



**Pacific Community (SPC)**

**Government of Tuvalu**

**GLOBAL CLIMATE CHANGE ALLIANCE PLUS:  
SCALING UP PACIFIC ADAPTATION (GCCA+ SUPA) PROJECT**

**PROJECT DESIGN DOCUMENT**

**Output 3**

**Strengthening water security in Tuvalu**

**September 2020**

## **Strengthening water security in Funafuti Island communities**

### **Project Summary**

This design document describes the framework for Tuvalu's activities under Output 3 "Scale up resilient development measures in specific sectors" of the Global Climate Change Alliance Plus - Scaling up Pacific Adaptation (GCCA+ SUPA) Project. The Output 3 activities, described here for Tuvalu, will be implemented in conjunction with related activities under Output 1 "Strengthen strategic planning at national levels" and Output 2 "Enhance the capacity of sub-national government stakeholders to build resilient communities" of the GCCA+ SUPA project.

The Government of Tuvalu has selected the water sector as their focus for Output 3. The overall objective of the project is to strengthen water security in Tuvalu through the improvement of water catchment and access to water. The specific objective is 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 Nauti Primary and SDA Primary School; (3) Procuring of a 10,000 Litre water truck; and (4) National coordination of the project activities.

In Tuvalu, the primary water source is from water catchment systems. Groundwater is classified non-potable in most islands due to high salinity levels and pollution mostly from improper sanitation systems and livestock waste. In Funafuti where 60% of the population reside, the demand for freshwater is close to reaching the estimated sustainable yields for freshwater supply which means Tuvalu is highly vulnerable to climate variations. Improving water catchments, supply and access is a high priority for the Government of Tuvalu. The SUPA project will scale up and support the ongoing efforts by the Government of Tuvalu in the area of water security.

The project will incorporate a holistic approach, directly benefiting 6,716 people and indirectly benefiting 3,929, and involving departments responsible for climate change, infrastructure, education, and local government. The project is about enhancing the resilience of people and communities, hence a people-centred approach is adopted throughout the design and implementation. Consultations to inform this Project Design Document were held virtually<sup>1</sup> during the months of May to July 2020.

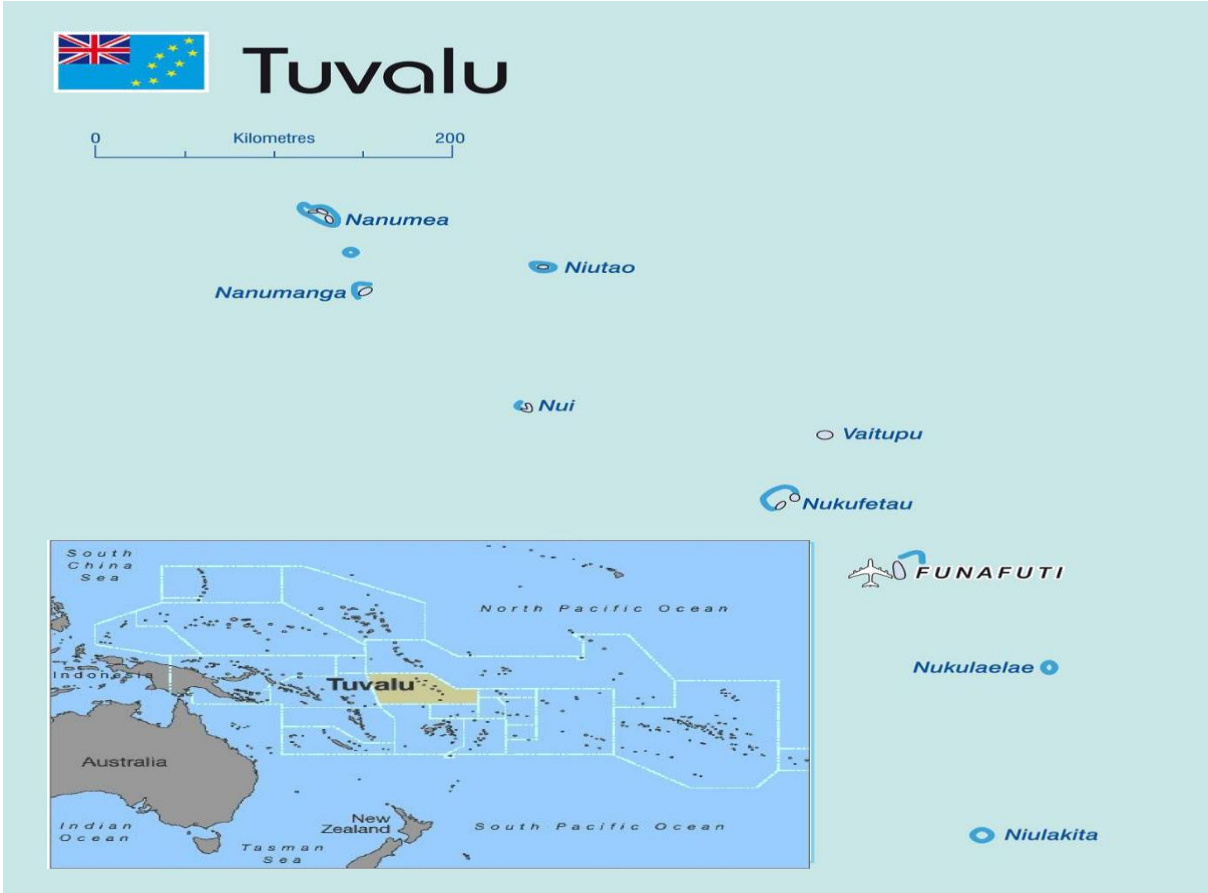
The project will install a portable, solar powered desalination plant to scale up water supply in Funafuti and the outer islands. Prior to procurement, the project will conduct an assessment of existing desalination plants with regards to specifications, operational capacity and costs, performance and maintenance. The desalination plant will be operated by the staff of the Ministry of Public Utilities, Infrastructure, Environment, Labor, Meteorology and Disaster (MPUIELMD) through its Public Works Department (PWD) in Funafuti and training will be provided when the plant is installed. A 10,000 Litre truck to be used for water deliveries within Funafuti will also be purchased and to be operated by the MPUIELMD. The project will undertake an assessment and refurbishment of the rainwater harvesting systems for the two schools identified. A capacity building training will be provided to staff and students on water management and water systems maintenance.

The implementation period of this project will commence on the date of signature of this Project Design Document and end on 31<sup>st</sup> December 2022. The project will be implemented by the MPUIELMD in collaboration with the Climate Change Department. The project is consistent with the Kakeega III – the National Strategy for Sustainable Development (2016-2020); Te Kaniva – Tuvalu's Climate Change Policy (2012); and Tuvalu's Sustainable and Integrated Water and Sanitation Policy (2012-2021) which identified improved water security as a key policy area.

