

Technical Assistance

TAR: TIM 38189

Technical Assistance to the Democratic Republic of Timor-Leste for Preparing the Urban Water Supply and Sanitation Project (Financed by the Japan Special Fund)

September 2005

Asian Development Bank

CURRENCY EQUIVALENTS

Timor-Leste uses the US dollar as its currency.

ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
AusAID	–	Australian Agency for International Development
CSPU	–	country strategy and program update
EDTL	–	Electricidade de Timor-Leste
IBNET	–	International Benchmarking Network
JICA	–	Japan International Cooperation Agency
MDG	–	millennium development goals
MPA	–	methodology for participatory assessment
NDP	–	National Development Plan
NGO	–	nongovernment organization
O&M	–	operation and maintenance
PHAST	–	participatory hygiene and sanitation transformation
PPMS	–	project performance management system
QBS	–	quality-based system
RRP	–	report and recommendation of the President
SPAR	–	subproject appraisal report
TA	–	technical assistance
TL	–	team leader
TOR	–	terms of reference
WatSan	–	water supply and sanitation
WSS	–	Water and Sanitation Service

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	Targeted intervention
Sector	–	Water supply, sanitation, and waste management
Subsector	–	Water supply and sanitation
Themes	–	Sustainable economic growth, Inclusive social development, Environmental sustainability
Subtheme	–	Fostering physical infrastructure development

NOTE

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

This report was prepared by C. Andrews, Special Office in Timor-Leste, Pacific Department.

I. INTRODUCTION

1. The Asian Development Bank (ADB) has been helping to improve water supply and sanitation (WatSan) services in Timor-Leste since early in the emergency period following the 1999 independence referendum. ADB administered the first and second Water Supply and Sanitation Rehabilitation Projects¹ between August 2000 and April 2003. The projects restored and expanded rural and urban water supplies and strengthened the Water and Sanitation Service (WSS), which manages the Government of Timor-Leste's WatSan investments and services.

2. ADB's Country Program and Strategy Update (CSPU) 2005–2006² includes the following strategic focus: "Rehabilitate key infrastructure including ... water supply and sanitation." In 2004, Timor-Leste became eligible for Asian Development Fund (ADF) grants, and ADB and the Government agreed during a country program confirmation mission in December 2004 to program a project preparatory technical assistance (TA)³ grant in 2005 to help the Government prepare an urban WatSan project to be partly funded by an ADF grant. The TA design and monitoring framework is in Appendix 1.

II. ISSUES

3. The Millennium Development Goal (MDG) target for water supply in Timor-Leste is to increase from 44% to 78% the proportion of people with improved sources of water. The target for sanitation is to increase from 19% to 46% the proportion of people with improved sanitation. Access to piped water is even lower: only about 13% of families have house connections and 16% are served by community taps.⁴ Most East Timorese live in rural areas where access to improved water sources and sanitation is worst. So success in rural areas is the key to achieving MDG Goal 7 targets. Accordingly, significant bilateral external assistance goes toward improving rural WatSan. The largest bilateral funding source in the subsector, the Australian Agency for International Development (AusAID), is expected to commit to a second phase of its Community Water Supply and Sanitation Program. Others, such as the Government of Portugal and the United Nations Children's Fund are expected to continue to support rural WatSan.

4. Meanwhile, Timor-Leste's urban centers, particularly the capital, Dili, are growing rapidly.⁵ Global experience shows that urbanization is both inevitable and key to economic growth and sustainable poverty reduction. Since 2003, only the Government of Japan and the Japan International Cooperation Agency (JICA) have financed major water supply investments in Dili; the Government of Portugal through *Aguas de Portugal* Timor-Leste (Portugal Water Timor-Leste), and the German Technical Cooperation upgraded components of the water supply system in the second city, Baucau. JICA's program in Dili is continuing and, by 2007, all the city's smaller water treatment plants will have been upgraded in addition to the new Dili central water treatment plant with a capacity of 6,000 cubic meters per day. Distribution will have been upgraded in all of Dili's 10 water supply zones.

¹ ADB. 2000. *Report on a Project Grant from the Trust Fund for East Timor to the United Nations Transitional Administration in East Timor for the Water Supply and Sanitation Rehabilitation Project*. Manila; ADB. 2000. *Report on a Project Grant from the Trust Fund for East Timor (to be Administered by the Asian Development Bank) to East Timor (as Administered by the United Nations Transitional Administration in East Timor) for the Water Supply and Sanitation Rehabilitation Project Phase II*. Manila.

² ADB. 2005. *Country Strategy and Program Update 2005–2006 Democratic Republic of Timor-Leste*. Manila.

³ The TA first appeared in *ADB Business Opportunities* (internet edition) on 28 June 2005.

