



Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 16-Aug-2018 | Report No: PIDISDSC21345



BASIC INFORMATION

A. Basic Project Data

Country Kiribati	Project ID P162938	Parent Project ID (if any)	Project Name South Tarawa Water Supply Project (P162938)
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date Dec 03, 2018	Estimated Board Date Mar 12, 2019	Practice Area (Lead) Water
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance and Economic Development	Implementing Agency Ministry of Infrastructure and Sustainable Energy	

Proposed Development Objective(s)

The proposed PDO is to increase access and quality of water supply services, and to improve the operational performance of the water supply services provider in South Tarawa.

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	58.00
Total Financing	58.00
of which IBRD/IDA	15.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	15.00
IDA Grant	15.00

Non-World Bank Group Financing

Counterpart Funding	1.49
Borrower	1.49
Trust Funds	28.63



Green Climate Fund	28.63
Other Sources	15.00
Asian Development Bank	15.00

Environmental Assessment Category

B - Partial Assessment

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

Country Context

1. The Republic of Kiribati is one of the smallest, most remote and geographically dispersed countries in the world, which creates significant economic growth and service delivery challenges. The total population of Kiribati, estimated at 106,000 in 2015, is spread amongst 167 rural villages and one urban area in 21 islands and atolls across some three million km². The capital South Tarawa, the country's only urban center, spans a string of densely populated coral islets connected by several causeways. Its population is expected to grow from 58,000 (2016) to 96,000 (2040). According to the last available Household Income and Expenditure Survey (HIES) conducted in 2006, poverty is widespread in Kiribati. Basic needs poverty¹ was concentrated in South Tarawa, where the rate was about 24 percent.

2. In recent years, Kiribati's revenues have been boosted by strong earnings from fishing license fees, as well as aid flows, investment income on the sovereign wealth fund and remittances from seafarers. However, only around 20% of the country's population is formally employed in the cash economy, with 80% of the jobs provided by the public sector. Economic activity is dominated by subsistence agriculture and fisheries, the public sector, and a service economy underpinned by the public sector. South Tarawa provides opportunities for cash employment and consumption, as well as access to higher education and specialized social services that is not

¹ Defined in reference to the absolute minimum resources necessary for long-term physical well-being, usually in terms of consumption goods.



available elsewhere in Kiribati. This has made the district a magnet for internal migration from the outer islands. In 2012, it was estimated that half of South Tarawa's population was living in informal areas.

Sectoral and Institutional Context

3. Access to safely managed water supply services. Per recent data (WHO/UNICEF JMP, 2017), 90% of the urban population in Kiribati (which mostly overlaps with South Tarawa population) has access to a basic water supply service². South Tarawa has a reticulated water supply system which covers about two thirds of its population and is operated by the Public Utility Board (PUB). However, water is only supplied up to two hours every 48 hours and at very low pressure. Water is chlorinated in various points of the system, but negative pressures in the distribution pipelines lead to groundwater infiltration and inadequate supplied water quality. Consequently, many households rely on multiple water sources, including rainwater collected from roofs and local groundwater from household wells. Both reticulated water and groundwater show high levels of bacterial contamination. Kiribati's infant mortality rate is among the highest in the Pacific at 44 per 1,000 live births and is partly attributable to infantile diarrhea³. In 2012, one in every two persons was treated for waterborne disease in a hospital or clinic in South Tarawa⁴. The links between diarrhea and child undernutrition and other enteric infections are well documented. Environmental enteric dysfunction, caused by chronic ingestion of pathogenic microorganisms, results in nutrient malabsorption and may be the primary causal pathway between poor water, sanitation and hygiene, and child growth (Humphrey 2009).

4. Water availability. Bonriki and Buota's rainfall-fed groundwater lenses are the only available freshwater sources in South Tarawa which are suitable for drinking water production, and have a combined sustainable yield of approximately 2,000 m³ per day. Even with a major reduction of water losses and consumption limited to 50 liters per capita per day, the water supply deficit would reach 2,500 m³ per day in 2020, increasing to a range of 3,300 m³ per day to 4,800 m³ per day in 2040⁵. The use of non-conventional water sources such as desalination has been identified in the South Tarawa Water and Sanitation Roadmap 2011 adopted by the Government, and in all subsequent engineering studies⁶ as the only option to meet South Tarawa's water demand, along with the diversification of sources for risk mitigation and increased resilience. The use of rainwater should be encouraged but it cannot be relied on during prolonged droughts.

