



Technical Assistance Report

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India: Strengthening Resilient, Inclusive, and Smart Waste Management in Indian Cities

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 2 November 2023)

Currency unit	–	Indian rupee/s (₹)
₹1.00	=	\$0.01
\$1.00	=	₹83.27

ABBREVIATIONS

ADB	–	Asian Development Bank
DLI	–	disbursement-linked indicator
EAKPF	–	Republic of Korea e-Asia and Knowledge Partnership Fund
GESI	–	gender equality and social inclusion
GFC	–	garbage-free city
MOHUA	–	Ministry of Housing and Urban Affairs
ODF	–	open-defecation free
RBL	–	results-based lending
SBM	–	Swachh Bharat Mission
SFPTF	–	Sanitation Financing Partnership Trust Fund
SWM	–	solid waste management
TA	–	technical assistance
ULB	–	urban local body
URTF	–	Urban Resilience Trust Fund
WFPF	–	Water Financing Partnership Facility

NOTE

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

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I. THE PROPOSED PROGRAM

1. The flagship 5-year Swachh Bharat (Clean India) Mission-Urban 2.0 (SBM-U 2.0) of the Government of India was launched in 2021, committing to making all cities “garbage-free cities” (GFCs) by 2026,¹ while maintaining open-defecation free (ODF) status across 4,372 urban local bodies (ULBs).² The results-based lending (RBL) program of the Asian Development Bank (ADB) is a geographic, time- and scope-based slice of the government’s program, covering an estimated 100 cities across eight states.³ The RBL program will enhance municipal sanitation and solid waste management (SWM) infrastructure, improve access and service delivery, and bolster the enabling environment for sustainable waste management. It aims to boost the performance of target states in comprehensive waste management, drawing on ADB’s experience, lessons, and previous engagements in the sector of water and other urban infrastructure and services.

2. The RBL program impacts will be healthy citizens living in resilient, garbage-free cities with clean air, clean water, and clean, and emissions intensity reduced by 45% from 2005 levels, by 2030.⁴ The outcome—improved performance of target states in comprehensive waste management—will be measured by at least 100 ULBs in the target states achieving a GFC 3-star rating or higher, and achieving ODF+ status.⁵ The disbursement-linked indicators (DLI) are aligned with those of the broader government program. The outcome will be achieved through the following two outputs: (i) sanitation and SWM infrastructure, access, and service delivery improved; and (ii) enabling environment for sustainable waste management strengthened. The overall RBL program expenditure from 2023 to 2026 is \$400 million. The government requested a loan of \$200 million from ADB’s ordinary capital resources while providing the rest of the program’s financing itself.

II. INTRODUCTION

3. The government requested the involvement of ADB in SBM-U 2.0 to introduce and learn from national and international best practices in SWM and sanitation, and tailor and adopt them to the local context. High-quality interventions in specific ULBs would make them lighthouse ULBs for other ULBs to replicate. To ensure that financing arrangements are streamlined, and the RBL program remains a well-defined slice of the overall government program, several RBL DLIs are aligned with the criteria for fund release of the Ministry of Housing and Urban Affairs (MOHUA),

¹ Government of India, Ministry of Housing and Urban Affairs (MOHUA). 2021. *Swachh Bharat Mission-Urban 2.0. Operational Guidelines*. Delhi. MOHUA adopted a SMART (single metric, measurable, achievable, rigorous verification, targeted towards outcomes) framework for rating ULBs. The indicators include source segregation, scientific processing of waste, dumpsite remediation, penalties and spot fines for littering, compliance by bulk waste generators, cleanliness of drains and water bodies, plastic waste management, and managing construction and demolition waste, all of which are critical for cities to achieve garbage free status. A standardized rating for the level of holistic cleanliness achieved is given through an independent assessment as per the garbage free protocol (Source: Government of India, MOHUA. 2021. [Azadi@75 Star Rating Protocol of Garbage-Free Cities. Toolkit 2022](#). Delhi).

² ODF is defined as not a single person found defecating in the open at any point of the day. Source: Government of India, MOHUA. 2020. *Declaring your City/Town SBM ODF+ and SBM ODF++ Toolkit for Urban Local Bodies*. Delhi.

³ The RBL program states are Assam, Bihar, Jharkhand, Karnataka, Maharashtra, Odisha, Tamil Nadu, and Uttar Pradesh.