⁴ United Nations Development Programme. 2004. *Timor-Leste Human Development Report: Paths Out of Poverty, Draft A*. Dili.

⁵ Initial results from the 2004 national census show that Dili district's population increased by 39% since 2001 and now has 19% of the total population.

5. But despite these investments in water production and distribution capacity, most Dili residents receive poor water supply service and WSS earns little income (Appendix 2). Community respondents in the City Alliance-funded Dili Slum Upgrading Project consistently place improved water supply as their highest development priority. WSS estimates that only 30–35% of Dili families and businesses receive reliable piped water supplies to their house or premises. Nowhere in Dili is there a continuous 24-hour service. Why is the level of service poor despite the investments in water production and distribution?

6. The answer is that the vertical structure of the Dili water supply system is not complete. Adequate clean water reaches many neighborhoods, but it does not reach households and businesses within those neighborhoods. Where does the water go—how much is consumed, for what purpose, and why do some get water and others do not? Poor quality reticulation (tertiary distribution) and lack of demand management are the crux of the problem: (i) reticulation networks do not penetrate into many neighborhoods, (ii) some reticulation networks leak excessively, (iii) much water is pilfered from reticulation pipes, and (iv) water is wasted. Table 1 shows the estimated water balance for the Dili water supply system. The system incurs large water losses.

Table 1: Water Balance for Dili

System Input Volume 100%	Authorized Consumption 59%	Billed Authorized Consumption 19%	Billed Metered Consumption (including water exported) 19%	Revenue Water 19%	
			Billed Nonmetered Consumption 0%		
	Unbilled Authorized Consumption 40%		Unbilled Metered Consumption 8%	Non- revenue Water 81%	
			Unbilled Nonmetered Consumption 32%		
	Water Losses 41%	Apparent Losses Not Known			Unauthorized Consumption Not Known
					Metering Inaccuracies Not Known
		Real Losses Not Known			Leakage on Transmission and /or Distribution Mains Not Known
			Leakage and Overflows at Storage Tanks Not Known		
		Leakage on Service Connections up to the Customers' Meters Not Known			

Source: Water and Supply Service estimates.

7. With large water losses and high unbilled authorized consumption, WSS's nonrevenue water is very high, at approximately 81%. WSS earns minimal revenue from water sales and it relies on government subsidies to finance its operations. The Dili water supply emergency repair and improvement budget is a handout from the Government that can be anywhere from \$10,000 to \$30,000 per annum, totally inadequate to upgrade reticulation and service connections. Only 1 of 10 service zones in Dili has a good reticulation system. Reticulation in all other zones comprises mostly Portuguese or Indonesian era galvanized iron pipes, corroded and prone to leakages, and with almost no monitoring and management of service connections.

8. To achieve the National Development Plan (NDP) target of "80% of urban population with access to safe piped water" (NDP p. 280), there is a strong rationale for focusing ADB urban WatSan support entirely on Dili's reticulation system and service connections, together with capacity development support for WSS. So long as WSS is unable to deliver a reliable piped water supply service to its Dili market, WSS will fail financially and technically, it will be unable to support WatSan services in district centers, returns on capital investments will remain low, and the Government will have no means of meeting its NDP urban WatSan targets. This

weakness will also impact NDP rural WatSan targets because WSS is responsible for supporting small town (subdistrict) WatSan.

9. The rationale (para. 8) hinges on WSS developing as an efficient, independent, and financially self-sufficient supplier of WatSan services. Is this achievable? Recent experience with other urban monopolies in Timor-Leste suggests that it is; and it is the expressed policy of the Government to create WSS into an independent public corporation. The Government's telecommunications operation has been privatized using a build-operate-transfer model, so that Timor Telecom is today a successful, independent service provider. The Government has more than halved its annual subsidy to its electricity operator, Electricidade de Timor-Leste (EDTL), under a management contract arrangement and an aggressive program to install prepaid meters. Both the Port of Dili and Dili Airport operate as public corporations and are close to being financially self-sufficient. The institutional fundamentals for the corporatization of WSS are being put in place. The decree law allowing WSS to charge for WatSan services was passed in 2004, and the tariff policy and tariff schedule have been approved by the responsible minister. A draft decree law for creating WSS into a public corporation was presented to the Council of Ministers in September 2004, but the Government wisely determined it too soon to reconstitute WSS.

10. On the demand side, there is clear evidence of strong willingness to pay for piped water supplies to the house, even in low-income neighborhoods in Dili. Community consultations by the Dili Slum Upgrading Project are encountering a high real demand for improved water supplies. And the success of EDTL's prepaid meter program is relevant to affordability and willingness-to-pay considerations for water supply. The success was largely due to the effective partnership between EDTL and the Dili district administration, the latter having a comparative advantage in working alongside communities. The Dili district administrator is of the view that a similar partnership with WSS could ensure the success of a water supply connection and metering program throughout Dili.

