

ASIAN DEVELOPMENT BANK

TAR: BAN 36297

TECHNICAL ASSISTANCE
(Financed by the Japan Special Fund)

TO THE

PEOPLE'S REPUBLIC OF BANGLADESH

FOR PREPARING THE

SECONDARY TOWNS WATER SUPPLY AND SANITATION PROJECT

December 2004

CURRENCY EQUIVALENTS

(as of 9 December 2004)

Currency Unit	–	taka (Tk)
Tk1.00	=	0.0167
\$1.00	=	Tk60.00

ABBREVIATIONS

ADB	–	Asian Development Bank
Danida	–	Danish International Development Assistance
DPHE	–	Department of Public Health Engineering
EIA	–	environmental impact assessment
IEE	–	initial environmental examination
NGO	–	nongovernment organization

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	Targeted intervention
Sector	–	Water supply, sanitation, and waste management
Subsector	–	Water supply and sanitation, waste management
Themes	–	Sustainable economic growth, inclusive social development, and environmental sustainability
Subthemes	–	Developing urban areas, human development, and urban environmental improvement

NOTES

- (i) The fiscal year (FY) of the Government ends on 30 June. FY before a calendar year denotes the year in which the fiscal year ends.
- (ii) In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. During the 2004 Country Programming Mission of the Asian Development Bank (ADB), the Government of Bangladesh confirmed its request for assistance to prepare the Secondary Towns Water Supply and Sanitation Project. The Government and ADB agreed that technical assistance (TA) will be provided in 2004 and a proposed loan in 2006. The TA Fact-Finding Mission visited Bangladesh from 10–25 October 2004 and held discussions with the Government and other concerned agencies. The Mission visited six towns¹ (Chandpur, Chuadanga, Comilla, Gazipur, Jessore, and Mymensingh) and met with the Department of Public Health Engineering (DPHE), local representatives, and the pourashava (municipality) chairpersons and staff to discuss the water supply and sanitation situation. The Mission presented its findings at a wrap-up meeting on 25 October 2004. The Government concurs with the TA goals, purpose, scope, implementation arrangements, cost and financing arrangements, and terms of reference of the consultants.² A preliminary project framework is in Appendix 1.

2. Bangladesh has a population of about 130 million, with approximately 25% living in urban areas. Compared with the overall annual national growth rate of 1.4%, the urban population is growing at 2.5% per annum. Due to urbanization, towns are expanding rapidly both spatially and in population. An analysis of piped water supply services to towns with population of 50,000–400,000 shows that less than 20% of the town residents have piped water supply to their houses. Some have access to water at a distance from their homes via standposts, but most rely on shallow tubewells with hand pumps. ADB has supported projects addressing water supply and sanitation in secondary towns: District Towns Water Supply Project (targeting five towns) approved in 1982 and Second Water Supply and Sanitation Project (nine towns) approved in 1993.³ DPHE, the executing agency for both projects, has overall responsibility for water supply and sanitation (except for Dhaka and Chittagong).

3. Ongoing and planned external assistance to urban water supply include (i) the Danish International Development Assistance (Danida) Sector Support Program, assisting six small towns; (ii) a potential Danida-Swedish International Development Cooperation Agency intervention to develop sources for Dhaka's water supply; and (iii) Japan International Cooperation Agency assistance to develop a central water-testing laboratory. Danida has also been helping DPHE's Unit of Policy Implementation promote policy and institutional reforms in the water supply sector.

II. ISSUES

4. **Lack of Adequate Water Supply.** In most towns, the piped water supply is dependent on deep tubewells. Due to high electricity cost, these pumps run only for 10–12 hours per day and water availability to consumers is for 2–4 hours per day. About 5% of the population receives water from standposts and 15% from public tubewells through piped connections. The remaining 60% rely on shallow wells. Apart from inconvenience and access to limited quantities of water, supplies from shallow wells are subject to arsenic and bacteriological contamination, and in the dry season the water levels often fall below that accessible to suction pumps. Many

¹ The towns were chosen by DPHE on the basis of its preliminary needs assessment.

² The TA first appeared in the *ADB Business Opportunities* (Internet edition) on 20 January 2004.

³ The District Towns Water Supply Project was rated partly satisfactory in its project performance audit report (ADB, 1995. *Project Performance Audit Report on the District Towns Water Supply Project in Bangladesh*. Manila [Loan 571-BAN(SF)]) and the Second Water Supply and Sanitation Project was rated successful in its project completion report (ADB, 2004. *Project Completion Report on the Second Water Supply and Sanitation Project in Bangladesh*. Manila [Loan 1264-BAN(SF)]).

schools don't have access to piped water. Additional sources for water supply, rehabilitation of existing systems, and expansion of new systems in new areas are all required.

