

## RISK ASSESSMENT AND RISK MANAGEMENT PLAN

Risk Description	Rating	Mitigation Measures	Responsibility
<b>Technical</b>			
1. Undersized assets, resulting in poor service coverage and redundancies	S	Due diligence will be conducted to assess the population, demographics, service coverage, access, and expected beneficiaries.	PMU, DCS
2. Low willingness to pay for services, resulting in a financially unviable system	H	Household connections will be provided as part of the project to ensure upfront connection to the system. Public awareness campaigns will be conducted to improve understanding of the benefits of household connections and solid waste collection services.	PMU, municipal administration, DCS
3. Slow progress on detailed engineering designs, resulting in delayed contract awards and disbursements	M	Advance recruitment of the DCS consultants will be conducted, and the DCS consultants will be engaged and mobilized soon after loan effectivity. The PMU will monitor the progress of the DCS consultants and will facilitate meetings where necessary for smooth implementation of the project.	PMU, DCS
4. Failure to operate assets as intended, resulting in poor service delivery	M	O&M guidelines and training programs will be developed under the project to increase the capacity and skills of municipal administration staff in charge of operating the new facilities.  Proactive O&M programs to monitor system performance and reduce risks of system failure will be implemented.	PMU, PIU, DCS
5. Shortage of technical staff skilled in engineering, O&M, asset management, infrastructure planning	M	Staff will be recruited to support the O&M of the new assets and services. Delays in recruitment will affect the O&M of the services.  Training will be provided to existing staff to build capacity and understanding of the O&M of the infrastructure and service delivery.	Municipal administration, DCS
6. Inexperienced construction contractors or inadequate consultant supervision, resulting in compromised construction quality	S	Construction supervisors and construction engineers will be engaged through the DCS consultants to oversee the construction contractors.  The bidding documents will include appropriate qualification criteria to ensure qualified and experienced construction contractors are engaged.	PMU, DCS
7. Lack of coordination during project implementation between provincial and municipal authorities, line ministries, and stakeholders, resulting in reduced project scope or conflicts in infrastructure design	S	PMU will facilitate regular meetings with provincial and municipal authorities to provide updates on the project implementation status. Representatives from provincial and municipal administrations will be included in review missions.	Executing agency, PMU
<b>Economic and Financial</b>			
8. Insufficient tariff reforms and funding shortfall, resulting in limited revenue to cover operation and maintenance costs, leading to poor level of service	S	Institutional development plans including financial sustainability plans will be developed. Tariff structures and adjustments will be documented. Any deficiencies in the budget for operation and maintenance will be funded by the executing agency in accordance with the loan agreement.	Executing agency, PIA, municipal administration

