

Tuvalu: Summary of activities for outputs 1 and 3

Output 1: Impact analysis to strengthen national strategic planning

Output 3: Scale up resilient development measures in specific sectors



One of the water tanker trucks provided by the project to supply desalinated water to households, communities and businesses

Tuvalu timeline for January 2019 – June 2023

Output 1: Impact analysis to strengthen national planning	
November 2022	Representatives from Tuvalu participated in the Applied Training in impact analysis (iA) and the impacts database held in Fiji
Output 3: Scale up resilient development measures in specific sectors	
Planning and KRA 4: National coordination	
March 2019	Presentation of GCCA+ SUPA project at an Inception Meeting in Fiji attended by a representative from Tuvalu
March 2020	Project sector selected - water security
May 2020	Concept note approved
September 2020	PDD signed
March 2021	Project National Coordinator commenced
June 2021	PDD amendment signed
November-December 2021	GCCA+ SUPA project showcased at Climate Change Awareness week in Funafuti
March 2022	GCCA+SUPA project showcased at the World Water Day celebrations in Funafuti
KRA 1: Procurement of a portable and solar powered desalination plant	
January 2021	Assessment report on existing desalination units in Tuvalu completed
April 2021	Preliminary assessment of rainwater systems in 7 pre-schools in Funafuti completed
April 2022	Desalination unit with accessories and solar panels delivered to Funafuti
November – December 2022	Commissioning and maintenance training provided to Public Works Department Tuvalu
KRA 2: Refurbish and maintain water systems in Fetuvalu Secondary School, Seventh Day Adventist Primary School and 7 preschools in Funafuti	
May 2021	Assessment of rainwater systems in Fetuvalu Secondary School (FSS) and Seventh Day Adventist (SDA) Primary School completed
October 2021	Engineering design and full material list for FSS and SDA Primary School completed
May 2022	Construction and plumbing materials for FSS and SDA Primary School delivered in Tuvalu
June 2022	Work commenced on the installation of rainwater measures in FSS and SDA Primary School
August 2022	Water tanks for FSS and SDA Primary School delivered in Tuvalu
December 2022	Installation of rainwater measures completed at FSS and SDA Primary School
April 2023	Engineering design and material list for Olave and Vaiaku preschools completed
May 2023	All materials delivered for hand washing stations for Olave and Vaiaku preschools.
June 2023	Maintenance and water management training provided to staff and students at FSS Secondary School, SDA Primary School, Nauti Primary School and the 7 preschools in Funafuti
KRA 3: Procurement of a 10,000L water truck	
July 2022	Supply and delivery contract for 2 water tanker trucks to Funafuti signed
October 2022	Two x 10,000L water trucks delivered to Funafuti, Tuvalu.

Tuvalu highlights

Tuvalu is an island archipelago in the South Pacific Ocean comprised of nine islands, six of which are low-lying atolls and three being raised limestone islands. With the highest elevation point of 5m above sea level and a land mass of 27km². The country has a population of 10,645 (2017 Census) with over 60% residing in the capital island Funafuti. Tuvalu's economic growth is constrained by a number of factors including the country's geographical isolation from international markets, small land mass and limited natural resources. The projected effects of climate change, including increased temperature, ocean acidification and sea level rise will compound the economic and environmental challenges existing in Tuvalu.

The project used a consultative and people centred approach to (i) prepare a methodology for impact analysis (iA) of past projects and share it with participants from Tuvalu; and (ii) address water security in Funafuti and the outer islands of Tuvalu.

Highlights output 1

Representatives from Tuvalu participated in the Applied Training in impact analysis (iA) and the impacts database held in Fiji in November 2022. The purpose of this workshop was to share the "light" version of the methodology to analyse past actions and learn from their successes and failures so as to improve strategic planning in the future.

Highlights output 3

The Government of Tuvalu selected the water sector as their focus for output 3. The overall objective of the project was to strengthen water security in Tuvalu through the improvement of water catchment and access to water. The specific objective was to improve the supply, storage and distribution of potable water to communities and schools in Funafuti. The project has four key result areas: (1) Purchasing of a portable, solar powered, desalination plant; (2) Refurbishing of the water systems in the SDA Primary and SDA Secondary Schools; (3) Procuring of a 10,000 L water truck; and (4) National coordination of the project activities.

