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Proposed Loans for Additional Financing and Technical Assistance Grant Jaffna and Kilinochchi Water Supply Project (Sri Lanka)

1. The Report and Recommendation of the President (RRP: SRI 37378-014) on the proposed loans for additional financing and technical assistance grant to Sri Lanka for the Jaffna and Kilinochchi Water Supply Project is circulated herewith.
2. This Report and Recommendation should be read with *Country Partnership Strategy: Sri Lanka, 2018–2022—Transition to Upper Middle-Income Country Status*, which was circulated to the Board on 26 July 2017 (DOC.Sec.M15-17).
3. In the absence of any request for discussion and in the absence of a sufficient number of abstentions or oppositions (which should be communicated to The Secretary by the close of business on 28 November 2017), the recommendation in paragraph 31 of the paper will be deemed to have been approved, to be so recorded in the minutes of a subsequent Board meeting. Any notified abstentions or oppositions will also be recorded in the minutes.

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Report and Recommendation of the President to the Board of Directors

Project Number: 37378-014
Loan Numbers: 2710-SRI and 2711-SRI
November 2017

Proposed Loans for Additional Financing and Technical Assistance Grant Democratic Socialist Republic of Sri Lanka: Jaffna and Kilinochchi Water Supply Project

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 1 October 2017)

Currency unit	–	Sri Lanka rupee/s (SLRe/SLRs)
SLRe1.00	–	\$0.00654
\$1.00	–	SLRs152.78

ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	Agence Française de Développement
DBO	–	design–build–operate
EIA	–	environmental impact assessment
EMP	–	environmental management plan
m ³	–	cubic meter
NWSDB	–	National Water Supply and Drainage Board
O&M	–	operation and maintenance
PAM	–	project administration manual
PMCIU	–	project management, coordination, and implementation unit
SDR	–	special drawing right
SPS	–	Safeguard Policy Statement
TA	–	technical assistance

NOTE

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

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PROJECT AT A GLANCE

1. Basic Data		Project Number: 37378-014	
Project Name	Jaffna and Kilinochchi Water Supply Project-Additonal Financing	Department /Division	SARD/SAUW
Country Borrower	Sri Lanka Democratic Socialist Republic of Sri Lanka	Executing Agency	Ministry of City Planning and Water Supply
2. Sector	Subsector(s)	ADB Financing (\$ million)	
Water and other urban infrastructure and services	Urban water supply	120.00	
		Total	120.00
3. Strategic Agenda	Subcomponents	Climate Change Information	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Adaptation (\$ million)	70.00
Environmentally sustainable growth (ESG)	Urban environmental improvement	Climate Change impact on the Project	Medium
4. Drivers of Change	Components	Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Institutional development	Effective gender mainstreaming (EGM)	
Knowledge solutions (KNS)	Application and use of new knowledge solutions in key operational areas		
Partnerships (PAR)	Implementation Private Sector		
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Rural	Low
Household Targeting	No	Urban	High
SDG Targeting	Yes		
SDG Goals	SDG6, SDG11		
6. Risk Categorization:	Complex		
7. Safeguard Categorization	Environment: A Involuntary Resettlement: B Indigenous Peoples: C		
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		120.50	
Sovereign Project (Regular Loan): Ordinary capital resources		95.00	
Sovereign Project (Concessional Loan): Ordinary capital resources		25.00	
Sovereign Transaction technical assistance: Technical Assistance Special Fund		0.50	
Cofinancing		0.00	
None		0.00	
Counterpart		33.00	
Government		33.00	
Total		153.50	
9. Effective Development Cooperation			
Use of country procurement systems		Yes	
Use of country public financial management systems		Yes	

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on the proposed loans to the Democratic Socialist Republic of Sri Lanka for the additional financing of the Jaffna and Kilinochchi Water Supply Project.¹ The report also describes proposed technical assistance (TA) for Capacity Development of Institutions of Jaffna Water Sector, and if the Board approves the proposed loans, I, acting under the authority delegated to me by the Board, approve the TA.

2. The project will improve drinking water supply in the urban areas of the Jaffna Peninsula, one of the less-developed regions of Sri Lanka. The additional financing is required to fund the changes in project scope that includes design build and operation (DBO) of a desalination plant; and meet the cost overruns of the current project,² whose performance is on track but requires restructuring to deliver the project outcomes.

II. THE PROJECT

A. Rationale

3. **Asian Development Bank support for Jaffna.** The Jaffna Peninsula, which lies in the northernmost part of Sri Lanka, was one of the worst-affected areas from years of conflict in the country, and is an economically lagging region.³ Since the civil war ended in 2009, Jaffna has been growing with the population expected to increase from 610,000 in 2016 to 900,000 by 2030.⁴ The demand for basic urban services, including drinking water, is increasing. The Asian Development Bank (ADB) approved the Jaffna and Kilinochchi Water Supply and Sanitation Project in November 2010 (current project).⁵ It was the first initiative by a development partner to support Jaffna's post-conflict development and reconciliation efforts. The current project aimed to treat, transport, and distribute 27,000 cubic meters (m³) of drinking water per day from Iranamadu Tank (approximately 30 kilometers away from Jaffna town) to water-scarce Jaffna and nearby towns. It also aimed to improve sanitation infrastructure in Jaffna town and water resource management in the peninsula.