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<sup>1</sup> The national consultations could only be held virtually due to the COVID-19 Pandemic

# Map of Tuvalu



### **List of Abbreviations**

ACSE	Adapting to Climate Change and Sustainable Energy
ACP	Asian Caribbean Pacific
ADB	Asian Development Bank
BRSP	Building Safety and Resilience in the Pacific
CCD	Climate Change Department
CSIRO	Commonwealth Scientific, Industrial Research Organisation (Australia)
COVID-19	Corona Virus Disease 2019
EU	European Union
EUR	Euros
FRDP	Framework for Resilient Development in the Pacific
FSM	Federated States of Micronesia
GCCA: PSIS	Global Climate Change Alliance: Pacific Small Island States project
GCCA+SUPA	Global Climate Change Alliance Plus: Scaling Up Pacific Adaptation
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ISACC	Institutional Strengthening in Pacific Countries to Adapt to Climate Change
KRA	Key result area
MoA	Memorandum of Agreement
MEYS	Ministry of Education, Youth and Sports
MPUIELMD	Ministry of Public Utilities, Infrastructure, Environment, Labor, Meteorology and Disaster.
NAPA	National Adaptation Programme of Action
PacRES	Pacific Adaptation to Climate Change and Resilience Building
PACC	Pacific Adaptation to Climate Change
PAP	Pacific Adaptation Project
PDD	Project Design Document
PIC	Pacific Island Countries
PWD	Public Works Department
R2R	Ridge to Reef
RENI	Readiness for El Nino
RMI	Republic of the Marshall Islands
SDG	Sustainable Development Goals
SDA	Seventh Day Adventist
SPC	Pacific Community
SPC-GEM	Pacific Community - Geoscience, Energy and Maritime Division
SPREP	Secretariat of the Pacific Regional Environment Programme
TCAP	Tuvalu Coastal Adaptation Project
TISIP	Tuvalu Infrastructure Strategy and Investment Plan
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
USP	University of the South Pacific

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## Signature Page

The contents of this Project Design Document are endorsed by:

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**All parties signed by 17/09/20**

## 1. INTRODUCTION

This design document describes the framework for Tuvalu’s activities under Output 3 “Scale up resilient development measures in specific sectors” of the Global Climate Change Alliance Plus - Scaling Up Pacific Adaptation (GCCA+ SUPA) Project. The Output 3 activities, described here for Tuvalu, will be implemented in conjunction with related activities under Output 1 “Strengthen strategic planning at national levels” and Output 2 “Enhance the capacity of sub-national government stakeholders to build resilient communities” of the GCCA+ SUPA project. The government of Tuvalu has selected the water sector as their focus for Output 3.

This section of the design document describes the background to Tuvalu and the background to the SUPA Project.

### **Background to Tuvalu**

#### ***Geographical and Economic Setting***

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 5 meters above sea level, a land mass of 27km<sup>2</sup> and vulnerability to weather conditions, Tuvalu is classified by the Intergovernmental Panel on Climate Change as one of the most vulnerable countries to climate change. 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. Fisheries is a significant contributor to the Government’s revenue in terms of exports and fishing license fees. The public sector employs the majority of the working population while subsistence agriculture and fisheries are important sources of household income for the outer island communities. The projected effects of climate change, namely increased temperature, ocean acidification and sea level rise will compound the economic and environmental challenges existing in Tuvalu.

#### ***Vulnerability and Climate Change Projections for Tuvalu***

Climate projections for Tuvalu based on the global climate models show that for the period to 2100:

- There is *very high confidence* that El Niño and La Niña and ocean acidification will continue to occur in the future. There is also *very high confidence* in the continued rising of annual mean temperatures, extremely high daily temperatures, coral bleaching and sea level.
- There is *high confidence* of more extreme rain events occurring.
- There is *low confidence* that little change will occur in the mean annual rainfall and drought incidences to decrease. A *low confidence* projection suggests a decrease in wave heights and periods for the month of December-March.

(These climate projections are based on the 2014 Australian Bureau of Meteorology and CSIRO Report: Climate variability, extremes and changes in the Western Tropical Pacific: New science and updated country reports).

These changes in climate are foreseen to exacerbate water security issues in Tuvalu.

### ***National Policies and Strategies***

Climate change resilience and water access are two of the most important key priorities for Tuvalu. The project activities are aligned to a number of strategic goals and policy areas identified by Tuvalu as follows:

- Te Kakeega III – National Strategy for Sustainable Development (2016-2020) is the overarching national policy that recognises climate change as Tuvalu’s most serious threat. Water access and management are amongst the policy’s strategic priorities.
- Te Kaniva – Tuvalu Climate Change Policy (2012) prescribes the country’s eight strategic priorities when responding to climate change impacts. Integrated water management is one of the strategic goals of the policy.
- Tuvalu’s Sustainable and Integrated Water and Sanitation Policy (2012-2021) aims for a safe, reliable, affordable access to water and sanitation. Amongst its strategic targets are the improvement and regular maintenance of water harvesting systems, sustainable operations and maintenance of desalination plants, cleaning and maintenance of gutters and water conservation.
- Tuvalu Infrastructure Strategy and Investment Plan (TISIP) 2012 is the country’s investment plan for economic infrastructure. Aligned strategic priorities include the rehabilitation of guttering and pipes connected to water storages, water storages’ maintenance programmes, and management plans for desalination plants to sustain operations.

### ***Related Projects and Activities***

Listed below are some water security related projects and activities that are presently ongoing in Tuvalu:

Project Title	Description	Status
<b>Tuvalu Coastal Adaptation Project (TCAP) (2017-2024)</b>	A US\$36 million project financed from the Green Climate Fund which aims to improve coastal protection focusing on the islands of Funafuti, Nanumea and Nanumaga.	Ongoing
<b>Managing Coastal Aquifers in Palau, RMI and Tuvalu (2018-2022)</b>	The project strives to improve the understanding, use, management and protection of coastal aquifers in Republic of Palau, Tuvalu and the Republic of Marshall Islands towards enhanced water security within the context of a changing climate.	Ongoing