11. Wastewater management in Dili is poor, and urban environmental sanitation (also covering drainage, solid waste management, pavements, and the like) is substandard, particularly in low-income areas. International experience is clear that community-based sanitation improvement programs using simple technology are most effective, affordable, and sustainable in low-income cities like Dili. There is scope for an ADB-supported intervention to work with other partners to improve wastewater management as water supplies improve in project neighborhoods. Prospective partners include Dili District, Dili Urban Upgrading Project, United Nations Development Programme (UNDP), and other United Nations agencies, nongovernment organizations (NGOs), and bilateral aid agencies. Partnerships would also cover hygiene improvement.

12. Improving WatSan in Dili is consistent with both goals of ADB's Pacific Strategy:⁶ (i) good WatSan services improve people's productivity and economic competitiveness, and (ii) clean water and sanitation are key social services for the poor (Pacific Strategy, p. 19). Timor-Leste's NDP sets even higher targets for access to clean water and sanitation than the MDGs. ADB's new results-based CSPU 2006–2008,⁷ which supports the NDP, includes "improved water supply and sanitation for residents and businesses in urban areas" as program outcome and sets the following outcome indicators for 2006–2008: (i) 40% of Dili residents and businesses connected to 24-hour piped water; and (ii) 20% of Dili neighborhoods with effective and sustainable wastewater collection, treatment, and disposal. Finally, the Government's

⁶ ADB. 2004. *A Pacific Strategy for the Asian Development Bank 2005–2009*. Manila.

⁷ ADB. 2005. *Country Strategy and Program Update 2006–2008 Democratic Republic of Timor-Leste*. Manila.

approved Sector Investment Program for Water Supply and Sanitation⁸ lists several urban WatSan activities for 2006–2009 including "Distribution and house connection pipe system I" (WatSan Sector Investment Program, Annex Table 5).

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

13. The expected impact of the project preparatory TA is improved water supply and sanitation for households and businesses in Dili. The expected outcome is the agreed-upon design of the Urban Water Supply and Sanitation Project to be funded in part by an ADF grant. The project will have the following components: (i) Dili water supply reticulation (tertiary distribution and metered service connections), and (ii) neighborhood sanitation and hygiene. The TA will also prepare an associated TA project to develop WSS.

B. Methodology and Key Activities

14. The TA consultants will work closely with WSS, Dili district administration, communities, development partners, and NGOs. The TA will conduct a Dili City water supply audit, following the model terms of reference (TOR) prepared by the ADB water team in 2004. Findings will detail and confirm Dili's water balance (Table 1), identify water supply-related financial transactions, and describe water sources and consumption patterns for families and businesses. This understanding is key to proposals for effective policies, procedures, and investments to improve city water supplies, especially for the poor. The extra baseline information is also necessary to measure project impact. Likewise for sanitation, hygiene, and water-related health status, existing and new baseline information is needed to design effective, affordable, and sustainable responses to Dili's poor sanitation situation, and to measure project impact. The TA consultants will apply best practice, including the methodology for participatory assessments (MPA) and participatory hygiene and sanitation transformation (PHAST). Assessment of WSS will introduce simple performance benchmarking needed to design and measure the success of a program for strengthening any water supply utility. WSS customers will participate. TA resources will then help prepare a comprehensive feasibility study covering technical, institutional, social, financial, economic, and environmental aspects. Subproject appraisal reports (SPARs) will be prepared for each project site; or, in situations where numerous small sites would be improved using similar technology and approach, a summary feasibility analysis would be prepared for each site. In addition to physical investments, each SPAR will fully consider investments in improving hygiene attitudes and behavior. The Government plans to eventually reconstitute WSS as a public corporation. This is a sound policy, but cannot be implemented until WSS is a stronger performing organization. The WSS assessment and performance benchmarking program will guide the preparation of the TA for development of the WSS organization.

C. Cost and Financing

15. The total cost of the TA is estimated to be \$720,000 equivalent comprising \$510,000 in foreign exchange and \$210,000 equivalent in local currency. The Government has requested ADB to finance \$600,000 covering the entire foreign exchange cost and \$90,000 equivalent of the local currency cost. The TA will be financed by ADB on a grant basis from the Japan Special Fund, funded by the Government of Japan. The Government will contribute \$120,000 equivalent to finance part of the local currency cost through the provision of office accommodation,

⁸ Government of Timor-Leste. 2005. *Water Supply and Sanitation Sector Priorities and Sector Investment Program*. Dili.

transport, and remuneration and per diem of counterpart staff. The detailed cost estimates and the financing plan are in Appendix 3. The Government has been informed that approval of the TA does not commit ADB to financing the ensuing project.