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9. Limited capacity to review and adjust the tariff structures and to collect bills, affecting the ability to cover O&M	S	The executing agency and PIAs will support the municipal administrations in reviewing the tariff policy, and tariffs will be adjusted to ensure financial sustainability. Training programs will be conducted to build capacity to undertake regular reviews, including monitoring accounts receivables and nonpayment of bills.	Executing agency, PIA, municipal administration, DCS
10. Unavailable government counterpart funds for the project	L	The loan agreement will include the government's counterpart funding obligation.	MEF, executing agency
11. Weak central and subnational financial transparency because of partial implementation of a financial management information system, undeveloped budget policy links, weak internal and external controls, inadequate procurement systems, and weak anticorruption institutions	S	The project will develop a financial management information system and provide training and capacity development to project staff across the participating cities. Training on fixed asset management, including linkage to preventive maintenance activities, will also be provided.	DCS, PIA, municipal administration
12. The PIAs and project implementation units have limited experience with the implementation of externally funded projects	H	ADB will provide training on disbursement, financial management, and procurement. The PMU and design and construction supervision consultants will support project management, financial management, evaluation procedures, and capacity building.  The PMU and DCS consultants will support project management, financial management, evaluation procedures, and capacity building.	ADB, executing agency, PIA  PMU, DCS
13. Overly complicated fund flow caused by three participating cities, resulting in increased risk of improper handling of loan proceeds and documentation	S	Fund flow will be simplified and limited to the borrower and the executing agency. No subaccounts will be created.	MEF, executing agency, ADB
14. Lack of internal audit system in the provincial and municipal administrations	S	An internal audit manual will be developed as part of the capacity development program.	PMU, DCS
15. The use of spreadsheet-based financial management systems by the PDPWTs and municipal administrations may lead to improper record keeping or mistakes	H	Accounting software and cloud-based backup storage will be purchased and implemented for each PDPWT and municipal administration. The PMU and PIA will ensure staff are trained in the use of the software. A qualified external auditor will be engaged to carry out an audit of financial statements.	MEF, executing agency
16. Financial data stored in Excel-based financial systems and not backed up	H	An accounting software and a cloud-based backup storage solution will be purchased and implemented for each PDPWT and municipal administration. The PMU and PIAs will ensure staff are trained in the use of the software.	Executing agency, PMU, PIU
<b>Governance</b>			
17. Low willingness to implement institutional plan, resulting in lack of resources (financial and technical) and unsustainable service delivery	S	Institutional development plans on planning, service delivery, and financial management will be developed. The executing agency and PIAs will provide support to the municipal administrations in the development and implementation of the plans.	ADB, executing agency, PIA
18. Procurement guidelines and procedures not followed	M	Training on ADB guidelines and government SOP for procurement will be provided.	ADB, executing agency

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19. Poor procurement planning, resulting in delays in project implementation	S	The procurement plan will clearly document the procurement strategy. The project implementation schedule will be reviewed, taking key deliverables and target dates into consideration.	Executing agency, PMU
20. Limited capacity of the executing agency, PMU, and PIAs in procurement and project management, resulting in delays, cost overruns, and a reduced project scope	M	Training on the revised ADB procurement framework will be provided to the PMU and PIAs. The DCS consultants will be engaged to develop the detailed design and costings. The executing agency, PMU, and DCS consultants will review the project budget once the detailed costs have been determined. Capacity development initiatives to strengthen project management capabilities will be provided over the course of the project.	Executing agency, PMU, DCS
21. Limited PMU resources to support procurement, resulting in delays in bid evaluation and approval	S	The DCS consultants, which will include a procurement specialist, will support the PMU in preparing bids.  The procurement schedule will be developed and revised throughout project implementation to ensure resources are available to form bid evaluation committees or procurement review committees.	DCS, PMU
22. Inadequate technical specifications developed, resulting in higher bidding prices being submitted	S	The DCS consultants will develop the detailed engineering designs, technical specifications, and bill of quantities. The deliverables will be reviewed and cross-checked. The bidding documents will clearly define the scope of works.	DCS, PMU
23. Poor use of time-based and fixed-cost contracts	M	The executing agency and PMU will receive training on time-based and fixed-cost contracts, as well as refreshers on provisional sum items and reimbursable costs. The PMU will consider using fixed-cost contracts when there are clearly defined delivery and payment structures and time-based contracts for works and services. The contract type will be considered during procurement planning.	DCS, PMU
24. Harsh and inappropriate payment conditions	S	The payment conditions will be reviewed when preparing the bidding documents, which will identify key milestones.	PMU
25. Submission of bids impacted by COVID-19	S	The executing agency and PMU will explore electronic bid submission options.	Executing agency, PMU
26. Inadequate or poorly defined qualification criteria, resulting in submissions from inexperienced contractors and high bid prices	M	Qualification criteria (demonstrated experience) will be reviewed based on the project scope and clearly defined in the bidding documents. The criteria should be specific.	DCS, PMU
27. Misprocurement caused by limited procurement expertise and experience	M	Refresher training courses will be provided to ensure all representatives involved in procurement understand the revised ADB procurement framework and are familiar with the provisions of ADB's Anticorruption Policy (1998, as amended from time to time). Procurement and contract management specialists familiar with ADB procurement procedures will support the PMU.	PMU, DCS