<b>Intra-ACP GCCA+ Pacific Adaptation to Climate Change and Resilience Building (PacRES) (2018-2022)</b>	Aims to increase the resilience of the Pacific ACP countries to climate change and achieve the UN's SDG 13.	Ongoing
<b>Ridge to Reef (R2R) (2015-2020)</b>	The objective of the project is to preserve ecosystem services, sustain livelihoods and improve resilience through the application of a 'ridge-to-reef' approach.	Ongoing
<b>EU Adapting to Climate Change and Sustainable Energy (ACSE) (2014-2020)</b>	Aims to improve climate change adaptation, reduce country resilience on fossil fuels and enhance capacity building.	Closing stages
<b>Pacific Adaptation Project (PAP): Institutional Strengthening in Pacific Countries to Adapt to Climate Change (ISACC) (2015-2020)</b>	The goal is to strengthen the national institutional capacity of Pacific Island Countries (PICS) to effectively plan for, coordinate and respond to the adverse impacts of climate change.	Closing stages
<b>ACP-EU Building Safety and Resilience in the Pacific (BRSP) (2013-2019)</b>	Mainstreams disaster risk reduction/climate change adaptation at the national and regional levels.	Completed
<b>Strengthening water security in Vulnerable Island States (2015-2019)</b>	The project works across 5 PICs, Tuvalu being one of them, and aims to (i) enable target countries to anticipate, prepare and respond to drought and (ii) to effectively and efficiently utilise and maintain human and infrastructure systems	Completed

### **ADB Funafuti water and sanitation project (2020-2023)**

The Funafuti water and sanitation project is a US\$13 million Asian Development Bank funded project to strengthen the water and sanitation sector in Tuvalu. The project, designed in two phases, comprises of a project readiness financing (PRF) phase totalled at US\$4 million and an ensuing project with an indicative cost of US\$9 million.

Due to the relevance and magnitude of the project, a PRF will be rolled out in 2020-2023 to ensure readiness for the ensuing projects and efficient and effective project outcomes. The national executing agency is the Ministry of Finance and the key implementing partners are the Ministry of Health, Social Welfare and Gender (MHSWG), the Ministry of Local Government and Agriculture (MLGA) and the Ministry of Public Utilities, Infrastructure, Environment, Labour, Meteorology and Disaster (MPUIELMD).

The PRF contains two key outputs. Output 1 “*Enabling environment for the ensuing investment project created*” aims to create the enabling environment for the Government of Tuvalu to implement the ensuing project. The output includes the following sub-components: (i) strengthening of the government’s water supply and sanitation services, including capacity development in water supply and sanitation, the establishment of a central project management

unit, the provision of a water supply and sanitation specialist and a project finance personnel; (ii) the establishment of a centralized water authority; (iii) design and implement a public awareness and community outreach campaigns on water resources, sanitation and related climate change issues; and (iv) reviewing and implementing reforms in the water supply and sewerage tariff frameworks.

Output 2 “*Investment scope identified and detailed engineering design completed*” contains six sub-components: (i) prepare a 2020-2040 sector strategy to support the delivery of resilient, sustainable and affordable water supply and sanitation services in Funafuti; (ii) identify the project scope; (iii) prepare the project due diligence; (iv) design the project’s hygiene awareness and education program; (v) provide capacity building activities in safeguards, procurement, gender, financial management and institutional strengthening; and (vi) perform the strategic procurement planning exercise.

The ensuing project scheduled to commence in 2022 has four key components, three of which are directly water supply related. Component 1 focuses on availability of safe drinking water at the household level. Activities include the provision of a desalination plant, the construction of new reservoirs, increased water harvesting systems, establishment of a rainwater treatment facility and water quality testing. Component 2 focuses on installation of sanitation infrastructure and improved services. Component 3 focuses on hygiene awareness behavioural change towards water conservation. The fourth component focuses on the financial, technical and operational sustainability of Tuvalu’s water supply and sanitation services.

### **About the GCCA+ SUPA Project**

#### ***Description of the overall GCCA+ SUPA project***

Climate change and natural disasters are among the greatest challenges jeopardizing and undermining the ability of all countries, in particular Pacific countries, to achieve the sustainable development goals and reduce poverty. The GCCA+ SUPA project falls under the GCCA+ flagship initiative, which has three priorities: (i) mainstreaming climate change issues into poverty reduction and development efforts; (ii) increasing resilience to climate-related stresses and shocks; and (iii) supporting the formulation and implementation of concrete and integrated sector-based climate change adaptation and mitigation strategies.

The GCCA+ SUPA project is about scaling up climate change adaptation measures in specific sectors supported by knowledge management and capacity building. The 4.5-year project (2019 – 2023) is funded with EUR14.89 million from the European Union (EU) and implemented by the Pacific Community (SPC) in partnership with the Secretariat of the Pacific Regional Environment Programme (SPREP) and The University of the South Pacific (USP) in collaboration with the governments and peoples of Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Republic of the Marshall Islands (RMI), Nauru, Niue, Palau, Tonga and Tuvalu.

The overall objective is to enhance climate change adaptation and resilience within ten Pacific Island countries. The specific objective is to strengthen the implementation of sector-based, but integrated, climate change and disaster risk management strategies and plans.

The three key outputs for the GCCA+ SUPA project are:

1. Strengthen strategic planning at national levels;
2. Enhance the capacity of sub-national government stakeholders to build resilient communities; and
3. Scale up resilient development measures in specific sectors.

The activities will adopt a people-centred approach<sup>2</sup> throughout and will take into account lessons learnt and wise practices from the regional, national, sub-national and community-based projects and programmes implemented over the last decade.

The Action will contribute to the *Framework for Resilient Development in the Pacific (FRDP)*, the *Sendai Framework for Disaster Risk Reduction*, the *Paris Agreement* to the *United Nations Framework Convention on Climate Change (UNFCCC)*, and the *Sustainable Development Goals*, especially Goal 1: no poverty, Goal 2: zero hunger, Goal 3: good health and well-being, Goal 4: quality education, Goal 5: gender equality, Goal 6: clean water and sanitation and Goal 13: climate action and Goal 14: life below water.

### ***The GCCA+ SUPA project in Tuvalu – Strengthening water security in Tuvalu***

The GCCA+ SUPA project in Tuvalu will scale up several past and ongoing project interventions related to water security.

The project will scale up past efforts by the Government of Japan in collaboration with the Government of Tuvalu in the provision of desalination plants to counter water shortage problems in Tuvalu. The first ever desalination plant donated by Japan was installed and operated in Funafuti in the 1980s and since then, the government of Tuvalu has relied on the desalination technology to assist Tuvaluans with freshwater supply particularly during drought seasons. There are currently three operational desalination plants in Funafuti with capacities of 1x100m<sup>3</sup>/day and 2x10m<sup>3</sup>/day. Desalination plants consume large amounts of energy and require specialized technical skills to operate and maintain. The project under the first Key Result Area (KRA 1) will purchase a portable, solar powered unit and provide a specialized training to staff of the MPUIELMD – the responsible ministry for the operations and maintenance of the desalination unit. The unit will also be a mobile machine that can be easily transferred between locations within Funafuti (and the outer islands) when needed. The operational capacity of the unit will be decided in the implementation phase of the project.

