



# Completion Report

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Project Number: 49154-001  
Technical Assistance Number: 9198  
March 2021

## Indonesia: Sewerage System Development Project

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## TECHNICAL ASSISTANCE COMPLETION REPORT

<b>TA Number, Country, and Name:</b> TA 9198-INO: Sewerage System Development Project		<b>Amount Approved:</b> \$1,160,000	
		<b>Revised Amount:</b> \$1,160,000	
<b>Executing Agency:</b> Directorate General for Human Settlements of the Ministry of Public Works and Housing	<b>Source of Funding:</b> Technical Assistance Special Fund (TASF- Others)	<b>Amount Undisbursed:</b> \$27,538.62	<b>Amount Used:</b> \$1,132,461.38
<b>TA Approval Date:</b> 7 October 2016	<b>TA Signing Date:</b> 29 May 2017	<b>TA Completion Date</b>	
		<b>Original Date:</b> 15 September 2017	<b>Latest Revised Date:</b> 16 March 2020
		<b>Financial Closing Date:</b> 11 June 2020	<b>Number of Extensions:</b> 2
<b>TA Type:</b> Project preparatory TA			

### Description

The project preparatory technical assistance (TA) supported the preparation of a sewerage system development project (SSDP) in three cities in Indonesia: (i) Banda Aceh, Aceh; (ii) Bekasi, West Java; and (iii) Mataram, Nusa Tenggara Barat. The SSDP was to support the (i) rehabilitation and construction of offsite and on-site sanitation systems, (ii) establishment of an effective service delivery system, and (iii) implementation of public awareness campaigns.

The TA was fully aligned with the development priorities of the Government of Indonesia to increase access to improved sanitation to 85% of the population in 2019. It was consistent with the Indonesia Country Partnership Strategy 2016–2020 of the Asian Development Bank (ADB), which promoted improved infrastructure services. The ensuing SSDP was listed in ADB's Country Operations Business Plan for Indonesia 2018.

### Expected Impact, Outcome, and Outputs

The outcome of the TA was to design a SSDP appropriate for ADB financing, focusing on the following outputs: (i) confirm recommended policy actions and identify the support to be provided through the loan; (ii) design a results-based component of the loan to support infrastructure development; policy, legal and institutional reforms; and leverage local government spending in sanitation; (iii) develop public awareness campaigns promoting hygiene and sanitation; (iv) assess climate risk vulnerability and identify adaptation and mitigation options, (v) confirm the project's overall financial and economic viability, and (vi) confirm safeguards documents.

### Implementation Arrangements

The TA was planned to be implemented from October 2016 to October 2017.

The TA engaged a firm with seven international experts (20.5 person-months) and nine national experts (25 person-months), three individual international consultants (8 person-months) and three individual national consultants (12 person-months) against the planned total of 26 person-months of international consultant inputs and 60 person-months of national consultant inputs. The consulting firm was recruited following quality- and cost-based selection method with a total contract amount of \$856,060.00, mainly to support safeguards due diligence and institutional and financial analyses. Individual consultants provided further specialized support to ADB and TA counterparts once the consultancy firm completed its assignment.

The Directorate General for Human Settlements (DGHS) of the Ministry of Public Works and Housing (MPWH) established a program implementation unit and recruited a program management consultant to facilitate project preparation and readiness for the SSDP.

The TA complemented infrastructure feasibility studies (output 1 of the SSDP) that were prepared by a consulting firm recruited through the Cities Development Initiative Asia (CDIA).<sup>1</sup> Detailed engineering designs, resettlement plans, and

<sup>1</sup> ADB. 2013. *Regional Technical Assistance: Supporting the Cities Development Initiative for Asia*. Manila.

environmental impact assessments were prepared under the Accelerating Infrastructure Delivery through Better Engineering Services Project (ESP).<sup>2</sup>

### Conduct of Activities

A minor change in scope was approved in June 2018 for additional consultant support to accommodate the changing needs of the local governments of the three cities and the DGHS. The TA was extended twice—in August 2017 for 12 months (until 15 September 2018) and in September 2018 for another 18 months (until 16 March 2020). The first extension was to allow the consulting firm to complete the envisaged assessments, as their mobilization was deferred due to a delay in signing the TA letter. The second extension was to accommodate additional consultations with the national and local governments on project scope and implementation.

The consultants conducted the following activities:

- (i) Confirmed recommended policy actions and identified support to be provided through the loan to (a) accelerate access to enhanced sanitation through the development of a wastewater management road map, (b) transfer sanitation assets to relevant service providers, and (c) identify possible sanitation service providers that could ensure effective service delivery.
- (ii) Designed a results-based component of the loan that supports the inclusion of outputs to be linked to disbursements indicators and verification protocol.
- (iii) Developed public awareness campaigns on hygiene promotion and sanitation that included the design of a consultation and participation plan to guide stakeholders in developing strategies that reflect the needs of beneficiaries, executing agencies, and communities in the target areas.
- (iv) Assessed climate risk vulnerability and following relevant ADB guidelines identified adaptation and mitigation options such as the introduction of energy efficient solutions in infrastructure designs.
- (v) Confirmed the overall project's financial and economic viability following ADB guidelines.
- (vi) Conducted citywide socioeconomic community surveys to provide information on (a) households' perceptions on wastewater issues, (b) sanitation and hygiene awareness and behaviors, and (c) willingness-to-pay to connect to a sewerage system and pay for subsequent wastewater treatment fees.
- (vii) Prepared (a) poverty and social analysis; (b) gender impact assessment; (c) resettlement plan; and (d) relevant strategies and action plans, including a gender action plan.
- (viii) Confirmed safeguards documents prepared by the CDIA consultants.

