

FUNAFUTI WATER SUPPLY AND SANITATION PROJECT (FWSSP)¹

1.PROJECT BACKGROUND

Country context:

Tuvalu is an isolated small island developing state (SIDS) made up of six atolls and three islands spread over an oceanic area of 1.3 million square kilometers (km²) of which 26 km² is land. According to the latest census data, the resident population of Tuvalu is about 10,645.² The country has few natural resources and limited opportunities for local economic development. Its economy is highly vulnerable to external shocks and income volatility due to its exposure to climate change, geographical remoteness, dependence on imports, and reliance on revenue from overseas. The public sector accounts for more than 90% of economic activities.³

Over 60% of Tuvalu's population lives in the capital, Funafuti, an atoll of 2.8 km² with approximately 6300 people living in 850 households, Fongafale, Funafuti's largest islet, has a population density exceeding 2,250 people per km². Funafuti's population grew by an average of 3% per year from 2012 to 2017 and the outer island population declined by an average of 4.3% per year. It is projected that 85% of the national population could live in Funafuti by 2050, bringing the capital's population to 14,565.⁴ Women, who account for 49% of Tuvalu's population, have limited technical skills and job opportunities and are particularly vulnerable to economic shocks and climate change impacts.

Key problems facing Tuvalu include:

Vulnerability to climate hazards. The country is highly susceptible to climate change impacts such as longer and more intense dry periods, more regular flooding, and sea level rise. The average altitude of Tuvalu is 1.83 meters above sea level with any substantial rise in sea level or wave action posing a risk to basic infrastructure. Since 2011, Tuvalu has been struck by at least four major disasters linked to climate change impacts. Prolonged droughts exacerbated health vulnerabilities⁵ and triggered state of emergency declarations in September 2011 and November 2022. Tropical Cyclones Pam (March 2014) and Tino (January 2020) caused substantial damage and losses to infrastructure and agriculture.

Inadequate water supply and sanitation services. Funafuti has inadequate water supply and sanitation services, and an increasingly high rate of communicable diseases. The groundwater is unsuitable for drinking because of saltwater intrusion and high levels of faecal/E coli contamination.⁶ Rainwater harvesting is the primary source of drinking water across the country. Despite high average annual rainfall (3,483 millimeters), Funafuti frequently experiences short dry periods. Women, as primary caregivers at the household level, are disproportionately affected by water shortages.

Most households on Funafuti utilize on-site septic tanks. However, the majority of these are poorly constructed and are breached during flood events. Typically, untreated sewage is discharged directly offshore or into pits at the north end of Fongafale islet. Some households in Funafuti have very limited sanitation facilities resulting in open defecation, which negatively impacts the water quality of Te Namu lagoon. Restricted sanitation facilities at public buildings such as health centers, government offices and schools affect working women and girls' mobility and productivity. Women are particularly badly affected during frequent outbreaks of communicable diseases which constrain their participation in leisure and economic activities.

2. THE FWSSP – HELPING TO OVERCOME KEY PROBLEMS ON TUVALU

Preparation for the FWSSP

¹ This overview has been extrapolated from, and informed by, various project documentation prepared under the PRF including the FWSSP concept note

² Government of Tuvalu. 2018. *Tuvalu Population & Housing Mini-Census 2017 – Final Report*. Funafuti.

³ International Monetary Fund. Asia and Pacific Department. 2018. [Tuvalu: 2018 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for Tuvalu](#). Washington, D.C.

⁴ Project Preparation Phase 1 Consultant. 2022. *Funafuti Water Supply and Sanitation Feasibility Study Feasibility Report*. Funafuti.

⁵ World Health Organisation. *Tuvalu, Health and Climate Change: country profile 2020*. WHO-CED-PHE-EPE-19.3.3eng.pdf.