5. **Poor Water Quality.** Arsenic problems are not often associated with the official pourashava water supply, but do affect the shallow well supplies for people not connected to piped water. Due to surface contamination from animals and open defecation of humans, health risks are high. High iron and manganese concentrations in the water are common with deep well supplies, which draw water from aquifers of about 150 meters deep. Where good quality surface water exists, this, if utilized, may become an alternative to tubewell supply after required treatment. DPHE recognizes that the lack of adequate water testing facilities is a major constraint, and the Government is considering assistance from the Japan International Cooperation Agency.

6. **Lack of Sanitation.** Septic tanks and pit latrines serve most of the households in formal settlements, but desludging is not organized. Most towns have slums accommodating from 5–40% of the population; pourashavas are responsible for their water supply. Good, clean, and hygienic community sanitation facilities, including toilets, drains, and footpaths are needed. Lack of good sanitation facilities in schools deters female education. None of the towns have sewerage. Recognizing the need to do more for sanitation, in 2003 the Government organized a nationwide detailed survey of urban sanitation, and set a target of 100% sanitation in the country by 2010. Each year in October a national sanitation campaign is organized. The TA will support the Government in achieving these targets through sound community-based techniques and introducing community awareness programs using lessons learned on earlier projects.

7. **Financial Sustainability.** On average, pourashavas' revenues from water tariffs cover only about 64% of operation and maintenance expenses. In fact, only 3 of 28 large pourashavas (50,000 to 400,000 population) meet operation and maintenance costs from their own revenues. Monthly household water bills (flat rate only) vary from about Tk50 to TK200, with an average of about Tk70. If the poverty line is set at Tk5,000 per month, this average equates to just 1.4% of that income. But collection efficiency varies from 60–85%. Supplies are not metered. The portion of the property holding tax (12.5%) for water tax does not materialize as cash in the pourashava water supply and sanitation unit accounts. Also accounts are in arrears, both in water billing and in payment of electricity charges. There is a need to (i) conduct a comprehensive analysis of the existing tariffs and estimate the appropriate water tariffs to cover long-term average costs; and (ii) bring all the illegal and unregistered consumers into a legalized database to help improve revenues; and build the financial management capacity in billing, collection, accounting, and budgeting. Based on lessons learned on earlier projects, the financial and managerial powers of pourashavas need to be expanded to cover outstanding dues from government agencies, without political interference.

8. **Institutional Weaknesses.** In the past, the pourashavas lacked staff—approved positions were not fully filled. This no longer seems to be a problem. However, if pourashavas double their customer base in terms of water connections, staff needs must be reassessed, considering employee-connection ratio and looking at the eventual delegation of service provision to accountable and autonomous pourashavas to ensure postproject sustainability. Pourashava staff require training. Many do not have access to computers. Although supported by past ADB projects, DPHE has capacity-building needs. For 20 years no new core staff have been recruited, making it a top-heavy organization. A total reassessment of DPHE from an organization development perspective is required. A national training center for water supply and sanitation and an information center are being sought. The absence of any regulatory body has contributed to the overall institutional weaknesses at the national and pourashava levels.

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

9. The Project's purpose is to improve living conditions and quality of life, and reduce poverty among people living in urban areas of Bangladesh, where water quality and access are serious issues and sanitation conditions are hazardous. The Project will help pourashavas in selected secondary towns develop effective and sustainable management of water and sanitation services. The TA will prepare a project suitable for ADB financing. The Project will facilitate sustainable piped water supply services and safe sanitation in selected project towns. The TA will prepare recommendations for institutional capacity building of the target pourashavas and DPHE by critically reviewing the pourashavas' performance and impact, and lessons learned from earlier projects. The TA will provide the overall project design, scope, cost, financing plan, and implementation arrangements; and will formulate the terms of reference for consultants to be recruited to help implement the Project.

B. Methodology and Key Activities

10. The Project will be prepared as a sector project. This is to facilitate competition among the many pourashavas for loan funds based on (i) expressed needs, (ii) staff capability, and (iii) financial management. Four pourashavas,⁴ with populations ranging from 50,000 to 400,000, different water resource situations (e.g., surface and groundwater supplies), different water quality issues, different slum situations, different financial status, different rehabilitation requirements, and low piped service coverage, will be selected for detailed study and analysis. The TA will include a comprehensive water supply audit in accordance with standard ADB terms of reference in the four pourashavas. This will examine all water sources for all people considering quantity, quality, cost, and accessibility. The results will be analyzed and discussed at a stakeholder consultation. Priority project interventions and policy will be determined. Selection and eligibility criteria for inclusion in the Project will be carefully prepared and agreed with the Government during the TA.⁵ However certain minimum requirements related to the water supply unit of pourashavas must be met: (i) full complement of adequate staff in place, (ii) no electricity payment arrears, and (iii) collections exceed operation and maintenance costs. The TA will carefully assess the reasons for noncompliance with the minimum requirements by needy pourashavas, and evaluate their potential to fulfill minimum requirements based on identified performance indicators. This will provide an opportunity for the needy pourashavas to qualify for investment under the Project. Under the eligibility criteria, the TA will prioritize urban (and peri-urban) areas where shallow aquifers are highly contaminated with arsenic,⁶ and people without piped water supply are affected. For towns included in the ongoing Urban Governance and Infrastructure Improvement Project,⁷ effective performance under that project will be used as a criterion for selection in the proposed Project. In addition, the baseline data on health standards relating to waterborne diseases will be used in the eligibility criteria. Based on

⁴ Tentatively Brahmanbaria, Chandpur, Comilla, and Jessore are proposed.

