



Pacific
Community
Communauté
du Pacifique

Global Climate Change Alliance: Pacific Small Island States

Volume 2: Country Reports



Building climate change resilience in Cook Islands, Federated States of Micronesia,
Kiribati, Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu

Global Climate Change Alliance: Pacific Small Island States

Volume 2: Country Reports

October 2016





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List of abbreviations

| | |
|------------|--|
| ACSE | Adapting to Climate Change and Sustainable Energy Programme |
| ADB | Asian Development Bank |
| AusAID | Australian Agency for International Development |
| C-CAP | Coastal Community Adaptation Project |
| CCCI | Climate Change Cook Islands |
| CCCPIR | Coping with climate change in the Pacific Island Region |
| CEO | Chief Executive Officer |
| CePaCT | Centre for Pacific Crops and Trees (SPC) |
| CI-CCA/DRM | Cook Islands Climate Change Adaptation and Disaster Risk Management |
| CIE | Department of Commerce, Industry and Environment (Nauru) |
| CRGA | Committee of Representatives of Governments and Administrations (SPC) |
| EHU | Environmental Health Unit (Kiribati) |
| EIA | Environmental impact assessment |
| EPA | Environmental Protection Agency (FSM) |
| EU | European Union |
| EUD | European Union – Delegation of the European Union for the Pacific |
| FAO | Food and Agriculture Organization |
| FNU | Fiji National University |
| FSM | Federated States of Micronesia |
| GCCA: PSIS | Global Climate Change Alliance: Pacific Small Island States |
| GIS | Geographic Information System |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| GSD | Geoscience Division (SPC) |
| IT | Information technology |
| IWRM | Integrated Water Resources Management |
| JICA | Japan International Cooperation Agency |
| JNAP | Joint National Action Plan |
| KJIP | Kiribati Joint Action Plan for Climate Change and Disaster Risk Management 2015-2020 |
| KRA | Key result area |
| LFA | Logical Framework Analysis |
| LOA | Letter of Agreement |
| MHMS | Ministry of Health and Medical Services (Kiribati) |
| MMR | Ministry of Marine Resources (Cook Islands) |
| MPW | Ministry of Public Works (Marshall Islands) |
| NAPA | National Adaptation Programme of Action |
| NDBP | National Development Bank of Palau |
| NGO | Non-governmental organisation |
| NIWA | National Institute of Water and Atmospheric Research (New Zealand) |
| NZAID | New Zealand Agency for International Development |
| OEEM | Office of Environment and Emergency Management (FSM) |
| OEPPC | Office of Environmental Policy Planning and Coordination (Marshall Islands) |
| OERC | Office of Environment Response and Coordination (Palau) |
| PACC | Pacific Adaptation to Climate Change |



| | |
|----------|---|
| PacTVET | Pacific Technical and Vocational Education and Training project |
| PET | Polyethylene terephthalate |
| PDD | Project design document |
| PPUC | Palau Public Utilities Corporation |
| PWSC | Palau Water and Sanitation Corporation |
| RFP | Request for proposals |
| RFQ | Request for quotations |
| ROM | Results Oriented Monitoring |
| RONadapt | Republic of Nauru Framework for Climate Change Adaptation and Disaster Risk Reduction |
| ROP | Republic of Palau |
| SCUBA | Self-contained underwater breathing apparatus |
| SIDS | Small Island Developing States |
| SODIS | Solar disinfection |
| SOSI | Sound Ocean Systems Inc. (USA) |
| SPC | Pacific Community |
| SPREP | Secretariat of the Pacific Regional Environment Programme |
| SRIC-CC | Strengthening the Resilience of our Islands and our Communities to Climate Change (Cook Islands) |
| TWG | Technical working group |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNICEF | United Nations Children's Emergency Fund |
| USAID | United States Agency for International Development |
| USP | University of the South Pacific |
| WASH | Water Supply, Sanitation and Hygiene |
| WERI | Water and Environmental Research Institute (University of Guam) |
| WHO | World Health Organization |





Executive Summary

The action entitled: Increasing Climate Resilience of Pacific Small Island States through the Global Climate Change Alliance, was implemented through Contribution Agreement DCI-ENV 2011/269–297, between the European Union and the Pacific Community. The action was implemented over a period of five years and four months, between 19 July 2011 and 19 November 2016. The European Union provided the Pacific Community with a budget of EUR 11.4 million for implementation. The working title of the action is: Global Climate Change Alliance: Pacific Small Island States project.

This final report on the action is divided into two volumes: Volume 1: Final Report; and Volume 2: Country Reports.

The overall objective of the project was to support the governments of nine Pacific smaller island states – namely Cook Islands, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu – in their efforts to tackle the adverse effects of climate change. The purpose of the project was to promote long-term strategies and approaches to adaptation planning, and to pave the way for more effective and coordinated aid delivery on climate change at the national and regional level. The project was implemented within the context of the Pacific Islands Framework for Action on Climate Change.

The project was divided into four phases: (i) international recruitment of the core team (0.5 years); (ii) project planning (2 years); (iii) implementation (2.25 years); and (iv) closure (0.75 years). The project's core team consisted of ten technical and financial professionals, and 23 national project officers.

Letters of agreement were signed between the Pacific Community and each country, setting out the scope of the project, and outlining roles and responsibilities and terms of governance. The signatories included Secretaries of the Ministry of Finance and line ministries in each country, and the Director-General of the Pacific Community. Countries then identified sectors in which to focus the project's activities, followed by a process of consultations, and preparation of concept notes and project design documents.

Key result area 1 focused on mainstreaming climate change into national and/or sector response strategies. Four national climate change policies – three covering climate change and disaster risk management – were prepared and nationally endorsed by Kiribati, Nauru, Palau and Tonga. Two sector plans – one in Nauru (water) and one in Tuvalu (agriculture) – were prepared and endorsed. A total of 248,593 people benefitted from the endorsed mainstreaming activities. A further six mainstreaming activities were undertaken, ranging from regulations for the Public Health Ordinance in Kiribati, to a pearl management plan in the Cook Islands.

Key result area 2 focused on better equipping countries to access climate change funds. With support from the project, Cook Islands gained accreditation as a National Implementing Entity to the Adaptation Fund, and the Government of Tonga prepared a Climate Change Fund Bill. Together, these two activities benefitted 119,073 people. Other activities included: two regional workshops on climate change finance; national reviews for each country on climate change mainstreaming and an assessment of budget support readiness; a regional climate finance meeting in 2013 involving Global Climate Change Alliance sister projects from Small Island Developing States in the Caribbean and Indian Ocean; and two rounds of in-country training in proposal preparation using the logical framework approach, which reached 428 people and contributed to 92 proposals being submitted in the six months following the two trainings.

National climate change adaptation projects were successfully implemented in each of the nine countries (**key result area 3**): coastal protection in Marshall Islands and Tonga; food security in Tuvalu; health in Kiribati; marine resources in Cook Islands; and water security in Federated States of Micronesia, Nauru, Niue and Palau. The total cost of implementation was EUR 4.641 million; 82,905 people directly benefitted from these projects.



Training and capacity building in climate change adaptation was delivered to a total of 2,938 people – 55 per cent men and 45 per cent women – through all four key result areas.

Throughout all the activities, gender considerations were addressed through: data disaggregation in all trainings and consultations; implementation of specific activities for women in three countries; solutions to lessen women’s day-to-day burdens in five countries; and delivery of specially-designed education and awareness activities that reached out to special groups – including women – in six countries.

In all of the projects involving the construction of new infrastructure, national planning requirements were followed, including the assessment of environmental impacts. Many of the projects contributed directly to sustainable environmental management – e.g. improved environmental monitoring in Cook Islands, Kiribati and Tonga.

Key result area 4 focused on regional collaboration. One of the activities included placing a project climate change adviser in the Secretariat of the Pacific Regional Environment Programme. This arrangement resulted in closer collaboration at the technical and delivery levels between the Pacific Community and the Secretariat of the Pacific Regional Environment Programme, and has been beneficial to the region. Other collaborative activities included: the development of the Framework for Resilient Development in the Pacific 2017–2030; the successful delivery of the Climate Change Roundtables in 2013 and 2015; and the continued development of the Pacific Climate Change Portal, where all the project’s documents are available to the public.

Communications and visibility were an important part of each key result area. More than 54 media releases and newsletter articles were published. Video was found to be the most far-reaching form of communication; 17 videos were prepared and screened widely on national media and throughout the Pacific via the Pacific Community’s Regional Pacific Way programme – reaching thousands of viewers – and on YouTube, where they received more 39,000 views.

