

## RISK ASSESSMENT AND RISK MANAGEMENT PLAN

Risk Description	Rating	Mitigation Measures	Responsibility
<b>Technical</b>			
1. Inadequate engineering design	Low	A dedicated consulting team for rigorous design review, quality assurance and control, and technical audit (PMQACs) will be engaged for the PMO. The PMQACs will confirm that designs are in line with the approved DWSS design standards.	PMO
2. Weak construction supervision	Low	Sufficient consulting service inputs from an RDSMC teams provisioned under the project will ensure effective monitoring, supervision, and quality control. RPMOs and RDSMCs will field adequate supervision engineers and safeguard monitors in project municipalities. The PMO will monitor the performance of consultants following ADB's Consultant's Performance Evaluation Monitoring System.	PMO
3. WUSCs <sup>a</sup> may fail to sustain capacity to operate and maintain investments and effectively provide services.	Substantial	The project will (i) provide 1-year O&M support through contractors, and staff training for the first 6 months before operations takeover; and (ii) support business plan preparation and establishment of necessary utility management tools, for computerized billing, accounting, and auditing.	DWSS and ISSAU
4. Failure of parts of water supply systems, such as the treatment plant, result in delivery of non-potable water.	Low	For all water supply subprojects, water safety plans will be developed and implemented in the project municipalities to ensure that safe water is supplied at all times.	RDSMCs
5. High levels of water losses in the distribution network may undermine revenue generation and lead to financial unsustainability of WUSCs.	Moderate	The district metering approach, including SCADA system, will be implemented for all subprojects to monitor NRW.	RDSMCs
6. Climate change and extreme events will undermine the smooth operation of facilities.	Moderate	Design standards will include assessment of climate and disaster risks. The PMQACs will ensure that subproject designs contain appropriate features.	PMQACs and PMO
<b>Public Financial Management</b>			
7. Financial management, accounting, auditing, internal controls, and reporting by the WUSCs are inadequate.	Low	Financial management assessment and performance auditing will be conducted by the DWSS and TDF as a precondition for supporting WUSCs. WUSCs will recruit a full-time financial management expert for water supply subprojects. TDF will also provide orientation and training to WUSCs on various financial management aspects.	TDF, PMO, and WUSCs
8. WUSCs are not able to service debt from their initial investments as well as collect tariffs.	Low	The government's ongoing cost-sharing modality will be adopted. In the project, the government grant will be 70% for water supply and 85% for sanitation subprojects. <sup>b</sup> Tariffs will be within the affordability and willingness-to-pay limits, and connections for the poor will be subsidized.	MOWS
9. TDF fails to have project accounts audited and to comply with financial covenants	Moderate	TDF to ensure timely resolution of any audit issues and compliance with mitigation measures.	TDF
10. WUSCs may not increase tariffs to	Moderate	Tariff guidelines will be prepared. DWSS will monitor the WUSCs' performance as per existing tariff	WUSC, DWSS, and PMO

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sustain the systems.		guidelines indicators.	
11. Subprojects may incur cost and time overruns because of late budget release and disbursement delays.	Low	Disbursement processes are well established in DWSS and TDF. Training on ADB disbursement procedures will be provided to staff through CDRC. PMO will establish an information technology-based project management system for effective monitoring of implementation, and ultimately to minimize cost and time overruns.	PMO and PMQACs
<b>Procurement</b> 12. RPMOs, TDF, and WUSCs have insufficient procurement experience.	Moderate	The PMO will manage and supervise all procurement activities to minimize such risks. Training on procurement processes and contract management will be provided through CDRC to all stakeholders, as needed.	PMO
<b>Corruption</b> 13. Imposition of informal conditions, collusion, bid rigging, and deviations from original bid documents	Moderate	Anticorruption and procurement procedures will follow ADB guidelines. ADB's Anticorruption Policy (1998, as amended to date) will be disseminated to all staff of PMO, RPMOs, WUSCs, and project municipalities. The PMO, with the support of the PMQACs, will also conduct technical audits of the subprojects.	ADB and PMO
<b>Others</b> 14. Changes in government structures may jeopardize the institutional arrangements and project implementation.	Substantial	Implementation and fund-flow structures that were successfully established in earlier ADB-funded projects will remain in place. Roles of stakeholders are clearly defined, and formation of WUAs and WUSCs will ensure consensus among key stakeholders.	ADB and MOWS
15. Technical positions remain vacant for a long time.	Moderate	Ensure that all technical positions at RPMOs and the PMO are filled with adequate staff.	MOWS

ADB = Asian Development Bank, CDRC = Capacity Development Resource Center, DWSS = Department of Water Supply and Sewerage, ISSAU = institutional support and service advisory unit, MOWS = Ministry of Water Supply, NRW = nonrevenue water, O&M = operation and maintenance, PMO = project management office, PMQAC = project management and quality assurance consultant, RDSMC = regional design, supervision, and management consultant, RPMO = regional project management office, SCADA = supervisory control and data acquisition, TDF = Town Development Fund, WUA = water users' association, WUSC = water users' and sanitation committee.

<sup>a</sup> A WUSC is the elected executive body of a water users' association, and generally has 9 members.

<sup>b</sup> In the case of extraordinary conditions and hardship—e.g., high terrain, lack of alternative water sources, and treatment issues—the government may increase the grant portion to facilitate affordability.

Source: Asian Development Bank.