



## Project Design Advance

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# Republic of Kiribati: South Tarawa Water Supply Project

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Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 16 November 2017)

Currency unit	–	Australian dollar (A\$)
A\$1.00	=	\$1.318
\$1.00	=	A\$0.759

## ABBREVIATIONS

ADB	–	Asian Development Bank
MISE	–	Ministry of Infrastructure and Sustainable Energy
PDA	–	project design advance
PUB	–	Public Utilities Board
TA	–	technical assistance

## NOTE

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

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## I. THE PROPOSED PROJECT

1. The ensuing project will address factors resulting in the high incidence of waterborne disease in South Tarawa through the delivery and effective management of new and rehabilitated climate-resilient water supply assets and improved hygiene practices. South Tarawa, the capital of Kiribati, has a population of about 56,000. Diarrhea, dysentery, and other waterborne diseases, which contribute to Kiribati's high infant mortality rate, are consequences of overcrowding and inadequate water, sanitation, and hygiene. South Tarawa has a reticulated water supply system that covers about two-thirds of its population and is operated by the Public Utilities Board (PUB).<sup>1</sup> Water supplied by PUB is rationed to 2 hours out of every 48 hours because of insufficient supply and high physical losses from the distribution network. Without intervention, the gap between supply and demand will continue to widen based on projected population growth. Domestic customers have not paid for water since a government directive in 2013, and customers' willingness-to-pay has been impacted by poor service levels and will require significant community engagement and advocacy—in addition to improved service levels—to restore.

2. South Tarawa's highest point is 3 meters above sea level, making it extremely vulnerable to rising sea levels induced by climate change. Bonriki and Buota groundwater lenses are the only sizeable freshwater sources that are suitable for producing drinking water, and their sustainable yield is insufficient to meet demand.<sup>2</sup> The available yield from these lenses is vulnerable to drought and inundation events, both of which may be accentuated by climate change. Climate change may also contribute to an increased demand for freshwater. Alternative supplies such as household wells have been deemed unsafe because of groundwater contamination, while rainwater supplies cannot be relied upon during drought. Recent studies concluded that seawater reverse osmosis desalination presents a practical and affordable longer-term option for supplementing water supplies.<sup>3</sup> Desalination is also considered a climate-adaptive technology, given its capacity to improve resilience to water quality degradation and diversify existing water supplies independent of rainfall. The government has recently reasserted its interest in solar photovoltaic desalination to augment water supplies.

3. The ensuing project is aligned with the following impact: health of South Tarawa's population improved. Its outcome is increased access to safe water supplies. It will have three outputs: (i) water supply infrastructure is improved through the construction of desalination plants with solar power and new water supply network infrastructure; (ii) water supply infrastructure is effectively managed through private sector engagement in water supply services and improved capacity of key institutions in program management and nonrevenue water management; and (iii) hygiene practices among South Tarawa's population are improved through the implementation of a water, sanitation, and hygiene awareness program.

4. In October 2016, ADB approved technical assistance (TA) of \$950,000 to prepare the ensuing project.<sup>4</sup> The TA consulting firm was mobilized in May 2017 and is expected to complete

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<sup>1</sup> PUB is a state-owned enterprise responsible for delivering power generation, water supply, and sewerage services across South Tarawa.

<sup>2</sup> A lens is a layer of underground freshwater made up of rainwater that has infiltrated the soil of the atoll. The freshwater floats on top of a layer of saltwater directly beneath the island (Republic of Kiribati. Climate Change. <http://www.climate.gov.ki/effects/fresh-water-supply/>)

<sup>3</sup> ADB. 2012. *Tarawa Water and Sanitation Roadmap 2011–2030*. Consultant's report. Manila (TA 7359-KIR). A comprehensive desalination feasibility study (ADB. 2012. *South Tarawa Water Supply Options Assessment Desalination Feasibility Study*. Consultant's report. Manila) presented advanced preliminary design plans and detailed costs, and was endorsed through peer review.