The project contributed to Sustainable Development Goals 2, 3, 6, 9 and 14 through specific national activities.



Goal 2: Zero Hunger – End hunger, achieve food security and improved nutrition and promote sustainable agriculture (Tuvalu)

Goal 3: Good Health and Well-being – Ensure healthy lives and promote well-being for all at all ages (Kiribati)

Goal 6: Clean Water and Sanitation – Ensure availability and sustainable management of water and sanitation for all (Federated States of Micronesia, Nauru, Niue and Palau)

Goal 9: Industry, Innovation and Infrastructure – Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Marshall Islands, Tonga)

Goal 14: Life Below Water – Conserve and sustainably use the oceans, seas and marine resources for sustainable development (Cook Islands)

The project also contributed to Sustainable Development Goals 4, 5 and 13 through the overall project activities.





Goal 4: Quality Education – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
 Goal 5: Gender Equality – Achieve gender equality and empower all women and girls
 Goal 13: Climate Action – Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy

Towards the end of 2015, ten ‘lessons learned’ meetings had been held (nine national and one regional). These contributed to the development of a Lessons Learned Roadshow, which consisted of ten events undertaken with regional organisations in the Federated States of Micronesia, Fiji, and Samoa, involving more than 180 climate change professionals.

Key lessons learned were:

- On-the-ground climate change adaptation activities supported by mainstreaming and targeted training, help countries tackle the adverse effects of climate change.
- Partnering with other organisations contributes to the sustainability of project interventions.
- Outer island communities that face isolation and logistical and transportation challenges require special attention.
- Project activities specially designed for women, youth and senior citizens, ensure their involvement in building climate resilience.
- Strengthening collaboration between line ministries and the ministry responsible for finance, enhances national systems, and may facilitate improved access to climate change funding in the future.
- Video is one of the most effective ways to share lessons learned.
- National communication materials need to be translated into local languages.

Major challenges to implementation included: developing a process for reallocation of funds when non-performance became a serious risk; addressing the limited human resources in the region; and currency fluctuations.

The final project evaluation, conducted at the beginning of 2016, showed the project was successfully implemented, with six out of eight evaluation criteria receiving the highest rating:

- | | |
|--------------------------------------|-----------|
| • Relevance/Coherence/EC value added | Very good |
| • Effectiveness | Very good |
| • Impact | Very good |
| • Sustainability | Good |
| • Efficiency | Very good |
| • Gender | Good |
| • Environment | Very good |
| • Visibility | Very good |

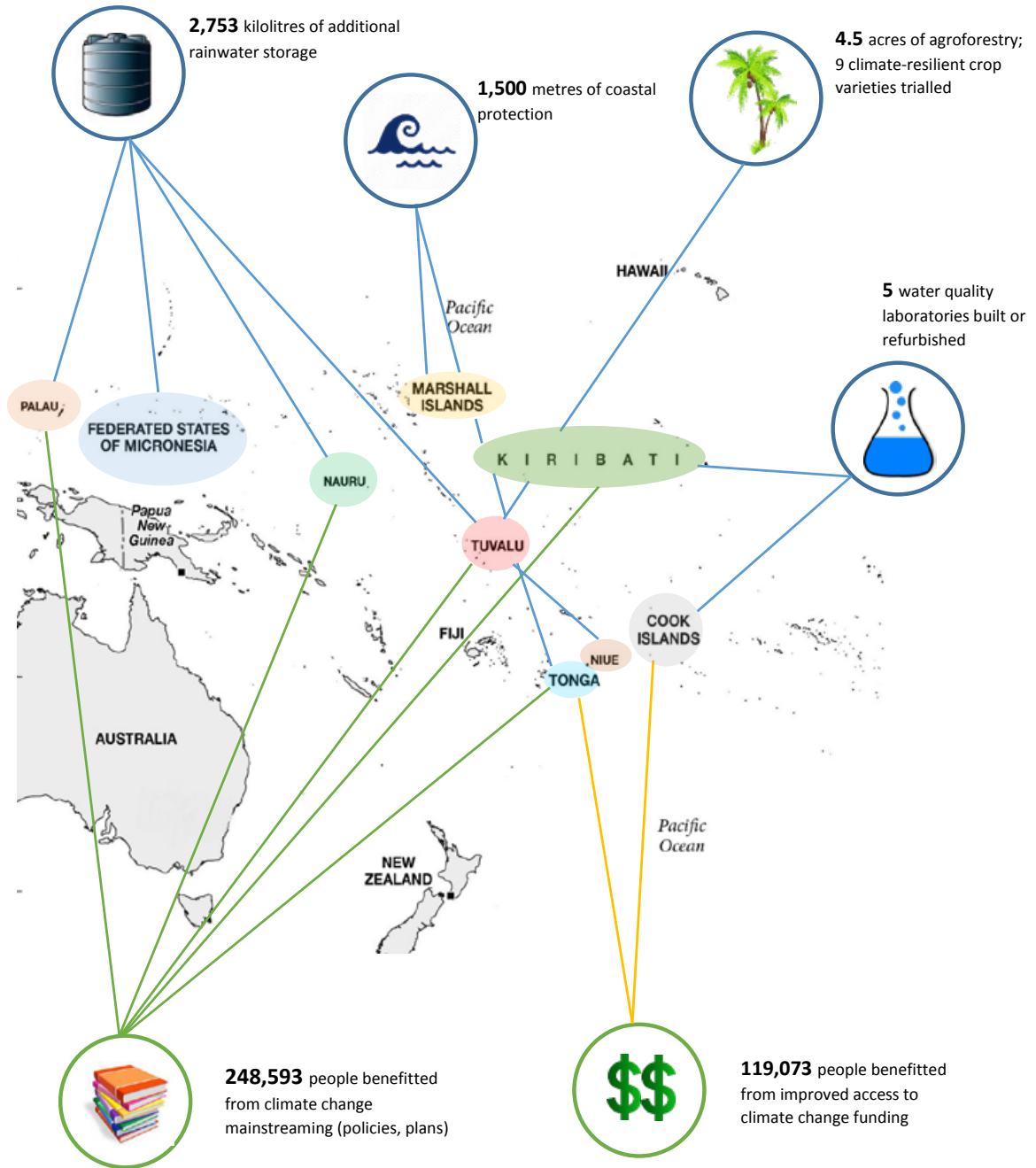
The final independently audited financial acquittal report showed that 99.77 per cent (EUR 11,373,602) of the EUR 11.4 million budget has been expended.

The successful delivery of the project reflects the hard work of the project teams in each of the nine countries and in the Pacific Community. It also attests to the continual support and advice of the European Union Delegation for the Pacific and other development partners, especially the Secretariat of the Pacific Regional Environment Programme. In particular, the project team appreciated the timely advice and guidance provided by the European Union Delegation for the Pacific throughout the implementation period, and acknowledges the important role this played in achieving the project objective.



Project Achievements

82,905 people benefitted from on-the-ground projects



2,938 people benefitted from climate change consultations and training

1,613 **1,325**



Representatives of the SPC team, European Union Delegation and the Government of France at the GCCA: PSIS Roadshow Event in Suva, Fiji, 26 November 2015.

Chapter 1: Introduction



1. Introduction

The Global Climate Change Alliance: Pacific Small Island States (GCCA: PSIS) project was implemented between 19 July 2011 and 19 November 2016. The GCCA: PSIS project was supported by the European Union (EU) with a budget of EUR 11.4 million, and implemented by the Pacific Community (SPC).

The final reporting on the GCCA: PSIS project is divided into two volumes:

- Volume 1: Final Report
- Volume 2: Country Reports

Volume 1 contains an overview of the achievements of the entire project and includes summaries for each country. Volume 2 contains the detailed reports for each of the nine countries.

The overall objective of the GCCA: PSIS project was to support the governments of nine Pacific smaller island states – Cook Islands, Federated States of Micronesia (FSM), Kiribati, Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu – in their efforts to tackle the adverse effects of climate change. The purpose of the project is to promote long-term strategies and approaches to adaptation planning and pave the way for more effective and coordinated aid delivery on climate change at the national and regional level.