² A household has access to basic water supply service when a water point is available with a collection time is no more than 30 minutes for a roundtrip, including queuing (SDG definition)

³ UNICEF and The Partnership for Maternal, Newborn and Child Health. 2013. *Kiribati: Tracking Progress in Maternal and Child Survival*. A Case Study Report, 2013. http://www.unicef.org/pacificislands/14-02-2014_Kiribati_Case_Study_For_Delivery_to_UNICEF_8-29-2013_conversion.pdf

⁴ ADB 2014, Economic costs of inadequate water and sanitation

⁵ ADB, 2017, TA-9200 KIR: South Tarawa Water Supply Project (49453-001) – Project Preparatory Technical Assistance (PPTA) DEMAND FORECASTS REPORT

⁶ Including MFAT, 2015, Kiribati Water and Sanitation Sector Situational Analysis and Scoping Mission – Situational Analysis and Assessment and ADB, 2017, TA-9200 KIR: South Tarawa Water Supply Project (49453-001) – Project Preparatory Technical Assistance (PPTA)



5. *Climate change.* Kiribati is located in relatively calm latitudes but due to the low elevation of its atoll islands (no more than two meters above mean sea level and only a few hundred meters wide) it is one of the most vulnerable countries in the world to the effects of climate change such as sea-level rise, and natural disasters such as drought and weather fluctuations. Climate change is likely to affect the water resources of South Tarawa through variations in rainfall, evapotranspiration, increase in sea-levels, and extreme events. Two other natural hazard threats faced by South Tarawa are droughts, in particular during El Niño–Southern Oscillation, and seawater inundations. Although most global climate models point to an increase in average rainfall, predictions span between a decrease by up to 11 percent and an increase by up to seven percent by 2050. A 10 percent decline in rainfall could be expected to cause a 14 percent reduction in groundwater recharge. Inundation caused by sea level rise and storm surges could temporarily reduce yields from the Bonriki and Buota aquifers used for South Tarawa water supply by about 20 percent by 2030.

6. *Access to improved sanitation and quality of sewerage services.* Only 49% of South Tarawa population has access to basic sanitation services (WHO/UNICEF JMP, 2017). The remaining population use shared sanitation facilities, on-site unimproved sanitation systems such as pit latrines without a slab or platform, or practice open defecation in the sea (nearshore), to which 60% of the population resort at least occasionally. South Tarawa has three sewerage systems coupled with seawater supply networks for flushing in the historical settlement centers. These centers have expanded and other centers have grown in recent years. As a result, currently about 25% of the population is connected to these sewerage systems. The water utility offers a vacuum truck service to households for emptying septic tanks. All sewage (from sewerage systems and from septic tanks) is discharged through ocean outfall currently being upgraded to diffuse sewage 30 meters deep, beyond the reef edge and there are no treatment systems. Except in sewered areas, households generally discharge greywater locally, taking advantage of coral sand’s high infiltration capacity. Appreciation of the importance of good hygiene in South Tarawa is low, with only 57% of households reportedly having a fixed place for handwashing. The island’s low elevation, high population density, lack of available space and high water table represent significant challenges to the implementation of safe and effective on-site sanitation solutions. There is no common agreement among the Government and development partners on the sanitation model to be adopted across South Tarawa. To address this issue, a sanitation study is being initiated by New Zealand Ministry of Foreign Aid and Trade (MFAT) to identify low-cost inclusive sanitation solutions applicable in the local context. The proposed World Bank project will build on the results of this study.