D. Implementation Arrangements

16. The Ministry of Natural Resources, Minerals, and Energy Policy will be the Executing Agency for the TA, and will give day-to-day implementation counterpart support through WSS. The WSS director will be the Government's TA project director, and the WSS chief of Urban Water Supply will be the day-to-day counterpart of the TA consultant team leader.

17. ADB will select and engage a team of international (20 person-months) and domestic (40 person-months plus 15 person-months of field survey enumerators) consultants in accordance with the ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for selecting and engaging domestic consultants. The international consulting firm will be recruited using ADB's quality-based system (QBS). QBS is justified because the quality of the consultants and proposed approach are critical to producing a feasible and efficient project design in the challenging area of low-income neighborhood WatSan. The simplified technical proposal format will be used to invite and evaluate proposals from the international consulting firms. The international WatSan specialist and engineer will be the team leader. Other international consultants will have expertise in civil engineering, urban environmental sanitation, community development, organization development, financial analysis, and economics and poverty impact assessment. Domestic consultants will have expertise in WatSan and engineering, and community development. Five domestic field enumerators (15 person-months) will work with communities on baseline status, preferences, willingness to pay, and other aspects. Appendix 4 gives the TOR for consultants. The TA will finance the rental of five computers for enumerators and one photocopier, and the purchase of project office and field equipment including printer, scanner, and survey equipment. Equipment for the TA will be procured in accordance with ADB's *Guidelines for Procurement* and procedures acceptable to ADB and will be retained by the Executing Agency after the TA.

18. The TA is expected to begin in February 2006, to be implemented over 6 months, and be completed in July 2006. The consultants will produce (i) an inception report by the end of 1 month, (ii) an interim report by the end of 3 months, (iii) a draft final report and draft report and recommendation of the President with appendixes and supplementary appendixes by the end of 5 months, and (iv) the final report by the end of 6 months.

IV. THE PRESIDENT'S DECISION

19. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$600,000 on a grant basis to the Government of Timor-Leste for preparing the Urban Water Supply and Sanitation Project, and hereby reports this action to the Board.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
Impact Improved water supply and sanitation for households and businesses in Dili	40% of Dili households and businesses receive 24-hour piped water supply, and 20% of Dili neighborhoods have effective wastewater collection, treatment, and disposal by 2009. ^a	WSS records ADB review missions UN Human Development Report for Timor-Leste	Assumption <ul style="list-style-type: none"> ADB and the Government approve and finance the project.
Outcome Agreed-upon design of the Urban Water Supply and Sanitation Project	A signed grant agreement by November 2006	ADB records	Assumptions <ul style="list-style-type: none"> The Government remains committed to financing the WatSan sector. Policy dialogue with the Government results in agreed-upon positions on sector/ organization reform.
Outputs <ol style="list-style-type: none"> Water supply audit for Dili Sanitation, hygiene, and water-related health baseline analysis for Dili WSS organization assessment Dili urban WatSan project feasibility study Dili urban WatSan project RRP TA report and TOR for WSS organization development 	A satisfactory draft final report and draft RRP by June 2006	Consultant reports ADB TA review missions and record	Assumption <ul style="list-style-type: none"> Sufficient data and information are available to supplement the TA's own primary research. Risk <ul style="list-style-type: none"> There are in-country disturbances or other uncontrollable impediments to TA implementation.
Activities with Milestones <ol style="list-style-type: none"> 1.1 Collect and collate all existing information on water supply services in Dili. 1.2 Confirm water supply audit terms of reference and identify information gaps. 1.3 Design a water supply audit (see www.adb.org/water) and conduct field surveys. 1.4 Analyze results and write up the water supply audit, including diagnosis of problems and responses from stakeholders. 2.1 Collect and collate all existing information on sanitation, hygiene, and water-related health status for Dili. 2.2. Identify baseline gaps and design and conduct baseline surveys using the MPA approach. 2.3 Analyze results and write up the baseline status, including diagnosis of problems and responses from stakeholders, and using a PHAST framework. 2.4 Prepare a sanitation and wastewater management options analysis (see www.adb.org/water) 3.1. Study the roles, responsibilities, and expectations of WSS. 			Inputs ADB Consulting services \$500,000 Equipment and SW \$10,000 Training/seminars \$10,000 Surveys \$20,000 Administration \$20,000 Contingencies \$40,000 Total \$600,000 International (figures stand for person-months) - WatSan specialist/senior engineer/TL: 6