⁴ Government of India. 2022. *India’s Updated First Nationally Determined Contribution (NDC) Under Paris Agreement (2021–2030)*. Delhi. Emissions intensity is the volume of greenhouse gas emissions per unit of gross domestic product. Waste represents 3% of India’s annual emissions. Improving sanitation and waste infrastructure and management systems is “indispensable for further mitigation actions.” Government of India. 2021. *India: Third Biennial Update Report to the United Nations Framework Convention on Climate Change*. Delhi.

⁵ GFC 3-star is a rating to classify the garbage-free status of cities in India. ODF+ means open defecation-free plus functionality and maintenance for continued usage of communal and/or public toilets.

as per its SBM-U 2.0 guidelines. The attached technical assistance (TA) provides significant additionality by leveraging the results and impact of the nationwide flagship government program. Several indicators proposed under the RBL program are not included in the SBM-U 2.0 and are planned to be directly supported through the TA—providing opportunities to encourage, scale up, and replicate best practices and successful innovative approaches to climate and disaster resilience, gender equality and social inclusion, digitalization, private sector engagement, knowledge management, and monitoring and evaluation across the overall mission.⁶

III. ISSUES

4. **Sector context.** As the world's fifth-largest economy, India has a population estimated at 1.41 billion, with an urban component of 498 million (35%) growing at 2.3% annually. Waste management, encompassing SWM and sanitation, represents a significant public health challenge. In 2020, India generated about 62 million tons of municipal solid waste. Economic and demographic growth in cities has increased the challenges and complexity of municipal SWM. Collection rates range from below 50% in small cities to as much as 90% in large cities, and an estimated 28% of waste is left untreated. Uncollected waste is openly burned or pollutes land and waterways, while collected waste may be illegally tipped or end up in uncontrolled dumpsites. In 2014, the Government of India, as an initiative led by the Prime Minister, launched the first SBM to achieve an ODF India by 2019, grounded in the ambition expressed by Mahatma Gandhi of a clean and hygienic India. The first phase eliminated open defecation among 500 million people, alleviating the acute health risks and preventing pollution of land and water bodies. Reaching ODF status for the remaining population, and maintaining it, remains a constant challenge in terms of behavioral and cultural factors, maintenance of sanitary facilities, and equitable access.

5. **Climate change, disaster, and other risks.** An inadequate infrastructure base makes India's urban sector vulnerable to climate change impacts. Global warming is projected to cause frequent and extreme floods and landslides, damaging urban infrastructure. Clogged drainage systems from improper disposal of solid waste exacerbate flood and health risks, while natural hazards, such as flooding and earthquakes, increase the quantity of waste entering the environment and change the waste characteristics. Pathogens and pollutants may be flushed into the environment from flooded septic tanks and storage pits, while water scarcity can impact the functionality of sanitation systems. Uncontrolled landfill sites are vulnerable to flood risks, while heatwaves increase the risk of landfill fires. India accounts for 4% of global greenhouse gas (GHG) emissions; its emissions from waste generate 75.2 megatons of carbon dioxide equivalent annually; and 15.8 megatons from municipal SWM.⁷ Since solid waste is generally linked to development and per capita income, methane emissions from landfills are highly correlated with economic development and population growth.⁸

6. **Sector strategy and lessons.** The first phase of the government's urban SBM (2014–2019) aimed to accomplish three primary objectives in all ULBs: (i) achieve 100% ODF status, (ii) ensure 100% modern and scientific SWM, and (iii) promote behavior change through people's movement. *Swachh Survekshan* (cleanliness survey) has emerged as an effective tool for transforming the urban landscape. It is an annual survey to evaluate and rank cities on various cleanliness parameters. SBM was able to advance these goals by achieving ODF status for 4,355 ULBs and ODF+ status for 547 ULBs. ULB wards with 100% source segregation increased

⁶ The TA first appeared in the business opportunities section of ADB's website on 13 March 2023.

⁷ Ministry of Environment, Forest and Climate Change, Government of India. [India's Long-Term Low-Carbon Development Strategy. Submission to the United Nations Framework Convention on Climate Change](#). 2022.