The country reports each contain a timeline and the following 12 sections:

- Highlights
- Establishment of agreement between SPC and country
- Climate change adaptation project
- National climate change mainstreaming
- Training
- Communications and visibility
- Gender and special groups
- Environmental issues
- Sustainability
- Anticipated potential impacts (2016–2020)
- Lessons learned
- Supporting documents



Chapter 2: Cook Islands



Timeline



| | |
|------------------|---|
| Sept 2012 | Letter of Agreement signed outlining governing roles and responsibilities of SPC and the Government of Cook Islands |
| Oct 2012 | Climate change adaptation project concept note finalised |
| Nov 2012 | Consultation workshop held in Cook Islands to design adaptation project |
| Apr 2013 | Project design document signed |
| May 2013 | Training conducted in proposal preparation using the Logical Framework Approach |
| Jul 2013 | Project Manager contracted and based in Ministry of Marine Resources from July 2013–December 2015 |
| Sep 2013 | Marine Biologist contracted and based in Manihiki from September 2013–December 2015 |
| May 2014 | Senior citizens IT and climate change training conducted (137 senior citizens trained) |
| Sep 2014 | Refurbished water quality monitoring buoy deployed and data made available to pearl farmers via mobile phones |
| Dec 2014 | Application submitted for accreditation as a National Implementing Entity to the Adaptation Fund |
| Feb 2015 | <i>Using local knowledge to understand climate variability in the Cook Islands</i> report published |
| Jun 2015 | Letter of Agreement amended to provide additional funds for the climate change adaptation project |
| Jun 2015 | Laboratories upgraded in Ministry of Marine Resources in Rarotonga and Manihiki |
| Sep 2015 | Feasibility study completed on marine resources management in Penrhyn, Rakahanga, Pukapuka and Manihiki |
| Oct 2015 | Second round of training conducted in proposal preparation using the Logical Framework Approach |
| Nov 2015 | Pearl management plan completed |
| Dec 2015 | Te Tarai Vaka (system for delivery of development activities and outcomes across government) shared online |
| Jul 2016 | Application for accreditation of the Cook Islands' Ministry of Finance and Economic Management as a National Implementing Entity to the Adaptation Fund approved |



1. Highlights

The Cook Islands are located in the South Pacific and the 2010 census recorded a population of 15,708. There are 15 islands, with the high volcanic island of Rarotonga being the centre of government and commerce. Geographically, and to a certain extent culturally, the nation is divided into two groups: the southern group, comprising the islands of Aitutaki, Atiu, Mangaia, Mauke, Mitiaro, Rarotonga, Manuae (an uninhabited atoll) and Takutea (an uninhabited sand cay); and the northern group, comprising the islands of Manihiki, Palmerston, Penrhyn, Pukapuka, Suvarrow (atolls) and Nassau, which are relatively isolated and less developed.

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Rarotonga on 15 February 2016.

- The climate change adaptation project involved strengthening environmental monitoring to inform fishers and pearl farmers' practices in the northern Cook Islands, especially Manihiki. Successes included the stationing of a marine biologist in Manihiki, refurbishment of the two Ministry of Marine Resources' laboratories (in Rarotonga and Manihiki), and the purchase of a boat and accessories for the Ministry of Marine Resources in Penrhyn. Overall, capacity within the Ministry of Marine Resources was increased.
- The stationing of a marine biologist in Manihiki has been particularly beneficial. Being on the ground to work with the fishers and pearl farmers on a daily basis in their management of the pearl industry, and to conduct research, has resulted in changes in farming practices, such as regular cleaning of the shells. School students in the area also benefited from the introduction of science activities, where previously there were none.
- Education and awareness activities were an important part of the project, and targeted young people and young farmers in particular. Young people were involved in the resource assessments in the northern islands, and were provided specialised training in areas such as scuba diving. Posting water quality information on public noticeboards, which are social meeting points in the northern islands, proved successful; local solutions are best suited to local problems.
- Senior citizens – who comprise a significant sector of the population in the outer Cook Islands – were targeted for Internet training using tablets. They were also surveyed about their experiences and observations of environmental change. An analysis and review of the findings was published, and a video was produced. Observed changes, such as increased sedimentation and diminishing fish diversity, were consistent throughout the Cook Islands, and are providing important information that will guide new activities being conducted through the Strengthening the Resilience of our Islands and our Communities to Climate Change (SRIC-CC) project. Many of the observed changes were related to climate variability.
- Preparing and submitting an application to become a National Implementing Entity to the Adaptation Fund resulted in strengthening the country's financial management system through: developing the Cook Islands Procurement Policy; establishing the position of Procurement Officer; review of the Cook Islands Government Financial Policies and Procedures Manual; and developing the Activity Management System and Environmental and Social Safeguards *Te Tarai Vaka*. The application was approved in July 2016.
- In 2013 and 2015, 17 men and 26 women – many from the outer islands and representing government and the private sector – were trained in proposal preparation using the Logical Framework Approach (LFA). In the six months following the first training, four survey respondents indicated they had completed or worked on a funding proposal since the training workshop, and more than half of the respondents had applied the LFA in their work.



2. Establishment of agreement between SPC and Cook Islands

A Letter of Agreement (LOA) was signed on 24 September 2012 between SPC (Director-General) and the Government of Cook Islands (Secretary, Ministry of Foreign Affairs and Immigration, and Secretary Ministry of Finance and Economic Management). The LOA outlined: the roles and responsibilities for the two parties; governance arrangements; confidentiality and intellectual property rights; arrangements for recruitment of a National Coordinator; implementation of a climate change adaptation project; and financial guidelines. Furthermore, it provides up to EUR 54,000 for the National Coordinator, and up to EUR 500,000 for the climate change adaptation project.

The Letter of Agreement was amended on 8 June 2015 to provide an additional EUR 41,737 for the purchase of a boat for the Ministry of Marine Resources' (MMR) activities in Penrhyn. These funds came from additional monies held in the overall project's climate change adaptation budget line – a total of EUR 4.64 million of which EUR 4.5 million had been committed at the start of the project.

3. Climate change adaptation project

3.1 Selecting project focus

- May 2012: First Steering Committee meeting held; during the bilateral session, several potential activities were discussed, including marine resources, human health, and agriculture and food security – no specific focus was identified.
- July 2012: Cook Islands climate change profile was prepared, describing the legislative and planning background for climate change in Cook Islands, including the Joint National Action Plan (JNAP) and sector plans, as well as activities undertaken over the past five years. This profile was revised in September 2013.
- July 2012: Several agencies were consulted during a country mission, which coincided with the SRIC-CC Inception workshop, where ways to collaborate were discussed. (Collaboration with SRIC-CC has continued throughout the project.) During this mission, it emerged that the GCCA: PSIS project was not included in the budget for the 2012 financial year, thus making it difficult to implement the project in 2012; however, it was still possible to proceed with the planning phase.
- July 2012: The GCCA: PSIS project was discussed at the Cook Islands Climate Change Adaptation and Disaster Risk Management (CI-CCA/DRM) Platform meeting. It was decided that the focus for the GCCA: PSIS adaptation project in the Cook Islands would be on the marine resources sector. The selection of this sector is consistent with Strategic Area 4 of the JNAP: Risk Reduction and Climate Change Adaptation – 'Strengthen economic development and livelihood systems in key sectors, increasing resilience to disasters and climate change'. This was formally confirmed in a letter issued by the Government of the Cook Islands.
- October 2012: Project concept note identifying fisheries and pearl farming in the northern Cook Islands as a primary focus was submitted by the government and approved by the Delegation of the European Union for the Pacific (EUD).



3.2 Consultations and preparation of project design document

- July 2012: The scope of the GCCA: PSIS project was discussed at the CI-CCA/DRM Platform meeting.
- November 2012: A consultation workshop was held in Cook Islands and a preliminary logframe was prepared. There were 17 participants, mainly from government agencies and the Pearl Support Unit, and five participants joined from Manihiki via Skype (11 women and 11 men).
- April 2013: The project design document (PDD) was signed after preliminary approval by the EUD. This was signed by the GCCA: PSIS Project Manager, the Secretary for the Ministry of Marine Resources, the Chief of Staff for the Government of Cook Islands, and the Secretary for the Ministry of Finance and Economic Management. The PDD became the equivalent of a work plan and was amended as the project progressed.
- February 2015: The PDD was amended to reflect the additional budget allocation for further work and equipment in Penrhyn, and was signed by representatives of the same agencies.

3.3 Detailed design and implementation

Design

- November 2012–April 2013: Detailed discussions were held with SPC's Geoscience Division (GSD) and MMR regarding the refurbishment and deployment of a water quality monitoring buoy. The original buoy was deployed in Cook Islands between 2003 and 2005 and supported by New Zealand's International Aid & Development Agency. The buoy was then transported to SPC-GSD for refurbishment; however a lack of funding delayed this process. MMR wished to use some of the project funds to refurbish and redeploy the buoy. SPC-GSD agreed to provide technical assistance given their experience with this equipment and their plans to deploy a similar buoy in Savusavu, Fiji. A budget was prepared and incorporated into the overall budget for the PDD.