⁵ Towns included for implementation of water supply and sanitation improvements under this project may have been included in previous ADB-assisted integrated urban development or flood protection projects but such circumstances will be justified based on the water supply and sanitation needs.

⁶ The TA will ensure that the arsenic mitigation interventions under the Project are coordinated with other externally funded efforts in this field (Japan International Cooperation Agency, Department for International Development, United Kingdom, United Nations Children's Fund, World Bank).

⁷ ADB. 2002. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the People's Republic of Bangladesh for the Urban Governance and Infrastructure Improvement (Sector) Project*. Manila [Loan 1947-BAN(SF), for \$87 million].

overall eligibility criteria, final selection of the pourashavas will be made during project implementation. Approximately 10–12 secondary towns will be selected.

11. The TA will prepare terms of reference for consultants to undertake comprehensive organization development of each project pourashava and DPHE. These will consider staff and their qualifications and skills, as well as procedures, accountability, incentives to perform, and training on technical operations and financial governance and management.

12. Project interventions will give priority to low-income communities and schools. The Project will be prepared using community participation, including women's groups; and be implemented, wherever feasible and appropriate, by nongovernment and community-based organizations. In each subject pourashava, through stakeholder workshops, the TA will help formulate specific water supply and sanitation policy and create a civil society task force to monitor policy and project implementation. The summary initial poverty and social analysis is in Appendix 2.

C. Cost and Financing

13. The total cost of the TA is estimated at \$1,000,000 equivalent, comprising \$480,000 in foreign exchange and \$520,000 equivalent in local currency costs (Appendix 3). ADB will finance the entire foreign exchange cost and \$320,000 equivalent of the local currency cost, totaling \$800,000 equivalent. The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan. The Government will provide \$200,000 equivalent to cover the remuneration of counterpart staff, provision of office accommodation and facilities, and local transportation for counterpart staff. The Government has been informed that approval of the TA does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

14. DPHE will be the Executing Agency for the TA. The Local Government Division (under which DPHE operates) will coordinate with other Government agencies and directly with the concerned pourashavas. The joint secretary, Local Government Division (water supply and sanitation), will head a steering committee that will meet once a month during TA implementation. Committee members will include the pourashava chairpersons of the four pourashavas; deputy chief (planning), Local Government Division; superintending engineer (Planning Circle), DPHE; joint secretary, Economic Relations Division; director, Urban Management Support Unit, Local Government Engineering Department; representatives from Finance Division, Planning Commission; and Implementation, Monitoring and Evaluation Division, Planning Commission; as well as a nominated Government representative on social, gender, and poverty issues.

15. The TA will be implemented over 6 months from April to October 2005. Consulting services total 60 person-months: 20 international and 40 domestic. With the exception of the international and domestic water audit/policy advisers, an international firm will be engaged to organize the TA activities. International experts (with person-months in parenthesis) to be provided by the firm will include a water supply engineer and team leader (7), financial analyst-financial management specialist (2), economist (2), environment specialist (2), organization development specialist (1.5), social and gender specialist (1), hydrogeologist (1), sanitation and sewage treatment specialist (1), and resettlement specialist (1). The team leader will be fielded before mobilizing the main group of consultants, to set up the TA implementation office, with

DPHE support. The team leader will help the ADB task manager identify and engage domestic individual consultants with expertise in water supply, financial management, economic analysis, organization development, hydrogeology, sociology and gender development, water and sewage treatment, environment, and resettlement. The team leader will appoint an individual domestic deputy team leader within 4 weeks after the team leader's arrival in Bangladesh. ADB will engage the international firm and international and domestic individual consultants in accordance with its *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for engaging domestic consultants. A simplified technical proposal with the quality and cost-based selection method will be used to select the international firm. The international firm will contract reputed nongovernment organizations to conduct an awareness raising, hygiene education, social mobilization, and baseline survey. The consultants may procure equipment through direct purchase in accordance with ADB's *Guidelines for Procurement*. Upon TA completion, ownership of the equipment procured under TA will be transferred to DPHE. The outline terms of reference for the consultants are in Appendix 4.