<sup>4</sup> ADB. 2016. *Technical Assistance to the Republic of Kiribati for Preparing the South Tarawa Water Supply Project*. Manila (TA 9200-KIR).

all tasks by January 2018. The TA will (i) assist the Ministry of Infrastructure and Sustainable Energy (MISE) and PUB to plan, design, and prioritize investments to improve water supply services in South Tarawa; (ii) assess technical suitability; economic, financial, and social viability; capacity and institutional issues; environmental and social safeguards; and climate change resilience of the project; and (iii) identify and implement measures to strengthen the project implementation capacity of MISE and PUB. TA outputs include (i) concept designs for a desalination plant; (ii) concept designs for a solar photovoltaic system to offset the energy consumption of the desalination plant; (iii) concept designs for water distribution network infrastructure covering all of South Tarawa; and (iv) design of a water, sanitation, and hygiene awareness program.

5. The Government of Kiribati requested project design advance (PDA) financing in the form of a grant to support project preparation. The PDA of \$2.0 million is being financed from the Asian Development Fund (ADF) allocation of \$15.0 million for the project and is reflected in the 2018–2020 country operations business plan.<sup>5</sup> The total indicative project amount (PDA and ensuing grant) reflected in the business plan is \$50.0 million including financing from the World Bank and the Green Climate Fund, pending an application to the Green Climate Fund in 2018. ADB has approved the advance contracting of consulting services and the main contract to be financed by the PDA is expected to be awarded in January 2018.

## **II. ACTIVITIES TO BE FINANCED BY THE PROJECT DESIGN ADVANCE**

6. The PDA will finance the engagement of a consulting firm to undertake (i) surveys to facilitate detailed design of key assets;<sup>6</sup> (ii) detailed design of water supply network infrastructure; (iii) procurement support to the executing and implementing agencies, including preparation of bidding documents, bid evaluation, and contract award; and (iv) safeguard support and community engagement in preparation for the project. The firm is expected to mobilize before the TA is completed, and will continue until the award of contracts under the investment project. The PDA will facilitate a smooth transition from the TA to the investment project, minimize contracting delays, and speed up the initial disbursement under the ensuing financing. Separately but also under PDA financing, individual consultants will be hired to join the project management unit within MISE.

## **III. COST ESTIMATES AND FINANCING ARRANGEMENTS**

7. The PDA is estimated to cost \$2.0 million, which will be financed from the ADF grant allocation of \$15.0 million for the proposed project. The government will provide in-kind support with an estimated value of \$0.1 million, including counterpart staff and access to data and information. Any balance in PDA funds following the award of contracts will be reallocated to project funds under the ensuing financing.

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<sup>5</sup> ADB. 2017. *Country Operations Business Plan: 11 Small Pacific Island Countries, 2018–2020*. Manila.

<sup>6</sup> Key assets include the desalination plant, solar photovoltaic system, and water supply network.

**Table 1: Investment and Financing Plan for the Project Design Advance**  
(\$ million)

Item	Cost <sup>a</sup>	ADB	Government
<b>A. Base Cost</b>			
1. Surveys, detailed design, and safeguards <sup>b</sup>	0.93	0.89	0.04
2. Bidding and procurement support	0.68	0.65	0.03
3. Individual consultant support to the PMU	0.29	0.26	0.03
<b>Subtotal (A)</b>	<b>1.90</b>	<b>1.80</b>	<b>0.10</b>
<b>B. Contingencies<sup>c</sup></b>	<b>0.20</b>	<b>0.20</b>	<b>0.00</b>
<b>Total (A+B)</b>	<b>2.10</b>	<b>2.00</b>	<b>0.10</b>

ADB = Asian Development Bank, PMU = project management unit.

<sup>a</sup> In mid-2017 prices.

<sup>b</sup> Survey costs are provisional.

<sup>c</sup> Physical contingencies computed at 10% for consulting services. Price contingencies computed at 5% including provision for potential exchange rate fluctuation under the assumption of purchasing power parity exchange rate.