4. **Performance of current project and its importance.** The current project suffered significant start-up setbacks resulting in implementation delays and cost overruns. The current project was hampered by local farmers' objection to using Iranamadu Tank's water for drinking water purposes, despite the consensus reached on water sharing at the loan appraisal stage. The remote project location in a post-conflict area also aggravated the challenges due to weak implementation capacities. By 2017, the ADB-financed overhead water tanks and the 51-kilometer water pipes had been constructed under the current project. Considering the ongoing

¹ The revised design and monitoring framework is in Appendix 1.

² Asian Development Bank (ADB). 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Jaffna and Kilinochchi Water Supply and Sanitation Project*. Manila (Loans 2710/2711-SRI). The project title was revised to Jaffna and Kilinochchi Water Supply Project in the project concept paper for additional financing, which ADB approved on 11 March 2016.

³ The region has high income poverty and income inequality. Poverty incidence in the Northern Province is estimated to be 10.9%, compared with 6.7% for the country as a whole. Government of Sri Lanka, Department of Census and Statistics. 2015. *Household Income and Expenditure Survey 2012/13: Final Report*. Colombo.

⁴ Government of Sri Lanka, Department of Census and Statistics. *Jaffna District Statistical Hand Book 2016*. Colombo; and *Kilinochchi District Statistical Hand Book 2016*. Colombo.

⁵ The current project is financed by an ADB loan of \$90 million, including an Asian Development Fund loan of \$70 million equivalent (Loan 2711-SRI, now concessional loan from ADB's ordinary capital resources as of 1 January 2017), and ordinary capital resources of \$20 million (Loan 2710 – SRI), along with €35 million (approximately \$40 million) cofinancing from Agence Française de Développement (AFD), and was declared effective in May 2011.

and completed works under the current project, and the current project's critical importance to the rehabilitation and reconstruction program of the Northern Province, the benefits of restructuring the current project outweigh those of canceling it. The government is committed to the current project and has dedicated significant resources to improve project implementation, including identifying a new water supply source and meeting the cost overruns.⁶ As of 15 October 2017, the cumulative current project contract awards totaled \$62 million (75% of the ADB loan amounts), and disbursements totaled \$35.4 million (43% of ADB loan amounts). The project implementation including the capacity building is rated as on track, and safeguards compliance has been met.⁷

5. Desalination plant and other sources to meet Jaffna's drinking water needs.

Although the annual rainfall in Jaffna is around 1,200 millimeters, surface water sources are limited. The peninsula depends heavily on groundwater for drinking water and agriculture, the primary economic activity. However, the groundwater aquifer is at risk from over extraction, resulting in the intrusion of seawater.⁸ Neither groundwater nor local surface water can meet the immediate drinking water demand in Jaffna. After extensive consultations and review of various options, including environmental assessment, a feasibility study identified production of drinking water from seawater through a reverse osmosis desalination process as a necessary interim solution to meet the urgent drinking water needs of Jaffna.⁹ The project area is expected to experience increase in temperature and rainfall variability due to climate change, leading to higher risk of droughts and worsening of drinking water availability. The desalination plant will directly address water scarcity challenges caused by the climate change. Nevertheless, further efforts to use surface water are still needed to provide drinking water to the entire population of Jaffna, which will include reaching consensus on using Iranamadu Tank for both irrigation water and drinking water, an integrated water resource management approach, among others.

6. Restructuring of the current project. The current project needs restructuring primarily to accommodate the change of water source from Iranamadu Tank to a desalination plant and to strengthen the water supply component. The following changes are proposed: (i) inclusion of a desalination plant using a DBO contract; (ii) cancellation of a water treatment plant and bulk water transportation from Iranamadu Tank, originally cofinanced by the Agence Française de Développement (AFD); (iii) exclusion of the sewerage component;¹⁰ (iv) inclusion of the household water connections; and (v) inclusion of water resource management and outreach activities. Based on the revised cost estimates and the cancellation of the AFD cofinancing, the government has requested additional financing of \$120 million from ADB to meet the change in project scope and cost overruns.¹¹ The closing date of the current loan has been extended from 14 August 2017 to 31 December 2020 to complete the revised project scope through the current project and the proposed additional financing.¹²

⁶ Cost overruns of \$26.7 million were due to delay in the project implementation, and higher bid prices because of challenging working conditions in post-conflict areas.

⁷ Summary of Project Performance and the piggyback TA (accessible from the list of linked documents in Appendix 2).

⁸ This had resulted in high salinity of up to 3,000 milligrams per liter in some places.

⁹ ADB. 2014. *Technical Assistance to Sri Lanka for Rapid Assessment of Sea Water Desalination and Other Alternative Water Sources for Jaffna Water Supply*. Manila.

¹⁰ The government is in discussions with AFD to fund the sewage management through a separate arrangement. The TA under the additional financing will support development of sanitation plans, including septage management.

¹¹ The additional financing was included in ADB. 2017. *Country Operations Business Plan: Sri Lanka, 2017–2019*. Manila.

¹² The current project is financing the water supply networks and the additional financing will finance the desalination plant. Construction needs to be coordinated, especially pipe laying that needs to be done closer to desalination plant completion, to ensure integrity of the pipes.

