agriculture and fishery development plans for the concerned subprojects.

¹² This is to be undertaken as a demonstrative preparatory activity to form sound water management associations for the priority interventions. The process will be followed for the rest of the identified feasible subprojects during the ensuing Project, as appropriate.

4. Design of Institutional Actions and Arrangements

9. The ensuing project should define comprehensive institutional arrangements and put into operation integrated water resource planning and other appropriate IWRM functions at regional, district, and subproject levels, while ensuring effective and sustainable service delivery functions. For this purpose, the consultants will undertake the following:

- (i) Review and assess the policy, institutional, and legal framework for IWRM and service delivery at national, regional, and lower levels, and identify gaps or action agendas to operate those functions effectively.
- (ii) Assess and identify institutional arrangements to operationalize IWRM at regional and lower levels, including (a) organizational setup, including agency, local government, and stakeholder representation; (b) management arrangements such as integrated planning, quantity and quality monitoring, coordination, and regulation as necessary; (c) human and financial resource requirements; and (d) performance targets and incentives.
- (iii) Regarding service delivery, assess similar interventions and design (a) organizational setup, skill mix, outsourcing, and external coordination arrangements; (b) procedures and arrangements for establishing sound stakeholder organizations, construction quality control, O&M, and a management information system; (c) human and financial resource requirements; and (d) performance targets and incentives.
- (iv) Assess the capacities and skills of the concerned organizations, including stakeholder associations, and prepare the capacity development plan.
- (v) Review and assess the draft water act being prepared by the Government, and make recommendations to promote sound water resource management and service delivery.
- (vi) On the basis of the above, prepare detailed terms of reference for consulting and other services to manage and develop the capacity of the Project.

5. Social Assessment

11. The consultants will undertake the following:

- (i) Conduct a socioeconomic survey in the identified subproject areas for social and economic analyses, and preparation of resettlement action plans.
- (ii) On the basis of the PRRA and socioeconomic survey, prepare social assessments, including social protection perspectives, in accordance with the ADB's *Handbook on Poverty and Social Analysis*.
- (iii) Suggest subproject-specific interventions to address gender imbalances, and interventions to support other vulnerable groups, which will culminate in the poverty reduction and social strategy under the Project.
- (iv) Prepare a resettlement action plan in accordance with ADB's *Policy on Involuntary Resettlement* and *Handbook on Resettlement*, including (a) policy framework and entitlements (through a land survey, census, asset inventorying, and consultation with affected persons); (b) compensation, relocation, and income restoration mechanism; (c) institutional framework, including grievance

redress mechanism and capacity building; (d) implementation schedule; and (e) financial plan, including resettlement budget.

6. Environmental Analysis

12. The consultants will prepare an initial environmental evaluation or environmental impact assessment, if warranted, following the *Environmental Assessment Requirements of the Asian Development Bank* and ADB's *Guidelines for Selected Agricultural and Natural Resources Development Projects* as well as the Government's guidelines. Activities include the following:

- (i) Collect and review all relevant data, studies, and reports in each subproject area related to the environment; screen and evaluate the direct and indirect environmental impacts; and recommend alternative environmental options.
- (ii) Identify measures to mitigate and monitor the environmental impacts, and their estimated cost, along with appropriate institutional arrangements, and present them in a detailed environmental management plan.

7. Project Costing and Economic Analysis

13. Activities will include the following:

- (i) Estimate the project cost, including a procurement and disbursement plan; prepare a draft financing plan, including ADB, government, and beneficiary contributions; and prepare prequalification documents for civil works.
- (ii) Conduct economic analysis of subprojects according to ADB's *Guidelines for Economic Analysis of Projects*, along with financial analysis at appropriate levels.
- (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*.
- (iv) Undertake sensitivity analysis, and describe major project risks, potential impacts on project feasibility, and safeguards to be incorporated in the project design.

8. Preparation of the Draft Project Document

14. Activities will include the following:

- (i) Prepare an investment project proposal, including (a) detailed policy matrix indicating the sector goal and a time-bound action framework to achieve the goal; and (b) synthesis of the project design with clear sector analysis, including assessment of external assistance and lessons learned; rationale; objective and scope; project framework, including project performance monitoring and evaluation arrangements along with adequate monitoring indicators and relevant baseline data; cost estimates and financing plan; implementation arrangements and schedule with effective capacity development plan of participating institutions, including detailed terms of reference of consultants and NGOs; environmental and social measures with effective poverty reduction strategy; draft gender action plan and participation plan; and economic and financial analysis.