The refurbishment of the water systems for schools in Funafuti is a scale up of past initiatives by the Government of Tuvalu (MPUIELMD), the Australian and New Zealand Governments and the National Adaptation Plan of Action 1 (NAPA). Because the schools rely solely on the water catchments for their supply of freshwater, regular maintenance of the water systems is vital to ensure the cleanliness of the water. Presently, the Government of Tuvalu is allocating resources for the renovation and maintenance works for Fetuvalu High School (a government-run school based in Funafuti) which covers maintenance of the water systems. The GCCA+ SUPA project under KRA 2 will support the refurbishment of the water systems for two primary schools in Funafuti, namely Nauti Primary and the SDA Primary. The project in

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<sup>2</sup> SPC has adopted a people-centred approach which incorporates human rights, gender equality, social inclusion, environmental sustainability and culture. It places people at the centre of planning, implementation, decisions, monitoring and reporting.

collaboration with the PWD of the MPUIELMD and Ministry of Education, Youth and Sports (MEYS) will conduct an assessment of the water systems at the two schools and prepare the complete design and full description of works. The water systems will be refurbished by a qualified contractor and training will be provided to the schools on water management and maintenance. A maintenance checklist will be developed.

The procurement of the 10,000 Liter water truck is scaling up the support from the New Zealand Government to Tuvalu. Presently, one 10,000 Liter water truck, donated by the New Zealand Government, is operational in Funafuti. The single truck performs all the water delivery needs on the island which includes the transportation of freshwater from the desalination units to the water storage systems (cisterns, water tanks) and from the storage systems to households, government and private facilities and schools. The additional 10,000L truck to be purchased by the GCCA+ SUPA project under KRA 3 will improve the delivery effort and contribute to a more efficient supply of freshwater to the residents of Funafuti. The truck will be stationed, operated and maintained by the PWD.

Lessons learnt from other water security projects relating to desalination units, water systems maintenance and water supply implemented in Funafuti and the outer islands of Tuvalu will be applied in the GCCA+SUPA. Through the installation of the water infrastructure and the strengthening of national capacity in water supply, maintenance and management, the project will not only help address immediate water security needs but set the tone for longer term project planning, in particular the Funafuti water sanitation project.

The project overall will directly benefit 6,716 people (in Funafuti Island) and indirectly benefit a further 3,929 people in Tuvalu. The population figures are sourced from the 2017 Tuvalu Mini Census Report:

<b>Country</b>	<b>Total Population</b>	<b>Direct Beneficiaries</b>	<b>Indirect Beneficiaries</b>
Tuvalu	10,645	6,716	3,929

### ***Rationale***

Based on the foregoing, the justification and rationale for the GCCA+ SUPA project in Tuvalu is as follows:

- The sector selected by Tuvalu is one of the five sectors identified in the EU Agreement as priority sectors needing scaling up interventions for the GCCA+ SUPA project.
- The identified scaling up measure is an effective and tested measure that has elements of sustainability and can be implemented within the timeframe of the GCCA+ SUPA project.
- The selected scaled up measure has socio-economic benefits for the communities and can be implemented using an evidence-based, people-centred approach.
- The selected scaled up measure fits within the scope of the GCCA+ SUPA project budget.

- The government of Tuvalu, through its national policies, strategies and plans, places a high priority on water security.
- The systems will contribute to an increase in the number of people having access to quality water particularly in times of drought which Tuvalu islands are prone to.
- The systems fit into the long-term project planning of the water sector in Tuvalu, in particular, the Funafuti water and sanitation project.
- Future projections for climate changes show a very high confidence in the continued occurrence of El Niño and La Niña events as well as the increase in annual mean temperature, extremely high daily temperatures, sea level and coral bleaching. These projected changes will continue to increase the vulnerability of people living in the low-lying atolls in Tuvalu where freshwater is scarce.
- Adopting a people-centred approach will ensure that the principles of equality and equity are provided to all rights holders in Tuvalu.

## **2. PROJECT SELECTION PROCESS**

This section provides a timeline of the planning activities that have led to this Project Design Document. Activities are listed below in chronological order.

*March 2019:* The representative for Tuvalu attended the GCCA+ SUPA Planning and Inception Meeting, 4-6 March 2019, in Suva and contributed to the development of the draft criteria for scaling up climate change adaptation interventions under Output 3 of the project.

*October 2019:* Tuvalu registered its interest for a National Coordinator to coordinate the implementation of the project in the country and identified coastal protection as its focus sector.

*March 2020:* The sector focus was changed to water in Tuvalu and Funafuti Island was selected as the project's main geographical site for implementation. A draft Concept Note submitted by Tuvalu to SPC for review.

*May 2020:* The concept note submitted to EU and approved.

*May – July 2020:* The first national virtual consultation on the PDD occurred in early May attended by the Climate Change Department (CCD), Public Works Department (PWD), Kaupule of Funafuti, Ministry of Education and SPC. A series of bilateral meetings with the government partners were held between May to July on the country activities, budget and workplan. Due to COVID-19 travel bans and national lockdowns, in-country consultations were not possible.

*July 2020:* A draft project design document was prepared and distributed. The draft was later revised to incorporate the feedbacks.

*September 2020:* A revised project design document distributed.

### **3. DETAILED PROJECT DESCRIPTION**

This section describes the overall objective, specific objective and key result areas, as well as the logical framework that is used to monitor progress. The section also includes the project budget and the schedule.

#### **Overall Objective**

The overall objective is: Strengthening water security in Funafuti Island communities through the improvement of water catchments and access to water.

#### **Specific Objective**

The specific objective is: Improved supply, storage and distribution of potable water to communities and schools in Funafuti Island.

#### **Key Result Areas**

##### **KRA 1: Purchase of a portable, solar powered, desalination plant**

###### *1.1 Rapid assessment of existing desalination plants in Funafuti*

The Ministry of Public Utilities, Infrastructure, Environment, Labour, Meteorology and Disaster (MPUIELMD), through the Public Works Department (PWD), in partnership with the GCCA+SUPA team will conduct a rapid assessment of the existing desalination plants on Funafuti. The assessment will identify the specifications of the desalination plants, their technical and operational capacity, running costs, maintenance and performance. The assessment will help to understand the national situation, suitable capacity of the technology and constraints surrounding the purchase of future desalination plants.

###### *1.2 Procurement and installation of a new portable, solar powered desalination plant*

The SPC will work closely with the MPUIELMD to design the technical requirements to procure a new portable and solar powered (and energy efficient) desalination plant (with likely capacity of 20m<sup>3</sup>/day). The plant should be easy to mobilize between locations during drought conditions. The services of a qualified and experienced desalination engineering firm will be procured by SPC to supply, install and provide training in the installation and maintenance of the new desalination plant. The SPC procurement policy will be applied. MPUIELMD will assist SPC with the development of the plant specifications, preparation of the procurement documents and the technical review of the tenders.