7. **Additional financing and eligibility criteria.** Taking into account the proposed restructuring, the project meets the eligibility criteria for additional financing.¹³ The overall project (i) remains technically feasible, economically viable, and financially sound; (ii) is accorded high priority by the government; (iii) is consistent with the current project's development objectives; and (iv) is consistent with the country partnership strategy, which prioritizes inclusive and sustainable economic growth, including providing drinking water in the post-conflict area.¹⁴

8. **The project's value addition.** Through the development and efficient management of a desalination plant, the project will preserve groundwater and enhance drinking water quality, and provide access to piped water supply for 300,000 people. It will benefit 12,000 households below the poverty line, and empower women by eliminating drudgery associated with fetching water from distant sources. By increasing access to good-quality pressurized water, the project will help improve local economic development and the environment in the post-conflict area. The project will introduce and implement a DBO contract covering (i) the design and construction of a high-quality desalination plant, and (ii) efficient operation and maintenance (O&M) of the assets through a performance-based contract of 7 years. The DBO contract will give adequate time for the National Water Supply and Drainage Board (NWSDB) to build its capacity to operate assets before the end of the O&M contract period. The project will introduce high technology and climate resilience through the desalination plant, which will employ complex reverse osmosis and advanced computer control systems.

B. Impact and Outcome

9. The impact will be improved health and human development in urban areas of the Jaffna Peninsula aligned with the government strategy.¹⁵ The outcome will be improved access to safe drinking water in targeted urban areas of the Jaffna Peninsula. The original and aggregate targets are in the revised design and monitoring framework (Appendix 1).

C. Outputs

10. The project supports the restructuring of the current project. It will (i) finance the cost overrun under the current project, and (ii) support the additional components of the desalination plant and related works under output 1 and water resource management plan under output 3. The overall project has the following three outputs (paras. 11–13).

11. **Output 1: Water supply infrastructure and service in the Jaffna Peninsula improved.** The overall project will (i) install a desalination plant of 24,000 m³ per day capacity, (ii) install 700 kilometers of water mains and distribution pipes, (iii) install 60,000 metered new water connections, and (iv) operate and maintain the desalination plant for 5 years. The desalination plant will be designed, constructed, operated, and maintained by a single contractor using a performance-based DBO contract. The O&M period under the DBO contract will be 7 years, of which 5 years will be covered by the project and the remaining 2 years will be financed by the government. The overall project will support the monitoring and independent review of the desalination plant services and the DBO contractor performance. The DBO contractor will ensure (i) proper bulk water metering, (ii) adequate water pressure at the turning point, and (iii) compliance of supplied water with national quality standards for drinking water. The NWSDB will manage the water transfer and distribution systems and ensure timely payments of fixed and

¹³ ADB. 2010. *Additional Financing: Enhancing Development Effectiveness*. Manila.

¹⁴ ADB. 2017. *Interim Country Partnership Strategy: Sri Lanka, 2018–2022*. Manila.

¹⁵ Government of Sri Lanka. 2006. *Vision for a New Sri Lanka*. Colombo.

performance-linked variable fees to the DBO contractor. The DBO contractor will train the NWSDB staff in operating the assets during the O&M period and will turn over the desalination plant to the NWSDB at the end of 7 years. The NWSDB has committed to the continuity of O&M of the desalination plant beyond the contract period.

12. **Output 2: Headworks at Iranamadu Tank improved.** The overall project will support enhancement and strengthening of headworks at Iranamadu Tank to increase its water storage capacity from 131.4 million m³ to 148.0 million m³. Iranamadu Tank remains an important drinking water resource for Jaffna, especially when the demand for drinking water is expected to increase significantly in the future. This output is expected to be completed by the end of 2017 under the current project by the Ministry of Local Government and Provincial Council as the executing agency; it will not be covered by the additional financing.

13. **Output 3: Water resource management systems and capacity strengthened.** The overall project will support long-term water resource management and capacity building of the NWSDB. This output will include (i) developing a detailed action plan for groundwater and surface water monitoring and rehabilitation in Jaffna; (ii) conducting awareness campaigns on water conservation and water sharing from Iranamadu Tank; (iii) completing a water resources management plan for Iranamadu Tank; and (iv) undertaking community development in Vadamarachchi village, where the desalination plant will be located. Capacity development will also be carried out under the attached transaction TA as described in para. 18.

D. Investment and Financing Plans

14. The overall project is estimated to cost \$266 million, with additional financing of \$120 million from ADB (Table 1). Detailed cost estimates by expenditure category and detailed cost estimates by financier are included in the project administration manual (PAM).¹⁶

Table 1: Project Investment Plan (\$ million)

Item	Current Amount ^a	Additional Financing ^b	Total
A. Base Cost^c			
1. Water supply infrastructure and service in the Jaffna Peninsula improved	75.1	121.6	196.7
2. Headworks at Iranamadu Tank improved	14.5	0.0	14.5
3. Water management systems and capacity strengthened	11.8	1.5	13.3
Subtotal (A)	101.4	123.1	224.5
B. Contingencies^d	6.3	13.7	20.0
C. Financing Charges During Implementation^e	5.3	16.2	21.5
Total (A+B+C)	113.0	153.0	266.0

^a Refers to the net amount of the current project without the AFD cofinancing of €35 million and related taxes and duties. Includes taxes and duties of \$19.5 million financed from government resources.