7. *Efficiency of water supply and sanitation services.* The water distribution network is in an advanced state of disrepair. Physical non-revenue water was estimated in 2015 to exceed 50% but no detailed assessment is possible given the lack of connection meters and taps. Inadequate water services quality (pressure, continuity), together with customer’s lack of willingness to pay, tampering of networks and water leakages have been self-reinforcing in a vicious circle over the past decades. Water often does not reach the household anymore and needs to be collected from various formal and informal points. Facing widespread discontent by the population, PUB’s line ministry requested it to stop charging domestic customers in 2013. PUB water and sewerage revenues now mostly come from non-domestic customers and from on-demand services (delivery by tanker, septic tank emptying). The current average O&M cost of water services amounts to US\$2.5 per m³ delivered, a very high



level per international standards, driven notably by (i) high physical losses, and (ii) high energy costs (27% of total costs due to high electricity tariffs - US\$0.6/kWh, and electromechanical equipment in aged condition). Recent improvements in operational efficiency have been achieved with enhanced donors support, in particular through the KAP-III and KUSRП projects (see paragraph 12).

8. *Financial viability of the water and sanitation services provider.* PUB's water and sewerage revenues recovered in 2015 only 34% of its operations and maintenance (O&M) costs associated to water and sewerage (WSS) services. The financial gap has been covered by limited operational subsidies from the Government of Kiribati (GoK) and through the non-payment of the national fuel provider (KOIL), in effect relying on cross-subsidy from its profitable power/electricity business. Community Service Obligation (CSO) payments have been delivered by GoK to PUB in the amounts of \$1.85 million in 2016 and \$1.35 million in 2017, mostly to cover losses in its water and sewerage activities. Improving their financial viability will require: (i) restoring adequate tariffs together with improving service quality and expanding PUB's efficient electricity billing and customer management capacity to the water side of the company, and (ii) improving infrastructure efficiency and assets management to minimize operating costs.

9. *Gender aspects.* Women, children, and the elderly bear a disproportionate share of the burden of inadequate water and sanitation services in South Tarawa.⁷ Women are not only affected by the burden of collecting water, but also to a great extent by the health issues resulting from inadequate water supply in South Tarawa: as the collectors and carriers, they tend to be more exposed to harmful pathogens in water and risk being ill themselves, and they bear the brunt of caring for the other members of the household who are sick due to unclean water.⁸ Female children are reported to have a higher likelihood of suffering from diarrhea and dysentery than males.

10. **Affordability of WSS services.** Piped water services and sewerage services are currently not charged to domestic customers. Only a small number of commercial and institutional water supply customers are metered and charged a rate of US\$8/m³ for commercial customers and US\$12/m³ for administrative and industrial customers. The rate of US\$2/m³ applies for water delivered by water tanker, plus a charge for the delivery, ranging from US\$12 to US\$57 depending on distance. Even with minimal consumption levels, those services are unaffordable to most of the population, whose mean willingness to pay for water and sewerage services is estimated at \$13 per household and per month⁹. Local organizations equipped with rainwater harvesting systems are reported to sell water a cost of up to US\$10 per m³.

⁷ The Economic Costs of Poor Water and Sanitation South Tarawa study (ADB 2014)

⁸ Balancing the Burden (ADB 2015)

⁹ ADB, 2014



Relationship to CPF

11. The proposed project will contribute to the achievement of higher level development objectives of GoK and the World Bank. Goal 6 of the Kiribati's Government Development Plan (2016-2019) commits to improve access to quality climate change resilient infrastructure in urban and rural areas; and the strategies to achieve this Goal include (i) the improvement of water security for communities through development of water supplies from ground resources and rainwater harvesting, and the exploration of solar-powered seawater desalination by reverse osmosis; and (ii) the promotion and implementation of sanitation programs.

12. Under the World Bank's Regional Partnership Framework (RPF) (100997-EAP) for nine Pacific Island Countries (including Kiribati) for the period FY17-FY21, Objective 4.2 focuses on the increase of access to basic services and improved connective infrastructure. The development of water and sanitation services in Kiribati is one of the key activities identified to achieve this objective. By helping address water stress challenges which may be aggravated by the effects of climate change, the proposed project will support Objective 3.1 of the RPF, which focuses on the strengthening of resilience to natural disasters and climate change. Support for improved water and sanitation services is a core contribution to Bank's twin goals of eliminating extreme poverty and sharing prosperity, by (i) reducing the time and effort—especially of women and children—to collect water, (ii) reducing the incidents of waterborne diseases caused by contact with contaminated water, (iii) diminishing absenteeism from work and school and the costs associated with these, including lost income and opportunities, and (iv) contributing to reducing malnutrition and stunting, since poor access to water, sanitation and hygiene is one of their underlying causes. The care for the sick and the responsibility of water collection and safety concerns also falls disproportionately on women and girls. Hence, improved access to water and wastewater services will help to address gender inequality, in line with Objective 2.3 of the RPF.