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28. Lack of confidentiality during bid evaluation	S	The Bid Evaluation Committee and Procurement Review Committee will adhere to the expected high ethics standard in compliance with the confidentiality requirements during bid evaluation, following ADB and SOP requirements. Committee members will be reminded of their duty when conducting evaluations and will be required to sign confidentiality and statement of ethical conduct agreements.	Executing agency
29. Lack of transparency in the bid evaluation process, which does not follow standard requirements	S	The Procurement Review Committee and Bid Evaluation Committee will follow the bid evaluation requirements and document the findings in a bid evaluation report.	Executing agency
30. Limited capacity of the executing agency, PMU, and PIAs in contract management and administration of civil works contracts, resulting in delays and cost overruns	S	The DCS consultants will support the PMU and implementing agency. Training will be provided to improve skills in contract management and administration.	PMU, DCS
31. Limited personnel available to oversee project implementation	M	The DCS consultants will support the PMU and PIAs throughout project implementation.  Contract administrative skills will be strengthened through training.	PMU, DCS
32. Inexperienced construction contractor or inadequate supervision of consultants, resulting in compromised construction quality	S	Construction supervisors will be engaged to conduct site supervision, monitor construction progress, and provide reports. The bidding document will define and review the qualification criteria for selecting contractors to ensure contractors experienced in delivering the scope of works are engaged.	PMU, DCS
33. Abnormally low bids, resulting in compromised construction quality	S	Provisions for abnormally low bids will be applied to the open competitive bidding document and bid evaluation process.	PMU
34. Variation in scope or costing after contract award	S	The project budget requires careful estimates based on prevailing international standards. The budget should be based on the detailed technical and commercial conditions. For scope or budget overruns during implementation, an extension of the budget or scope of works (or goods) should be requested for prior approval.	PMU
<b>Poverty, Social and Gender</b>			
35. Lack of consideration of gender and social dimensions in the project design	L	The PMU and DCS consultants will monitor the implementation of the GESIAP throughout the project.	PMU, DCS
<b>Safeguards</b>			
36. Delays in land acquisition or changes in project sites affecting project implementation	M	The PMU and DCS consultants will liaise with the GDR to confirm land acquisition procedures and due diligence requirements.  The PMU will consider the time frame for resettlement planning and factor this into the overall project implementation schedule.	DCS, PMU, GDR
37. Delays in obtaining environmental approvals resulting in delays in project implementation	M	The DCS consultants and PMU will consider the duration to obtain clearances for IEEs, EMPs, and domestic environmental approvals in the project implementation schedule. The DCS	DCS, PMU

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		consultants will mobilize environmental consultants to conduct the works within the project schedule.	
38. Presence of UXOs, resulting in safety issues and/or project implementation delays	L	The DCS consultants will consult with district government agencies, and communes and village chiefs during field surveys and site visits to identify any potential UXO risks. The bid documents and contracts will emphasize the risk and include requirements to conduct provincial, district, and village consultations; plan work accordingly; and agree on necessary actions and procedures for reporting in case unexpected UXOs are discovered.	PMU, DCS, contractors

ADB = Asian Development Bank, COVID-19 = coronavirus disease, DCS = design and construction supervision, EMP = environmental management plan, GDR = General Department of Resettlement, GESIAP = Gender Equality and Social Inclusion Plan, H = high, IEE = initial environmental examination, L = low, M = moderate, MEF = Ministry of Economy and Finance, O&M = operation and maintenance, PDPWT = provincial department of public works and transport, PIA = project implementing agency, PIU = project implementing unit, PMU = project management unit, S = substantial, SOP = standard operating procedures, UXO = unexploded ordinance.

Source: Asian Development Bank.