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>3.2. Prepare and agree on performance benchmarks for WSS.</p> <p>3.3 Assess and analyze the performance of WSS according to the agreed-upon benchmarks, including diagnosis of problems.</p> <p>4.1 Define initial scope and approach of the project, matching diagnostic analysis and target improvement in performance benchmarks and project resources available.</p> <p>4.2 Consult with stakeholders, including communities and customers, and adjust the scope and approach as necessary.</p> <p>4.3 Prepare engineering designs and estimates for all typical works.</p> <p>4.4 Prepare financial, economic and poverty, social, and environmental assessments.</p> <p>4.5 Assess feasibility and prepare consolidated feasibility study report.</p> <p>5.1 Formulate the feasibility study into a draft RRP suitable for consideration by ADB Management and Board</p> <p>6.1 Define the proposed scope and approach for the WSS organization development TA, and consult with stakeholders.</p> <p>6.2 Finalize the TA design and prepare a draft TA report suitable for ADB Management.</p>			<ul style="list-style-type: none"> - WatSan junior engineer: 4 - Urban environmental and PHAST specialist: 3 - Community development and MPA specialist: 2 - Organization development specialist: 2 - Financial analyst: 1 - Economist/poverty reduction analyst: 2 <p>Domestic</p> <ul style="list-style-type: none"> - WatSan specialist/deputy TL: 5 - Two WatSan engineers: 10 - Two engineering surveyors: 10 - Three community development specialists: 15 - Five MPA interviewers: 15 <p>Government</p> <ul style="list-style-type: none"> Office and transport \$40,000 Remuneration \$30,000 Others \$50,000 Total \$120,000

ADB = Asian Development Bank, MPA = methodology for participatory assessment, PHAST = participatory hygiene and sanitation transformation, RRP = report and recommendation of the President, TA = technical assistance, TL = team leader, TOR = terms of reference, UN = United Nations, WatSan = water supply and sanitation, WSS = Water and Sanitation Service.

^a The target percentages are gross figures accommodating also Dili's growth in the intervening period.

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 Timor-Leste: Poor urban families suffer disproportionately from inadequate water supply and sanitation (WatSan) services in urban neighborhoods. Informal settlements typically have no piped water service at all. Residents rely on unsafe shallow wells and make do with small water volumes. Poor residents are consequently more susceptible to water-related diseases, particularly diarrhea among children. Inadequate supply of water reduces the productivity of poor families and increases their health costs. Bad sanitation in poor urban neighborhoods in Timor-Leste increases the prevalence of vector-borne diseases such as dengue fever and malaria. The capital, Dili, suffered a dengue epidemic in January–February 2005 that killed up to 20 children.</p>			

B. Poverty Analysis

Targeting Classification: Targeted intervention

<p>What type of poverty analysis is needed? The technical assistance (TA) will examine the variation in access, attitudes, and practices in relation to water supply, sanitation, and hygiene. Likely causal links with health status and health-related family costs will be analyzed, and then, impacts on poverty will be examined. This understanding of access, attitudes, practices, health status and costs, and poverty will be used to prepare a results-based project design that is consistent with ADB's new project performance management system. The Project will need to confirm the targeted intervention classification.</p>

C. Participation Process

Is there a stakeholder analysis?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Stakeholder analysis and participatory strategy will use the methodology for participatory assessments (MPAs) and participatory hygiene and sanitation transformation (PHAST). These approaches are effective for engaging stakeholders in analyzing needs, priorities, and demands, and in planning, implementing, and monitoring interventions.</p>		
Is there a participation strategy?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

D. Gender Development

<p>Strategy to maximize impacts on women: Women (and their children) benefit most from improved water supplies and sanitation. Women must help plan, design, and implement WatSan improvements to achieve valued and lasting benefits. The results of the MPAs and PHAST during baseline surveys and analysis will be used in developing a gender action plan with project-specific targets and design features.</p>		
Has an output been prepared?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

E. Social Safeguards and Other Social Risks

Item	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Resettlement	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant		<input type="checkbox"/> Full <input checked="" type="checkbox"/> Short

	<input type="checkbox"/> None		<input type="checkbox"/> None
Affordability	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Labor	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Indigenous Peoples	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None		<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		<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	370.00	0.00	370.00
ii. Domestic Consultants	0.00	90.00	90.00
b. International and Local Travel	30.00	0.00	30.00
c. Reports and Communications	10.00	0.00	10.00
2. Equipment and Software	10.00	0.00	10.00
3. Training, Seminars, and Conferences			
a. Facilitators	5.00	0.00	5.00
b. Training Program	5.00	0.00	5.00
4. Surveys	20.00	0.00	20.00
5. Miscellaneous Administration and Support Costs (incl. vehicle costs)	20.00	0.00	20.00
6. Contingencies	40.00	0.00	40.00
Subtotal (A)	510.00	90.00	600.00
B. Government Financing			
1. Office Accommodation and Transport	0.00	40.00	40.00
2. Remuneration and Per Diem of Counterpart Staff	0.00	30.00	30.00
3. Others	0.00	50.00	50.00
Subtotal (B)	0.00	120.00	120.00
Total	510.00	210.00	720.00