⁶ Government of Tuvalu. Tuvalu Multi Indicator Cluster Survey (MICS) 2019-2020 Survey Findings Report

Under Project Readiness Financing (PRF) an extensive range of studies has been carried out to gain an up to date understanding of the current health, hygiene, social and environmental, legislative and regulatory and communication contexts on Funafuti. Findings from these studies informed the development of FWSSP designs and activity plans which will be implemented over five years beginning in 2024. The FWSSP will contribute to Te Kete: Tuvalu's National Strategy for Sustainable Development 2021 to 2030 and its goal to "increased access to clean water and sanitation".

Overall aim of the FWSSP

Improved provision of drinking water supply and sanitation services on Funafuti that are climate-adapted, affordable and resilient.

Beneficiaries

Direct Beneficiaries: all Funafuti households; **Indirect Beneficiaries:** Outer island populations through strengthened institutional and public outreach capacity of the Public Health and Public Works Departments and selected non-governmental organizations (NGOs).

FWSSP components

Output 1: Climate-resilient and inclusive drinking water supply services provided. Output 1 will provide Tuvalu's first reticulated water supply system to supplement household rainwater harvesting, including piped household water supply connections. This will include the construction and/or installation and commissioning of (i) a reverse osmosis seawater desalination plant with a capacity of about 200 cubic meters (m³) per day, a water pump station, and supply pipelines to elevated reservoirs; (ii) two elevated potable water storage reservoirs with a combined capacity of at least 480 m³; (iii) a piped water distribution network (about 17 kilometers), and at least 400 metered household water connections across the seven villages of Funafuti; (iv) a metered marine gantry hose fill station; (v) a water supply and plumbing service vehicle, connection field testing equipment, and water quality testing equipment; and (vi) about 94 rainwater harvesting tanks and pipes for settlements on outer islets.⁷ The project will ensure that a gender-inclusive communication strategy is developed and adopted during the design and construction of the drinking water supply infrastructure. The project will also encourage women's employment through on-the-job training and access to capacity development programs.

Output 2: Adapted, resilient, and safely managed sanitation services provided. Output 2 will include the (i) upgrade of toilets and sanitation facilities with gender-friendly design features in at least 60 selected government buildings (including health centers and schools) to the benefit of all staff and students, but particularly women and girls; (ii) procurement of a septage vacuum truck; (iii) installation of about 30 household septage containment tanks on a pilot basis; (iv) installation of a packaged primary STP, with about 5 m³/day capacity, and construction of an outfall manifold pipe that safely discharges treated effluent into the ocean; and (v) construction of about 10 septage drying beds. The STP would enable the safe use of biosolids in local agriculture projects to encourage a circular economy.⁸

Output 3: Institutional capacity for and public awareness on climate-resilient and inclusive WASH systems strengthened. Output 3 will focus on building capacity for (i) the resilient and sustainable operation and maintenance (O&M) of services; (ii) asset management; (iii) legislative and regulatory improvements; (iv) operational and financial management (such as accounting upgrades, metering and billing review, and tariff review); and (v) gender-inclusive human resources policies. The capacity-building activities will be structured to meet both short-term and long-term needs. The tariff review will aim to promote financial sustainability for the PWD. A legislative and regulatory review was completed under the PRF, which identified the key changes needed to improve coordination in WASH matters and enable the PWD to sustainably operate the investment. The Public Awareness and Community Outreach Campaign (PACOC) aims to build understanding and support for the project

⁷ Improved rainwater harvesting interventions will be on Amatuku, Funafala, and Papaelise islets.

⁸ The European Union-funded PAC Waste Plus: Tuvalu Sustainable Waste Management Programme has expressed interest in utilizing the dried septage sludge from the project in its composting program.

activities and encourage improved health and hygiene practices among communities across Funafuti. It includes content promoting gender-fair division of labor in households. Special attention will be given to gender-specific WASH issues, and the benefits of the project for the community's resilience to change, for public health, and for the environment. Project implementation assistance consultant (PIAC) team will provide support to the project management unit (PMU) and the PWD; and a nongovernment organization (NGO) will implement the PACOC.