16. The consultants' reporting requirements include (i) an inception report within 4 weeks of TA commencement (including the review of lessons learned and the work plan), (ii) an interim report within 12 weeks of TA commencement (including field visit reports, indicative investment program for the selected towns, and project framework), (iii) a draft final report within 20 weeks (including a full feasibility study), and (iv) a final report within 24 weeks of TA commencement incorporating comments on the draft final report from the Government and ADB. Stakeholder workshops will be held in each of the four pourashavas (following the water and sanitation audit) and one in Dhaka to discuss the draft final report attended by the pourashava chairpersons who wish to make a case for inclusion of their pourashava in the Project, and by representatives of other government agencies, nongovernment organizations, other funding agencies, and interested consultants. Tripartite meetings involving the Government, ADB, and the consultants will be held after the submission of inception, interim, and draft final reports.

IV. THE PRESIDENT'S DECISION

17. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$800,000 on a grant basis to the Government of Bangladesh for preparing the Secondary Towns Water Supply and Sanitation Project, and hereby reports this action to the Board.

PRELIMINARY PROJECT FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>Goal Increase household income and improve health, particularly of poor communities, in the project areas.</p>	<ul style="list-style-type: none"> • Percentage of the population in absolute poverty reduced to 50% by 2015 • Per household monthly medical expenditures reduced from the average Tk500 per month to Tk350 per month 	<p>Annual report of economic survey, the Government</p> <p>Annual Bangladesh resident mission report on Bangladesh economic update</p>	
<p>Purpose Improve living conditions in the selected secondary towns (100,000–400,000 population) by improving water quality and access, and ensuring adequate disposal and treatment of sewage.</p>	<ul style="list-style-type: none"> • Improved access to economic and social services • Maternal deaths in project districts reduced by 75% and infant mortality rate reduced by 65% by 2015 • Safe and reliable drinking water provided for at least 1.2 million people, and water supply coverage improved from the existing x% to y% by the end of 2010 • Drinking water and sanitation facilities in all schools in selected towns ensured • Sanitation coverage improved from the existing x% to y% by end of 2010 • Pourashava water supply and sanitation running cost of water and sanitation services sustainable with collected water tariff meeting operation and maintenance costs 	<p>Annual report of economic survey, Government</p> <p>Hospital reports</p> <p>Health management information system</p> <p>ADB Review missions reports</p> <p>Project completion report</p> <p>Project performance monitoring system reports</p> <p>Financial records and management information system of the pourashava</p>	<p>Assumption (A): Competent Government staff continue to be available for management, design, and supervision</p> <p>(A): Competent contractors are available, and competitive bidding of contracts is carried out</p> <p>(A): Government funding is available in accordance with loan disbursement schedule</p> <p>Risk (R): Political environment may destabilize and delay implementation of the Project</p> <p>(R): Major flood occurs in target towns and stops implementation</p>

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>In Bangladesh, an overwhelmingly rural, steady migration from the rural to urban areas in search of employment and economic opportunities is inflating the urban population. The urban areas are very densely populated, and shanty settlements are sprouting in low-lying areas and on vacant land accommodating the extremely poor. With about 50% of the country's population living below the poverty line, economic development and poverty reduction remain the overriding development priority in Bangladesh. Urban poverty declined from 34% in 1991/92 to 26% in 2000 according to the Household Income and Expenditure Survey 2000. Since about 25% of the population live in urban areas, the majority of the population is poor, both income and human poverty need to be addressed. The urban development subsector is important in reducing the vulnerability of the poor, as well as in providing a safer living environment with basic facilities. Secondary towns provide for residence to both temporary and permanent migrants from the rural areas because of the proximity to their native villages. In most of the towns, water supply and sanitation facilities are limited. Particularly in poor areas and slums (accounting for 5% to 40% of the towns' population) living condition are unsafe and residents are vulnerable to diseases and morbidity. According to Household Income and Expenditure Survey only 32.06% of the population has access to supply water, 66.93% are dependent on tubewell water with the risk of arsenic contamination. The same survey found that 55.29% of the urban population had unsafe sanitary latrines causing damage to health and the environment. The 2004 flood adversely affected both water and sanitation. Urban water supply systems were contaminated by flood water leaking into pipelines. Tubewells were drowned or infected, and latrines were damaged or washed out deteriorating the overall situation. Development of water and sanitation infrastructure in urban areas contributes to poverty reduction by reducing health risks and creating employment.</p> <p>The National Strategy for Economic Growth, Poverty Reduction, and Social Development announced five strategies: (i) pro-poor economic growth for increasing income and employment of the poor; (ii) human development of the poor to raise their capability through education, health, nutrition, and social intervention; (iii) women's advancement and closing gender gaps in development; (iv) social safety nets for the poor; and (v) participatory governance, enhancement of the voice of the poor, and improvement of nonmaterial dimensions of well-being, including security, power, and social inclusion by improving the performance of antipoverty institutions and removing institutional hurdles to social mobility. Improved safe water supply and sanitation services have been emphasized to reduce health costs, decrease malnutrition, and increase labor productivity. Effective measures to address arsenicosis from arsenic contamination of drinking water from tubewells, to which the poor are more vulnerable within the framework of National Water Supply and Sanitation Policy 1998 will be undertaken. To maximize direct and indirect multipliers of development for poverty reduction, the Government's priority is in area-based interventions in secondary towns. The water and sanitation programs need to focus on provision of basic services as well as participation of private and public sectors in collaboration with strengthened local government institutions, such as municipalities, so that the strengthened local government institutions can support the poor to demand and access services.</p> <p>The Asian Development Bank (ADB) is planning to support the Government's efforts to address these issues. ADB has already supported six development projects for secondary towns in Bangladesh since the 1980s. The proposed Project is expected to significantly contribute to reducing urban poverty and consolidate the gains made so far in the area.</p>			