^b Includes taxes and duties of \$16.8 million to be financed from government resources by cash contribution.

^c In mid-2017 prices; exchange rate of \$1 = SLR152 is used.

^d Physical contingencies computed at 5.0% for civil works and equipment. Price contingencies computed at 1.4%–1.5% on foreign exchange costs and 5.5%–6.7% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Includes interest and commitment charges. Interest during construction for a regular ordinary capital resources (OCR) loan has been computed at the 5-year US dollar fixed-swap rate (1.81%) plus a spread of 0.5% and a maturity premium of 0.2%. Commitment charges for a regular OCR loan are 0.15% per year to be charged on the undisbursed loan amount. Interest during construction for a concessional OCR loan is computed at 2.0% per annum.

Source: Asian Development Bank estimates.

¹⁶ Project Administration Manual (accessible from the list of linked documents in Appendix 2).

15. The government has requested (i) a regular loan of \$95 million, and (ii) a concessional loan of \$25 million, both from ADB's ordinary capital resources, to help finance the project. The regular loan will have a 30-year term, including a grace period of 7 years; an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a commitment charge of 0.15% per year; and such other terms and conditions set forth in the loan agreement. Based on the straight-line method, the average maturity is 18.75 years, and the maturity premium payable to ADB is 0.20% per year.¹⁷ The concessional loan will have a 25-year term, including a grace period of 5 years; an interest rate of 2.0% per year during the grace period and thereafter; and such other terms and conditions set forth in the loan agreement. The interest and other charges during implementation under the loans will be capitalized.

16. The financing plan is in Table 2. ADB will finance the expenditures in relation to civil works; equipment; consulting services; and project management, coordination, and implementation unit (PMCIU) costs. The government will contribute \$33 million to cover (i) taxes and duties; (ii) land acquisition and resettlement cost; and (iii) a portion of civil works, equipment, and contingencies. The government has assured that it will meet (i) any financing shortfall to ensure that project outputs are fully implemented, and (ii) the costs for O&M of the desalination plant after the first 5 years of operation.

Table 2: Financing Plan

Source	Current ^a		Additional Financing		Total	
	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
Asian Development Bank						
OCR (regular loan)	20.0	17.7	95.0	62.1	115.0	43.2
OCR (concessional loan)	70.0	61.9	25.0	16.3	95.0	35.7
Government	23.0	20.4	33.0	21.6	56.0	21.1
Total	113.0	100.0	153.0	100.0	266.0	100.0

OCR = ordinary capital resources.

^a Refers to the net amount of the current project without the AFD cofinancing of €35 million and related taxes and duties.

Source: Asian Development Bank estimates.

E. Implementation Arrangements

17. The Ministry of City Planning and Water Supply is the executing agency for the project. The NWSDB through the PMCIU is the project management, and implementing agency. All procurement of goods and civil works will follow ADB's Procurement Guidelines (2015, as amended from time to time), and consulting services will be engaged following the Use of Consultants (2013, as amended from time to time). The O&M period of the desalination plant financed by ADB (5 out of 7 years) is expected to be completed by 31 December 2025, while all other project outputs are expected to be completed by 31 December 2022. The implementation arrangements are summarized in Table 3 and described in detail in the PAM (footnote 16).

Table 3: Implementation Arrangements

Aspects	Arrangements
Implementation period	January 2018–December 2025
Estimated completion date	31 December 2025
Estimated loan closing date	30 June 2026 (OCR regular loan) 30 June 2023 (OCR concessional loan)

¹⁷ The maturity-based premium of 0.2% is based on the loan terms and the government's choice of repayment option and dates.

Aspects	Arrangements		
Management			
(i) Oversight body	A national steering committee, chaired by the Secretary of MCPWS and the following as members: Senior members of NWSDB, Ministry of Finance, Ministry of National Policies and Economic Affairs, and National Planning Department		
(ii) Executing agency	MCPWS		
(iii) Implementing agency	NWSDB		
Procurement	International competitive bidding	2 contracts	\$88.0 million
	National competitive bidding	2 contracts	\$5.5 million
Consulting services	Desalination component consultancy (QCBS, 90:10)	482 person-months	\$2.0 million
	Environment survey consultancy (CQS)	90 person-months	\$0.3 million
	Individual consultant selection	42 person-months	\$1.0 million
Retroactive financing and/or advance contracting	Advance contracting will be used for procurement of works and recruitment of consultants. Retroactive financing of up to 20% of the loan amounts is allowed for expenditures for works, goods, and services incurred prior to the loan effectiveness but no earlier than 12 months before the loan signing		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook (2017, as amended from time to time) and detailed arrangements agreed upon between the government and ADB		

ADB = Asian Development Bank, CQS = consultants' qualifications selection, MCPWS = Ministry of City Planning and Water Supply, NWSDB = National Water Supply and Drainage Board, OCR = ordinary capital resources, QCBS = quality- and cost-based selection.

Source: ADB.