^a Financed from the Japan Special Fund, funded by the Government of Japan.
Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Scope of Consulting Services

1. Team Leader and Members

1. The international water supply and sanitation (WatSan) specialist/senior engineer (6 person-months) will be the team leader (TL). The TL will (i) hold a degree in civil engineering, (ii) have experience as a project preparatory technical assistance (TA) TL and substantial experience working on urban WatSan projects in developing member countries in the Asia and Pacific region, including working with urban communities. The ability to communicate in Bahasa Indonesia and/or Tetum will be a strong advantage. The consultant will be engaged on a continuous basis for the duration of the TA. The consultant will confer regularly with the director of the Water and Sanitation Service (WSS), the Dili district administrator, and other senior officials and representatives; and will work on a day-to-day basis with the WSS chief of Urban Water Supply. As TL, the consultant will perform the following tasks:

- (i) Coordinate team activities and ensure efficient implementation of tasks.
- (ii) Coordinate with and brief government counterparts, and ensure that consultant team members coordinate appropriately with their relevant counterparts.
- (iii) Regularly brief and confer with the TA project officer.
- (iv) Take overall responsibility for timely preparation and submission of required reports, and ensure their quality and completeness.

2. The following additional international consultants will be engaged (person-months and guidelines are in parenthesis): (i) WatSan junior engineer (4, continuous); (ii) urban environmental sanitation specialist (3, intermittent); (iii) community development specialist (2, intermittent); (iv) organization development specialist (2, continuous); (v) financial analyst (1, continuous); and (vi) economist and poverty reduction analyst (2, intermittent). The following domestic consultants will be engaged: (i) WatSan specialist/deputy TL (5, continuous); (ii) two WatSan engineers (5 each, continuous); (iii) two engineering surveyors (5 each, continuous); and (iv) three community development specialists (5 each, continuous). Local nongovernment organizations (NGOs) or other local institutions will provide field survey enumerators (about 15 person-months) for beneficiary and community consultations.

2. Core Team for Water Supply

3. The core team for water supply will be led by the international WatSan specialist/senior engineer. The team will design and prepare the project component for improving water supply reticulation and service connections in Dili. The TL will provide technical direction and guidance to team members and will help prepare and finalize (i) all WatSan technical options to be tested and assessed; (ii) project technical guidelines and unit costs; (iii) technical WatSan aspects of feasibility studies; (iv) project cost estimates, financing, and project documents; and (v) the draft TA report on the WSS organization development project. The core team for water supply will do the following:

- (i) **Dili city water supply audit.** Design and implement a comprehensive city water supply audit,¹ which will identify flows of water, flows of money, and water

¹ The design of the Dili city water audit will be guided by ADB's model terms of reference for *Diagnostic City Water Assessments* available on www.adb.org/water.

consumption characteristics in Dili. Field surveys and investigations must be sufficient to yield statistically reliable data on characteristics and parameters examined.

- (ii) **Water balance for Dili.** Use the results of the city water supply audit to update and supplement WSS's estimated water balance for Dili.
- (iii) **Diagnostic analysis.** Use the water supply audit and the water balance to prepare a diagnostic analysis of the poor water supply service in Dili.
- (iv) **Water supply improvement scope.** Use the results of the diagnostic study to confirm the scope of the water supply improvement component in terms of (a) Dili system components and zones; (b) characteristics of target neighborhoods, households, and businesses; and (c) coverage.
- (v) **Options analysis.** Within the agreed-upon scope, enunciate and analyze options relating to (a) technology and engineering; (b) institutional arrangements, and roles and responsibilities, including community-based and community-supported approaches, role of NGOs and so on; (c) operation and maintenance (O&M) arrangements; and (d) others. Consider innovative approaches such as using small-scale private piped water networks, differential tariffs based on quality of service (see www.adb.org/water), and so on.
- (vi) **Agreed-upon approaches.** Consult on the enunciated options with major stakeholders, including WSS, Dili district, communities, families, businesses, and small-scale water providers. The community development specialist, and preferably the core TL also, should be experts and experienced in implementing the methodology for participatory assessments (MPA) approach, which should be applied (as modified for local conditions) in project planning and design with participating neighborhoods. Finalize agreed-upon/preferred options. Options will describe the approach the project will take to improve water supplies for families and businesses in different characterized situations.
- (vii) **Identified beneficiaries.** Agree with stakeholders on what neighborhoods and business concentrations will participate in the project. To the extent possible, participants/beneficiaries should self-select based on their "demand"² for the project.
- (viii) **Feasibility studies.** Prepare feasibility studies for all water supply infrastructure and facilities to be funded by the project. The studies will be site specific and be of a quality normally required for subproject appraisal reports (SPARs). In situations where numerous smaller sites would be improved using similar technology and approach, individual SPARs for all sites would not be required and a summary feasibility analysis may be applied. SPARs will cover technical, institutional, social, financial, economic, and environmental aspects and will be suitable as supplementary appendixes to the report and recommendation of the President (RRP).
- (ix) **Cost estimates, financing, and project documents.** Prepare cost estimates and financing plan for all the project's water supply infrastructure and facilities inputs in a form compatible with class of service table (COSTAB)-based analysis and aggregation. Prepare a detailed component description, core appendixes, and supplementary appendixes appropriate for the draft RRP.