C. Proposed Development Objective(s)

The proposed PDO is to increase access and quality of water supply services, and to improve the operational performance of the water supply services provider in South Tarawa.

Key Results (From PCN)

- People provided with access to improved water sources through piped household water connections (male/female)
- People provided with continuous water supply (male/female)
- Samples testing meeting national water quality standards at distribution points (%)
- Non-revenue water (%)

* core sector indicator

D. Concept Description



13. Government's long-term vision. The proposed South Tarawa Water Supply Project (STWSP) will support GoK's efforts to achieve SDG6.1¹⁰ by financing the necessary infrastructure investments and strengthening PUB's capacity to operate this infrastructure in an efficient manner. It also supports the GoK to make progress on achieving SDG6.2¹¹. It aligns with GoK's vision for the sector, as outlined in the Tarawa Water Master Plan (2010) and the Water and Sanitation Roadmap 2011 to 2030. Policy objectives include sustainable water supplies to enhance the welfare and livelihood of Kiribati population; the protection and conservation of freshwater sources for public water supplies; the efficient and effective delivery of freshwater; the provision of effective, acceptable, and appropriate sanitation; sanitation systems and practices that protect freshwater sources, lagoon waters and the environment; and reduced waterborne illness.

14. The Project will focus on improving water services and strengthening the water and sewerage services provider PUB to improve the sustainability of services. It will also help build South Tarawa water sector's resilience to climate change and help test low-cost sewerage and sanitation models for further replication across the capital. The proposed project will seek to cooperate and coordinate with other government and development partners, aiming towards jointly providing comprehensive and aligned support to the sector.

15. Project Cost, Duration, Financing and Beneficiaries. The estimated total project cost is US\$59 million, parallel financed by a IDA Grant (US\$15 million), and ADB grant (US\$15 million) and a Green Climate Fund (GCF) grant (US\$28 million) to be secured by ADB. The Project will be implemented over a period of eight years to allow sufficient time for successful achievement of the PDOs, given the limited country's capacity to sustain high implementation pace. The lending instrument for the proposed Project is Investment Project Financing (IPF). Selection of the IPF structure was based on the IPF's flexibility and suitability to incorporate financing for a broad range of activities, including several specific investments, technical assistance, and capacity enhancement measures. The Recipient will be the GoK for the full IDA amount. The entire population of South Tarawa (58,000) is expected to benefit from improved water services through the project. A significant part of the population will also benefit from the proposed community labor schemes to construct the network infrastructure.

16. Project Components. To achieve the Project Development Objectives (PDOs), the proposed Project will have four components as follows:

¹⁰ By 2030, achieve universal and equitable access to safe drinking water for all

¹¹ By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations



Component 1: Improvement of Water Supply Services (US\$41m)

17. This component will aim to improve access to safe water supply services in South Tarawa and resilience of the services to climate change. The activities include (i) construction and operation of a desalination plant (4000 m³ per day) and ancillary infrastructure; (ii) implementation of a solar photovoltaic energy system connected to the grid, to offset desalination electricity and other water supply system needs; (iii) rehabilitation, replacement and/or expansion of water supply transmission and distribution systems; and (iv) supervision consultancies.

18. The desalination system will be procured using a design-build-operate (DBO) contract approach, foreseeing contractor's support in plant operation and maintenance for five years and related knowledge transfer to PUB. Most works on the distribution system will entail the full replacement of existing infrastructure, include the creation of district metered areas and the installation of metered house connections. Implementation of the distribution network will be carried out by PUB with the help of community labor for earthworks, building on KAP-III successful experience in the three pilot villages. This component is expected to benefit the entire population of South Tarawa outside of the KAP-III pilot areas, where infrastructure is already being upgraded. Detailed designs and safeguards documents are underway and are expected to be completed by appraisal.

Component 2: PUB capacity building and performance improvement (US\$7m)

19. This component is designed to contribute to the sustainability of water-related investments funded under Component 1 and will help improve the operational efficiency and financial viability of PUB.