III. TECHNICAL ASSISTANCE

18. The proposed transaction TA will support capacity development of institutions of Jaffna's water sector.¹⁸ It will have three outputs: (i) capacity of the NWSDB built to monitor and manage the DBO contract and the desalination plant during the contract period and after contract completion; (ii) community awareness raised on water conservation, environmental protection, and hygiene practices in Jaffna and Kilinochchi; and (iii) septage management improved in Jaffna through implementation of sanitation safety plans. The transaction TA is estimated to cost \$600,000, of which \$500,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF 6). The government will provide counterpart staff, office space, workshop venues, and other in-kind contributions. The Ministry of City Planning and Water Supply will be the executing agency for the TA, which will be implemented over 3 years.

IV. DUE DILIGENCE

A. Technical

19. Initial technical due diligence included a comprehensive review of the desalination component's pre-feasibility and environmental studies, surveys and site investigations. Based on that, among several alternatives, the desalination plant's location in Thalayadi is based on the following factors: (i) ideal seabed and seawater conditions; (ii) lower and consistent salinity level in the ocean for seawater intake; (iii) limited human activities; (iv) limited adverse environmental, ecological, and social impacts; and (v) the clean water transfer mains are aligned with the future water supply route. The seawater intake will be piped to the sea due to the large plant capacity and to protect the groundwater aquifer. The reverse osmosis process was considered after a market survey revealed availability of the robust technology at a competitive price, which helps reduce the life cycle costs, achieve O&M cost savings, and maximize benefits. The bidding documents of the performance-based DBO contract were carefully developed to attract qualified

¹⁸ Attached Technical Assistance (accessible from the list of linked documents in Appendix 2).

international bidders.¹⁹ During project implementation, the NWSDB will recruit project management consultants to monitor the construction and services undertaken by the DBO contractor. The NWSDB will recruit an independent performance monitoring and review entity to review the contractor's performance and its employer obligations over the O&M period. With government support, the NWSDB will recover O&M costs through tariffs to ensure sustainable service delivery and optimal maintenance of the assets.

B. Economic and Financial

20. **Economic analysis.** Economic analysis was conducted for the overall project.²⁰ The economic rationale for the government's intervention is sound, as the overall project aims to provide stronger and more sustainable basic urban services in the Jaffna Peninsula, one of the areas worst affected by the civil war. The economic internal rate of return is estimated at 12.0%, indicating sufficient economic return compared to the economic opportunity cost of capital of 9.0%. The results of the sensitivity analysis are satisfactory, except in cases where benefits are decreased by 20% and all downside risks are combined, i.e., (i) a capital cost overrun of 20%, (ii) an overrun in O&M costs of 20%, and (iii) a 1-year delay in the start of operation.

21. **Financial analysis.** Financial analysis was undertaken to assess the financial viability of the overall project.²¹ The financial internal rate of return is estimated at 2.9%, higher than the weighted average cost of capital of 2.7%. The results of the sensitivity analysis indicate that the overall project is sensitive to changes in parameters such as increase in capital costs, reduction in revenue, and a 1-year delay in implementation. The National Drinking Water Policy, 2002 states that the water tariff should be adjusted regularly to cover the capital and O&M costs.²² Financial analysis indicated that the NWSDB would have sufficient income to cover its costs through implementation of this policy. However, water tariff adjustment is a sensitive issue and may not always be implemented in time, which could lead to a revenue deficit for the NWSDB. In such an eventuality, the government would take actions to ensure that the NWSDB remains financially sustainable through a combination of partial tariff adjustments and budget support.²³ ADB will provide continued policy advice and capacity development support to facilitate the NWSDB's financial sustainability.

C. Governance

22. **Governance and financial management.** The NWSDB was established in 1975 as a statutory entity and has been functioning under the supervision of the Ministry of City Planning and Water Supply. NWSDB's mandate is to develop, operate, and control an efficient, coordinated water supply system and to distribute water for public, domestic, and industrial purposes. During the project implementation, Jaffna Municipal Council and the Ministry of Local Government and Provincial Council will be consulted. An assessment concluded the financial management risk is moderate with deficiencies in the fragmented accounting system and a need to strengthen the

¹⁹ Desalination Plant and DBO Package (accessible from the list of linked documents in Appendix 2).

²⁰ Economic Analysis (accessible from the list of linked documents in Appendix 2).

²¹ Financial Analysis (accessible from the list of linked documents in Appendix 2).

²² Government of Sri Lanka, NWSDB. 2002. *National Drinking Water Policy*. http://waterboard.lk/web/images/contents/organization/policies/national_drinking_water_policy.pdf.

²³ The NWSDB implements a progressive water tariff policy, which means uniform tariffs on a nationwide basis. This will allow the project capital and O&M costs to be spread across all customers. To ensure the NWSDB's financial sustainability, the government has taken the following steps: (i) waived the NWSDB's loans from the government in 2014; (ii) re-lent the additional financing loan to the NWSDB, with the loan portion being 15% and a grant covering the remaining amount; (iii) will issue approval allowing the NWSDB to increase water tariff by 35% in 2017; and (iv) will establish an independent regulator who will decide water tariffs.

number of auditing staff in the NWSDB.²⁴ NWSDB is familiarizing itself with ADB's disbursement procedures and gaining knowledge through prior and ongoing experience in implementing ADB projects. The risk mitigation measures include (i) strengthening the NWSDB's internal audit division to conduct timely audits by recruiting qualified staff to fill the existing vacancies; (ii) continuing policy dialogue with the government for approval of regular tariff adjustment and establishment of an independent regulator for water tariffs; (iii) extending training and capacity building support for the accounting staff of the NWSDB; and (iv) updating and improving the accounting system. The project will support the strengthening of the financial management capacity of the NWSDB.