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

The following are the output 3 highlights in Tuvalu:

- The GCCA+SUPA project was presented to the countries at an Inception Meeting in Fiji in March 2019. After initially considering coastal protection as a focus sector Tuvalu confirmed water security as the focus sector in March 2020 and Funafuti as the project site.
- The main implementing partners for the project activities were the Climate Change Department, Ministry of Finance, and the Public Works Department, Ministry of Public Utilities, Infrastructure, Environment, Labor, Meteorology and Disaster.
- A National Coordinator was recruited in March 2021 and continued in position until June 2023.
- Applying the people centred approach, a special focus was directed towards children and youth in the design of the project activities.
- In October 2021, a full engineering design of the additional rainwater systems at FSS and SDA Primary School including a bill of quantities was completed. A local construction contractor was hired to install the rainwater systems at the FSS and SDA Primary School. The installation was successfully completed in December 2022 adding an additional 122.4 KL storage capacity.

- Following an engineering assessment of the seven pre-schools, Tuvalu selected Olave and Vaiaku preschools in Funafuti, for the installation of hand washing facilities, a full design was completed. The materials were provided by the GCCA+ SUPA project and the Government of Tuvalu committed to install the facilities with their own resources.
- In June 2023, a series of trainings were delivered to teachers and students of the FSS, SDA Primary School, Nauti Primary School and the 7 preschools in Funafuti on water management and maintenance of the water measures in the schools.
- In April 2022, Tuvalu received a solar-powered mobile 20m³/day desalination unit with an additional generator. This had been designed for shipment to the outer islands in times of drought. Installation and commissioning of the unit, including operations and maintenance training were provided in November 2022 to the PWD engineers.
- In October 2022, two x 10,000 L water tanker trucks were delivered in Funafuti to improve water delivery to residences, schools, businesses and government facilities. An official handing over of the trucks from the Climate Change Department to the Public Works Department took place on 28th October 2023.
- Between November and December 2021, the project was one of the major supporters of the Climate Change Awareness week in Funafuti. Awareness raising relating to the project and water security issues were part of the week-long programme.
- Similarly in March 2022, the project provided similar support for the World Water Day celebrations. In addition to taking part in awareness raising on water issues, the project distributed visibility materials to students and the general public such as the project's custom-made water bottles and tote bags.

Tuvalu details: output 3

The PDD was signed in May 2020.

Assessment, consultation and design of measures

- The government of Tuvalu initially requested the GCCA+ SUPA funding be used to co-fund the Tuvalu Coastal Adaptation Project. However, this request could not be accommodated as the GCCA+ SUPA funds had to be applied to the scaling up of a standalone action. Subsequently the government of Tuvalu confirmed water security as the focus sector in March 2020 and Funafuti as the project site.
- Scoping and engineering preliminary assessments of one secondary school, two primary schools and seven preschools in Funafuti were carried out by the PWD engineers. Based on the assessments, FSS and SDA Primary School were selected as sites for additional rainwater systems; and two preschools, Olave and Vaiaku, were selected for handwashing facilities.
- A rapid assessment to gauge the number and capacity of existing desalination plants operating in Funafuti was carried out in December 2020 and completed in January 2021. The finding revealed that desalination plants are a reliable source for freshwater supply besides rainwater systems. In times of drought, Tuvaluans rely entirely on desalinated water. The findings also indicated that there were only two plants operational in Funafuti at the time of the assessment.

KRA 1: Procurement of a portable and solar powered desalination plant

- The size, capacity and specifications of the desalination unit procured by the GCCA+SUPA project was determined by Tuvalu during the design phase of the project. The 20m³/day portable, solar-powered desalination was procured and delivered to Funafuti Tuvalu in April

2022. This caused an increased daily production of desalinated water from 180m³/day to 200m³/day in Funafuti.

- Tuvalu opted for a portable and solar-powered desalination unit on the basis that it could be mobilized between islands in times of drought and water scarcity situations. In December 2022 – January 2023, the unit was shipped to Vaitupu Island to address the water scarcity issue experienced on the island.
- Although the desalination unit was delivered to Funafuti in April, installation, commissioning and training on operations and maintenance were not provided until November – December 2022 when Tuvalu reopened its borders. Six Public Works Department engineers were trained, and more than 80 solar panels were installed at the PWD building for the solar operation of the unit.