###### *1.3 Training of MPUIELMD staff and selected technicians on operation and maintenance.*

The services of the engineering firm identified in 1.2 will provide the operations and maintenance training to the MPUIELMD staff and local technicians. A Memorandum of Agreement (MoA) between the engineering firm and the Government of Tuvalu should be prepared and that it clearly specifies the maintenance work and plant service training to be provided and their duration.

## **KRA 2: Refurbish water systems in the SDA High School and Nauti Primary School in Funafuti**

### *2.1 Rapid assessment of the water systems for the two schools*

The MPUIELMD will work closely with the GCCA+SUPA and the National Coordinator to conduct an assessment of the water systems at the SDA Primary School and Nauti Primary School. The assessment team will work in close collaboration with the relevant stakeholders including the Department of Education, Kaupule of Funafuti and the SDA and Nauti School Management. The assessment will identify the state of the water systems and the level of refurbishment work to be undertaken by the project.

### *2.2 Complete design of the water systems to be refurbished, materials specifications and a full description of works.*

The MPUIELMD in collaboration with the GCCA+SUPA engineer in Suva will undertake the design, material specifications, full description of work for the renovations of the water systems in the SDA Primary School and Nauti Primary School.

### *2.3 Refurbishment and maintenance of the water systems in the two schools.*

With the technical assistance of MPUIELMD and the National Coordinator, SPC will procure the materials and the services of a qualified building contractor(s) to refurbish the water systems in the two schools. The MPUIELMD and the National Coordinator will monitor the progress and provide overall supervision of the work.

### *2.4 Training on water management and maintenance of the water systems in the schools*

The contractor in 2.3 together with the MPUIELMD and the National Coordinator will provide maintenance training of the water systems to the staff and management personnel of the two schools. In addition, the National Coordinator in collaboration with the CCD will provide capacity building and awareness raising on water management to the schools.

## **KRA 3: Procurement of a 10,000 Litre water truck**

### *3.1 Design and complete specification of the water truck*

The MPUIELMD will work with GCCA+SUPA team on the complete design and specifications of the water truck. The water truck will be used to distribute water from the desalination plants to water storages/cisterns. The truck will also be used to supply the water from storages to households, schools, government buildings and communities in Funafuti. MPUIELMD will assist SPC with the development of the specifications, preparation of the procurement documents and the technical review of the tenders.

### *3.2 Procurement and purchase of the 10,000L water truck*

The SPC will undertake direct procurement following its own policy and procedures and to work in collaboration with the MPUIELMD for the purchase of a 10,000L water truck. The water truck will be used to distribute potable water to the communities and households in Funafuti. The truck will be operated and maintained by the ministry's PWD.

#### **KRA 4: National coordination of the project activities**

##### *4.1 Employ a National Coordinator*

A National Coordinator will be recruited and employed for a minimum of two years. Additional employment will be dependent on the assigned budget. This position will be based at the Climate Change Department in Funafuti to coordinate project implementation and is expected to work across both the CCD and MPUIELMD. The National Coordinator will report to the (1) Director of the Climate Change; (2) Director Public Works Department and the (3) GCCA+ SUPA Project Manager based in Fiji. The National Coordinator will liaise closely with the USP's Research Community Officer for Funafuti (Output 2 of the overall GCCA+ SUPA Action), and any national officer as may be appointed by SPREP under Output 1 of the overall GCCA+ SUPA Action.

##### *4.2 Operational costs for National Coordinator*

The project will support the procurement of small equipment (i.e. laptops, desktop printer and external hard drives) and office supplies (i.e. internet, office stationery, printer toner, etc.) specifically for the GCCA+ SUPA National Coordinator.

#### **Logframe**

The logframe, which represents the basis for monitoring and evaluation, is shown as Annex 1.

#### **Budget and Arrangements for Financial Management**

The budget and arrangements for transfer of funds and financial management is shown as Annex 2.

#### **Schedule of Activities**

Annex 3 presents the schedule of activities.

## **4. INSTITUTIONAL ARRANGEMENTS, RISK MANAGEMENT AND EXIT STRATEGY**

### **Institutional Arrangements**

The funding of this project in Tuvalu will be channeled through the Ministry of Finance. The MPUIELMD will be the key implementing partner for the project who will work in collaboration with Climate Change Department on the water systems, assessments and trainings. The GCCA+ SUPA project in Tuvalu is being implemented under the ambit of the Co-Delegation Agreement, Global Climate Change Alliance Plus – Scaling Up Pacific Adaptation (GCCA+ SUPA), CRIS number: ENV/2018/398237, which was signed by

representatives from the European Union Delegation to the Pacific, SPC and SPREP on 27<sup>th</sup> December 2018.

*Project Oversight Committee*

The project oversight will be placed on the National Advisory Council on Climate Change (NACCC) in Funafuti which includes representatives from the CCD, MPUIELMD, the Kaupule of Funafuti, and the Department of Education. It is expected that the Committee will meet on a quarterly basis or more often as required. The Tuvalu GCCA+SUPA National Coordinator will provide administrative support, including the preparation of meeting agendas and minute taking and dissemination to members and SPC using a standardized template. The committee will provide an oversight function and advice on addressing problems and issues.

*Reporting*

The GCCA+ SUPA National Coordinator will be responsible for providing quarterly narrative and financial progress reports, and monthly progress reports to the project secretariat at SPC in Fiji. A template for reporting will be provided with applicable budget lines. The National Coordinator will also provide brief monthly updates to the project secretariat at SPC in Suva.

*Day-to-Day Implementation of the Project*

The GCCA+ SUPA National Coordinator will coordinate project activities, including quarterly and annual financial and narrative reporting to Tuvalu government and to SPC. The GCCA+ SUPA National Coordinator is also responsible for day-to-day coordination between government agencies regarding delivery of the project’s outputs. The GCCA+ SUPA National Coordinator reports to the Director of Climate Change Department, the Director of PWD and the GCCA+ SUPA Project Manager in SPC.