The activities and outputs produced by the TA greatly helped design the SSDP.

Eight workshops were held in each city (16 workshops in total) to support the development of project outputs and increase understanding and capacity on (i) wastewater management road maps, (ii) wastewater and sludge treatment and advanced treatment technologies, (iii) tariff setting and business planning, and (iv) sanitation promotion. Workshops were always well attended with relevant participants from local government, utilities, and other relevant stakeholders. In total, an estimated 600 participants attended the workshops.

Once it became clear that the TA would not result in an ADB financed loan, as the government preferred to finance the identified investments using government resources, TA activities concluded. This resulted in underutilization of \$27,538.82 of available TA resources.

### Technical Assistance Assessment Ratings

Criterion	Assessment	Rating
Relevance	The intended TA outcome and envisaged ensuing project were fully aligned with the development priorities of the Government of Indonesia to increase access to improved sanitation to 85% of the population in 2019. <sup>3</sup> The TA was also consistent with ADB's Indonesia Country Partnership Strategy 2016–2020. <sup>4</sup> Although the TA was strategically relevant its design did not address land availability constraints in the respective project locations or establish the willingness of government to borrow from ADB for the identified investments. While the TA type and rationale for the proposed ensuing investments were appropriate, strategic risks were insufficiently addressed.	Less than Relevant
Effectiveness	While all envisioned TA activities were completed and 98% of the TA resources utilized, the TA did not result in ADB financing for the SSDP. The TA outcome was not attained.	Ineffective

<sup>2</sup> ADB. 2016. *Accelerating Infrastructure Delivery through Better Engineering Services Project* (Loan 3455-INO). Manila.

<sup>3</sup> Government of Indonesia, 2016. *Medium Term National Development Plan 2016–2020*. Jakarta.

<sup>4</sup> ADB. 2016. *Indonesia Country Partnership Strategy 2016–2020*. Manila.

Criterion	Assessment	Rating
	<p>In Bekasi and Mataram, TA outputs have been used as a basis to further develop sanitation investments using ESP resources. However, in Bekasi the location of the wastewater treatment plant (WWTP) was changed, so many of the designs and assumptions used in the TA had to be changed during the subsequent detailed engineering design.</p> <p>In Banda Aceh, TA outputs have not been used. During construction of a MPWH-financed WWTP, centuries-old graves with relics were unearthed on the site. As a result, the Indonesian Ministry of Education and Culture halted the construction of the WWTP for an undetermined period. In response, MPWH stopped all investments in the sanitation sector in Banda Aceh, including those envisioned to be financed through the SSDP.</p> <p>Training of relevant staff in the respective project cities to address wastewater issues, technical scoping, financial projection and analysis, and social and safeguards monitoring did take place and were well-received.</p>	
Efficiency	The TA is considered less than efficient as the implementation delay was more than 2 years and the socioeconomic benefits were marginal.	Less than Efficient
<b>Overall Assessment</b>	The TA is considered less than successful as the envisaged outcome was not met and the outputs were partially met. Also, the TA incurred an implementation delay of more than 2 years and the socioeconomic benefits were marginal. However, in both Mataram and Bekasi, TA outputs have been used as a sound basis for further design and preparation of investments using ESP resources. Furthermore, the TA strengthened ADB's engagement with the DGHS and MPWH. As a result, ADB was requested to finance sanitation investments in Pontianak and Semarang under the Citywide Inclusive Sanitation Project (INO-CISP), scheduled for commitment in 2022.	Less than successful
<b>Sustainability</b>	<p>The TA is considered less than likely to be sustainable, except for Mataram, as there is limited evidence that financial resources for implementation of the SSDP can be guaranteed.</p> <p>Work done through the TA to sensitize local governments and MPWH on the importance of investments in the sanitation sector and the preparation of relevant regulations and institutions have had some impact. However, this impact is unlikely to be sustained without substantial support from the central government to finance these investments.</p>	Less than likely sustainable