² Demand-based approaches to sustainably improving water supplies are found in the 1992 Dublin Principles. The best proxy for "demand" is willingness to pay, and payment can be in whatever form that is of value to participants, including money, land, labor, supplies, and assistance with planning and managing. Global experience shows that using an administrative process to select beneficiaries, typically based on "need", leads to less sustainable benefits.

- (x) **WSS performance benchmarking.** Work with the organization development specialist to help prepare a performance benchmarking system for WSS. This task will require a thorough assessment of WSS's strengths, weaknesses, opportunities, and threats. Benchmarking should be simple and focus on probably just 10 core indicators. WSS officers should “own” the process. WSS should become a member of the World Bank-sponsored International Benchmarking Network (IBNET) program. The IBNET start-up kit might be appropriate for WSS.
- (xi) **WSS development TA.** Design a TA project for developing WSS into an efficient, independent, and financially viable WatSan utility that could be reconstituted as a public corporation. Prepare a draft TA paper and consultant terms of reference (TOR) suitable for consideration by Asian Development Bank (ADB) Management.

3. Core Team for Sanitation and Hygiene

4. The core team for sanitation and hygiene will be led by the international urban environmental sanitation specialist. The team will design and prepare the project component for improving sanitation conditions and hygiene practices in neighborhoods that receive improved water supplies through the project. The TL will provide technical direction and guidance to team members and will help prepare and finalize work and deliverables (para. 3 for water supply core TL). The team will do the following:

- (i) **Existing conditions.** Compile from secondary sources a general picture of sanitation and hygiene conditions and characteristic situations in Dili. Important sources include project documents, particularly the ongoing Dili Urban Upgrading Project funded by the Cities Alliance.
- (ii) **Input criteria for selecting water supply beneficiary neighborhoods.** Use the knowledge from (i) to prepare sanitation and hygiene criteria that will be considered in screening and selecting neighborhoods to participate in the water supply component. For instance, neighborhood types that would have difficulty handling additional wastewater may be less appropriate than neighborhoods that could handle extra flows and/or neighborhoods with high potential to improve living conditions and health status by improving sanitation and water supplies.
- (iii) **Baseline surveys and analysis.** Conduct detailed sanitation and hygiene baseline surveys in neighborhoods selected for water supply improvement. The survey and analysis should cover physical aspects, attitudes and practices, health status, and other relevant factors. The information is necessary for options analysis, and also for measuring project results and impacts.
- (iv) **Options analysis.** Prepare and analyze technical, institutional, and financial options for improving sanitation and hygiene in the selected project neighborhoods. Options analysis should be guided by ADB's model TOR on Sanitation and Wastewater Management Options Analysis (www.adb.org/water), and innovative approaches should be considered. The participatory hygiene and sanitation transformation (PHAST) approach should be considered. It is expected that the core TL will be familiar with and experienced in applying PHAST. The options will also consider sustainability and O&M.
- (v) **Agreed-upon approaches.** Use a consultative approach—preferably the MPA approach (as modified)—to consider and agree with stakeholders on the options to be used. Options will describe the approach the project will take to improving sanitation and hygiene in each type of neighborhood.

- (vi) **Feasibility studies.** Prepare feasibility studies for all sanitation improvements and hygiene support to be funded by the project. These will be site specific and be of a quality normally required for SPARs. In situations where numerous smaller sites would be improved using similar technology and approach, individual SPARs for all sites would not be required and a summary feasibility analysis may be applied. SPARS will cover technical, institutional, social, financial, economic, and environmental aspects and will be suitable as supplementary appendixes to the draft RRP.
- (vii) **Cost estimates, financing, and project documents.** Prepare cost estimates and financing plan for all the project's sanitation improvements and hygiene inputs in a form compatible with COSTAB-based analysis and aggregation. Prepare a detailed component description, core appendixes, and supplementary appendixes appropriate for the draft RRP.