23. **Procurement.** The PMCIU has experience in procurement in accordance with ADB requirements and has a satisfactory track record. Transparency in procurement will be ensured with help of a website to disclose project information and thereby reduce corruption risk and improve governance. ADB will continue to provide consultants for technical inputs to assist the NWSDB. The government established a grievance redress mechanism to address any procurement issues.

24. **Anticorruption.** ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government. The specific policy requirements and supplementary measures are described in the PAM (footnote 16).

D. Poverty and Social

25. The project is classified as effective gender mainstreaming. While Sri Lanka has a good track record in gender equality, many women suffer from poor water supply, sanitation, and other urban services, particularly in post-conflict areas. Limited access to safe drinking water requires family members, primarily women and girls, to spend considerable time and effort for fetching water. The current project has made satisfactory progress on several indicators of the gender action plan.²⁵ The additional financing will support the current project in providing safe drinking water to 300,000 people (about 50% of whom are women). The gender action plan has been updated to ensure that the inclusive and participatory approach will be followed to address the needs of women and socially marginalized groups.²⁶ The additional financing will cover costs for implementation and monitoring of the strengthened gender action plan.

E. Safeguards

26. **Social safeguards.** The project is classified as category B for involuntary resettlement. It does not involve any land acquisition, physical or economic displacement, and/or loss of assets for private individuals. All works will be undertaken on public lands or existing rights-of-way.²⁷ The project will not have any significant impacts on the fishing activities in this area. The PMCIU will undertake continuous monitoring and in case of any unanticipated livelihood impacts (particularly on local fishers during the laying of the intake and outfall pipes in the sea for the desalination plant), the resettlement plan will provide remedial actions to be undertaken.²⁸ The project-

²⁴ Financial Management Assessment (accessible from the list of linked documents in Appendix 2).

²⁵ These relate to women's involvement during the consultation on the water supply design, construction, and O&M; gender sensitization for project staff and stakeholders; an inclusive water management committee at the district level; and collection of sex-disaggregated data.

²⁶ Gender Action Plan (accessible from the list of linked documents in Appendix 2).

²⁷ The NWSDB signed a memorandum of understanding with the Thalayadi Fishermen's Cooperative Society and the Thalayadi Rural Development Society agreeing on the project location.

²⁸ Resettlement Plan (accessible from the list of linked documents in Appendix 2).

impacted area in the sea (where intake and outfall pipes will be laid) is only used by fishers as a transit passage with no fishing operations. The environmental management plan (EMP) contains provisions to ensure the contractor provides requisite clear passage for fishing boats during the pipe laying in the sea. The PMCIU conducted 31 public consultations with stakeholders, including fishing communities in the project area. More consultations are planned as per the community action and participation plan,²⁹ which will be overseen by the PMCIU's sociologist. Resources have been allocated from the current project to improve infrastructure and living conditions of the local fishers, including livelihood development, water supply, and toilets for the poor, as well as the construction of local roads. The PMCIU has dedicated staff for monitoring social and resettlement issues, and will submit social safeguards monitoring reports to ADB for review and disclosure on a semiannual basis.

27. **Environmental safeguards.** The project is classified as category A for environment because it involves construction and operation of a large desalination plant at a coastal site. A full environmental impact assessment (EIA) including an EMP was prepared and disclosed on ADB's website on 17 July 2017.³⁰ Mitigation measures are proposed in the EMP to minimize habitat and species disturbance during construction and operation of the desalination plant and associated facilities. Implementation of a biodiversity management plan in the EMP will ensure no net loss of biodiversity. Public consultations were conducted with local communities, government authorities, and nongovernment organizations, and their feedback was considered in the project design. Environmental clearance from the Central Environment Authority (CEA) was obtained and provisions in the clearance were incorporated in the EMP and environmental monitoring program. Public concerns were identified in the EIA, and mitigation measures were incorporated into the EMP. A grievance redress mechanism was established, and the project will ensure that the members of the grievance redress committee, the PMCIU, and contractors are provided with trainings to address project-related grievances. The PMCIU has dedicated staff for monitoring environmental issues and implementing the EMP. The PMCIU will retain independent advisory experts to monitor the implementation of the project's EMP in compliance with ADB's Safeguard Policy Statement (2009) (SPS) and the CEA policy.

28. The NWSDB has implemented several ADB projects and has adequate institutional capacity and experience to manage safeguard risks. The EMP will be incorporated into civil works contracts, giving contractors the primary responsibility for implementation. The NWSDB will provide environmental monitoring reports to ADB quarterly during construction works and semiannually during operation. A corrective action plan will be prepared and implemented for any noncompliance issues. The contractors and NWSDB will adhere to the SPS and national environmental regulations. In the event of any unanticipated environmental impacts during project implementation, the NWSDB will address them by updating the EIA and revising the EMP, which will be disclosed on the ADB website.

F. Risks and Mitigating Measures

29. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.³¹ Intended benefits are expected to outweigh costs.