### Lessons Learned and Recommendations

Design and/or planning	<p>City selection was based on a detailed ranking and selection methodology which covered 98 cities funded by TA 8060-REG.<sup>5</sup> However, it soon became clear that, particularly in Bekasi, basic conditions needed to ensure successful implementation of a sanitation investment could not be met as the local government was unable to secure sufficient affordable land for a WWTP, making the investment financially unviable. In Mataram, land identified for the WWTP was under dispute, which caused substantial delays in project processing. In Banda Aceh, the discovery of historic artefacts at the location of another WWTP led to the suspension of the project.</p> <p>The lesson learned for future sanitation projects is that a key determining factor for city selection should be the availability of appropriately sized government-owned land that can be used for development of a WWTP.</p> <p>The consultations and socioeconomic surveys carried out through the TA provided important information on households' perceptions on wastewater issues, sanitation and hygiene awareness and behavior, as well as their capacity to connect to a sewerage system and pay for subsequent wastewater fees. Extensive front-end analysis was valuable to show that households were not ready to connect to centralized sewers and to pay a fee for such connections.</p> <p>The lesson learned is that when local governments want to introduce sewerage systems to replace individual septic tanks, a clear communication strategy needs to be developed and implemented to present the benefits, practical application, and financial impact (including incentives) on the households. Free or subsidized connections for households should also be considered to lessen households' financial burden and ensure connections are made.</p>
Implementation and/or delivery	The TA consultants used technical assessments prepared by a consulting team recruited by CDIA, while detailed engineering designs were covered by ESP-financed consultants. Using

<sup>5</sup> ADB. 2012. *Promoting Innovations in Wastewater Management in Asia and the Pacific*. Manila.

	different consulting teams resulted in some overlapping work and differing opinions regarding technical approaches and solutions. This complicated the studies and confused the client. Going forward, the lesson learned is that only one consulting team should be used, or work should be clearly delineated between different teams from the outset.
Management of staff and consultants	A key approach to ensure alignment between the CDIA and TA consultants was to request both teams to share a single office and deliver a joint report (as opposed to separate deliverables). Individual report sections were divided between the two consulting teams to avoid overlap. The comprehensive joint report was useful for TA counterparts to assess the proposed projects. Close staff and consultant collaboration with government counterparts are critical to ensure support for, and relevance of, TA outputs.
Knowledge building	The reports produced through the TA were well prepared and highly informative. However, they were ineffective in communicating concepts and ideas to some stakeholders because they were written in English. Additional summary reports and/or well-designed presentations and other visual tools prepared in Bahasa Indonesia would have been more effective to communicate ideas to local government counterparts.
Stakeholder participation	Holding interactive workshops using Bahasa Indonesia was helpful to identify key stakeholders and target groups for the promotion of safe sanitation; and to facilitate information exchange.
Partnership and cofinancing	Many other development partners in Indonesia are helping MPWH and local governments enhance access to improved sanitation. Formal and informal exchanges, among others through the Indonesia Sanitation Working Group, have proven to be useful as many of the development partners are facing similar challenges.

#### Follow-up Actions

Reports produced under the TA have been provided to DGHS. In the case of Bekasi and Mataram, reports are being used to prepare detailed engineering designs, financed through ESP. For Banda Aceh, ADB should regularly check with MPWH on the possibility to resume the WWTP project once the issues surrounding the unearthed historic artefacts have been resolved.

Given Indonesia's backlog in providing its citizens with access to improved sanitation, continued development partner support to raise awareness and finance the construction of sewerage systems and wastewater treatment plants is required. For densely populated areas in particular, centralized sewer systems and WWTPs are still preferred, despite potentially more cost-efficient alternative sewered and non-sewered solutions. As investments in sewer systems require significant resources, options to encourage private investments in wastewater treatment facilities should be explored. However, their financial viability and the need for government incentives will need to be carefully considered. Finally, as most of the cities have no specific plan for sewer systems, further support to develop institutions, relevant regulations, and financing instruments to secure the operation and maintenance of the sanitation assets is required.

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## TECHNICAL ASSISTANCE COST

**Table A.1: Technical Assistance Cost by Activity**  
(\$'000)

Item	Amount <sup>a</sup>		
	Original <sup>b</sup>	Revised	Actual <sup>c</sup>
1. Consultants	1,010.00	0.00	1,090.42
2. Goods	0.00	0.00	0.00
3. Training, seminars and/or conferences	10.00	0.00	9.83
4. Studies	10.00	0.00	31.98
5. Miscellaneous TA administration	17.00	0.00	0.23
6. Contract negotiation	2.00	0.00	0.00
7. Contingency	111.00	0.00	0.00
<b>Total</b>	<b>1,160.00</b>	<b>0.00</b>	<b>1,132.46</b>

TA = technical assistance.

<sup>a</sup> Includes ADB-financed funds and/or ADB fully administered cofinanced funds.

<sup>b</sup> Original estimated cost in the TA report.

<sup>c</sup> Number does not sum precisely because of rounding.

Source: Asian Development Bank estimates.

**Table A.2: Technical Assistance Cost by Financier**  
(\$'000)

	ADB TASF <sup>a</sup>	Government	Total Cost
1. Original <sup>b</sup>	1,160.00	40.00	1,200.00
2. Revised	0.00	0.00	0.00
3. Actual	1,132.46	40.00	1,172.46
4. Unused	27.54	0.00	27.54

Note: Number does not sum up precisely because of rounding.

<sup>a</sup> ADB Technical Assistance Special Fund (TASF-Others).

<sup>b</sup> Original estimated cost in the TA report.

Source: Asian Development Bank estimates.