B. Reporting on Project Preparation

5. To ensure that the project is prepared to a stage ready for ADB and government appraisal, the consultant will undertake the following:

- (i) Prepare SPAR-standard reports for all project sites, or summary feasibility reports for numerous small sites that have common characteristics and project approach.
- (ii) Prepare a detailed project cost estimate using COSTAB, applying a 3-year project period. Include physical and price contingencies, and interest during construction; break each cost component into foreign and local sources,³ and indicate the associated taxes and duties.⁴ Determine the ratio of cost sharing, both cash and in-kind (community, private sector and civil society, ADB, and central and district governments) for each component and implementation stage, including O&M.
- (iii) Prepare a financing plan for the project using COSTAB, and describe the channeling of funds as well as cost recovery measures and means where applicable.
- (iv) Define all arrangements for project implementation. Demonstrate the relationship between relevant institutions and organizations, and indicate the chain of command and responsibilities for project implementation on a flow chart. Estimate the numbers and specify the expertise of consulting staff, central and Dili district government staff, staff from civil society organizations, and community/private sector participants in relation to a phased implementation schedule, and identify training needs for the Project. Describe procurement methods and packages. Prepare draft TOR for project implementation and management consulting services, identify international and domestic consultants' tasks, and cost out the proposals.
- (v) Undertake economic analyses of the project components in accordance with ADB guidelines⁵ and models developed by ADB's Economics Research Department. In addition to assessing the project's economic feasibility, the economist will thoroughly analyze WatSan user charges and each

³ Since the currency of Timor-Leste is the US dollar, "source" is more relevant than "currency".

⁴ At the time of writing, ADB was considering a streamlining initiative that includes, for instance, enabling ADB to finance previously precluded project items such as local taxes and duties.

⁵ The following ADB guidelines will be used: *Guidelines for Water Supply Projects*, *Handbook for Integrating Poverty Impact in Economic Analysis of Project*, and *New Guidelines for Economic Analysis of Projects*.

neighborhood's priorities for developing public services. The economist will help design a methodology for selecting project neighborhoods/sites. Innovative approaches should be considered, such as different user charges for different supply zones with different standards of service.

- (vi) Undertake financial analyses of the project components, including financial projections for WSS and a financial management capacity assessment in conformance with ADB's *Guidelines for Financial Governance and Investment Projects*. The consultants will also be guided by notes on financial analysis and management prepared by the Regional and Sustainable Development Department.
- (vii) Prepare a poverty and social analysis and strategy for the project following the guidelines in ADB's *Handbook on Poverty and Social Analysis* and ADB's *Guidelines for Incorporation of Social Dimensions* as supplemented by guidelines from the ADB specialist staff.
- (viii) Conduct gender analysis as part of the poverty and social analysis and strategy, and prepare a project-specific gender plan with specific targets and design features. Results from the MPA and PHAST during baseline surveys and analysis will inform the gender plan.
- (ix) Screen all project sites for any involuntary resettlement impacts as defined in ADB's Operations Manual Group F Number 2 on Involuntary Resettlement (2003), and for each SPAR/site prepare a resettlement plan in accordance with ADB's *Resettlement Policy* (1995), Operations Manual Group F Number 2, and ADB's *Handbook on Resettlement: A Guide to Good Practice* (1998).
- (x) Include in SPARs a comprehensive appraisal of environmental impacts in line with ADB's *Environmental Assessment Requirements and Environmental Review Procedures* (refer to www.adb.org/environment/policy). Environmental assessments will have due regard to the (a) draft Environmental Impact Assessment Law of Timor-Leste, and (b) draft Pollution Control Law of Timor-Leste. The consultant will assign responsibility for preparing the necessary environmental assessments to one of the following: the WatSan specialist/senior engineer, the WatSan junior engineer, or the urban environmental sanitation specialist.
- (xi) Prepare a project performance management system (PPMS) and project framework in line with ADB's new results-based PPMS regime.

C. Reporting Requirements

6. The TA will last for 6 months and activities will overlap. The consultants will produce (i) an inception report by the end of 1 month, (ii) an interim report by the end of 3 months, (iii) a draft final report and draft RRP with appendixes and supplementary appendixes by the end of 5 months, and (iv) a final report by the end of 6 months. The draft final report will comprise a fully developed feasibility study and description of the project proposal, including all SPARs. The final report will incorporate comments of ADB and the Government on the draft final report.