**Risk Management**

Risk	Risk level	Mitigating Measures
<b>Extreme events</b>		

Project implementation delayed by an extreme weather event e.g. cyclone, ocean surge, major social/cultural events, or COVID-19	High	<ul style="list-style-type: none"> <li>• Ensure planning of activities contains sufficient buffering for minimum one severe and disruptive weather event.</li> <li>• Major social and cultural events to be included in schedules during inception and planning.</li> <li>• Implementation of the action will take into account travel and transportation constraints (likely to continue into 2021) posed by the current COVID-19 pandemic, including but not limited to: <ul style="list-style-type: none"> <li>○ Procuring the services of contractors based in Tuvalu;</li> <li>○ Careful scheduling of equipment delivery due to reduced shipping routes;</li> <li>○ Utilising expertise based in Tuvalu wherever possible.</li> </ul> </li> </ul>
<b>Time constraints</b>		
Insufficient time to complete full installation of rainwater harvesting systems	Moderate / High	<ul style="list-style-type: none"> <li>• Adopt flexible and back-up planning approaches such that alternatives can be prioritized if and when necessary.</li> </ul>
<b>National capacity and challenges to full stakeholder involvement</b>		
Country has insufficient capacity to fully implement the project activities	High	<ul style="list-style-type: none"> <li>• Obtain assistance from government to identify persons who will be committed to the project.</li> <li>• Ensure full commitment of government.</li> </ul>
<b>Sustainability</b>		

Project activities are not maintained or sustainable	Moderate	<ul style="list-style-type: none"> <li>• Build in monitoring and maintenance of on-the-ground measures.</li> <li>• Promote ongoing community engagement during implementation phase.</li> <li>• Communicate with householders and the public on a regular basis using consistent messaging</li> <li>• Involve skilled community members in the installation of the on-the-ground measures.</li> <li>• Capitalise on collaboration opportunities with other development partners.</li> </ul>
<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• There are many uncertainties around the ongoing COVID-19 pandemic, which represents a serious constraint to project implementation. As more information becomes available, further mitigation measures will be developed.</li> <li>• Global economic conditions and national governance do not prevent economic growth.</li> <li>• Global support for the Paris Climate Change Agreement is maintained.</li> <li>• Continual high-level national government commitment to prioritizing climate change and disaster risk management in the national development agendas.</li> <li>• Social and political stability is maintained.</li> <li>• Continuous collaboration amongst development partners occurs and is documented to ensure coherence, complementarity and efficiency amongst climate change and sector-based interventions.</li> </ul>		

## **Exit Strategy**

### *Strategy 1: Community Ownership*

Ongoing community engagement and effective communication through all phases of the project will promote ownership and contribute to the sustainability of project activities. Recognizing that community involvement creates expectations, efforts will be made throughout to ensure that the project's and the community's expectations are the same.

### *Strategy 2: Further Funding*

Identifying alternative sources of grant funding or loan finance, or national government funds in order to continue a project's activity is the second exit strategy for the project in Tuvalu.

GCCA+ SUPA is working closely with a number of other climate change adaptation and disaster risk management projects being implemented by regional and international organizations. Throughout the course of the project, routes to create synergies with other longer running activities will be pursued and where appropriate, developed.

Kiribati and Nauru are also implementing activities under the GCCA+ SUPA project relating to water produced through desalination. Maintaining linkages with these projects and learning from each other is another part of the exit strategy.

### *Strategy 3: Private enterprise*

Developing an alternative business and/or operational model, through commercializing aspects of the project, is a third exit strategy. Within the scope of SUPA, community and private sector involvement in disaster risk management and climate change adaptation interventions will be encouraged where appropriate. Involvement of NGOs is also critical.

Developing a strong relationship and a Memorandum of Agreement with the desalination firm to be engaged under the GCCA+ SUPA will contribute to this exit strategy.

### *Strategy 4: Project Closure*

Winding down the project's activities as efficiently and effectively as possible to capture the benefits and any lessons learned is the fourth exit strategy. Lessons learnt from the GCCA: PSIS project will be applied and include allowing sufficient time and staff for an efficient and complete closure process, complete documentation of all narrative and financial materials, and perhaps most importantly the compilation and sharing of lessons learnt through interactive discussion sessions with national stakeholders and regional partners.

### Annex 1: Indicative Logframe Matrix GCCA+ SUPA Activities in Tuvalu

The activities, the expected outputs and all the indicators, targets and baselines included in the logframe matrix are indicative and may be updated during the implementation of the action. Note also that indicators will be disaggregated by sex whenever relevant.

Intervention logic	Indicators	Baselines (2020)	Targets (2022)	Sources and means of verification	Assumptions
<b>Overall objective:</b> Strengthening water security in Funafuti Island communities	<ul style="list-style-type: none"> <li>Increased production of potable desalinated water to communities in Funafuti all year round</li> </ul>	<ul style="list-style-type: none"> <li>120,000 litre of desalinated water per day</li> </ul>	<ul style="list-style-type: none"> <li>+10% increase in desalinated water available</li> </ul>	<ul style="list-style-type: none"> <li>Tuvalu PACC Technical Report 9 2014</li> <li>MPUIELMD Data</li> <li>Project Assessment Report</li> </ul>	
<b>Specific objective:</b> Improved water security through enhanced supply and distribution of potable water to communities and schools in Funafuti Island.	<ul style="list-style-type: none"> <li>Improved access to potable water by students of Nauti and SDA Primary</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 900 students currently have limited access to freshwater supply</li> </ul>	<ul style="list-style-type: none"> <li>At least 500 students will have access to improved water supply</li> </ul>	<ul style="list-style-type: none"> <li>MPUIELMD Data</li> <li>Project Assessment Report</li> <li>Data from Nauti Primary and SDA Primary schools</li> </ul>	The schools agree to the water maintenance works described by the project