Procurement

- 2013–2015: Refurbishment of the buoy required the replacement of parts from the original manufacturers of the buoy, Sound Ocean Systems Inc. (SOSI) in the USA. This procurement was done through SPC using a non-competitive process based on SOSI being a preferred supplier for such specialised equipment.
- 2014–2015: Other equipment that was required – e.g. for the refurbishment of the two MMR laboratories – was acquired by MMR using Cook Islands procurement processes and documented in the financial reporting submitted to SPC.

Recruitment of project officers

- May 2013: Post of Project Manager was advertised and a Project Manager was contracted for the period July 2013–December 2015, based in MMR.
- May 2013: Post of Marine Biologist in Manihiki was advertised. The Biologist was contracted from September 2013–September 2014. In September 2014 the post was re-advertised and a second individual was contracted for January–December 2015.
- October 2013–October 2015: a Communications Officer and MMR Support Officer were contracted to assist with the Cook Islands Pearl Industry Support Programme and the GCCA: PSIS project.



Implementation

- The project logframe as amended in February 2015 was used to report on implementation.
- **Overall objective** – To build resilience to climate change in the Cook Islands. This objective has been achieved, particularly in the Northern Group, where project activities have been focused. To a large extent this has been achieved by having a dedicated Marine Biologist based in Manihiki, who was able to liaise with, and provide inspections, one-on-one training and pearl monitoring advice to individual farmers and the pearl research farm in Manihiki, as well as the small communities in the Northern Group, backed up by the other team members in Rarotonga. The climate change-related indicator, ‘Climate change issues to be included in island development community plans’, has not been directly achieved, mainly because of scheduling issues. The existing island development plans run from 2012–2017, and their review will not start until 2016, thereby falling outside the project’s timeframe. However, a firm foundation has been laid, through the collection and analysis of data on local changes to the environment and climate over the past 50 years, the resource assessment surveys, and the pearl management plan. This information is already being used in the design of project activities in the SRIC-CC project in the Northern Group.
- **Project purpose:** To strengthen environmental monitoring and its relevance to the communities of the northern atolls.
 - The indicator specifying that at least one northern atoll community be engaged in environmental monitoring by December 2014 has been achieved in Manihiki (see KRA1 – 2nd bullet).
 - The indicator specifying that at least two communities in the northern atolls publicly share the results of the environmental monitoring by June 2015 was achieved. Weekly water quality monitoring results were displayed on community notice boards in both English and Cook Islands Maori.
 - The indicator specifying that at least one school in the northern atolls become involved in monitoring water quality by June 2015 was achieved. The project provided training and equipment, including Secchi-disks (for water clarity) and Forel-ule kits (for chlorophyll), and assisted the school principals to include science lessons in the curriculum on topics such as climate change, El Niño, fish biology and ecology. Four young people from Penrhyn were trained to use scuba gear and earned their Open Water Diver certification. They also assisted with the invertebrate study in Penrhyn in 2015.
- **Key Result Area 1:** Awareness and understanding of the results from environmental monitoring of the lagoon system advanced.
 - The indicator specifying that one new effective communication tool be prepared collaboratively and used widely in the communities by June 2015 was achieved. Community noticeboards in cyclone shelters in Manihiki (3) and Pukapuka (1) were used for sharing water quality and other information, and have become community meeting places. Water quality updates were sent to everyone via email and text messaging allowing farmers to respond instantly to environmental conditions.
 - The indicator specifying that at least 10 pearl farmers be trained in water quality monitoring and climate change resilience-building activities by June 2015 was met. Five farmers from Tukao and one from Tauhunu are doing water quality monitoring with the equipment provided – Secchi-disks (for water clarity) and Forel-ule kits (for chlorophyll). More than 10 farmers have



- been trained in environmental change and climate resilience through regular, one-on-one inspections and training provided by the Marine Biologist.
- Information about the project is displayed on the MMR Facebook Page. The MMR website is still under development.
- **Key Result Area 2:** Existing environmental monitoring system strengthened especially in Manihiki.
 - The indicator specifying that one fully operational environmental monitoring system be in place in Manihiki by June 2014 was only partially achieved. The buoy was refurbished, calibrated and deployed in September 2014 – considerably later than planned due to the need to obtain new parts from the United States, transportation constraints, and buoy leakages once deployed. After about five months of real-time data collection, which was analysed and transmitted to the farmers, problems occurred and it was decided that the sensors would be sent back to the US for recalibration early in 2015. The buoy was redeployed with new sensors in November 2015.
 - The indicator specifying that the MMR laboratory be upgraded so that all nutrient analysis can be analysed in-house by June 2015 was achieved. The MMR laboratory in Manihiki has been refurbished, and two laboratories – chemical and biological – for MMR in Rarotonga have been refurbished and equipped so that all analysis can be done in-house, and two laboratory technicians have been trained.
 - The indicator specifying that at least four people in Manihiki be trained in maintenance of monitoring equipment by July 2014 was achieved. The Manihiki team are fully familiar with the deployment of the buoy and cleaning of the sensors.
 - The indicator specifying that at least two MMR personnel be trained in water quality monitoring and data analysis by June 2015 has been achieved; two officers were trained in nutrient analysis work in 2015, with the assistance of L'Institut de recherche pour le développement (IRD) in Noumea.
 - The indicator referring to the production of one publication on project activities by December 2014 was amended to marine resource surveys for Mauke and Mitiaro, which were completed in full. Throughout the project, several articles were published in *Cook Islands News* and the *Climate Change Cook Islands Newsletter*.
 - **Key Result Area 3:** Feasibility study of appropriate marine resource-related livelihood activities conducted in Penrhyn, Rakahanga, Pukapuka and Manihiki in light of changing climate.
 - The indicator specifying that a feasibility study be completed on marine resources management in the four northern atolls by September 2015 was achieved in full.
 - **Key Result Area 4:** Community engaged in implementing the pearl farming management plan.
 - The indicator specifying that a revised compliance structure be completed for the pearl management plan has been achieved. The review including the management plan, pearl farming permit, application forms and draft seeding permit, and the revised 2016–2026 plan was accepted by the Manihiki Island Council.
 - The indicator specifying that at least 20 pearl farmers provide input to the review of the pearl management plan has been achieved. Farmers contributed to the review on an ad-hoc basis throughout 2014 and through to November 2015 during the mini-workshops conducted by the MMR Marine Biologist. The draft document was distributed in the second quarter of 2015, and further meetings were held in Manihiki in November 2015.



Monitoring and evaluation

- Regular quarterly reporting was provided by Cook Islands using the logframe as a reporting template. Financial reporting was provided on a similar schedule.
- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions, provided the project team with regular updates, which were used to alter or amend activities, revise logframe indicators, and monitor budgets.
- Annual planning and steering committee meetings provided other opportunities for discussion and evaluation.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion. During the midterm evaluation in the fourth quarter of 2013, the evaluators conducted a site visit to the Cook Islands.

3.4 Sector mainstreaming

- The revision of the Pearl Management Plan takes into account changing environmental conditions and climate change (see KRA 4 above).
- A coral reef monitoring survey was conducted to review the reef recovery since the 1995–2001 Crown of Thorns outbreak and the 2003–2005 cyclones.

4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

The national mainstreaming activities in the Cook Islands focused on the efforts to gain accreditation to the Adaptation Fund. All the ministries were involved in the preparation of the application, led by the Ministry of Finance and Economic Management (see section 4.3 below).

4.2 National coordination

The position of National Coordinator was advertised in 2012, and the individual was contracted from January 2013–December 2014, and based in the Climate Change Cook Islands Office. Between January and December 2015, there was a sharing agreement in place for the National Coordinator with GCCA: PSIS and the SRIC-CC project.

4.3 Assisting Cook Islands to access climate change finance

- A review of climate change mainstreaming into national plans and policies in the Cook Islands was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of Cook Islands qualifying for direct budget support for climate change was medium-low given its capacity constraints.
- Between December 2013 and July 2016, assistance was provided to the Cook Islands to support its application for status as a National Implementing Entity to the Adaptation Fund. The application was submitted in December 2014, and after successfully responding to requests for further information



from the Adaptation Fund Board, the application was approved in July 2016. The application's approval was not the only positive outcome; the process also resulted in the Cook Islands strengthening its financial management system, updating internal audit processes, revised procurement guidelines, creating a Procurement Officer position, and developing social and anti-corruption policies.

- During February–December 2015, assistance was provided to the Ministry of Finance and Economic Management to develop the communication plan for its activity management system *Te Tarai Vaka*, to provide for efficient delivery of development activities and outcomes across government.