⁸ NITI Aayog. [India Climate & Energy Dashboard](#) (Accessed 2 November 2023).

from 15% in 2021 to 89% in 2023. The focus on scientific waste management is clear since waste processing in India has increased more than fourfold, from 18% in 2014 to 76% in 2023. Key lessons from that first phase highlight the remaining challenges, notably (i) inadequacies in managing various solid waste types; (ii) insufficient budgetary support for disposal or management of legacy waste, plastic waste, and construction and demolition waste; (iii) risk of regress in ODF achievements; (iv) the need for sustained and adequate infrastructure; (v) inadequate institutional capacities; and (vi) limited information, education, and communication outreach. A proactive political and administrative leadership and a whole-of-government approach are crucial to resolving these challenges. In 2021, SBM-U 2.0 was launched to sustain and deepen the achievements of SBM, committing to GFCs by 2026, while maintaining ODF status across 4,372 ULBs. In addition, MOHUA introduced standardized protocols for achieving the Water+ status as a part of the SBM-U 2.0, i.e., for ULBs to prevent the discharge of untreated wastewater into the open environment or water bodies. SBM-U 2.0 also encourages more private sector involvement in asset provision and the operation of SWM services in India, which has been limited. Progress varies across states because ULBs' institutional capacity varies, which affects service delivery. In seven of the eight states selected for the RBL program (footnote 3), 0%–4% of ULBs achieved a GFC 3-star rating, while in Maharashtra that ratio is 18%. ADB has incorporated valuable lessons from its engagement with MOHUA into its support for SBM-U 2.0. These strategic interventions are expected to enhance urban livability and stimulate increased investments in the cities.

7. **Sector governance.** The institutional arrangements of SBM-U 2.0 follow existing regulatory and institutional frameworks. The role of the central government is to formulate broad policy guidelines, provide TA and support to the states and ULBs for the development of human resources, and act as an intermediary for mobilizing external assistance. MOHUA is responsible for overseeing the implementation of SBM-U 2.0, and its secretary is the mission director. The joint secretary in charge of SBM-U 2.0 is the focal for the national program in the ministry, and a dedicated full-time program director supported by officials and consultants. Under each state's administrative and regulatory framework, ULBs are responsible for planning, operating, and maintaining ODF and GFC ratings. Under the SBM-U 2.0 framework, an incentive scheme was introduced that not only provides financial assistance to states for infrastructure investments, but also supports institutional processes and measures the outcomes of those investments. Fund releases are processed through the Treasury into separate bank accounts of states and corresponding ULBs in installments based on performance. A robust online monitoring and evaluation system, centrally managed by MOHUA with inputs from states and ULBs, is the foundation of the government program. The system tracks progress toward program goals as well as financial progress (i.e., fund releases and expenditures in different components of the program). Despite such robust and centrally overseen arrangements, many ULBs have weak institutional capacities for SWM planning, development, and management, and are in poor financial condition. Improvements are required in source segregation (e.g., sorting and separating waste to facilitate recycling, treatment, and disposal) as well as SWM infrastructure. This entails local capacity enhancements, increased enforcement, and stronger regulatory and institutional arrangements.

8. **Private sector participation.** The private sector's participation in the provision and operation of SWM assets and sanitation services in India is expected to grow—from innovative technologies, equipment, and cost-efficient waste-handling solutions, especially waste sorting; to the recycling of plastic, tires, e-waste, and batteries; to construction waste management, and landfill design and technologies; to collection and transportation; to solutions generating energy from waste. But the financial viability is constrained by (i) the absence of a gate fee, which is deemed necessary to underwrite an investment; (ii) limited consideration of payment mechanisms in concession agreements; and (iii) ULBs requesting royalty payments from concessionaires. The

TA attached to the RBL program will help pilot digital solutions for SWM and explore other opportunities for the private sector to contribute solutions. This includes a study to identify the enablers and barriers to the participation of private players in SWM, and how to create an enabling environment for their involvement under the RBL to improve service quality. In addition, the TA will enhance ULBs' collection of user charges to minimize the financial viability constraints.

IV. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

9. The TA will support the implementation of the RBL program by (i) mainstreaming climate and disaster-resilient and GESI-responsive solutions in SWM and sanitation. It will (i) establish and pilot a system to collect data on informal waste workers in at least five ULBs, disaggregated by gender and vulnerable groups, to ensure their inclusion; (ii) explore private sector participation and apply digital technology solutions to SWM (e.g., source segregation) and sanitation in 10 ULBs; and (iii) strengthen the target states' monitoring and evaluation frameworks and financial management. The TA will also allow city-to-city partnerships and twinning.