B. Poverty Analysis

Targeting Classification: Targeted intervention

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 the household income and expenditure surveys. Survey data will be required to estimate access of various groups to water and sanitation facilities, modes of delivery, level of arsenic contamination, time for women and children to collect water, estimated cost of various modes by area, affordability of poorer groups, and direct and indirect poverty impact of the various services. Limited-size survey data can be combined with available more comprehensive data sets.

To improve poverty reduction impacts, equity of project effects will be considered to assess the distribution of economic and financial benefits and costs, and net benefits between poor groups and other stakeholders through distribution analysis. During the feasibility study, the channels of effect need to be identified: (i) to see how costs will be incurred and benefits realized; (ii) to identify gains from distributing project effects; (iii) to determine how much cost burden can be acceptable to those who will pay; (iv) to identify overall project performance and returns on equity consideration; and (v) to identify modifications of project design and components to enhance impact on target beneficiaries.

Continued on next page

C. Participation Process

Is there a stakeholder analysis? Yes No

Preliminary stakeholder consultation was done during technical assistance (TA) Fact-Finding Mission. The TA will prepare a stakeholder analysis, indicating roles of various stakeholders in delivery and receipt of the project services.

Is there a participation strategy? Yes No

The TA will involve various stakeholders including the Government, nongovernment organizations, civil society groups, local government representatives, women and men citizens in identifying, planning, implementing, and monitoring project components and activities through consultation and joint planning workshops.

Form and level of participation of various stakeholders in the loan project implementation phase will be identified and a plan will be prepared to ensure quality participation of various stakeholders.

D. Gender Development**Strategy to maximize impacts on women:**

In the project towns women make up almost half of the population. The TA will analyze needs and suggest means to address gender concerns in activities related to development of water supply and sanitation facilities, operation and maintenance, and delivery of services. The TA will recommend ways for the Project to create scope for women's participation in project activities beginning from participatory project planning to implementation, monitoring, and evaluation. It will recommend how to generate employment opportunities for women by involving them in different activities. The role of local government, especially of female representatives, in participatory service delivery and promotion of women's involvement in various activities will be examined and recommendations made.

Has an output been prepared? Yes No, Will be prepared during PPTA

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	Land is generally owned by the municipalities. As such, involuntary resettlement is unlikely. However, this will be screened during the TA for all proposed interventions to avoid displacement/dispossession. A resettlement framework will be prepared for future guidance in preparing a satisfactory resettlement plan, if required, and arrangements to deal with losses on a transparent, voluntary basis will be included in resettlement plans, with appropriate safeguards.	<input type="checkbox"/> Full <input checked="" type="checkbox"/> Short <input type="checkbox"/> None
Affordability	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None	The TA will recommend linkages and partnerships with local government and nongovernment organizations to ensure that low-income households and the poor have greater access to services, including better use of the services.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Labor	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	No significant labor implication is expected. Employment opportunities will be examined and recommendations made for a labor strategy to remove any unfair gender discrimination and improving employment and working conditions.	<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	Indigenous peoples are not in significant numbers in the towns. Indigenous issues will be examined during the TA for the proposed project activities in the areas of significant indigenous peoples' settlements. Specific action and an indigenous peoples framework will be proposed, if needed.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other Risks and/or Vulnerabilities	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None	Ownership 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, thus addressing potential needs of vulnerable groups and women.	<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 Financing ^a			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	400.0	0.0	400.0
ii. Domestic Consultants	0.0	160.0	160.0
b. International and Local Travel	40.0	20.0	60.0
c. Reports and Communications	0.0	10.0	10.0
2. Equipment (Computer, Printer, etc.) ^b	10.0	0.0	10.0
3. Workshops and Training	0.0	25.0	25.0
4. Vehicle Rental	0.0	6.0	6.0
5. Surveys ^c	0.0	64.0	64.0
6. Miscellaneous Administration and Support Costs	0.0	2.0	2.0
7. Representative for Contract Negotiations	5.0	0.0	5.0
8. Contingencies	25.0	33.0	58.0
Subtotal (A)	480.0	320.0	800.0
B. Government Financing			
1. Office Accommodation and Transport	0.0	60.0	60.0
2. Remuneration and Per Diem of Counterpart Staff	0.0	100.0	100.0
3. Water Quality Testing	0.0	20.0	20.0
4. Communication		20.0	20.0
Subtotal (B)	0.0	200.0	200.0
Total	480.0	520.0	1,000.0

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

^b Computers and other office equipment will be purchased by the consultant in accordance with ADB's *Guidelines for Procurement*. The equipment will be given to the Department of Public Health Engineering upon completion of the technical assistance.

