



# Technical Assistance Report

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Project Number: 46380-028  
Transaction Technical Assistance Cluster (C-TRTA)  
March 2018

## Indonesia: Sustainable Infrastructure Assistance Program Subproject Number 15: Preparation of the Enhanced Water Security Investment Project (Financed by the Government of Australia)

This document is being disclosed to the public in accordance with ADB's Public Communications Policy 2011.

## CURRENCY EQUIVALENTS

(as of 1 March 2018)

Currency unit	–	rupiah (Rp)
Rp1.00	=	\$0.0000732
\$1.00	=	Rp13,669

## ABBREVIATIONS

ADB	–	Asian Development Bank
SIAP	–	Sustainable Infrastructure Assistance Program
TAC	–	technical assistance cluster
TRTA	–	transaction technical assistance
UNESCO-IHE	–	Institute for Water Education of the United Nations Educational, Scientific and Cultural Organization

## NOTE

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

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## I. THE ENSUING PROJECT

1. The proposed Enhanced Water Security Investment Project will support the Government of Indonesia to improve selected dimensions of water security (economic water security and resilience to water-related disasters).<sup>1</sup> The project will promote an integrated water resources management approach to: (i) improve water resources planning and management to meet rising demands for irrigation and non-agricultural use; (ii) minimize spatial and temporal variations in water availability by improving water storage and conveyance; and (iii) increase resilience to climate change. The International Fund for Agricultural Development is expected to provide collaborative financing to improve land management in upper river basins.

2. The project will help the government to plan, design, implement and operate water infrastructure better to mitigate water shortages and the adverse effects of climate change. It will strengthen river basin organizations to review and prioritize river basin plans including climate resilient design features. To this end, water accounting using remote sensing technology will be introduced to assess water stresses and impacts of land use and climate change. The project will develop adaptive and integrated management strategies for reservoir operations to cope with water supply, irrigation and energy needs and priorities. To ensure sustainability of the infrastructure, the project will give special attention to building systems and capacity for operation and maintenance. The proposed International Fund for Agricultural Development investment will help reduce upland erosion and improve water conservation and efficiency through agricultural productivity in river basins targeted by the project. The project will have the following outputs:

- (i) **Output 1: Planning for water resources optimized.** The project will expand the networks of hydro-meteorological stations to improve real-time data acquisition at river basin level. The project will develop hydrological and hydrodynamic models to optimize allocation of water for energy, food and economic development. Both formulated and tailored solutions will fully incorporate urbanization and climate change trends, scenarios and uncertainty. This will help the river basin organizations to update their river basin plans that integrate infrastructure investment with supporting software measures. The project will identify potential for private investment for water infrastructure, and where feasible, the project will prepare private investment schemes. The project will also improve asset management, linkages between, sector budgeting, and planning to ensure that operation and maintenance budgets are adequately allocated. Performance-based operation and maintenance might be introduced where feasible.
- (ii) **Output 2: Raw water supply infrastructure and services improved.** The project will increase raw water supply capacity through a range of infrastructure options.<sup>2</sup> Those infrastructure measures will be complemented by river basin modeling to optimize operation of reservoirs to better adapt to current and future water demand for water supply, irrigation and energy needs. To ensure that full benefits are achieved, the project will facilitate integration with investments in water treatment and distribution, and improved management of water utilities.<sup>3</sup>

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<sup>1</sup> ADB. 2016. *Asian Water Development Outlook 2016: Strengthening Water Security in Asia and the Pacific*. Manila.

<sup>2</sup> These include: (i) improving capacity of storage facilities through dredging, reducing siltation, protecting infrastructure by raising spillway capacities, and constructing sediment traps, (ii) addressing deficit water storage by enabling inter-basin transfers where feasible; (iii) upgrading groundwater infrastructure where the resources are sustainable; (iv) constructing small diurnal storages consisting of bunded storage reservoirs to solve wet season flooding and shortage of water supply in dry season; and (v) providing water conveyance infrastructure needed to bring water to underutilized water supply plants.

<sup>3</sup> Idle capacity is estimated at 50.8 m<sup>3</sup>/sec nationally. <http://perpamsi.or.id/page/view/25/kinerja-pdam1>.

- (iii) **Output 3: Flood risks management enhanced.** The project will finance construction and upgrading of flood, coastal and urban drainage infrastructure to increase climate resilience. The project will promote river restoration approach and natural based solutions for river works. This will be complemented by flood warning systems. Community and women/women's groups will be engaged to support participatory and gender responsive flood risk management.