B. Outputs, Methods, and Activities

10. The major outputs and activities are summarized in Table 1.

Table 1: Summary of Major Outputs and Activities

Major Outputs ^a	Delivery Dates	Key Activities with Milestones
Output 1: Climate- and disaster-resilient and GESI-responsive solutions mainstreamed in SWM and sanitation	Q3 2026	<ol style="list-style-type: none"> 1.1. Target ULBs identified for support (Q4 2023). 1.2. Advertise all consultant packages (Q4 2023). 1.3. Award all consultant packages (Q1 2024). 1.4. Develop the curriculum for a GESI-sensitive training program for sanitation works (Q1 2024). 1.5. Roll out the GESI-sensitive training program in at least 100 ULBs (Q2 2024–Q2 2026). 1.6. Identify climate- and disaster-resilient and GESI-responsive features in SWM infrastructure and/or service delivery (Q1 2024). 1.7. Implement climate- and disaster-resilient and GESI-responsive features in SWM infrastructure and/or service delivery (Q2 2024–Q2 2026). 1.8. Develop standard criteria and recommendations (e.g., standardized registration format and/or checklist, field data collection system, advice on software, centralized dashboard, and ease of accessibility) for collecting data on informal waste workers (Q4 2023). 1.9. Support selected states and ULBs in establishing a fully functional system to collect data on informal waste workers, disaggregated by gender and vulnerable groups (Q1 2024–Q2 2026). 1.10. Develop and finalize the definition of GESI-sensitive measures in agreement with MOHUA and other authorities in target states to encourage the participation of WSHGs (Q4 2023). 1.11. Support states and selected ULBs in implementing finalized GESI-sensitive measures for participation of WSHGs in SWM and sanitation (Q4 2023). 1.12. Finalize the study on the enabling environment for private sector participation and the list of priority actions (Q1 2024). 1.13. Selected ULBs in target states to engage private sector in waste management services (Q3 2026).
Output 2: Capacity to apply digital technology solutions to SWM	Q3 2026	<ol style="list-style-type: none"> 1.1. In discussion with MOHUA and 8 target states,^b identify at least 10 ULBs from any of the 8 states to be directly supported under the TA. Target ULBs will be selected using objective criteria, e.g., enabling environment for digitalization of SWM and minimum levels of ICT infrastructure (Q3 2023).

Major Outputs ^a	Delivery Dates	Key Activities with Milestones
in 10 ULBs strengthened		<p>1.2. Advertise and award contracts for the following TA-funded packages: (i) Korean counterpart agency; (ii) project manager; and (iii) communications experts (Korean and Indian) (Q4 2023).</p> <p>1.3. Korean counterpart agency to prepare program schedule and start the planning of (i) field visits by Indian counterparts to Korea to visit sites and facilities presenting examples of digital technology application and best practices in SWM; (ii) training and capacity building sessions, conferences, networking events for Indian counterparts with Korean experts, on SWM and digitalization; and (iii) visits from Korean experts to at least 10 ULBs in India, to provide direct support to identify digital technology solutions to SWM challenges (Q4 2023).</p> <p>1.4. Korean counterpart agency to commence discussions with Indian counterparts in 10 ULBs on proposed digitalization initiatives to be rolled out in ULBs, and the type of expertise required to be mobilized. Proposed initiatives and target areas will be selected carefully to ensure that the scale is realistic within the available budget and time, and to ensure meaningful results (Q1 2024).</p> <p>1.5. Korean counterpart agency and/or ADB to recruit and mobilize the experts to support ULBs (Q2 2024).^c</p> <p>1.6. Mobilize Korean experts to at least 10 ULBs in India to identify (i) digital technology solutions to SWM challenges, and (ii) small or pilot-scale equipment to support digitalization efforts (Q2 2024).</p> <p>1.7. Start procurement of small or pilot-scale equipment to support digitalization efforts (Q2 2024).^d</p> <p>1.8. Purchase, install, and commission small or pilot-scale equipment (and give early operation and maintenance support) in at least 10 ULBs (Q4 2024).</p> <p>1.9. Project manager to deliver midterm report (Q1 2025).</p> <p>1.10. Korean experts to provide further or follow-up support and engagement to 10 ULBs in target states (until Q1 2026).</p> <p>1.11. Conduct field visits for Indian counterparts to Korea, to sites and facilities presenting examples of digital technology application and best practices in SWM; as well as for training, capacity building, and conferences (Q1 2024–Q1 2026).</p> <p>1.12. Carry out program evaluation surveys to assess TA outcomes and follow-up actions (Q2 2026).</p> <p>1.13. Project manager to deliver TA final report (Q3 2026).</p>
Output 3: Monitoring and evaluation frameworks strengthened	Q1 2027	<p>1.1. MOHUA to advertise IVA packages (Q3 2023).</p> <p>1.2. States to recruit the audit firm from the Comptroller and Auditor General's list of empaneled auditors (Q4 2023).</p> <p>1.3. Award IVA and audit firm contract packages (Q4 2023).</p> <p>1.4. IVA to deliver annual verification plans and annual and/or semiannual results verification reports (Q1 2024–Q4 2026).</p> <p>1.5. Audit firm to deliver audit reports at the end of each calendar year (Q1 2025–Q1 2027).</p> <p>1.6. IVA to deliver final report (Q1 2027).</p> <p>1.7. Audit firm to deliver recommendations on strengthening the capacity of ULBs and state agencies in managing public finances (Q1 2027).</p>