Sub-component 2.1: Institutional support to PUB (US\$6.8m)

20. The activities will include a Performance-based Operation and Maintenance (O&M) Contract and technical assistance to PUB to improve its operational efficiency. They will support the payment of a Private Contractor (PC) under a proposed five-year performance-based contract to operate and maintain the pumping stations and network. The PC will also be in charge of supervising the construction of these infrastructure. Performance targets are expected to include areas such as continuity of service, non-revenue water and energy efficiency. Draft bidding documents are expected to be completed by appraisal.

21. Capacity building will be an important component of the network O&M contract and desalination plant DBO. The PCs will directly manage, mentor and train PUB operatives seconded to the PCs for the time of the contracts. The objective will be that PUB acquires the required capacity to over operation and maintenance of all assets at the end of the 5-year contracts. Technical assistance support will also be provided to strengthen PUB capacity on areas such as billing, customer management and assets management.

Sub-component 2.2: Groundwater management (US\$0.2m)

22. Implementation of Buota and Bonriki water reserves protection and management measures: the proposed activities will advise GoK on measures to improve the management and protection of the very fragile Buota and Bonriki water reserves from encroachment and pollution risks. The activities will not substantially increase the production of water from these groundwater lenses, which are already being exploited at close to full capacity.

Component 3: Hygiene promotion and sanitation pilot (US\$3.2m)

23. This component will support a broad WASH behaviour change campaign with a focus on tackling existing problematic behaviours linked to sanitation, hygiene, menstrual hygiene management, solid waste



management and climate change. This program will expand on and align with the STSISP community engagement program.

24. The component will also aim to pilot sanitation models to upgrade current sanitation services and provide an acceptable alternative to a costly expansion of sewerage systems across all of South Tarawa beyond the areas targeted by the current ADB financed project. The models will be recommended by the NZ MFAT study now initiated as part of donor collaboration under the project. Sanitation activities will focus in priority on (but not be limited to) the three KAP-III village pilots (representing about 280 households) where 24/7 water supply is being introduced early 2018. The activities include: (i) investments in sanitation infrastructure; (ii) technical assistance and training to support community-based organizations and their supporting structures.

Component 4: Project management and institutional strengthening (US\$6.8m)

25. This component will support MISE in project management and supervision. This will include, but not limited to, the operating cost of the PMU, project implementation technical assistance, supervision consultant, and consultants that will support the design of sub-projects and related studies. The component will also support the provision of studies and technical assistance to strengthen water and sewerage sector regulation, in particular in the areas of tariff setting and provision of Community Service Obligations.

Other project features.

26. *Collaboration with donor partners.* The proposed parallel financing with ADB will provide equal contributions to the various project components (to be confirmed at appraisal), while GCF funds will contribute mostly to the financing of Component 1. Given the limited institutional capacity at all levels, the implementation agency is likely to be overwhelmed by the use of two sets of procurement and safeguards policies and procedures. Given its leading financial contribution to the project (including with the mobilization of the GCF grant), ADB will act as lead parallel-financier during project implementation. NZ MFAT has expressed potential interest to support sanitation investments, but is awaiting directions from GoK to clarify its future engagement. It plans, in the foreseeable future, to continue financing the expatriate CEO position at PUB.

27. *Citizen engagement:* To optimize the potential benefit of the project, citizen engagement through consultation will be conducted to ensure the needs of men, women and children are addressed in the project. The water supply project will benefit all population South Tarawa, including both those who previously had access to unimproved water sources and those who had access to unsafe and unreliable piped water services. Consultation through public forum and/or focus group discussion is planned to be conducted before the infrastructure is put in place to identify the optimal layout of the distribution network. Feedback about service quality and others will also be collected during different stages of project implementation through focus group discussion to better serve the population. As part of Component 2, the project will support the development of PUB's capacity and systems in terms of customer relationship, which will include the set-up of a grievance collection and redress mechanism. For sanitation investment, focus group discussion and/or public forum is planned to be conducted with potential beneficiaries residing within the catchment areas of the sanitation network. This will increase the likelihood of household connection and to increase community ownership of the infrastructure.