3. These solutions and other innovations will result in the following outcome: resilience to climate change for selected river basins enhanced.<sup>4</sup> The project will be aligned with the following impacts: water security enhanced and climate adaptation improved.

4. The indicative investment cost of the project is estimated at \$605.0 million, including \$550.0 million loan from ADB's ordinary capital resources, and \$55.0 million from the government as counterpart funding.<sup>5</sup> The modality (stand-alone project or sector modality) will be confirmed during due diligence. The amount of climate adaptation is estimated to cost \$60.0 million of which 90% will be finance by ADB.<sup>6</sup>

5. **Strategic fit.** The project is aligned with the government strategies and with the priorities of the Asian Development Bank (ADB) country partnership strategy 2016–2019 for Indonesia. The project is included in the ADB's country operations business plan, 2018–2020 for Indonesia.<sup>7</sup> The project is aligned with the Water Operational Plan 2011–2020<sup>8</sup> and to the Climate Change Operational Framework 2017–2030.<sup>9</sup> The project will help achieve sustainable development goals 6.4, 6.5, and 13.

## II. THE TECHNICAL ASSISTANCE

### A. Overall Progress of the TA Cluster

6. The Technical Assistance Cluster (TAC) for Sustainable Infrastructure Assistance Program (SIAP) is financed by the Government of Australia through the Department of Foreign Affairs and Trade and administered by ADB.<sup>10</sup> The TAC was approved on 17 June 2013 and is due to close on 30 June 2019. As of 19 January 2018, total commitments are \$11,108,237 against time elapsed of 75% and disbursements are 66% of commitments. This technical assistance proposal is one of those subprojects. The SIAP Steering Committee also approved additional financing for two existing subprojects for a total value of \$2.435 million. Assistance under SIAP has focused on energy; urban services, water, and sanitation; rural infrastructure; transport; and infrastructure reform. SIAP is on track to meet its outcome and outputs. To date, SIAP has supported the preparation of approved projects and programs valued at nearly \$3 billion (\$1.75 billion in OCR and \$1.13 billion in cofinancing). SIAP has contributed to the preparation and

<sup>4</sup> The design and monitoring framework is in Appendix 1.

<sup>5</sup> It is estimated that output 1 will cost around \$20 million, while the remaining funds will be allocated between outputs 2 and 3 which mainly consist of civil works. This will be reconfirmed during preparation.

<sup>6</sup> This assumes 10% incremental cost to climate proof infrastructure. ADB. 2016. *Guidance Note on Counting Climate Finance in Urban and Water*. Manila. This will be further assessed during project preparation.

<sup>7</sup> ADB. 2016. *Country Partnership Strategy: Indonesia, 2016–2019: Towards a Higher, More Inclusive and Sustainable Growth Path*. Manila. ADB. 2017. *Country Operations Business Plan: Indonesia, 2018–2020*. Manila.

<sup>8</sup> ADB. 2011. *Water Operational Plan, 2011–2020*. Manila.

<sup>9</sup> ADB. 2017. *Climate Change Operational Framework 2017–2030. Enhanced Actions for Low Greenhouse Gas Emissions and Climate-Resilient Development*. Manila.

<sup>10</sup> ADB. 2013. *Technical Assistance Cluster for Sustainable Infrastructure Assistance Program*. Manila. (TAC 0013-INO). This technical assistance cluster, amounting AU\$20 million is financed by the Government of Australia, through the Department of Foreign Affairs and Trade, and administered by ADB.

implementation of approved projects and programs valued at nearly \$5 billion. As of 19 January 2018, TAC 0013–INO: SIAP has an available balance of \$3,045,777, including the ADB management fee.

## B. Subproject Scope

7. The transaction technical assistance (TRTA) is a subproject under the TAC 0013-INO: SIAP as agreed with the Department of Foreign Affairs and Trade. The TRTA will support the Ministry of Public Works and Housing to prepare the project. More specifically, the TRTA will provide support to (i) conduct consultations with the Ministry of Public Works and Housing and river basins stakeholders to finalize the scope of the project, and to ensure that innovations are built into the investment; (ii) undertake due diligence of technical, social, financial, environmental, gender, and economic aspects of the project; and (iii) ensure that subprojects designed under the Accelerating Infrastructure Delivery through Better Engineering Services Project and Flood Management in Selected River Basins Sector Project, are complying with ADB’s technical, environment and social safeguards and fiduciary requirements.<sup>11</sup> The TRTA is included in ADB’s country operations business plan, 2018–2020 for Indonesia (footnote 7).