<b>Intervention logic</b>	<b>Indicators</b>	<b>Baselines (2020)</b>	<b>Targets (2022)</b>	<b>Sources and means of verification</b>	<b>Assumptions</b>
<b>KRA1:</b> Procurement of a portable, solar powered desalination plant	<ul style="list-style-type: none"> <li>Assessment on existing desalination plants in Funafuti completed</li> <li>A portable, solar powered desalination plant purchased, installed and operated</li> <li>Training delivered to staff of MPUIELMD</li> </ul>	<ul style="list-style-type: none"> <li>0</li> <li>3 desalination plants in Funafuti (1x100m<sup>3</sup>/day, 2x10m<sup>3</sup>/day)</li> <li>1 training on portable desalination unit</li> </ul>	<ul style="list-style-type: none"> <li>+1 Desalination plant assessment report for Funafuti</li> <li>+1 20m<sup>3</sup>/day portable, solar desalination plant operational in Funafuti</li> <li>+10 MPUIELMD staff trained</li> </ul>	<ul style="list-style-type: none"> <li>MPUIELMD Data</li> <li>Assessment report (to be completed by project)</li> <li>Project Reports</li> </ul>	<ul style="list-style-type: none"> <li>Tuvalu remains in agreement with the 20m<sup>3</sup>/day operational capacity of the desalination plant</li> <li>A 20m<sup>3</sup>/day portable, solar powered desalination plant is available from an external supplier.</li> </ul>
<b>KRA 2:</b> Refurbish and maintain water systems in the SDA High School and Nauti Primary School in Funafuti	<ul style="list-style-type: none"> <li>Assessment of the water systems in the schools completed</li> <li>The refurbishment and maintenance of the water systems in the schools completed</li> <li>Maintenance training to staff delivered</li> </ul>	<ul style="list-style-type: none"> <li>1 assessment (2020) of Fetuvalu High School</li> <li>1 water system maintenance work for 1 government school in Funafuti</li> <li>0</li> </ul>	<ul style="list-style-type: none"> <li>+1 assessment report for the water systems at the 2 schools</li> <li>+2 schools with refurbished water systems</li> <li>+10 staff in total trained</li> </ul>	<ul style="list-style-type: none"> <li>MPUIELMD Data</li> <li>Assessment report (to be completed by project)</li> <li>Nauti Primary data</li> <li>SDA Primary data</li> <li>Project reports</li> </ul>	<ul style="list-style-type: none"> <li>The schools agree to the maintenance work described in the project</li> </ul>
<b>KRA 3:</b> Procurement of a 10,000 Litre water truck	<ul style="list-style-type: none"> <li>Water truck purchased, delivered to Funafuti and operated</li> </ul>	<ul style="list-style-type: none"> <li>1 10,000L truck</li> </ul>	<ul style="list-style-type: none"> <li>+1 additional water truck operational in Funafuti for water distribution</li> </ul>	<ul style="list-style-type: none"> <li>MPUIELMD Data</li> <li>Project reports</li> </ul>	<ul style="list-style-type: none"> <li>Tuvalu remains in favor of the 10,000L water truck</li> <li>A 10,000L water truck is available from an external supplier</li> </ul>

Intervention logic	Indicators	Baselines (2020)	Targets (2022)	Sources and means of verification	Assumptions
<b>KRA 4:</b> National coordination of the project activities	<ul style="list-style-type: none"> <li>Number of quarterly narrative and financial reports submitted by national coordinator</li> </ul>	<ul style="list-style-type: none"> <li>0 reports</li> </ul>	<ul style="list-style-type: none"> <li>+8 reports</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly narrative and financial reports</li> </ul>	<ul style="list-style-type: none"> <li>National coordinator is recruited by Q4 2020</li> </ul>

## Annex 2: Budget and Payment Schedule

Activity	Cost (Euros)
<b>KRA1: Procurement of a portable and solar powered desalination plant</b>	
1.1 Rapid assessment of existing desalination plants in Funafuti	5,000
1.2 Procurement and installation of a new portable, solar powered desalination plant and parts	180,000
1.3 Training of MPUIELMD staff on operation and maintenance	
<b>Total KRA 1</b>	<b>185,000</b>
<b>KRA2: Refurbish and maintain water systems in the SDA Primary School and Nauti Primary School in Funafuti</b>	
2.1 Rapid assessment of the water systems for the two schools in Funafuti	5,000
2.2 Complete design of the water systems to be refurbished, materials specifications and a full description of works	10,000
2.3 Refurbishment and maintenance of water systems in the two schools	100,000
2.4 Training on management and maintenance of water systems in the schools	10,000
<b>Total KRA 2</b>	<b>125,000</b>
<b>KRA3: Procurement of a 10,000L water truck</b>	
3.1 Design and complete specification of the water truck	100,000
3.2 Procurement and purchase of the 10,000L water truck	

Activity	Cost (Euros)
<b>Total KRA 3</b>	<b>100,000</b>
<b>KRA 4: Coordination</b>	
4.1. Recruit National Coordinator	60,000
4.2 Support National Coordinator	10,000
<b>Total KRA 4</b>	<b>70,000</b>
Contingency*	20,000
<b>Total</b>	<b>500,000</b>

\*Utilization of the Contingency budget line will require SPC's approval

SPC may enter into a Service Contract with a private contractor or the Ministry of Finance / Ministry of Public Utilities, Infrastructure, Environment, Labour, Meteorology and Disaster for the rapid assessments and maintenance training.

SPC will directly procure the services of a qualified firm to provide and install the desalination plant and to provide training in operation and maintenance. MPUIELMD to assist with the preparation of specifications, preparation of procurement documents and the technical review of tenders.

SPC will directly procure the materials for the refurbishment of the school water systems and the services of a contractor to undertake the refurbishment. MPUIELMD to assist with the preparation of specifications, preparation of procurement documents and the technical review of tenders.

SPC will directly procure the purchase and delivery of the water truck. MPUIELMD to assist with the preparation of specifications, preparation of procurement documents and the technical review of tenders.

SPC will enter into a Grant Agreement or Service Contract with the Government of Tuvalu to fund the National Coordinator.

All procurement will be based on SPC's Procurement Policy



SPC Procurement  
policy - 10 April 2011

### **Other information**

The Government of Tuvalu will oversee accurate and regular records and accounts of the implementation of the Action. The following conditions will also apply:

- Financial transactions and financial statements will be subject to the internal and external auditing procedures laid down in the financial regulations, rules and directives of SPC.
- Scanned copies of supporting documents relating to each financial transaction will form part of the quarterly acquittal. Originals will be retained by the Ministry of Finance, Tuvalu and made available upon request.
- Fixed assets (equipment): All fixed assets (equipment) will remain the property of SPC until the closure of the project. On closure of the project, the assets will officially be handed over by SPC to the respective stakeholders in Tuvalu. An asset register of all assets purchased should be maintained by the MPUIELMD.

**Annex 3: Schedule of Activities**

Activities	M1-6 2020	M7-12 2020	M1-6 2021	M7-12 2021	M1-6 2022	M7-12 2022
<b>KRA1: Procurement of a portable and solar powered desalination plant</b>						
1.1 Rapid assessment of existing desalination plants in Funafuti						
1.2 Procurement and installation of a new portable, solar powered desalination plant and parts						
1.3 Training of MPUIELMD staff on operation and maintenance						
<b>KRA2: Refurbish and maintain water systems in the SDA Primary School and Nauti Primary School in Funafuti</b>						
2.1 Rapid assessment of the water systems for the two schools in Funafuti						
2.2 Complete design of the water systems to be refurbished, materials specifications and a full description of works						
2.3 Refurbishment and maintenance of the water systems in the two schools						
2.4 Training on management and maintenance of the water systems in the schools						

<b>KRA3: Procurement of a 10,000L water truck</b>						
3.1 Design and complete specification of the water truck						
3.2 Procurement and purchase of the 10,000L water truck						
<b>KRA 4: Coordination</b>						
4.1. Recruit National Coordinator						
4.2 Support National Coordinator						