²⁹ The community action and participation plan is included in the PAM (footnote 16).

³⁰ Environmental Impact Assessment Report (accessible from the list of linked documents in Appendix 2).

³¹ Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Lack of sustained support from fishing communities for the desalination plant will cause implementation delays and cost overruns	Public consultations have been held. The project design addressed concerns raised by the stakeholders through specific design requirements in the desalination plant and livelihood improvements for the local fishing communities
Inadequate cost recovery and financial sustainability because of low water tariff	Continuing policy dialogue will be held with the government for approval of regular tariff adjustments and establishment of an independent regulator of water services
Inadequate management of environmental issues will lead to incompleteness of the desalination plant	The bidding documents have provided detailed environmental studies to help the contractor manage the risks. During the implementation stage, careful environmental monitoring and supervision will be carried out by an independent third-party
Desalination plant is not operated properly during the post-construction period	Desalination plant implementation will be undertaken through a design–build–operate contract. The contractor's remuneration is linked to performance, with built-in incentives for nonrevenue water reduction through effective network management. Sufficient operation and maintenance funding is included in the project cost

Source: Asian Development Bank.

V. ASSURANCES

30. The government and the NWSDB have assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM and loan documents. The government and the NWSDB have agreed with ADB on certain covenants for the project, which are set forth in the draft loan and project agreements.

VI. RECOMMENDATION

31. I am satisfied that the proposed loans would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve:

- (i) the loan of \$95,000,000 to the Democratic Socialist Republic of Sri Lanka for the additional financing of the Jaffna and Kilinochchi Water Supply Project, from ADB's ordinary capital resources, in regular terms, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 30 years, including a grace period of 7 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board; and
- (ii) the loan of \$25,000,000 to the Democratic Socialist Republic of Sri Lanka for the additional financing of the Jaffna and Kilinochchi Water Supply Project, from ADB's ordinary capital resources, in concessional terms, with an interest charge at the rate of 2% per year during the grace period and thereafter; for a term of 25 years, including a grace period of 5 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

Takehiko Nakao
President

7 November 2017

REVISED DESIGN AND MONITORING FRAMEWORK

Impacts the Project is Aligned with Current project Health and human development in urban areas of Jaffna Peninsula improved (Vision for a New Sri Lanka) ^a Overall project Unchanged			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Current project Improved water supply and sanitation infrastructure for residents and returning internally displaced persons in targeted urban areas, and protection and management of Jaffna Peninsula's water resources. Overall project Access to safe drinking water in targeted urban areas of the Jaffna Peninsula improved.	Current project By 2017 a. Residents and returning internally displaced persons lacking access to safe drinking water and sanitation in target areas reduced by 50% (baseline: 2010). b. Institutional framework, skills, and awareness for water protection and management built. c. Access ratio to urban services and poverty ratio regularly monitored, with sex-disaggregated data. Overall project By 2025 a. 300,000 people, including 20% below poverty line and 50% female, provided with continuous standard water service (2017 baseline: 18,000 people). b. 90% of the water quality tests meet the country standards (2017 baseline: 0%).	Statistical data such as provincial and local government and agency annual reports; NWSDB annual report; government reports; and Sri Lanka Millennium Development Goal country report. a–b. Statistical data such as provincial and NWSDB reports.	National, provincial, and local governments do not undertake actions to improve service delivery. Lack of sustained support from local fishing communities on the desalination plant will cause implementation delays and cost overruns.
Outputs Current project 1. Improved water supply infrastructure	Current project By 2017 1a. Construction of one water treatment plant and production of 35,000 m ³ per day potable water. 1b. Installation of 584 km of water mains and supply pipes. 1c. 60,000 new water connections. 1d. At least 33% representation of women in committees established for community water supply and sanitation programs.		Water demand grows at a slower or more rapid pace than planned. Lack of qualified contractors. Lack of funds for O&M.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Overall project 1. Water supply infrastructure and service in the Jaffna Peninsula improved.	Overall project By 2022 1a. Desalination plant of 24,000 m ³ per day using DBO model installed (2017 baseline: not applicable). 1b. 700 km of water mains and distribution pipes installed (2017 baseline: 51 km). 1c. 60,000 metered new water connections installed, with at least 15% of the households headed by women (2017 baseline: 2,400 households). 1d. O&M part of the desalination plant contract implemented for 5 years (2017 baseline: 0).	1a–d. Quarterly project progress reports and NWSDB annual report.	Inadequate cost recovery and financial sustainability due to the low tariff.
Current project 2. Improved sanitation infrastructure ^b	Current project By 2017 2a. Construction of one sewage treatment plant of 12,500 m ³ per day capacity. 2b. Installation of 331 km sewer mains and networks. 2c. 20,000 households connected to the sewer network. 2d. Households with access to properly maintained on-site sanitation. 2e. Pro-poor sanitation infrastructure is built (target: 35% are war widows and households headed by women). 2f. Communal sanitary facilities built for both men and women.		
Overall project 2. Headworks at Iranamadu Tank improved.	Overall project By 2017 2a. Capacity of Iranamadu Tank increased to 148.0 million m ³ (2010 baseline: 131.4 million m ³).	2a. Quarterly project progress reports.	
Current project 3. Strengthened water resource protection and management	Current Project By 2017 3a. Training of NWSDB and WRB staff for capacity building (target: 50% women participation). 3b. Monitoring and data systems for groundwater institutionalized. 3c. Monitored bacteriological groundwater pollution reduced by 25% in Jaffna town.	For all indicators 3a–h. Quarterly project progress reports and PPMS.	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Overall project 3. Water resource management systems and capacity strengthened.	3d. Water conservation, environmental, and hygiene awareness-raising activities conducted. 3e. Public communication documents published and disseminated to target audience. Overall project By 2021 3a. Detailed plan and actions for groundwater and surface water monitoring and rehabilitation in Jaffna developed (2010 baseline: 0). 3b. Monitoring systems for groundwater in the Jaffna Peninsula set up and quarterly report produced (2017 baseline: 0). 3c. At least 10,000 farming households have increased awareness of water sharing from Iranamadu Tank (2017 baseline: 0). 3d. Water resource management plan for Iranamadu Tank completed (2010 baseline: 0). 3e. 7.5 km of roads in Vadamarachchi fisherman's village improved (2017 baseline: 0) 3f. At least 50 NWSDB staff report improved skills in managing and monitoring DBO performance-based contract (at least 30% of whom are women) (2010 baseline: 0). 3g. At least 60,000 households, of which 20% are below the poverty line and 15% are headed by women, have increased awareness of water conservation, environmental protection, and hygiene (2017 baseline: 0). 3h. Sanitation safety plans developed for Jaffna (2017 baseline: 0).	3a–h. Quarterly project progress reports and surveys.	
Current project 4. Project management and implementation system is operational Overall project Combined with output 3	Current project 4a. Capacity building training of NWSDB Overall project Combined with output 3		