^c Surveys include water quality testing, tubewell performance testing, and socioeconomic surveys.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. The consultants will work closely with the staff of the Department of Public Health Engineering (DPHE) and the pourashavas and will coordinate with low-income communities, community based organizations, nongovernment organizations (NGOs), civil society, and the private sector to foster a high level of beneficiary participation and local ownership of the project preparatory technical assistance (TA). The consultants will coordinate closely with other funding agencies involved in water supply and sanitation projects in Bangladesh, and review participatory approaches with poor communities, available documents, reports, and other reference materials. The consultants will critically review the lessons learned from earlier projects and structure the new project accordingly. Other special reports to be reviewed include *National Policy for Safe Water and Sanitation 1998* and *National Survey on Sanitation 2003*. The consultants will liaise closely with the Local Government Engineering Department, the executing agency for the TA Supporting Urban Governance Initiatives.

2. In the preparation of social assessments, the consultants will use Asian Development Bank (ADB) *Guidelines for the Incorporation of Social Dimensions in Bank Operations* and the *Handbook for Incorporation of Social Dimensions in Projects*. Any initial environmental examination (IEE) will be prepared in accordance with ADB's Environmental Policy, Operations Manual Section 20, *Environmental Considerations in ADB Operations* and the *Environmental Guidelines for Selected Infrastructure Projects 1993*. Reference should also be made to past ADB studies in Bangladesh. For economic analysis the consultants will use the ADB *Guidelines for Economic Analysis of Water Supply Projects* and for financial analysis the *Guidelines for the Financial Governance and Management of Investment Projects Financed by ADB*. Table A1 summarizes consulting inputs for the TA.

Table A1. Consulting Services (person-months)

Expertise	International	Domestic
Water Supply Engineer (Team Leader)	7	
Water Supply Engineer (Deputy Team Leader)		8
Sanitation and Sewage Treatment Specialist	1	2
Environment Specialist	2	3
Water Policy-Audit Adviser	1.5	2
Organization Development Specialist	1.5	4
Financial Analyst-Financial Management Specialist	2	5
Economist	2	3
Hydrogeologist	1	2
Social and Gender Specialist	1	3
Water Quality and Treatment Engineer		5
Resettlement Specialist	1	3
Total	20	40
Nongovernment Organizations (awareness raising, hygiene education, social mobilization, and baseline surveys)		12

Source: Asian Development Bank estimates

1. Team Leader and Water Supply Engineer, and Deputy Team Leader

3. The team leader's task will include the following: (i) Ensure delivery of reports in a timely manner, fully integrating the outputs of the domestic experts. Prepare the summary final report following ADB format for Board documents. (ii) Prepare individual work plans, supervise all field investigations and studies, and ensure strong involvement of stakeholders in

project preparation. (iii) Develop a project performance management system with sufficient baseline data to establish quantifiable, measurable, and realistic targets for the Project with specific information to measure project impact on poverty reduction. Include baseline data from socioeconomic surveys, and empirical data on health standards and associated costs on waterborne diseases, etc. (iv) Prepare a project framework with detailed targets reflecting the final policy matrix and project design. Prepare details of project implementation, and in cooperation with team members prepare the terms of reference for consultants involved in project design and implementation. Look at least-cost options, and ways and means of reducing operation and maintenance costs including, if feasible, the elimination of overhead tanks.

4. As water supply engineer, responsibilities of the consultant will include the following: (i) Be responsible for the analysis of all data including demand analysis, water metering, and in coordination with financial analyst and economist, complete the tariff study and recommend policy on tariff structure. (ii) Review and update the consumer database through surveys to bring all illegal and unregistered consumers into legalized database to help improve revenues. (iii) In consultation with the Government, determine the nature, extent, and location of project water supply components, based on eligibility and selection criteria that reward towns that introduce sector reforms. Place emphasis on providing piped water through house connections. (iv) Help the water audit and policy adviser formulate policy, and ensure civil society task forces (to monitor policy implementation) are mobilized in project towns. (v) Review the design of the World Bank's Water Supply Program Project, which aims to pilot test and promote piped water systems in rural areas with significant private sector participation. Under its urban water supply component, which promotes similar approaches, consider public-private partnership and prepare recommendations.