28. *Gender mainstreaming:* A gender analysis has been conducted as part of ADB Project Preparation Technical Assistance (PPTA), identifying gender gaps relevant for Components 1 and 2 of the project and proposing actions to mitigate the gaps. Women play a limited role in decision making in public affairs, have a proportionally much lower rate of employment than men, and female-led households are over-represented in the lowest three expenditure deciles. Obesity is more than twice more prevalent among women than men and gender based violence is among the highest in the world. In the household, women play traditionally the main roles in water-related chores such as cooking, washing and cleaning, but men are more often involved in purchasing and carrying rainwater to the household. A complementary analysis and action plan will be developed to cover activities supported by the other project components.

29. *Climate Change:* Project design will take into consideration the climate risks and vulnerabilities identified in the Sectoral Context section into its design and how the planned components help to reduce vulnerability. These design choices and calculations will build on the extensive climate change-related analyses conducted by ADB as part of its GCF proposal preparation. In terms of mitigation impact potential, the project will have an impact on GHG emissions through three pathways: (i) by providing a 2.5 MW solar power to cover the electricity demand of the desalination plant, thereby avoiding emissions that would have been generated from the use of a diesel plant to provide the required energy; (ii) by providing safe water to all households on South Tarawa, the project will reduce or even remove the need to burn fuels to boil water¹², therefore alleviating GHG emissions that result from burning fuels; and (iii) by substantially reducing water losses from the network and improving the energy efficiency of pumping systems, the electricity required to supply customers with the same volume of water will reduce. Preliminary GHG accounting suggest that total avoided CO₂ emissions due to the project over a 20-year period would represent about 154,000 tons. This estimate will be refined and confirmed during Preparation.

30. In terms of adaptation impact potential, as described in paragraph 5, Bonriki and Buota lenses are currently the only large freshwater sources in South Tarawa suitable for drinking water production and the entire population depend on these for freshwater. These lenses are threatened by climate change, potentially rendering them useless for extended periods. Other existing sources of water across the island are too small and too significantly cover major water deficit, and many are also threatened by climate change. Further, on the demand side, higher temperatures due to climate change will increase the need for freshwater per person. With the proposed installation of a seawater desalination plant that is resilient to climate change and meets the increased demand for water, the project will adapt and climate proof South Tarawa's entire water supply to climate change. All infrastructure designs will be made considering the expected flow of migration from outer islands, recognizing the likelihood of significant increase in human mobility in the future as a result of a

¹² Almost all households on South Tarawa boil water for drinking using locally sourced wood, coconut residues, kerosene, and propane gas.



combination of population growth and the increasing impact of climate change.¹³ Assets created under the project will be designed to withstand climate change impacts. Adapting the water sector is essential to the continued habitation of Kiribati.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The project's physical investments will be situated in several locations on South Tarawa atoll and will include a desalination plant (including raw water intake and brine discharge facilities), new water transmission and distribution networks, together with associated storage and pumping infrastructure, a solar array (approximately 3 hectares) and limited sanitation infrastructure. The civil works will be situated on customary land, some of which is leased to the Government. The project will also have potential implications for informal settlements within the two water reserves. There is the potential for environmental impacts to both terrestrial and marine environments as a result of the works and mitigation measures will need to be carefully designed to ensure impacts are minimized.

The civil works contemplated under the project include:

- Installation of solar panels, most likely in a cleared area of the Bonriki Water Reserve adjacent to the existing solar array. The structures will include simple concrete footings (on which individual solar panels will be mounted), underground cabling and a control center/transformer facility. Environmental risks are readily manageable; however social risks will need careful consideration in the context of disputed land tenure within the water reserve;
- Water reticulation within peri-urban areas of Tarawa atoll. These works will involve excavation of trenches, placement of water pipes, pump stations, standpipes etc. and backfilling and stabilization. Environmental risks are readily manageable; however, care will need to be taken to avoid existing formal and informal services. Social risks are mainly associated with the construction phase with assets (eg. pig pens, shelter structures, fences etc.) requiring temporary relocation and possible removal of crop trees to allow pipework to be installed. This will require diligent citizen engagement and compensation for any lost assets; and
- Desalination plant. The desalination plant is expected to be sited on Government-leased land at Betio and will comprise a chemical store, control center, desalination units and reticulation for feed water and brine discharge. The brine will be discharged via the existing sewage outfall to enable sufficient dispersion in receiving waters to reduce salinity. The marine environmental impacts are not expected to be significant.