ADB = Asian Development Bank, CAG = Comptroller and Auditor General, GESI = gender equality and social inclusion, ICT = information and communication technology, IVA = independent verification agency, MOHUA = Ministry of Housing and Urban Affairs, Q = quarter, SWM = solid waste management, TA = technical assistance, ULB = urban local body, WSHG = women's self-help group.

^a Output 1 activities will be supported by the Urban Resilience Trust Fund. Output 2 activities will be supported by the Republic of Korea e-Asia and Knowledge Partnership Fund. Output 3 activities will be supported by the Sanitation Financing Partnership Trust Fund.

^b The target states are Assam, Bihar, Jharkhand, Karnataka, Maharashtra, Odisha, Tamil Nadu, and Uttar Pradesh.

^c This may include, for example, experts in SWM treatment processes, sanitation technology, SWM collection, instrumentation, geographic information system, and app developers.

^d Procurement may be done either by individual experts if costs are small, by the Korean counterpart agency if feasible, or otherwise by ADB.

Source: ADB.

11. This represents ADB's first RBL program in India's urban sector and in SWM or sanitation. ADB will bring the following value additions to the program with support from the attached TA: (i) mainstreaming of climate- and disaster-resilient solutions across the sector; (ii) digital technologies to enhance infrastructure, and data-informed decision- and policymaking; (iii) promotion of GESI-responsive innovations in sanitation and SWM infrastructure and service delivery, with measures for increased participation of women; (iv) catalyzing of private sector participation;⁹ and (v) international best practices on waste management, such as plastic waste management and circular economy.

C. Cost and Financing

12. The TA financing amount is \$3.15 million, of which (i) \$2.00 million (for output 1) will be financed on a grant basis by the Urban Resilience Trust Fund (URTF) under the Urban Financing Partnership Facility;¹⁰ (ii) \$1.00 million (for output 2) will be financed on a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund (EAKPF) and administered by ADB;¹¹ and (iii) \$0.15 million (for output 3) will be financed by the Sanitation Financing Partnership Trust Fund (SFPTF) under the Water Financing Partnership Facility (WFPF).¹² Major outputs and activities are summarized in paras. 10–11. The key expenditure items are listed in Annex 1.¹³

13. The government will provide counterpart support in the form of counterpart staff, office space, and other in-kind contributions. The government was informed that approval of the TA does not commit ADB to finance any ensuing program.

Table 1: Cost Breakdown per Output

Output	Indicative Cost (\$)	Percentage of TA Amount (%)
Output 1: Climate and disaster-resilient and GESI-responsive solutions mainstreamed in solid waste management and sanitation	2,000,000	63
Output 2: Capacity to apply digital technology solutions to solid waste management in 10 ULBs strengthened	1,000,000	32
Output 3: Monitoring and evaluation frameworks strengthened	150,000	5
Total	3,150,000	100

TA = technical assistance, GESI = gender equality and social inclusion, ULBs = urban local bodies.