5. Training

5.1 Formal training

5.1.1 Proposal preparation using the Logical Framework Approach

In 2013 and 2015, 17 men and 26 women – mainly from government agencies, NGOs, private sector and outer islands – were trained in proposal preparation using the LFA. The training in 2015 was conducted in collaboration with the SRIC-CC project and individual mentoring was a key component. In the six months following the 2013 training, the LFA was applied in the preparation of four proposals, as well as being integrated in regular work duties.

5.1.2 Sector training

- Four people trained in monitoring buoy deployment in 2014 and 2015 (2 men, 2 women)
- Seven pearl farmers (all men) trained in water quality monitoring in 2015
- Two technicians trained in water quality analysis in 2015 (1 man, 1 woman)
- Four youths from Penrhyn trained in Scuba diving

5.1.3 IT and climate change training

- Between December 2013 and December 2014, assistance was provided to upskill senior citizens in the Southern Group to enable them to confidently use a tablet to communicate and access information on the web to assist them with decision-making in building resilience to the effects of climate change. The training was conducted by two government agencies: Climate Change Cook Islands and the Information, Communications and Technology Division, aided by Cook Islands Telecom and Rauti Para, a local NGO. Overall, 137 senior citizens – 71 men 66 women – were trained in Aitutaki, Aitu, Mangaia, Mauke and Mitiaro.
- Coinciding with the IT training, senior citizens in the Southern Group were surveyed on their observations of environmental changes. The results were analysed and combined with scientific data to prepare a report entitled: *Using local knowledge to understand climate variability in the Cook Islands*. The results showed that many of the observed changes were due to climate variability. A video entitled: *A lifetime of change: Marine fisheries* has been prepared.



5.2 Informal training

- Informal on-the-job training was provided during many of the activities conducted as part of the climate change adaptation project (Section 3) – e.g. during the marine resource surveys (KRA 3) in which island residents participated and assisted.
- Assistance was also provided for one participant from the Cook Islands to attend the United Nations Framework Convention on Climate Change Conference of Parties – 18 in 2013 and 19 in 2014 – in order to follow and report on the climate finance discussions.

6. Communications and visibility

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, video, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

The Cook Islands team was proactive in providing updates to local media, especially the *Cook Islands News* and the newsletter produced by the Climate Change Office. Information about the project in Manihiki is available on the MMR Facebook page: <https://www.facebook.com/MinistryofMarine>.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2013: Adapting to climate change in the Cook Islands: The human health dimension – video
- July 2014: Silver surfers expand climate change knowledge in the Pacific – article
- 2014: Cook Islands GCCA: PSIS project fact sheet
- 2014: Effectively managing marine resources in remote communities in the Cook Islands – video
- 2014: A lifetime of change: Marine fisheries – video
- 2015: GCCA Pacific small island stories featured at the Pacific Climate Change Roundtable – article
- 2016: Adaptation Fund accredits Cook Islands as 24th National Implementing Entity – article

7. Gender and special groups

The GCCA: PSIS project activities have focused on engaging government, private sector and communities in the outer islands in particular.

An analysis of the gender disaggregated data for all consultation and training activities in the Cook Islands shows that there was almost equal representation of men and women (99 men, 103 women).

During the project, senior citizens were identified as a particularly vulnerable, and often neglected population group with regard to climate change. To address this, Internet training using tablets was carried out in five islands in the Southern Group in 2014, with the aim of: (i) improving Internet skills among seniors to empower them to access information about climate change; (ii) providing seniors with information about climate change through presentations; and (iii) facilitating knowledge-sharing in order to capture seniors' experiences and observations



of environmental change over the course of their lifetimes. The activity engaged 137 senior citizens (71 men, 66 women) in Aitutaki, Atiu, Mangaia, Mauke and Mitiaro.

Youth¹ were another target group, especially in the invertebrate assessment in Penrhyn, where they were trained in scuba diving (4 young men).

8. Environmental issues

Most of the project activities in the Cook Islands were focused on environmental issues and environmental change. The implementation of the project provided improved water quality data for the Manihiki lagoon, as well as marine resource stock assessments for the islands in the Northern group. The project also resulted in improved pearl farming management practices in the Manihiki Lagoon.

9. Sustainability

9.1 Mainstreaming

- Maintenance of the monitoring buoy will be incorporated into the business plan and budget of the MMR.
- Manihiki Lagoon Pearl Management Plan (prepared through this project) will be incorporated into the business plan and budget of the MMR.
- As accreditation to the Adaptation Fund has been achieved, there will be opportunities to sustain key project activities with resources from the Adaptation Fund.
- Two trainings were conducted to build skills in proposal preparation, which will enable participants to apply for further funding for project activities.
- Training and refurbishment/equipping of the three laboratories at the MMR means water quality analysis can now be done in-country. The SRIC-CC project supported the hiring of an experienced and highly qualified Laboratory Manager. Plans are underway for the MMR laboratory to achieve an acceptable accreditation level that will enable them to support fish export as well as marine water quality monitoring work in Manihiki, Aitutaki and Rarotonga.

9.2 Further funding

- Efforts were made (unsuccessfully) by Climate Change Cook Islands to secure core government funding for the position of National Coordinator. The holder of the National Coordinator position has been rehired by the SRIC-CC project from 2015 onwards. (In 2015 GCCA: PSIS provided top-up funds only in the amount of NZ 10,000.)
- Efforts are also underway by MMR to secure core government funding for continuing the Marine Biologist position based in Manihiki.
- The holders of the Marine Biologist position in Manihiki and the Project Manager position in Rarotonga have been rehired in 2016 through the SRIC-CC project and the Ridge-to-Reef project.

¹ The age range of 15–34 years is used to define youth throughout this report.

- The rehiring of the holders of all three GCCA: PSIS positions – National Coordinator, Project Manager in MMR and Marine Biologist in MMR in Manihiki – is extremely important for the sustainability of key project activities beyond the end of the project, retention of skills in country, and the continued capacity building of Climate Change Cook Islands and MMR. It is anticipated that in the longer term, these positions may be covered by core funding.
- The Climate Early Warning Systems Programme of the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Ridge-to-Reef project are potential funding sources to support continued project activities.
- Senior citizens IT training is being expanded to islands in the Northern Group through the SRIC-CC project.

9.3 Private enterprise

- Discussions are underway between MMR and the Pearl Authority to maintain the research farm in Manihiki. The plan is that the pearl farmers will contribute shells to the research farm, after which they will be sold to the Pearl Authority as an income-generating activity to maintain the research farm.

10. Anticipated potential impacts (2016–2020)

- Pearl farms are better managed in Manihiki, and pearl production and quality for individual farmers is improved
- Pearl research farm in Manihiki is a viable public/private enterprise
- Senior citizens in the outer islands are more informed about climate change and able to contribute proactively to climate change adaptation measures on their islands
- Cook Islands can directly access funds for climate change adaptation measures from the Adaptation Fund (and potentially the Green Climate Fund)

11. Lessons learned

- A regional lessons learned meeting was held in Yap State, FSM, 3–4 September 2015.
- A national lessons learned meeting was held in Cook Islands on 15 February 2016 to discuss the pearl farming project in Manihiki; separate discussions were held to discuss the lessons learned from the project's technical assistance activities.

12. Supporting documents

Supporting public documents are available online:

- SPC website (<http://ccprojects.gsd.spc.int/eu-gcca-psis/>)
- Pacific Climate Change Portal (<http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>)

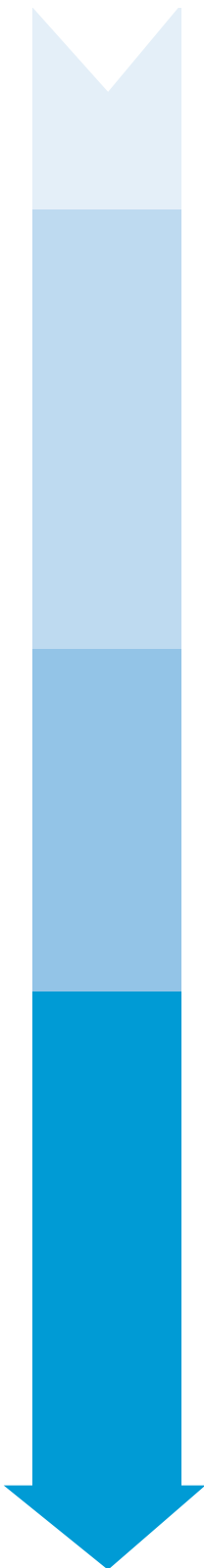
All supporting documents are stored on SPC's internal electronic archive for the GCCA: PSIS project.