5. The deputy team leader, water supply engineer, will assist the team leader to accomplish these tasks.

2. Sanitation, and Sewage Treatment Specialist

6. The consultant will be responsible for the following: (i) Determine the nature and extent of sanitation and drainage services in the potential project towns, including on-site facilities (design, construction, and maintenance), and community-based systems (i.e., community toilets, public toilets, school toilets, septic tank desludging services, and design of sewage treatment). Consider the *National Baseline Survey on Sanitation 2003* and ADB's *Terms of Reference for Preparation of Sanitation Projects*. Give priority to provision of services to informal settlements, schools, and public places. (ii) Include in the project scope, pilot projects in eco-sanitation and special incentives for stakeholders to engage in such projects. (iii) Collect and analyze baseline statistics on water-related diseases in the project towns. Assess public awareness on hygiene and sanitation with the NGO Forum on Drinking Water Supply and Sanitation.

3. Environment Specialist

7. The consultant, in close cooperation with the national environmental protection agency, will undertake the following: (i) Prepare a comprehensive IEE report for the Project in accordance with ADB's various policies and guidelines. Determine the need for an environmental impact assessment (EIA). If an EIA is not required, prepare a summary IEE with clear recommendations for environmental mitigation measures, associated costs, and monitoring systems. If an EIA is required, prepare detailed terms of reference for the EIA. Of special consideration are the water treatment and sewage treatment sites and the disposal of

sludge from these sites. (ii) Outline a water quality monitoring program for the project towns for drinking water supply and receiving waters for wastewater. (iii) Undertake public consultations (including affected people, NGOs, and other related agencies) and document the results in the IEE. (iv) Provide project-specific and quantitative information on potential environmental impacts (positive and negative). (v) Help DPHE develop an environmental management plan to cover project-specific environmental mitigation measures, environmental monitoring plan (monitoring indicator, frequency, and reporting requirements), institutional arrangements to implement the mitigation measures and monitoring plan, and cost estimates and budget sources for implementing the mitigation measures and monitoring plan (the cost should be reflected in the Project cost table). (vi) Work closely with the local environmental protection authority to confirm that the environmental management plan is practical and meaningful and ensure DPHE is committed to implementing the plan.

4. Water Audit /Policy Advisor

8. The consultant will have the following responsibilities: (i) In the first month of the TA, supervise a comprehensive water supply audit in each project town, following ADB's *Terms of Reference for Urban Water Supply Audits, and Diagnostic City Water Assessment*. (ii) Analyze the audit results and provide a report within 1 month of audit completion for discussion at stakeholder consultations in each study town to prioritize project interventions, formulate government policy in the urban water supply and sanitation sector, and create a civil society task force to monitor the implementation of the policy in that town. (iii) Prepare a report on each stakeholder consultation. Prepare a draft water and sanitation policy report for discussion with senior government officials and politicians to reach a consensus and obtain formal government endorsement for public announcement of the policy. (iv) Help the team leader prepare project reports following ADB guidelines.

5. Organization Development Specialist

9. The consultant will undertake the following: (i) Review the past performance of DPHE as an executing and implementing agency for water supply and sanitation development projects, as well as an institution for supporting operation and maintenance of urban water supply and sanitation throughout Bangladesh. (ii) Critically review lessons learned on earlier projects and incorporate them in the proposed project design. (iii) Review the pourashavas' and DPHE's mission statements, objectives, human and financial resources, management capability, autonomy, scope of work, and public reporting. (iv) Evaluate the pourashavas in the proposed project towns as local government institutions capable of implementing the project components and operating and maintaining existing and new water supply and sanitation facilities and services. (v) In cooperation with the respective pourashava chairperson, prepare terms of reference for consultants to undertake organizational development. (vi) Undertake the assignment in consultation with the financial analyst and financial management specialist.

6. Economist

10. The economist will have the following responsibilities: (i) Undertake economic analysis in accordance with all relevant ADB publications. (ii) Analyze (a) the economic rationale for government investment; (b) the goals of the investment plan; (c) the ways to achieve the goals, including selection criteria for subprojects; (d) associated policies, including tariffs; (e) the Government's capacity to implement and monitor the plan; (f) sources of funds to finance the plan; (g) the Government's commitment to the plan; (h) the commitment and coordination of

foreign aid agencies; (i) risks to implementing the plan and achieving the goals; and (j) conditions for disbursing funds.

7. Financial Analyst/Financial Management Specialist

11. The responsibilities of the consultant will include the following: (i) Undertake a financial management assessment of DPHE as an executing agency and of the four representative pourashavas as implementing agencies. (ii) Undertake a financial analysis of the Project and propose audit requirements to assess the Project's financial viability and sustainability, and determine that sufficient project management controls are in place to support monitoring and supervision of the Project. Calculate financial internal rates of return for the water supply component of four representative pourashavas. (iii) Prepare financial projections for water supply and sanitation, including at least 1 year of actual financial results, with accompanying assumptions for all participating pourashavas. (iv) Conduct a comprehensive risk assessment to identify conditions when the Project will be susceptible to not meeting expected development objectives. Combine conservative estimates of project duration, nonrevenue water, collection efficiency, and tariff level. (v) Undertake the assignment in consultation with the organization development specialist.