8. Through its partnerships, ADB will introduce innovations to inform the design of the project: (i) water accounting using satellite data to predict water availability, adjust engineering design, and improve water allocation planning through the partnership between ADB and UNESCO-IHE;<sup>12</sup> and (ii) piloting benchmarking and monitoring of land use change and erosion through the partnership between ADB and the European Space Agency.<sup>13</sup> Funding from the Climate Change Fund will be explored for preparing the climate risk vulnerability assessments for the selected river basins.

## C. Subproject Outputs and Activities

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

**Table 1: Summary of Major Outputs and Activities**

Major Outputs	Delivery Dates	Key Activities with Milestones
1. Project scope finalized	Q2 2018	1.1 Update existing or develop hydrological and hydrodynamic models to optimize water resources and investments 1.2 Based on the models, river basin plans, water accounting assessments, Climate Risk Vulnerability Assessments, and available feasibility studies, prioritize investments in the selected river basins 1.3 Carry out investigations and feasibility studies of schemes identified under recent studies that enhance existing infrastructure function or address multipurpose water security needs 1.4 Conduct consultations with river basins stakeholders to review and confirm proposed investments

<sup>11</sup> ADB. 2016. *Report and Recommendation of the President to the Board of Directors: Proposed Technical Assistance Loan to the Republic of Indonesia for the Accelerating Infrastructure Delivery through Better Engineering Services Project*. Manila. (Loan 3455-INO); ADB. 2016. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Indonesia for the Flood Management in Selected River Basins Sector Project*. Manila. (Loan 3440-INO).

<sup>12</sup> The Asian Development Bank manages a knowledge partnership with Institute for Water Education of the United Nations Educational, Scientific and Cultural Organization which is part of the RETA 6498: Knowledge and Innovation Support for ADB’s Water Financing Program.

<sup>13</sup> Under the European Space Agency initiative “Earth Observation for Sustainable Development.”

Major Outputs	Delivery Dates	Key Activities with Milestones
		1.5 Identify infrastructure investments suitable for private public partnership and performance-based operation and maintenance 1.6 Review best practices (climate adaptation, water efficiency) relevant to the project and formulate activities to be part of the investment
2. Design of ensuing project prepared	Q4 2018	2.1 Review and confirm feasibility studies prepared under L3455 and L3440 from technical, environment, social and economic perspectives 2.2 Prepare costs estimates, financing plan, and implementation arrangements including fund flow mechanisms 2.3 Prepare the economic and financial analysis for the overall project 2.4 Prepare the financial management, procurement and institutional assessment 2.5 Prepare project subcomponents including detailed description, implementation schedule and related terms of reference 2.6 Prepare communication strategy, gender action plan 2.7 Support the preparation of the required linked documents attached to the Report and Recommendation of the President to the Board of Directors.
3. Readiness as per Asian Development Bank (ADB) standards complied	Q1 2019	3.1 Update the L3440 Land Acquisition and Resettlement Framework and Environment Assessment Review Framework to be used as reference for preparation of subprojects under L3455 3.2 Review compliance of the resettlement plans, and initial environment examination studies or environment impact assessments prepared under L3455 and L3440 with ADB Safeguards Policy Statement 2009 3.3 Review quality and technical soundness of the detailed engineering designs for subprojects prepared under L3455 and L3440 3.4 Ensure that climate change resilience measures are incorporated in engineering designs

Source: Asian Development Bank.

#### D. Subproject Cost and Financing

10. The TRTA is estimated to cost \$1.1 million, of which \$1.0 million will be financed from the TAC on a grant basis by the Government of Australia, administered by ADB as a subproject of TAC 0013-INO: SIAP (footnote 10). The TRTA is within the purpose and fit for TA cluster financing. The key expenditure items are listed in Appendix 1. The government will provide counterpart support in the form of counterpart staff, office accommodation, and other in-kind contributions. The government was informed that approval of the TA does not commit ADB to finance any ensuing project.