Chapter 3: Federated States of Micronesia



Timeline



- | | |
|-----------------|--|
| Oct 2012 | Letter of Agreement signed outlining governing roles and responsibilities of SPC and the Government of FSM |
| Apr 2013 | Climate change adaptation project concept note finalised |
| Jun 2013 | Consultation workshop held in Yap State to design adaptation project |
| Sep 2013 | Project design document signed |
| Oct 2013 | Consultation workshop conducted in Chuuk State on adaptation project design |
| Dec 2013 | Project Officer contracted for December 2013–January 2016 in Yap |
| Jan 2014 | Amendment of the FSM Integrated Disaster Risk Management and Climate Change Policy signed into law |
| Apr 2014 | Training in proposal preparation using the LFA completed in each of the four states of FSM |
| May 2014 | Additional funds allocated for Typhoon Maysak recovery efforts, following a decision by the project’s regional steering committee |
| Mar 2015 | World Water Day celebration held in Yap State |
| Apr 2015 | Tanks and accessories delivered to Fais Island |
| Apr 2015 | Sahagow Well refurbishment completed |
| Jul 2015 | National lessons learned workshop on sustainable use of quality water involving all four states of FSM held in Yap State |
| Dec 2015 | Installation of tanks and accessories in Fais Island complete |
| Dec 2015 | Hydrological assessment of water resources completed |



1. Highlights

FSM is a group of 607 islands in the northwestern Pacific Ocean and the 2010 census recorded a population of 102,360. These islands vary in size from small islets that disappear at high tide, to atolls, to large volcanic islands of more than 80 km². Approximately 65 of the islands are inhabited. The most striking physical characteristic of FSM is the small land area spread over a great expanse of water. The country is comprised of four states: Chuuk, Kosrae, Pohnpei and Yap, which each have a considerable degree of autonomy.

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Yap State, 30–31 July 2015, and involving participants from all four states.

- One of the early projects to tackle the adverse effects of climate change in FSM, demonstrating a practical on-the-ground adaptation intervention that targeted the particularly vulnerable outer islands, and increased their accessibility to clean and fresh water.
- Overcame significant logistical and capacity challenges, including Typhoon Maysak in 2015, to provide timely emergency relief water supplies and better prepare for the impact of the 2015–2016 El Niño. This was achieved through the establishment of the Sahagow Well solar pump and storage system, and the household and community rainwater harvesting systems.
- Working across a variety of national and state agencies and island communities, and with the support of the private sector, implemented projects to improve the lives of the community. Agreements were developed to ensure proper maintenance, thereby ensuring sustainability.
- A rainwater harvesting demonstration site in place in Colonia, Yap State, and project information products, namely reports and videos, widely shared. Appreciation was expressed that these were also communicated in the local language and in partnership with others like the Water for Life team.
- The first national lessons learned meeting was conducted that served as a model for other countries. A regional lessons learned meeting was hosted by Yap State, which enabled sharing of these lessons and more capacity building at both the national and state level, including exposure to effective technology options such as SODIS (solar disinfection) and first flush diverters.
- Stakeholder engagement that contributed to the enactment of the climate change policy and the development and costing of state action plans. Exploration of and access to new climate finance modalities such as the Adaptation Fund and the Green Climate Fund.
- The success of the project stemmed from collaboration amongst regional, intergovernmental, national and state agencies, and communities, to improve water security in the most vulnerable areas, while also fostering greater outreach and awareness of community resilience to the effects of climate change.

2. Establishment of agreement between SPC and FSM

- A Letter of Agreement (LOA) was signed on 23 October 2012 by SPC and the Government of FSM. FSM signatories to the LOA were the Director, Office of Environment and Emergency Management (OEEM), the lead agency; Acting Secretary, Department of Finance and Administration; and Acting Secretary, Legal Sufficiency Determined, Department of Justice. The LOA outlined: the roles and responsibilities for the two parties; governance arrangements; confidentiality and intellectual property rights; arrangements for recruitment of a National Coordinator; implementation of a climate change adaptation project; and financial guidelines.



- Under the LOA, the FSM Government was assigned the leading role in coordinating and providing human resources for broad and inclusive national participation in the project; specifically it was tasked to take on: (1) the mainstreaming of climate change in national and sectoral responses; and (2) the identification, design, implementation and evaluation of a specific climate change adaptation project.
- In consultation with the FSM government and other stakeholders, SPC provided training, technical advice, support for national coordination, and funding for adaptation projects in FSM, to be carried out by the government, non-governmental organisations (NGOs), and other participants.
- The LOA included a provision stating that up to EUR 500,000 could be used for the adaptation project, EUR 54,000 for country engagement (national coordination), and other funds for technical assistance (in-country training, workshops, and participation in meetings, as well as missions by the project staff to facilitate the work) available on request.
- In addition, following a decision of the regional steering committee, funds reallocated from Nauru, (up to EUR 310,000) were transferred to FSM's National Disaster Fund for Typhoon Maysak recovery efforts.

3. Climate change adaptation project

3.1 Selecting project focus

- February–May 2012: Preparation of country profile (version 1). This document, prepared in consultation with OEEM, described the legislative and planning background for climate change in FSM, including the strategic and sector policies and plans in place, as well as existing projects and programmes and relevant activities over the past five years. This profile was updated in July 2013.
- May 2012: Decision by FSM climate change team not to carry out new community consultations in 2012 because of all the consultation work done by other projects prior to 2012, and the community expectations already being very high.
- May 2012: First Steering Committee meeting held; during the bilateral meeting, several possible activities were discussed, including coastal protection through mangrove replanting, food security through raised taro beds, and water security. A broad focus on coastal food and water security in vulnerable outlying islands was agreed upon.
- July 2012: In-country discussions were held, including a consultation to determine the project focus at a meeting on the Hyogo Framework of Action. Chuuk and Yap were put forward as project sites, as both Kosrae and Pohnpei were implementing other climate change adaptation activities. Yap initially proposed an airport water catchment system for Fais and Ulithi, while Chuuk put forward mangrove planting, raised taro beds, and undefined water system improvements on two outer islands. All of these options were to be further discussed in-country.
- November 2012: Due to lack of data for Chuuk, a decision was taken to focus on conducting a pre-feasibility assessment, and to direct most of the funding to Yap.
- November 2012: Yap State Department of Resources & Development provided a report on Fais Island prepared by the University of Guam's Water and Environmental Research Institute (WERI) that outlined the costs of implementing a range of recommendations to improve water security, based on a socio-economic and hydrological assessment conducted in 2006.
- April 2013: Concept note focusing on Yap approved by EUD.



3.2 Consultations and preparation of project design document

- June 2013: Consultation workshop on project activity design held in Yap; an amount of USD 130,000 was set aside for a pre-feasibility assessment in Chuuk's outlying islands. In Yap it was determined that a reticulated system was not going to be feasible with the project funding available, particularly due to the types of soil and lack of equipment for trenching; instead it was decided the focus would be on improving a well and household rainwater harvesting systems.
- September 2013: Based on the draft PDD, the amount endorsed by Congress in accordance with national financial procedures was USD 665,000. The funding would be disbursed in tranches based on the PDD. FSM opted to have SPC undertake larger procurements as a time-saving measure, with joint acquittal and reporting on these funds.
- October 2013: PDD Consultation Workshop held in Chuuk; following stakeholder recommendations, a decision was taken to replace a pre-feasibility assessment with an Integrated Water Resources Management (IWRM) replication project to enhance communal water storage facilities activities on two islands located in Chuuk Lagoon: Eot and Udot.
- September 2013: The PDD was signed. After detailed costing and design in 2014, it was determined that insufficient funds were available to implement the project in both Yap and Chuuk States (see also section 3.3). Following consultations, the PDD was amended to focus activities in Yap State. The PDD became the equivalent of a work plan and was amended as the project progressed.

3.3 Detailed design and implementation

Design

- During the first half of 2014, detailed project planning, assessments, surveys and site visits were carried out by the GCCA: PSIS project team.
 - In Yap, efforts were made to procure tanks from local vendors; however, food/water grade tanks were not available.
 - In Chuuk, costing for work in Eot and Udot was based on estimates from the IWRM project. There was less baseline data available for Chuuk in comparison with Fais in Yap, where the WERI baseline report had been carried out.
- July 2014: Engineering designs and costs of the planned water infrastructure activities in Chuuk and Yap States were finalized. These costs showed a 77 per cent increase over those estimated in the original PDD. This budget shortfall was largely due to under-estimation of the cost of local transport and labour in the initial planning. The PDD was amended and FSM made the decision to focus on new water infrastructure in Yap only.