Source: Asian Development Bank.

D. Implementation Arrangements

14. ADB will administer the URTF (\$2.000 million) and EAKPF (\$1.000 million) funds, and its South Asia Team, Water and Urban Development Sector Office, Sectors Group will select,

⁹ Due diligence began with an assessment of enablers and barriers to private sector entry in the SWM subsector in India, which will inform potential interventions through the program.

¹⁰ Financing partner: the Government of the United Kingdom. URTF is a \$82.12 million (£68.50 million) multi-partner trust fund (2023–2029) administered by ADB under the Urban Financing Partnerships Facility. The program will help reduce risks from climate change and natural disasters for select cities in Asia and the Pacific through TA and demonstrative innovative investments in specified thematic areas.

¹¹ Financing partner: Republic of Korea. The fund covers all ADB sectors with priority on infrastructure (transport, logistics, telecommunications, and water); smart city development based on information and communication technology; clean energy, climate change and disaster risk management, and rural development; and health (hospitals, medical systems, and bio-industry).

¹² Financing partner: Bill and Melinda Gates Foundation. The fund aims to support identification, testing, and piloting of innovative sanitation solutions and new policies, business models, and technologies to increase support for non-networked (non-sewered) sanitation and septage management in ADB's developing member countries.

¹³ Cost Estimates and Financing Plan (accessible from the list of annexes on the Contents page of this TA report).

supervise, and evaluate the consultants. For WFPF SFPTF funds (\$0.1500 million), ADB will delegate TA administration to MOHUA, which will be the executing and implementing agency. MOHUA will also select, supervise, and evaluate the independent verification agency engaged under output 3. A portion of the TA funds is delegated to MOHUA (\$0.008 million) to finance state-level audits of the RBL program (according to statement of audit needs) where states require external funding for this activity.¹⁴ Such states will single-source the audit firm from the Comptroller and Auditor General's list of empaneled auditors and will seek reimbursement from MOHUA. ADB will reimburse MOHUA for expenses under the delegated portion. Further details are provided in Annexes 3–5.¹⁵

15. Implementation arrangements are summarized in Table 2.

Table 2: Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	December 2023–March 2027		
Executing agency	Ministry of Housing and Urban Affairs		
Implementing agencies	The Ministry of Housing and Urban Affairs and the urban local bodies will play the principal role in administering and supervising the TA together with ADB; this includes implementation oversight, accountability for the outputs, and communication with consultants and stakeholders.		
Consultants	To be selected and engaged by ADB		
	ICS	Multiple packages	\$2.86 million
	To be selected and engaged by the executing agency		
	QCBS 70:30	National expertise (output-based contract)	\$142,500
	SSS ^a	National expertise (output-based contract)	\$7,500
Procurement ^b	To be procured by consultants following ADB's Procurement Policy (2017, as amended from time to time)		
	Shopping	Estimated 5–10 contracts	\$100,000
Disbursement	Disbursement of TA resources will follow ADB's <i>Technical Assistance Disbursement Handbook</i> (2020, as amended from time to time). Each package will be financed by a specific ADB-administered TA fund.		
Asset turnover or disposal arrangement upon TA completion	All equipment and fixed assets will be handed over to the urban local bodies upon TA completion. ^c		

ADB = Asian Development Bank, ICS = individual consultant selection, QCBS = quality- and cost-based selection, SSS = single-source selection, TA = technical assistance.

^a States will single-source the audit firm from the Comptroller and Auditor General's list of empaneled auditors.

^b Procurement Plan (accessible from the list of annexes on the Contents page of this TA report).

^c Consultants and/or ADB will be the signatory for supply contracts for all equipment purchased under the TA. Procurement of goods by consultants will be in alignment with the ADB Procurement Policy 2017 (as amended from time to time). Fixed assets are defined in ADB. 2016. Asset Management and Inventory Control. Administrative Orders. AO 4.02. Manila.

Source: ADB.

16. **Consulting services.** For activities funded by URTF and EAKPF funds, ADB will engage consultants following the ADB Procurement Policy (2017, as amended from time to time) and its associated project administration instructions and/or staff instructions.¹⁶ Consultants or ADB will procure works and goods (as applicable).