B. Borrower's Institutional Capacity for Safeguard Policies

The implementing agency, MISE, has developed some capacity to manage safeguards risks through the Kiribati

¹³ Oakes, Robert, Milan, Andrea and Campbell, Jillian (2016). *Kiribati: Climate Change and Migration - Relationships Between Household Vulnerability, Human Mobility and Climate Change*. United Nations University Institute for Environment and Human Security



Adaptation Program. While the KAP PMU has been effective, it has also been supplemented by a senior social adviser (World Bank retiree) to ensure compliance with social safeguards policies. The environmental and social risks are considered substantial largely due to the limited in-country capacity for safeguards management, to the fragility of South Tarawa’s atoll environment, and to the complexity and political sensitivity associated with informal settlements within the Buota and Bonriki water reserves. Therefore skill supplementation will be necessary under STWSP, with dedicated technical assistance to the PMU on environmental and social safeguards matters to support the management of these risks and ensuring compliance with safeguards policies.

C. Environmental and Social Safeguards Specialists on the Team

Wolfhart Pohl, Environmental Safeguards Specialist
Ross James Butler, Social Safeguards Specialist
Nicholas John Valentine, Social Safeguards Specialist

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	<p>Overall, the project is environmentally and socially beneficial. The provision of safe drinking water and proper sanitation facilities is expected to have a significant positive impact on the improvement of livelihoods and the environment, including reduction in groundwater pollution. Some minor and temporary negative environmental impacts may occur, resulting mainly from the construction activities but also potentially from by-products of the desalination process.</p> <p>The positive impacts include: (i) increased access to safe water supplies (ii) reducing the time and effort—especially of women and children—to collect water, (iii) reducing the incidents of waterborne diseases caused by contact with contaminated water (Kiribati’s infant mortality rate is among the highest in the Pacific at 44 per 1,000 live births and is partly attributable to infantile diarrhea), (iv) diminishing absenteeism from work and school and the costs associated with these, including lost income and opportunities and (v) better and properly sited sanitation facilities will reduce the risk of contamination of groundwater resources and associated disease risk.</p> <p>Potential negative impacts from construction activities can be readily managed through the preparation and stringent application of the project ESMP to be prepared in collaboration with ADB. This will require</p>



ongoing citizen engagement to ensure inconvenience is minimized and any resettlement issues are appropriately managed.

Brine discharge from the desalination plant has the potential to cause negative environmental impacts near the discharge point. Brine will be introduced to the sewerage system, ensuring a level of dilution within the system prior to discharge through the existing, rehabilitated sewage outfall diffusing 30 meters deep after the reef platform.

The environmental impacts associated with the project are readily manageable with well-designed mitigation measures and close contract supervision. Social impacts associated with placement of solar panels and, in particular, existing squatters in the water reserves will require careful consideration with non-resettlement options to be prioritized. It is considered that there are achievable solutions for managing environmental and social impacts and there are no significant adverse environmental impacts that are sensitive, diverse, or unprecedented. Hence it is proposed at this stage that the project be classified as Category B.

Performance Standards for Private Sector Activities OP/BP 4.03	No	The project does not finance private sector-led economic development activities.
Natural Habitats OP/BP 4.04	Yes	There is a potential risk to marine natural habitats from brine discharge however this will be mitigated by ensuring the discharge infrastructure facilitates adequate mixing with receiving marine waters to reduce salinity levels. While the project involves management and conservation of water resources these are solely groundwater sources and are not linked to particular natural habitats. Some vegetation clearance will be undertaken in the Bonriki water reserve; however this will be selective clearing of crop trees that do not provide significant habitat.
Forests OP/BP 4.36	No	While the project may involve the selective clearance of vegetation within the Bonriki water reserve the characteristics of the existing vegetation does not meet the definition of "forest" in OP 4.04.
Pest Management OP 4.09	No	The project will not involve the use of pesticides.
Physical Cultural Resources OP/BP 4.11	Yes	Tarawa atoll includes a number of historical relics from World War 2. While it is anticipated that known relics



can be avoided by design there is the potential for chance finds of historical and other PCR items. The potential for impacts on known PCR will be determined during the preparation of the ESMP, which will guide project management, procurement and monitoring processes to mitigate risks of PCRs destructions or disturbance.

