



Draft Design and Monitoring Framework

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Proposed Loan and Administration of Loan
People's Republic of Bangladesh: Dhaka
Environmentally Sustainable Water Supply Project

Asian Development Bank

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>Impact Improved access to and quality of sustainable water supply services in Dhaka</p>	<p>By 2021: Access increased to 95% in 400 km² of DWASA service areas (baseline: 90% access in 2012)</p> <p>Groundwater table drawdown is reduced to 1-2 meters a year (baseline: 2-3 meters drawdown a year in 2012)</p> <p>Diarrheal diseases are reduced to 3.6% (baseline: 4.0%^a of children in Dhaka division)</p>	<p>DWASA annual reports</p> <p>DWASA annual reports</p> <p>Bangladesh Demographic and Health Survey</p>	<p>Assumptions Other investment projects on water supply including chlorination system improvements are implemented on time.</p> <p>Abstraction of groundwater is reduced with the increase in surface water supply.</p> <p>Overhead tanks of buildings are maintained properly.</p> <p>Hygiene practices are improved.</p> <p>Risks Network expansion does not keep pace with the population increase.</p>
<p>Outcome More reliable and improved security of water supply in Dhaka</p>	<p>By 2019 in zones 4, 5, 6, 8, 9, and 10: 24/7 water supply (baseline: 14-15 hours per day in zones 4 and 10, and 22.5 hours per day in zones 5, 6, 8, and 9)</p> <p>Water supply pressure of at least 1 bar at consumer end (baseline: 0.2-0.3 bar in 2012)</p> <p>Dependence on groundwater reduced to 30% (baseline: 100% in 2012 except zone 6)</p> <p>98% of water quality test results within DWASA distribution systems meet country standards (baseline: 90% in 2011)</p>	<p>DWASA surveys</p> <p>DWASA surveys</p> <p>DWASA surveys</p> <p>Joint surveys between DWASA and Department of Environment</p>	<p>Assumptions NRW is reduced to less than 20% in concerned service areas as planned by DWASA.</p> <p>River water quality at the intake is maintained.</p> <p>Risks Tariff level not raised to cover full O&M costs and debt recovery.</p>

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<p>Outputs</p> <p>1. New surface water supply system developed</p>	<p>By 2019:</p> <p>Water intake with capacity of 2,000 MLD constructed</p> <p>21.5 km of raw water transmission pipeline laid</p> <p>WTP with production capacity of 500 MLD constructed</p> <p>34 km of treated water transmission mains installed^p</p>	<p>For all indicators under outputs:</p> <p>DWASA surveys</p>	<p>Assumptions</p> <p>Timely availability of cofinancing from AFD and EIB</p> <p>Timely acquisition of required land</p> <p>Risks</p> <p>Increasing political instability hampering project activities.</p> <p>Sharp price increases of construction materials</p>
<p>2. Distribution network strengthened</p>	<p>By 2019 in zone 6:</p> <p>Rehabilitation of 376 km of water distribution network</p> <p>32,000 household and community connections rehabilitated, including replacement of meters</p> <p>NRW reduced to 15% or less in 16 DMAs from the current level estimated at about 35%</p> <p>6,000 new or legalized household connections installed, including 500 connections in low income communities (target: 10,000 women in LICs)</p> <p>Public awareness on water use and conservation raised in all 16 DMAs</p>	<p>For all indicators under outputs:</p> <p>DWASA surveys</p>	<p>Assumptions</p> <p>Timely issuance of permits by local governments</p>
<p>3. Project management and administration adequately supported</p>	<p>PMU established and fully staffed on time, with at least 30% women, by the end of 2013</p> <p>Special management unit of the new surface water system established by 2018</p> <p>Project is implemented on time and within budget</p> <p>Capacity development programs on financial management and gender mainstreaming</p>	<p>For all indicators under outputs:</p> <p>DWASA surveys</p>	

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	<p>implemented by 2019 (target: 100 staff for financial management with 30% women; 150 staff for gender mainstreaming)</p> <p>Project performance management system with social and gender indicators and sex-disaggregated data integrated with existing DWASA MIS by 2014</p>		
<p>Activities with Milestones</p> <p>1. New surface water supply system developed</p> <p>1.1 Mobilize design-build contractor by 1Q 2015</p> <p>1.2 Conduct detailed design for treated water pipelines by 2Q 2015</p> <p>1.3 Complete construction works by 2018</p> <p>1.4 Commence operation of the WTP at Gandharbpur by end 2018</p> <p>2. Distribution network strengthened</p> <p>2.1 Mobilize design-build contractor by 3Q 2014</p> <p>2.2 Complete construction works by 3Q 2017</p> <p>2.3 Prepare bid documents for two future packages by 2017</p> <p>3. Project management and administration adequately supported</p> <p>3.1 DWASA provides PMU with office space and initiates staff recruitment, including project director (May 2013)</p> <p>3.2 Issue bid documents for distribution network improvement (July 2013)</p> <p>3.3 Issue bid documents for Gandharbpur WTP design-build contract by 2Q 2014</p> <p>3.4 Recruit all consultants and NGOs by 3Q 2014</p> <p>3.5 Engage all contractors by 2Q 2016</p> <p>3.6 Develop modules of capacity development programs and implement them (continuous until 2019)</p> <p>3.7 Undertake regular surveys and issue quarterly and semiannual monitoring reports and audit reports on time (continuous until 2019)</p>		<p>Inputs</p> <p>Loan</p> <p>ADB: \$250 million</p> <p>Cofinanciers: AFD \$100 million</p> <p>EIB \$100 million</p> <p>Government: \$225 million</p>	

AFD = *Agence Francaise de Developpement*, DMA = district metered area, DWASA = Dhaka Water Supply and Sewerage Authority, EIB = European Investment Bank, MIS = management information system, MLD = million liters per day, NGO = nongovernment organization, NRW = non-revenue water, PMU = project management unit, WTP = water treatment plant.

^a Percentage of children under age five who had diarrhea in the two weeks preceding the survey.

^b 13.0 km from the WTP to the injection point and 21.0 km of distribution reinforcements in the existing network.

Source: Asian Development Bank.