



Draft Design and Monitoring Framework

Project Number: 38189
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TIM: Dili Urban Water Supply Sector Project

A design and monitoring framework is an active document, progressively updated and revised as necessary, particularly following any changes in project design and implementation. In accordance with ADB's public communications policy (2005), it is disclosed before appraisal of the project or program. This draft framework may change during processing of the project or program, and the revised version will be disclosed as an appendix to the report and recommendation of the President.

Asian Development Bank

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impact Improved WS services for households, businesses and institutions in Dili city</p>	<ul style="list-style-type: none"> • Coverage of the population of Dili city with 24-hour piped water supply increased from 25% in 2007 to 80% by 2015 • Customer satisfaction with Dili city piped WS services improved, with less than 180 complaints per 1,000 customers per year by 2015 • Women perceive significant benefits from improved WS services to their households 	<ul style="list-style-type: none"> • DNSAS customer registration records, consumption records and field surveys • DNSAS customer complaints records • Structured customer surveys, gender disaggregated. 	<p>Assumptions</p> <ul style="list-style-type: none"> • Dili is peaceful and stable, and neighborhoods “normalize” including the resettlement of IDPs • Government replicates new WS infrastructure improvements in all Dili city WS zones • Mol/DNSAS retain all project leak detection team members and retains/engages 1 subzone caretaker for every 1,000 connections throughout the Dili service area • Mol/DNSAS allocate sufficient budget and technical resources to properly operate and maintain Dili WS systems • Government implements reforms to strengthen the financial, technical, and managerial autonomy of DNSAS, including retention of earned revenues
<p>Outcome Improved hydraulic management of the Dili WS system and more efficient tertiary distribution</p>	<ul style="list-style-type: none"> • NRW ratio for Dili city WS reduced from 95% to 40-50% by month 29 • NRM ratio for the three target zones is reduced from 95% to 25-30% by month 29 • Coverage of the population in the three target zones with 24-hour piped water supply is increased from 40% in 2006 to 80% by 2009 • Procurement contracts let, NRW targets set and work plans in place for ongoing leak detection and NRW reduction work in future target zones by month 29 	<ul style="list-style-type: none"> • DNSAS customer, billing, production and consumption records • Procurement contracts and monthly Demand Management Task Force report 	<p>Assumptions</p> <ul style="list-style-type: none"> • Water production and main distribution infrastructure and facilities recently upgraded continue to function properly and deliver water to the service area as designed • Residents in neighborhoods cooperate with project teams • DNSAS provides efficient and effective management and administration procedures for customer registration, metering and billing • Procurement agencies provide efficient and effective procurement support
<p>Outputs 1. Water losses reduced and controlled in three target zones</p>	<ul style="list-style-type: none"> • Water loss reduction and control program completed in three target zones by month 29, including: (i) six sub-zones in the three target zones metered and controlled by valves; (ii) 51 km of tertiary pipes and service connections surveyed for leaks, repaired 	<ul style="list-style-type: none"> • Demand management task force progress reports and leak detection teams field reports • DNSAS customer registration records, customer database and meter database 	<p>Assumptions</p> <ul style="list-style-type: none"> • Outputs from the Dili WS Performance Improvement TA are on time and as expected • Mol/DNSAS give adequate authority to the demand management task force over DNSAS operating sections to ensure timely execution of their assigned NRW work plans

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<p>2. Visible leaks reduced, practical improvements made, stop valves refurbished, replaced or installed to allow the better management of the system; and commercial customers metered in all Dili water zones</p> <p>3. Skills of DNSAS technical and O&M staff upgraded in leak detection, leak reduction, and subzone management [Note: TA 4869-TIM: <i>Dili Water Supply Performance Improvement</i> will provide formal and on-the-job training for (a) NRW, (b) network modeling and drawing office management, (c)</p>	<p>or replaced; (iii) 2,950 meters replaced or installed on registered connections; (iv) 5,100 unauthorized connections regularized or disconnected; and (v) metering level of all registered customers in target zones increased from 30% (September 2007) to 70-80% by month 29</p> <ul style="list-style-type: none"> • Visible leaks and open pipe discharges identified in all water supply zones by month 12 • Installation of 240 commercial and bulk meters and metering level (operating meters) of registered commercial, institutional and other large customers in all zones increased from 25% (September 2007) to 80-90% by month 29 • make improvements to allow the disconnection of 7km of old leaking mains and repair, replace or install 88 stop valves to allow the better management of water by month 29 • refurbish or replace 9 chlorine dosing units by month 29 • Three leak detection teams established by month 2, operating effectively by month 8 and team members retained by DNSAS as permanent staff by month 29 • Planning of leak detection work in target zones completed by month 4 and planning of future target zones completed by month 29 • Subzone caretakers recruited, trained and operating effectively in target zones at maximum ratio of 1 caretaker per 1,000 customers by month 29 • 80 trainees successfully completed 470 days of classroom instruction 	<ul style="list-style-type: none"> • DNSAS record drawings • Demand management task force progress reports and leak detection teams field reports • DNSAS customer registration records, customer database and meter database • Baseline and follow-up socio-economic surveys during project implementation • DNSAS staff records, leak detection teams and sub-zone caretakers employment contracts and duty statements • DNSAS training records • Leak detection teams field reports • Demand management 	<p>and targets</p> <ul style="list-style-type: none"> • Government approves and enacts changes to water supply tariffs and connection charges that may be recommended by project team in view of prevailing economic and social conditions and consumers' willingness to pay • Mol/DNSAS implement water supply connection & disconnection policies, on a graduated basis (focusing on commercial, institutional, wealthier, and larger customers first) • Residents do not obstruct project teams from inspecting and repairing leaks • Targeted customers are willing to pay DNSAS water supply tariffs and connection charges • Availability of suitable leak detection teams members for recruiting. • Availability of suitable subzone caretakers for recruiting.