Key Activities with Milestones		
1. Water supply infrastructure and service in the Jaffna Peninsula improved 1.1. Complete detailed designs for water towers and distribution pipes (completed) 1.2. Complete bidding of DBO for 24,000 m³ per day reverse osmosis desalination plant (Q4 2017, changed) 1.3. Complete construction of the water towers and distribution pipes (Q2 2020, changed) 1.4. Complete construction and commissioning of the desalination plant (Q4 2020, added) 1.5. Install metered connections for water supply (Q3 2021, changed) 1.6. Contractor successfully continues to operate and maintain desalination plant (Q3 2025, added)		
2. Headworks at Iranamadu Tank improved 2.1. Complete the detailed design of the works (completed) 2.2. Complete the dam construction (completed)		
3. Water resource management systems and capacity strengthened 3.1 Develop water resource management plan including detailed actions for ground and surface water monitoring and rehabilitation (Q4 2020, added) 3.2. Conduct water sharing awareness-raising activities for farmers, with women comprising at least 30% of the participants (Q4 2022, added) 3.3. Complete detailed design and construction of infrastructure in Vadamarachchi village (Q1 2019, added) 3.4. Establish gender budget cell in the NWSDB (Q3 2018, changed) 3.5. Conduct water conservation, environmental, and hygiene awareness-raising activities, including 20% below poverty line households and 15% households headed by women (Q4 2022, changed) 3.6. Conduct workshops and trainings on managing and monitoring DBO performance-based contract, including at least 30% women participants (Q4 2022, added) 3.7. Complete water resource management plan for Iranamadu Tank (Q4 2022, added) 3.8. Complete and implement detailed sanitation safety plan in urban areas of Jaffna (Q4 2022, added).		
Inputs		
ADB		
Ordinary capital resources (regular loan)	Ordinary capital resources (concessional loan)	Technical assistance grant
\$20 million (current)	\$70 million (current)	\$0.6 million (current)
\$95 million (additional)	\$25 million (additional)	\$0.5 million (additional)
\$115 million (overall)	\$95 million (overall)	\$1.1 million (overall)
Government		
\$23 million (current)		
\$33 million (additional)		
\$56 million (overall)		
Assumptions for Partner Financing		
Not applicable		

ADB = Asian Development Bank, DBO = design–build–operate, km = kilometer, m³ = cubic meter, NWSDB = National Water Supply and Drainage Board, O&M = operation and maintenance, PPMS = project performance monitoring system, Q = quarter, WRB = Water Resources Board.

^a Government of Sri Lanka. 2006. *Vision for a New Sri Lanka*. Colombo.

^b The sewage management component that was to be cofinanced by the Agence Française de Développement has been canceled from ADB financing.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/RRPs/?id=37378-014-3>

1. Loan Agreements
2. Project Agreement
3. Sector Assessment (Summary): Water Supply and Other Urban Infrastructure and Services
4. Project Administration Manual
5. Summary of Project Performance
6. Contribution to the ADB Results Framework
7. Development Coordination
8. Attached Technical Assistance Report
9. Financial Analysis
10. Economic Analysis
11. Country Economic Indicators
12. Summary Poverty Reduction and Social Strategy
13. Gender Action Plan
14. Environmental Impact Assessment
15. Resettlement Plan
16. Risk Assessment and Risk Management Plan

Supplementary Documents

17. Financial Management Assessment
18. Project Climate Risk Assessment and Management Report
19. Desalination Plant and Design Build Operate Package
20. Performance Summary of Ongoing Technical Assistance