Source: Asian Development Bank.

#### IV. IMPLEMENTATION ARRANGEMENTS

8. The implementation arrangements are summarized in Table 2 and described in detail in the PDA project administration manual.

**Table 2: Implementation Arrangements for Project Design Advance**

Aspects	Arrangements									
PDA implementation period	January 2018–March 2019									
Estimated PDA completion date	March 2019									
<b>Management</b>										
(i) Oversight body	National Infrastructure Development Steering Committee									
(ii) Executing agency	Ministry of Finance and Economic Development									
(iii) Key implementing agency	Ministry of Infrastructure and Sustainable Energy									
(iv) Implementation unit	Project management unit within Ministry of Infrastructure and Sustainable Energy									
Consulting services <sup>a</sup>	<table border="1"> <tr> <td>Quality- and cost-based selection (output-based terms of reference)</td> <td>One consulting firm contract (45 person-months)</td> <td>\$1.54 million</td> </tr> <tr> <td>Individual consultant<sup>b</sup></td> <td>One international consultant (8 person-months)</td> <td>\$0.26 million</td> </tr> <tr> <td></td> <td>Two national consultants (13 person-months)</td> <td></td> </tr> </table>	Quality- and cost-based selection (output-based terms of reference)	One consulting firm contract (45 person-months)	\$1.54 million	Individual consultant <sup>b</sup>	One international consultant (8 person-months)	\$0.26 million		Two national consultants (13 person-months)	
Quality- and cost-based selection (output-based terms of reference)	One consulting firm contract (45 person-months)	\$1.54 million								
Individual consultant <sup>b</sup>	One international consultant (8 person-months)	\$0.26 million								
	Two national consultants (13 person-months)									
Advance contracting	Advance contracting is allowed by default following the policy paper Enhancing Operational Efficiency of the ADB, approved in November 2015 and effective 1 February 2016.									
Disbursement	Disbursements under the PDA will be made in accordance with ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time)									

ADB = Asian Development Bank, PDA = project design advance.

<sup>a</sup> The implementing agency will delegate the selection of consultants to ADB, which will use the quality- and cost-based method with a quality–cost ratio of 90:10. Consulting firms will be recruited in accordance with ADB Procurement Policy (2017, as amended from time to time) and the associated PAIs.

<sup>b</sup> International consultant (project manager) and two national consultants (deputy project manager/procurement specialist and project accountant). Positions to be funded by PDA and then by the project during implementation.

Source: Asian Development Bank.

9. The government and ADB will jointly select the consulting firm. ADB will use its consultant management system for the selection. ADB and the government will evaluate expressions of interest, prepare the shortlist, and evaluate technical proposals. When the selection is concluded, the consulting service contract will be signed between the government and the selected consultant.

## **V. SAFEGUARDS**

10. The PDA finances only consulting services for project preparatory work and project management and is categorized C for environment, involuntary resettlement, and indigenous peoples. Safeguard due diligence will be undertaken through the TA in 2017. The project is expected to be categorized B for environment and involuntary resettlement and C for indigenous peoples. Proposed water supply infrastructure is expected to be built mostly on government-reserved or government-owned land but some civil works may require private lands either through leasing or land acquisition. The project is not expected to have any indigenous peoples impacts. Since the PDA will be financing detailed engineering designs, safeguard documents will be updated upon completion of detailed designs. Pursuant to the Safeguard Policy Statement (2009), ADB funds may not be applied to activities described on the ADB Prohibited Investment Activities List (Appendix 5 of the Safeguard Policy Statement). A climate risk and vulnerability assessment will be carried out for the project and climate risks are being incorporated into concept designs through the TA.

## **VI. DECISION**

11. Management has approved the provision of a grant not exceeding \$2,000,000 to the Republic of Kiribati from ADB's Special Funds resources, in the form of a project design advance (PDA) for the South Tarawa Water Supply Project; and the President hereby reports this action to the Board.