#### E. Subproject Implementation Arrangements

11. ADB through the Southeast Asia Department will administer the TRTA including evaluation and supervision of consultants. Activities will be coordinated with relevant agencies such as the Ministry of Home Affairs, the Ministry of Agriculture, the National Planning Agency (BAPPENAS) and the Ministry of Finance. The Directorate General of Water Resources will establish a technical working group to provide guidance. The TRTA consultants will organize and implement workshops, trainings and public consultations and provisions for those will be included in their contract as provisional sums.



**Table 2: Implementation Arrangements**

Aspects	Arrangements		
Indicative implementation period	March 2018– June 2019		
Executing agency	Directorate General of Water Resources, Ministry of Public Works and Housing		
Consultants	To be selected and engaged by ADB in accordance with the ADB Procurement Policy (2017, as amended from time to time)		
	ICS	57.50 person-months	\$633,840
Procurement	ADB will engage consulting firms and individual consultants and all TA financed Goods shall be procured in accordance with ADB Procurement Policy (2017, as amended from time to time) and the associated Project Administration Instructions/TA Staff Instructions.		
	Shopping <sup>a</sup>	1 contract	\$2,000
	Surveys	2 contracts	\$100,000
	Studies	2 contracts	\$100,000
Disbursement	The TA resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).		
Asset turnover upon TA completion	Assets purchased under the transaction TA will be handed over to the Ministry of Public Works and Housing.		

ADB = Asian Development Bank, ICS = individual consultant selection, TA = technical assistance.

<sup>a</sup> This includes printers and scanner.

Source: Asian Development Bank estimates.

12. **Consulting services.** Consultants will be recruited on an intermittent basis (over a period of 16 months). Expertise will range from technical, social and environment safeguards and fiduciary. The TRTA will require services of five international consultants (totaling 28.50 person-months) and four national consultants (totaling 29.00 person-months). The consultants will be engaged by ADB using the individual consultant selection. Consultant contracts will be input-based contracts. Workshops, surveys and studies will be organized at key stages of the TRTA. Equipment, training, workshops and surveys will be procured or organized by ADB or by the consultants in accordance with ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time).

13. **Financier requirements.** Regular progress reports will be submitted to the Department of Foreign Affairs and Trade as per agreement in the umbrella TAC 0013-INO: SIAP (footnote 10).

## F. Governance

14. The TRTA will support assessment of financial management capacity, procurement capacity, and risk assessment and management of the executing and implementing agencies. Based on the assessments, measures to address the capacity gaps and risks will be suggested in three separate documents that will form part of the loan documents.

**APPENDIX 1: COST ESTIMATES AND FINANCING PLAN**  
(\$'000)

Item	Amount
<b>Government of Australia<sup>a</sup></b>	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (28.5 person-months)	516.69
ii. National consultants (29 person-months)	117.15
b. Out-of-pocket expenditures	
i. International and local travel	51.65
ii. Reports and communications	4.15
2. Workshops, training, seminars, and conferences <sup>b,c</sup>	
a. Workshops	76.00
3. Equipment <sup>d</sup>	2.00
4. Studies and surveys	132.36
5. Contingencies	100.00
<b>Total</b>	<b>1,000.00</b>

Note: The TRTA is estimated to cost \$1.1 million of which contributions amounting to \$1.0 million financed on a grant basis by the Government of Australia and administered by ADB as a subproject of TAC 0013-INO: SIAP are presented in the table above. The Ministry of Public Works and Housing (MPWH) will provide counterpart support in the form of counterpart staff, office accommodation and supplies, furniture, equipment, utilities, internet connection, and other miscellaneous support. The value of MPWH's contribution is estimated to account for 9.1% of the total cost of the TRTA.

<sup>a</sup> Administered by the Asian Development Bank.

<sup>b</sup> Includes rent of venue and other facilities, food and beverages (excluding alcoholic beverages), promotion and training materials, and other related costs. All travel to and from conference/event shall be arranged by the most economical direct route possible. Subsistence allowances payable to out-of-town event participants shall be adjusted if meals are provided as part of the accommodation booking or conference package.

<sup>c</sup> This includes travel costs of ADB staff when engaged as resource persons, as well as support services as per the Strategy, Policy and Review Department and Budget, Personnel and Management Systems Department memo dated 26 June 2013.

<sup>d</sup> This includes printers and scanner.

Source: Asian Development Bank estimates.

**LIST OF LINKED DOCUMENTS**

<http://www.adb.org/Documents/LinkedDocs/?id=46380-028-TARreport>

1. Terms of Reference for Consultants