¹⁴ Only selected states are expected to require funds reimbursement from ADB.

¹⁵ Delegated Technical Assistance, Pilot Testing of Project Approach, and Procurement Plan (accessible from the list of annexes on the Contents page of this TA report).

¹⁶ Terms of Reference for Consultants (accessible from the list of annexes on the Contents page of this TA report).

17. For activities funded by WFPF SFPTF funds, consultant recruitment is delegated to the executing agency.

18. **Piloting of project approach.** The ADB-administered portion of the TA includes the piloting of digital technology solutions for solid waste management operations. EAKPF funds may be used for small or pilot-scale equipment purchase,¹⁷ installation, programming, commissioning, and initial operation and maintenance support for the rollout and/or demonstration of digital technology solutions in selected ULBs. Where the pilot involves equipment or goods purchase, consultants and/or ADB will be the signatory for supply contracts. Procurement of goods by consultants will be in alignment with the ADB Procurement Policy 2017 (as amended from time to time). All equipment and fixed assets procured as part of the pilot will be handed over to the ULBs upon TA completion. The activities are small in scale and will not result in any potential adverse environmental and/or social impacts. Further details on the pilot are in Annex 4.¹⁸

19. **Procurement.** Procurement will follow the ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The procurement plan is in Annex 5.¹⁹ The states will follow current practice (single-source selection) when engaging an auditor empaneled by the Comptroller and Auditor General. This is a standard practice in all states, so there should be sufficient capacity. Single-source selection is supportable since the empanelment of auditors would have been based on open competition. The recruitment of the independent verification agency will be through quality- and cost-based selection (70:30). MOHUA is conversant with and has reasonable capacity with the recruitment of consulting firms through this method.

20. **Cofinancier requirements.** The TA's monitoring and reporting requirements and changes in the implementation arrangements will follow ADB's applicable project administration and staff instructions and comply with the implementation guidelines and the monitoring and reporting requirements of the URTF,²⁰ EAKPF,²¹ and WFPF.²² All changes in the TA scope and objectives will be discussed with the cofinanciers. The TA completion report will be shared with the cofinanciers.

E. Governance

21. **Financial management.** MOHUA has sufficient capacity for the financial management of the delegated TA component, and the financial management risk is assessed as *low*. The funding

¹⁷ This may include the purchase of hardware for the mobilization of digital technologies, such as sensors, controllers, and output devices.

¹⁸ Pilot Testing of Project Approach (accessible from the list of annexes on the Contents page of this TA report).

¹⁹ Procurement Plan (accessible from the list of annexes on the Contents page of this TA report).

²⁰ During implementation, the director of the Strategy and Partnerships Team of the Water and Urban Development Sector Office and the URTF Secretariat will assist the program team in monitoring and capturing lessons. Program officers will be requested to regularly provide to the financing partners the implementation status, including progress on the URTF indicators and targets to support the URTF's reporting requirements. The URTF Secretariat shall provide technical support and guidance to the project team on the results monitoring methodology, including the terms of reference for the consultant.

²¹ The fund will finance operational expenditures related to eligible activities indicated in output 2. It will not be used for (i) civil works; (ii) procurement of large-scale equipment; (iii) permanent staffing costs; (iv) hiring of staff consultants; or (v) foreign travel cost of staff, unless otherwise agreed between the Government of the Republic of Korea and ADB.

²² The WFPF semiannual and annual reports are provided to comply with the monitoring and reporting requirements of the SFPTF. In addition, a detailed progress report on the SFPTF-supported components is provided as a supplement to the WFPF reports. For a TA project, gender-disaggregated data reports on activities related to consultations and capacity building are required.

delegated to MOHUA is \$150,000; and the number of transactions anticipated during the implementation of the TA is small, i.e., one consulting contract for the independent verification agency and annual reimbursements of audit costs to the eight states. Based on the findings of the program fiduciary assessment, conducted for the RBL program, MOHUA's current accounting, reporting, and internal control systems can be relied on for making payments under the TA, ensuring that proper supporting documents are maintained, and for preparing and submitting withdrawal applications to ADB. MOHUA will ensure that an external audit of all transactions executed during the implementation of the TA is completed, and an audit report submitted to ADB, within 6 months after the closing date of the TA.