Procurement

- August 2014: Procurement of (i) tanks and accessories, and (ii) a solar pumping system for the well, was carried out by SPC with the involvement of Yap State government staff through the review and selection of tenders. The Yap State Public Works Department assisted with the designs. Tanks for FSM and Palau were purchased jointly to save money, especially on transportation. The contract was awarded in December 2014. Specifications for the solar well pump system were prepared by SPC, while the procurement and installation were undertaken by the Yap State Public Service Corporation.

- August 2014: SPC led a procurement process to hire a consultant to prepare and implement an action plan for education and awareness; the contract was awarded to a local consultant.
- September 2014: Discussions held with SPC-GSD to conduct a hydrological assessment; however GSD staff were already fully committed to other projects.
- January 2015: SPC procured the services of the University of Guam's WERI to conduct the assessment using a non-competitive procurement provision.

Recruitment of project officers

- The late Deputy Director of Yap State Resources & Development Office served as project focal point during the design phase.
- The Project Officer was appointed in Yap from December 2013–January 2016.

Implementation

- The PDD logframe as amended in August 2014 was used to report on implementation.
- **Overall objective:** To contribute to water security as a climate change adaptation strategy for FSM.
 - The indicator specifying the documentation of lessons learned in FSM's outlying islands about sustainable use of quality water in the context of climate change was achieved, especially in Yap State where activities were focused. The lessons were shared with all four states of FSM during a two-day lessons learned workshop held in 2015.
 - The indicator specifying the preparation of a checklist for the planning of water infrastructure installation, monitoring and maintenance was achieved.
- **Project purpose:** To contribute to increased access and sustainable use of quality water in the outlying islands of FSM states.
 - The indicator specifying that a demonstration model showing implementation of water security measures for climate change adaptation and disaster risk management be in place in one outlying island by mid-2015 was accomplished on Fais Island. Forty-five 1,200 gal tanks have been installed at households in the three villages in Fais; the well has been refurbished with a solar pump and recipient agreements have been signed.
 - The indicator specifying that 5 per cent of Yap State's population adopt a long-term water conservation measure by mid-2015 was also achieved. Fais Island, where the water catchment systems have been installed and where most of the overall effort has been concentrated, represents 5 per cent of Yap's population. Furthermore, as a result of the project, Yap State has joined with other UN countries to designate 20 March as World Water Day.
- **Key Result Area 1:** Education and awareness on sustainable water use and conservation in the context of climate change enhanced in FSM.
 - The indicator specifying that a water security education and awareness plan be developed and distributed by January 2015 was achieved.
 - The indicator specifying that printed materials on water conservation and maintenance be distributed to at least two outlying islands by May 2015 was met in Ulithi and Fais, as well as other islands; materials included copies of translated stickers, brochures and posters.



- The indicator specifying that at least two awareness programmes be conducted in Yap State – to reach 15 per cent of the population by mid-2015 – was also achieved. This included the radio programming and World Water Day activities, as well as community workshops.
- **Key Result Area 2:** Improved water infrastructure for catchment, storage and emergency services in place for at least one outlying island.
 - The indicator specifying that final designs for communal water supply be completed for two outlying islands in Chuuk State by September 2014 was achieved. The design documents were distributed to stakeholders in Chuuk during a November 2014 mission. At that meeting it was explained that implementation could not proceed, primarily due to delays in appropriate institutional arrangements being established (no project officer in place to oversee procurement and installation) and a shortfall in funding.
 - The indicator specifying that a new installation or upgrade of water catchment storage be in place for 80 per cent of Fais Island’s population by September 2015 was achieved; 45 household and community water catchment and storage systems, including guttering, pipes, brackets, tie down, first flush diverters, and platforms were procured, transported and installed, and improvements were made to an additional 23 existing catchment systems.
 - The indicator specifying that an emergency water supply be fully operational in Fais Island by April 2015 was also achieved; the groundwater specifications for, and procurement and installation of a quality solar pump system for Sahagow Well were completed, and the emergency water supply was operating almost immediately following Typhoon Maysak (April 2015). Further work to address minor defects, conduct training, and monitor water quality continued into early 2016.
- **Key Result Area 3:** Household and communal water systems maintained, monitored and managed sustainably in at least one outlying island.
 - The indicator specifying that a monitoring, management and maintenance programme be implemented for all households in Fais Island was achieved. By February 2015 the Fais community had agreed to the programme. The Yap State Project Steering Committee assisted with the programme, particularly Yap EPA which regularly monitored water quality and maintenance of the catchment systems, with assistance from the Project Officer based in Yap State Resources & Development, and the FSM National Coordinator. The project assisted in the purchase of equipment and chemicals required for the water quality testing, which will continue beyond the project’s life cycle, and has been included in a recipient agreement with Fais residents.
 - The indicator specifying that a maintenance training tool kit be trialled in one outlying island of Yap State by June 2015 was achieved. The Climate Change Adviser conducted the first training, and this was repeated by the Project Officer in late 2015. The demonstration tank at the Yap State community centre was damaged in late 2015, which provided an opportunity for the Project Officer to test the welding kit successfully.
 - The indicator specifying that a checklist be developed for the planning of water infrastructure installations, monitoring and maintenance for outlying islands in FSM, including the possibility of payment arrangements, was achieved.

- **Key Result Area 4:** Improved information on available water resources in at least five outlying islands of Yap State.
 - The indicator specifying that a basic inventory of all existing water infrastructure in all outlying islands of Yap be made available by December 2014 was achieved, with the assistance of the International Organisation for Migration commissioning the work, and allowing the project to use and disseminate the report.
 - The indicator specifying that hydrological assessment of water resources be carried out in four outlying islands of Yap State – Ifalik, Eurpik, Satawaal, and Ulithi – has been achieved. The field hydrological assessment and monitoring of water resources in Ifalik has been completed.
 - The indicator specifying that a national lessons learned workshop be held on sustainable use of quality water in outlying islands of FSM was achieved in July 2015; this model was then adopted by other GCCA: PSIS countries.

Monitoring and evaluation

- Regular quarterly reporting was provided by FSM using the logframe as a reporting template. Financial reporting was provided on a similar schedule.
- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions, provided the project team with regular updates, which were used to alter or amend activities, revise logframe indicators, and monitor budgets.
- Annual planning and steering committee meetings provided other opportunities for discussion and evaluation.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion, as did the midterm evaluation in the fourth quarter of 2013.

3.4 Sector mainstreaming

- In FSM there is no single agency at the national level responsible for water; the Department of Transportation, Communications and Infrastructure, Resources & Development and OEEM all have roles to play, but there are no dedicated staff for the water sector. Each state has different systems for water management, therefore semi-private agencies (in Yap there are three separate water utilities) are often reluctant to look at outer islands due to their limited profit potential. In this context, the project played a key role in keeping this vital but sometimes overlooked sector under consideration, and in bringing different stakeholders together in committees to consider areas such as education and awareness, and health.
- The national lessons learned workshop described in KRA 4 brought together both national and non-state stakeholders in Yap to learn from the activities undertaken in the sector.
- Other mainstreaming activities included in the adaptation project included the checklist for the planning of water infrastructure, monitoring and maintenance.



4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

The project, through the Climate Change Adviser based in Pohnpei, contributed to the consultations leading to the enactment of the FSM nationwide Integrated Disaster Risk Management and Climate Change Policy, 2014.

4.2 National coordination

The FSM National Coordinator was appointed and positioned in the OEEM from February 2013 to December 2015.

4.3 Assisting FSM to access climate change finance

A review of climate change mainstreaming into national plans and policies in FSM was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of FSM qualifying for direct budget support for climate change was low given its capacity constraints.

Assistance was also provided to FSM for preparation of the Green Climate Fund Readiness Grant.

5. Training

5.1 Formal training

5.1.1 Proposal preparation using the Logical Framework Approach

Training in proposal preparation using the LFA was conducted in each of the four states of FSM in 2014. A total of 30 women and 74 men were trained mainly from government and the private sector. In the six months following the training, the LFA was used in the preparation of a total of nine proposals, as well as being integrated in regular work duties.

5.1.2 Sector training

Training activities have already been described as part of the climate change adaptation project. These included:

- 2012: Sub-regional climate change and energy efficiency media training held in Pohnpei in October 2012 (14 men, 7 women)
- 2015: 36 contractors (all men) trained in the installation of rainwater tanks and accessories in Yap
- 2015: 49 community members from Fais trained in monitoring and maintenance of rainwater harvesting systems (34 men, 15 women)



5.2 Informal training

Informal on-the-job training was provided in financial management and procurement.