8. Social and Gender Specialist

12. The consultant will undertake the following: (i) Organize and analyze the socioeconomic survey results in each of the proposed project towns, including all slum, squatter, and underserved areas. Collect baseline data on income and expenditures, demographic trends, health, welfare, sanitation and urban environmental situations, and other related social circumstances. (ii) Review the impact of the proposed Project on women and the poor. Identify all possible options to enhance the participation of beneficiaries, particularly women, in identification, planning, design and implementation phases. (iii) Establish contact with community-based organizations and NGOs in each of the project towns. (iv) Review the Project's impact on indigenous and/or ethnic groups in the project towns. (v) Prepare a gender analysis in accordance with ADB guidelines and show the distribution of the expected benefits both direct and indirect. (vi) Analyze poverty incidence in each town, including the projected growth in the incidence of urban poverty, and describe the nature and characteristics of poverty in selected towns. (vii) Prepare summary of poverty reduction and social development strategy including linkage to the country poverty analysis, poverty analysis, stakeholder participation process, gender and development, and potential issues regarding affordability of services, resettlement, labor, indigenous people, and other risks and vulnerabilities.

9. Resettlement Specialist

13. The consultant will have the following responsibilities: (i) Review the resettlement requirements related to land acquisition for the components of the Project, with particular reference to, but not limited to, sites required for small dams, sewage treatment, water treatment, storage/balance reservoirs, pipelines, sewers, and pumping stations. (ii) Update the initial resettlement checklist using the available information on resettlement effects of the project components. (iii) Review the Government policy on resettlement, especially in terms of the entitlement matrix, and identify where it differs with the ADB policy on resettlement. Since the subprojects would provide direct benefits to communities, and are amenable to a local decision-making process, arrangements to deal with losses on a transparent, voluntary basis will need to be included in resettlement plans, with appropriate safeguards. The safeguards could be built into the community decision-making process to deal with any losses that arise. Such safeguards

include (a) full consultation with landowners and any nontitled affected people on site selection; (b) ensuring that voluntary donations do not severely affect the living standards of affected people, and are linked directly to benefits for the affected people, with community sanctioned measures to replace any losses that are agreed to through verbal and written record by affected people; (c) any voluntary donation will be confirmed through verbal and written record and verified by an independent third party such as a designated non-government organization or legal authority; and (d) having adequate grievance redress mechanisms in place. All such arrangements will be set out in a resettlement framework. (iv) If necessary, prepare a resettlement action plan for the Project.

10. Hydrogeologist

14. The consultant will have the following responsibilities: (i) Examine the records of all existing operational tubewells in the four study towns as to design, construction, maintenance, and operation. (ii) In conjunction with the water treatment engineer, arrange for water quality tests on all tubewells. (iii) In each of the study towns, arrange pumping efficiency tests of the tubewells and examine overall maintenance/rehabilitation requirements. (iv) Prepare a report on findings and provide guidance for developing new tubewells considering location, depth, design, operation, and maintenance. (v) Conduct hydrogeological investigations and detailed assessment of alternative water sources, and prepare a plan for future investigations in the towns to be selected during project implementation. (vi) Provide terms of reference and cost estimates for new tubewell construction and pumping, including test wells and overall testing to validate the yield and quality of water. (vii) In collaboration with the environmental specialist, look into and coordinate with the ongoing geological studies to provide assessments as a part of the IEE. (viii) Review and evaluate all arsenic mitigation measures currently being reviewed such as through recharging deep aquifers, and prepare recommendations for detailed studies under the proposed Project.

11. Water Quality and Treatment Specialist

15. The consultant will undertake the following: (i) Assume responsibility for testing water quality at source and at consumer-use points for each source of supply in each of the four study towns. (ii) Test water, especially for arsenic, iron, manganese, chloride/salinity, heavy metals, and bacteriological contamination. Compare the results with World Health Organization and National Standards for Drinking Water, and recommend appropriate treatment necessary to comply with the standards. In particular, identify the difference in contamination between source and consumer, which might be resulting from an intermittent supply operation and what precautions consumers should take to prevent waterborne diseases. (iii) Sample three brands of bottled water available in each of the four pourashavas, and compare the results with piped water and the National Standards.

12. NGO Assignments

16. The NGO team will consist of specialists in the fields of awareness raising, hygiene education, social mobilization, and water-related baseline surveys. The latter will include assistance with the water audit, water-quality monitoring, and monitoring of waterborne diseases with baseline data on average number of patients and related household expenditure. Each specialist will prepare terms of reference for implementing these components in the Project based on assessment carried out in the four representative study pourashavas.