As part of the task team engagement with the GoK, an assessment of burial sites will be determined within the ESMP to identify burial sites within the Bonriki water reserve and appropriate citizen engagement through awareness, will be provided to the encroachers to avoid any further burial rituals.

Indigenous Peoples OP/BP 4.10

No

Project activities will take place in South Tarawa where the population is not considered to meet the characteristics of OP 4.10.

The vast majority of land on South Tarawa is under customary ownership with the Government leasing portions of private land under the State Acquisition of Lands Act in the 'public interest'. Water transmission and distribution infrastructure will likely be subject to lease arrangements; whereas land access arrangements for the desalination facilities and photovoltaic array will need to be determined once the infrastructure preliminary design is prepared. The concept designs suggest the use of government leased lands for the desalination plant and the solar PV array (0.2 and 3 hectares respectively).

Involuntary Resettlement OP/BP 4.12

Yes

Land related issues including compensation for lost assets is a challenge in Kiribati and an RPF will be required to ensure these issues are adequately addressed. Resettlement impacts are expected to be limited under the project, and will be managed through the preparation and application of ARAPs. Social assessments and citizen engagement will be central elements in ARAP design and implementation.

The project will advise the Govt of Kiribati on measures to protect and manage the water reserves at Buota and Bonriki, which are subject to encroachment by squatters. Approximately 100 squatter households have been identified across the two water reserves. Customary landowners previously occupying the water reserves were resettled in a designated zone adjacent to the water reserve. The



task team will engage with GoK to determine an approach to the squatters, noting that GoK has made previous attempts to evict these households and this has been politically unacceptable. Given GoK’s past difficulties in resettlement of squatters, the team’s preferred approach is to focus on soft measures such as community awareness about potential water contamination from household activities, education on behavioral change and prevention of further in-migration. These measures will be incorporated in a Water Reserve Management Plan. Appropriate citizen engagement throughout the life of the project will be determined in the environmental and social engagement process to provide adequate information to the squatters and consult them on the design of the proposed measures. It is not expected that resettlements would take place as part of, or in parallel to the project.

Notwithstanding the proposed “soft measures” approach there is the possibility that GoK may seek to resettle squatters during the project lifetime. The RPF will incorporate measures to manage this eventuality to ensure that any resettlement is undertaken in accordance with OP 4.12 requirements.

Safety of Dams OP/BP 4.37	No	The project will not finance any dams as defined under OP 4.37.
Projects on International Waterways OP/BP 7.50	No	The project does not impact or relate to any known international waterways as defined under the policy.
Projects in Disputed Areas OP/BP 7.60	No	The project is not located in any known disputed areas as defined under the policy.

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Jun 18, 2018

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

The project is co-financed with ADB (which will channel GCF funds). Both ADB and World Bank’s policies will apply in all Project safeguards instruments. The ADB has prepared a draft Resettlement Plan (RP) and Environmental and Social Impact Assessment (ESIA) for the ADB/GCF-funded investments and the Bank has recruited a consultant to undertake due diligence to ensure that requirements of Bank safeguard policies are fully complied with and to incorporate an assessment of the Bank-funded activities. In addition, an RPF will be prepared and disclosed prior to appraisal to ensure



appropriate consideration of potential resettlement impacts including potential relocations from the water reserve. Project scoping details and safeguard-related implications will be discussed further with ADB and GoK during project preparation.

CONTACT POINT

World Bank

Stephane Raphael Dahan, Edkarl M. Galing
Senior Water Supply and Sanitation Specialist

Borrower/Client/Recipient

Ministry of Finance and Economic Development

Implementing Agencies

Ministry of Infrastructure and Sustainable Energy
Benjamin Tokataake
Secretary
registry@mise.gov.ki

FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: <http://www.worldbank.org/projects>

APPROVAL

Task Team Leader(s):	Stephane Raphael Dahan, Edkarl M. Galing
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Approved By

Safeguards Advisor:	Peter Leonard	17-Aug-2018
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Practice Manager/Manager:	Sudipto Sarkar	17-Aug-2018
Country Director:	Mona Sur	12-Sep-2018