## **Project design document amendment #1**

**Between**

**The Pacific Community**

**And**

**The Government of the Tuvalu**

**For the**

**Implementation of the Global Climate Change Alliance Plus – Scaling Up Pacific Adaptation Project in Tuvalu**

Reference is made to the Project Design Document (PDD) dated 17<sup>th</sup> September 2020 which was endorsed for the implementation of the Global Climate Change Alliance Plus – Scaling Up Pacific Adaptation (GCCA+SUPA) Project in Tuvalu. The PDD is hereby amended to include the utilization of EUR 50,000 reallocation from the overall project's savings for 2021, as follows:

### **Page 15-16:**

**KRA 2: Refurbish water systems in Fetuvalu High School, SDA Primary School and 7 preschools in Funafuti.**

### **Preschools in Funafuti**

#### *2.5 Assessment and refurbishment of the rainwater harvesting systems in the 7 preschools*

The MPWIELMD will work closely with the National Coordinator and the GCCA+SUPA SPC Team to conduct an assessment of the water systems at the seven preschools in Funafuti and prepare the engineering design of the water systems to be refurbished. The services of a local contractor will be procured for the refurbishment work. EUR 7,500 will be allocated to this budget line.

#### *2.6 Purchase of materials and installation of 1 handwashing facility and overhead tank for each of the 7 preschools*

The services of a contractor will be procured for the supply and installation of the handwashing facility and the overhead tanks at the 7 preschools. MPWIELD together with National Coordinator

are responsible for overseeing the works by the contractor. EUR 19,000 will be allocated to this budget line.

*2.7 Purchase of materials and installation of 7 UV whole-house assembled water treatment system at each of the 7 preschools*

Materials and spare parts for 7 UV water treatment systems for the preschools will be purchased and installed. The service of a contractor will be procured for the supply and installation of 7 UV water treatment systems. EUR 22,300 will be allocated to this budget line.

*2.8 Training of preschool teachers on operation and basic maintenance of UV water treatment systems*

MPWIELMD and the National Coordinator will provide maintenance training of the water systems to the staff and management of the seven preschools, and local technicians. EUR 1,200 will be allocated to this budget line.

*2.9 Support for the 2022 World Water Day community outreach in Tuvalu*

The activity will be coordinated and implemented by CCD and to focus on water conservation and management awareness campaigns to the general public in Tuvalu. This activity will be funded separate to this PDD under budget line 6.1.1 in overall project budget.

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**Annex I: Indicative Logframe Matrix GCCA+SUPA Activities in Tuvalu**

***KRA 2: Refurbish water systems in Fetuvalu High School, SDA Primary School and 7 preschools in Funafuti***

<p><b>KRA 2: Refurbish and maintain water systems in the SDA High School and Nauti Primary School in Funafuti</b></p>	<ul style="list-style-type: none"> <li>• Assessment of the water systems in the schools completed</li> <li>• The refurbishment and maintenance of the water systems in the schools completed</li> <li>• Maintenance training to staff delivered</li> <li>• UV water treatment systems installed in preschools on Funafuti</li> </ul>	<ul style="list-style-type: none"> <li>• 1 assessment (2020) of Fetuvalu High School</li> <li>• 1 water system maintenance work for 1 government school in Funafuti</li> <li>• 0</li> <li>• 0</li> </ul>	<ul style="list-style-type: none"> <li>• +1 assessment report for the water systems at the 2 schools</li> <li>• +2 schools with refurbished water systems</li> <li>• +10 staff in total trained</li> <li>• +7 UV water treatment systems installed</li> </ul>	<ul style="list-style-type: none"> <li>• MPUIELMD Data</li> <li>• Assessment report (to be completed by project)</li> <li>• Nauti Primary data</li> <li>• SDA Primary data</li> <li>• Project reports</li> </ul>	<ul style="list-style-type: none"> <li>• The schools agree to the maintenance work described in the project</li> </ul>
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In addition, one of the focus schools in Funafuti has changed based on the advice by Tuvalu. The project will now focus on Fetuvalu High School instead of Nauti Primary School. Therefore, Nauti Primary School will now be read as Fetuvalu High School where it appears in the PDD.

**Annex 2: Budget and Payment Schedule**

<b>Activity</b>	<b>Budget in PDD (Euros)</b>	<b>Amended Budget (Euros)</b>
<b>KRA1: Procurement of a portable and solar powered desalination plant</b>		
1.1 Rapid assessment of existing desalination plants in Funafuti	5,000	5,000
1.2 Procurement and installation of a new portable, solar powered desalination plant and parts	180,000	180,000
1.3 Training of MPUIELMD staff on operation and maintenance		
<b>Total KRA 1</b>	<b>185,000</b>	<b>185,000</b>
<b>KRA2: Refurbish and maintain water systems in the Fetuvalu High School, SDA Primary School and 7 preschools in Funafuti</b>		
<i>Fetuvalu High School and SDA Primary School</i>		
2.1 Rapid assessment of the water systems for the two schools in Funafuti	5,000	5,000
2.2 Complete design of the water systems to be refurbished, materials specifications and a full description of works	10,000	10,000
2.3 Refurbishment and maintenance of water systems in the two schools	100,000	100,000

Activity	Budget in PDD (Euros)	Amended Budget (Euros)
2.4 Training on management and maintenance of water systems in the schools	10,000	10,000
<i>Preschools in Funafuti</i>		
2.5 Refurbishment of the rainwater catchment water systems in the 7 preschools		7,500
2.6 Purchase of materials and installation of 1 handwashing facility and overhead tank for each of the 7 preschools		19,000
2.7 Purchase of materials and installation of 1 UV whole house assembled water treatment system at each of the 7 preschools		22,300
2.8 Training of preschool teachers and local technicians on operation and basic maintenance of UV water treatment systems		1,200
2.9 Support for the 2022 World Water Day community outreach in Tuvalu		To be funded separate to this PDD under budget line 6.1.1 in overall project budget
<b>Total KRA 2</b>	<b>125,000</b>	<b>175,000</b>

Activity	Budget in PDD (Euros)	Amended Budget (Euros)
<b>KRA3: Procurement of a 10,000L water truck</b>		
3.1 Design and complete specification of the water truck	100,000	100,000
3.2 Procurement and purchase of the 10,000L water truck		
<b>Total KRA 3</b>	<b>100,000</b>	<b>100,000</b>
<b>KRA 4: Coordination</b>		
4.1. Recruit National Coordinator	60,000	60,000
4.2 Support National Coordinator	10,000	10,000
<b>Total KRA 4</b>	<b>70,000</b>	<b>70,000</b>
Contingency*	20,000	20,000
<b>Total</b>	<b>500,000</b>	<b>550,000</b>