KRA 2: Refurbish and maintain water systems in Fetuvalu Secondary School, Seventh Day Adventist Primary School and 7 preschools in Funafuti

- To improve clean water access and supply especially for children and youth, the project focused on refurbishing and installing water measures at two selected schools in Funafuti – FSS and SDA Primary School.
- 12 x 10,200L water tanks and materials for construction and plumbing were procured from Fiji following the engineering design and bills of quantity provided by Tuvalu.
- A local construction firm was contracted for the refurbishment and installation of the water systems at the two schools. Installations were done in accordance with the engineering design and drawings. Public Works Department and the Project National Coordinator provided oversight for the installations. A weekly progress meeting was held between the Contractor, PWD, the National Coordinator and SPC. Issues raised in these meetings were discussed and addressed.
- Installations were completed in December 2022 with 9 water tanks installed in FSS and 3 tanks in SDA Primary School. Roofing and gutters were replaced at the two sites and first flush diverters and other appurtenances were installed at each school.
- Maintenance training was provided to a total of 10 staff of the two schools.
- In June 2021, Tuvalu proposed new activities under an overall project budget reallocation which included the installation of handwashing facilities and overhead tanks, and ultraviolet water treatment systems at 7 preschools in Funafuti.
- Due to time constraints and shipment delays that continued post COVID-19 travel restrictions, the scope of the preschool activity was reduced to the provision of handwashing materials, including overhead tanks, to two selected preschools only. The materials and overhead tanks were delivered to Funafuti in May 2023 and are being stored at the Climate Change Department's compound. An agreement was established with the Government of Tuvalu in March 2023, whereby the government of Tuvalu confirmed they would use their own funds for installation.

KRA 3: Procurement of a 10,000L water truck

- One of the main issues relating to water access and supply in Funafuti is the distribution capacity of the water trucks operated by the PWD.
- At the time of procurement, only one 10,000L truck was operational in Funafuti. The truck was insufficient to meet the daily water orders from the public.

- Two 10,000L water trucks were procured and delivered to Funafuti in October 2022 which coincided with the drought season in Tuvalu. Demands for desalinated water rise exponentially during drought seasons.
- The additional trucks operated by PWD have increased daily delivery rate from 30 to 65 households daily and reduced delivery turnover time from 30 minutes to 10 minutes.

KRA 4: National coordination

- The Climate Change Department is the key focal agency responsible for project oversight and coordination in Tuvalu.
- In March 2021, a Project National Coordinator was recruited and housed at the Climate Change Department. The National Coordinator was responsible for the project coordination in Tuvalu, providing monthly reports, and served as a liaison between SPC and the implementing agencies in Tuvalu.

Challenges

- Border closures and restrictions as a result of the COVID-19 pandemic impacted the delivery and scope of the project in Tuvalu. This included the delayed installation and commissioning of the desalination unit and the provision of training to the local engineers.
- Similarly, significant challenges have had to be overcome in the procurement and delivery of construction and plumbing materials, the water trucks and the UV water treatment systems required for the preschools. A number of activities were reduced in scope to factor in delay times. Such activities included the handwashing facilities at the preschools where the UV systems were removed, and the number of beneficiary schools was reduced from seven to two.
- The competing infrastructure projects in Tuvalu can be a constraint to the workforce at PWD when engineers are providing oversight for several projects simultaneously.
- Acquittal of expenditures compulsory under a Grant Agreement are putting extra burden on the already limited staff of the Climate Change Department and Ministry of Finance.
- Compliance to the SPC '3-quote' procurement process is a challenge in Tuvalu as suppliers are limited in Tuvalu and at times obtaining three quotes is not feasible.

Lessons learnt

- Applying a people centred approach in the design, planning and implementation of the project is critical to achieve acceptable and culturally appropriate measures. In Tuvalu particular attention was directed towards communities, households and youth.
- One of the positive outcomes seen from the border closures was the extensive reliance on the National Coordinators for facilitation and mobilization of local resources and partners in the countries. This was seen as an upskilling to National Coordinators.
- Increased shipping costs and potential shipment delays to be factored into the planning stages of new projects to mitigate possible implementation risks.
- Regular update meetings between the implementation agencies and partners have been instrumental towards a coordinated on-the-ground implementation and rectifying issues as they arise.
- Flexibility in procurement should be considered to accommodate country situations and processes.
- Finance training is recommended for country officers to improve compliance with SPC financial regulations and standards.