GCCA+ SUPA project:
Supply of a 20 m^3 Solar-powered Desalination Unit to Funafuti, Tuvalu, 2021 - 2022

In Tuvalu, the primary water source is from rainwater catchment systems, while in the capital island, Funafuti, desalination systems are also important. Groundwater is classified non-potable in most islands due to high salinity levels and pollution mostly from improper sanitation systems and livestock waste.

Sixty per cent of the population reside in the capital island Funafuti. Tuvalu is highly vulnerable to climate variations and a two–week period without rain would see a depleted water supply especially for households which are dependent on rainwater catchment systems. Improving water security, including supply and access is a high priority for the Government of Tuvalu.

Tuvalu recognizes Reverse Osmosis (RO) or desalination technology as a priority need to address water scarcity in the country. As such, Tuvalu since the late 1990s has depended on RO units to supply freshwater for its communities. RO units were initially introduced as a back-up supply system for freshwater, particularly during dry spells. However, this has changed, and RO units have now become a primary source of freshwater supply for communities, schools and government facilities in Funafuti. Desalinated water is transported to water storage systems such as community cisterns and rainwater tanks using water tanker trucks.

In Tuvalu's outer islands water scarcity is also a serious concern during periods of low rainfall.

100m^3 Desalination Unit in Funafuti

The government of Tuvalu has selected water as their focus sector under the Global Climate Change Alliance (GCCA+) Scaling Up Pacific Adaptation (SUPA), The overall objective is to strengthen water security in Tuvalu communities through the improvement of water catchment, storage and access to water.

The project scales up previous efforts on water supply and access in Funafuti and the outer islands, and applies the lessons learnt from other water security projects relating to desalination units, water systems' maintenance and water supply.

In 2021, the GCCA+ SUPA project procured a portable, solar powered, $20m^3$/day desalination plant and accessories for Tuvalu. This plant will be delivered to Funafuti early in 2022 and will be commissioned and installed alongside the existing plants in Funafuti. The plant and its accessories have been carefully designed to address the needs of Tuvalu, since the unit is portable and can be easily deployed to the outer islands during times of water shortage. In addition, a generator has been supplied to power the plant when deployed to the outer islands for short time periods when it is not feasible to install the solar power component. Further training to technical staff is part of the contract.