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meter management, (d) customer service, (e) customer relations, and (f) distribution planning and management. On-the-job training will piggy-back with the Project	(supplemented by on-the-job training) by month 29	task force progress reports <ul style="list-style-type: none"> • Project monitoring and evaluation report 	
<p>Activities with Milestones</p> <p>1. Water Loss Reduction and Control Program in Three Target WS Zones</p> <p>1.1 Establish project team and recruit project consultants by month 0</p> <p>1.2 Provide training to project team and establish project management, accounting, reporting and records system in months 1 to 3</p> <p>1.3 Plan and design leak detection, reduction and control program in consultation with demand management task force by month 3</p> <p>1.4 Assist DNSAS to recruit and establish three leak detection teams by month 3</p> <p>1.5 Prepare tender documents, call, evaluate and award tenders for supply of pipes, valves, meters; meter and valve chamber construction; pipe repair and replacement by month 6</p> <p>1.6 Inspect, repair or replace faulty distribution valves and bulk meters by month 12</p> <p>1.7 Create physical zones and subzones by installing valves in months 4 to 24</p> <p>1.8 Construct valve and meter chambers for target subzones in months 4 to 24</p> <p>1.9 Create three pilot sub-zones, undertake leak detection and repairs in the subzones and provide training to leak detection teams from months 4 to 8</p> <p>1.10 Expand leak detection, pipe repair and replacement to other parts of target zones and subzones from months 9 to 29</p> <p>1.11 Inspect, replace or install meters on all authorized connections in sub-zones in target zones; and regularize or disconnect unauthorized connections from months 3 to 29</p> <p>1.12 Provide ongoing support to demand management task force over months 1-29</p> <p>2. Basic Leak Reduction and Commercial Customer Metering in All Ten WS Zones</p> <p>2.1 Identify and repair visible leaks and open pipe discharges in all ten water supply zones in months 3 to 6</p> <p>2.2 Inspect, replace or install meters on authorized commercial, institutional and other large customer connections from months 3 to 29</p> <p>3. Skills Upgrading in Leak Detection and Sub-zone Management</p> <p>3.1 Provide formal training and on-the-job training to leak detection teams and subzone caretakers in pilot sub-zones from months 4 to 8</p> <p>3.2 Provide ongoing support and on-the-job training to leak detection teams and subzone caretakers in month 9-29</p> <p>[Note: The project team will assist TA consultants to assess skills, review practices, and design skills upgrading programs in distribution and management by month 1. The project team will assist TA consultants to conduct formal (in-house) and on-the job skills training programs covering distribution planning, zone management, valve and bulk meter management and technical standards by end of month 3, reaching at least 60% of staff in planning and Design and Dili O&M Sections. The project team will provide ongoing support and-the-job training in distribution planning and management over months 4-29.</p>			<p>Inputs</p> <p>ADB-\$6.000m</p> <ul style="list-style-type: none"> • Consulting services 104PMs-\$1.036m • Design and Supervise package - \$0.723m • Equipment and Installation – \$3.680m • Contingencies-\$0.561m <p>Government-\$1.500 mill</p> <ul style="list-style-type: none"> • Equipment and Installation - \$1.026m • Taxes and Duties - \$0.275m • Contingencies: \$0.199m

ADB= Asian Development Bank; DNSAS = National Directorate of Water Supply and Sanitation; IDPs = internally displaced persons; m = million; Mol = Ministry of Infrastructure; NRW = non-revenue water; O&M = operations and maintenance; PM = person months; TA = technical assistance; WS= water supply