The project supported participation of an FSM representative in the First GCCA Global Learning Event in 2012 in Brussels.

The Pohnpei-based Climate Change Adviser gave presentations on climate change at three youth events and two women's forums during 2012–2015, using interactive exercises from the Gender and Climate Change Toolkit, which were then shared with several participants.

6. Communications and visibility

There has been extensive awareness work done within Yap State and this has been referenced under the climate change adaptation activities and included the Yap Water for Life campaign, World Food Day and World Water Day, which as a result of the project has become an annual event. All of these events had extensive coverage in the local media.

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, videos, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2012: GCCA Global Learning Event – video interviews
- 2013: Portal training programme heads to northern Pacific – media release
- 2013: Adapting to climate change in FSM: The food and water security dimension – video
- 2014: Improving water security for traditional island living – video
- 2014: FSM GCCA: PSIS project fact sheet
- 2015: Food, water and energy security tops SPC concerns following Typhoon Maysak – media release
- 2015: Water tanks and solar panel repairs provide relief on Fais and Ulithi following Typhoon Maysak – media release
- 2015: Sustainable Climate change adaptation measures highlighted at regional meeting – media release
- 2015: Needs of outer islands top lessons learned at Pacific meeting – media release

7. Gender and special groups

An analysis of the gender disaggregated data for all consultation and training activities in FSM showed that there was a predominance of men participating (192 men, 75 women). This partly reflects the fact that men are typically more prominent in decision making in FSM, and that some of the project activities – e.g. training in installation and maintenance of rainwater harvesting systems – are activities typically undertaken by men. In recognition of the role of men in FSM society, appropriate approvals for undertaking the work were always sought from traditional leaders and representatives.



However, addressing water security in the outlying islands of FSM is particularly relevant to women and children who spend a large amount of time fetching water, and are significantly affected by water quality issues in terms of maternal, infant and child health. The project has resulted in women and children having to spend less time fetching and carrying water.

In both Yap and Chuuk, water-borne disease incidence is high and a major concern for vulnerable groups, such as the elderly and sick, particularly after extreme events such as Typhoon Maysak. Therefore in the education and awareness campaign, a special effort was made to hold separate meetings and consultations with women. Similarly, women were included in the Community Health Team, which will be involved in tank inspections going forward.

8. Environmental issues

Many of the project's activities in FSM focused on environmental issues and environmental change. In particular the Water for Life Campaign – a part of the water conservation education programme – focused on reducing pressure on underground water resources. The hydrological assessments and the checklist for water infrastructure installation should contribute to better water management practices, such as sustainable extraction rates in the future.

9. Sustainability

9.1 Mainstreaming

- The Pacific Resources for Education & Learning – Water for Life, and the Department of Education, will continue the education and awareness activities for water maintenance and conservation initiated by the GCCA: PSIS project. The target audiences are schools and communities, including the outer island of Ulithi.
- A Memorandum of Understanding and recipient agreements are in place for the Yap State Public Service Corporation, EPA, Resources & Development and Fais Island community, to maintain the installed infrastructure (rainwater harvesting systems and well).
- Designated focal points in EPA and Yap State Resources & Development have agreed to follow up and sustain project activities within their respective agencies' mandates.
- Funding expended on implementation and training is being captured in FSM's new official development assistance database, currently covering 2014 and 2015. All reports and documents have also been shared with other development agencies – e.g. Japan International Cooperation Agency (JICA), Asian Development Bank (ADB), and FSM Department of Statistics.
- The Integrated Disaster Risk Management and Climate Change Policy 2014, has prompted the development of sector and state plans. These have been identified for elaboration and implementation including through the Green Climate Fund.
- Participants in the media training continue to cover climate change matters in a more accurate manner – e.g. through the FSM Public Information Office page and on the radio.
- Yap State has joined with other UN countries to designate 20 March as World Water Day.



9.2 Further funding

- Plans are ongoing with Yap State to work with the University of Guam’s WERI, International Organisation for Migration, and other relevant agencies to replicate and expand the hydrological assessment approach and to develop project proposals to address water security in those islands.
- Equipment acquired through the GCCA: PSIS project will be used as part of the EU-funded Hydrological Cycle Observing System project to monitor surface water.
- Global Environment Facility System for the Transparent Allocation of Resources is considering scaling up or replicating some of the project’s activities.

10. Anticipated potential impacts (2016–2020)

- Communities in Fais Island are better able to effectively cope with droughts and extreme events, without help from Yap State
- World Water Day continues to be a major event in Yap State
- Hydrological assessment of the outer islands of Yap State effectively used to plan and implement improved water infrastructure measures (an example indicator would be the uptake of the first flush diverter)
- State water sector plans prepared and implemented

11. Lessons learned

- A two-day national lessons learned meeting was held in Yap State, FSM, 30–31 July 2015.
- A regional lessons learned meeting was held in Yap State, FSM, 3–4 September 2015.

12. Supporting documents

Supporting public documents are available online:

- SPC website (<http://ccprojects.gsd.spc.int/eu-gcca-psis/>)
- Pacific Climate Change Portal (<http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>)

All supporting documents are stored on SPC’s internal electronic archive for the GCCA: PSIS project.



Chapter 4: Kiribati



Timeline

- 
- Jun 2012** **Health** was selected as the sector of focus for the adaptation project
 - Aug 2012** **Letter of Agreement** signed outlining governing roles and responsibilities of SPC and the Government of Kiribati
 - Oct 2012** Climate change adaptation project **concept note finalised**
 - Jan 2013** **Project planning workshop** held in Kiribati
 - Jun 2013** **Project design document** signed
 - Jul 2013** **First shipment of laboratory equipment** arrived in Kiribati
 - Aug 2013** **Project National Coordinator appointed** by the Office of the President
 - Dec 2013** **Project Technical Officer** appointed by the Environmental Health Unit
 - Dec 2013** **Kiribati Climate Change and Climate Risk Communications Strategy 2014–2018** finalised
 - Jan 2014** **Contract signed** with IMBO Construction Company to **refurbish the public health and medical laboratory**
 - Feb 2014** **Finance Officer appointed** by the Environmental Health Unit
 - Apr 2014** **Opening of the Public Health Laboratory** by the EU Ambassador for Development
 - Oct 2014** **Communications Officer appointed** by the Office of the President
 - Mar 2015** **Solar Disinfection of Water (SODIS) endorsed** by the Minister of Health and Medical Services
 - Nov 2015** **Side event of SODIS** at SPC's 45th annual meeting of the Committee of Representatives of Governments and Administrations (CRGA) in Niue
 - Nov 2015** New regulations for the **Public Health Ordinance (1977)** completed
 - Nov 2015** **National lessons learned meeting** held in Kiribati



1. Highlights

Kiribati is located in the central Pacific Ocean and the 2010 census recorded a population of 103,466. From north to south the distance is only 800 km, but from east to west it is more than 3,210 km. There are three main island groups: Gilbert, Phoenix and the Line Islands. Kiribati consists of 32 low-lying atolls that rise to no more than a few metres above sea level and Banaba, a raised coral island with a highest point of 81 m. Nearly half of the population lives in Tarawa (in the Gilbert Islands), which has seen a 24 per cent increase in population over the five years since 2005 and has a population density of 3,173/km².

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Kiribati on 11 November 2015.

- The project focus in Kiribati was on improving implementation of environmental health surveillance and response to climate sensitive health risks. This involved improving capacity within the Environmental Health Unit (EHU) and providing necessary transportation, equipment and training to enable Ministry of Health and Medical Services (MHMS) staff to monitor and respond to climate-sensitive health risks effectively. These included water-borne diseases such as diarrhoea, food-borne diseases such as *Escherichia coli*, and vector-borne diseases such as dengue fever.
- On water quality monitoring, the project has worked closely with a sister project implemented by the New Zealand National Institute of Water and Atmospheric Research (NIWA) and with Fiji National University's (FNU) Environmental Health Programme. Both organizations assisted with procurement and training for the laboratory equipment for water quality monitoring. FNU also provided training on food quality monitoring so that EHU could monitor restaurants and other food preparation outlets so as to prevent food-borne diseases.
- On vector-borne disease control and surveillance, the project partnered with Fiji's Ministry of Health and the Pasteur Institute in New Caledonia. Attachments for EHU staff were arranged for both organizations, and staff from the Pasteur Institute also travelled to Kiribati to train the entire EHU team. One component of the project that came out of the trainings was to promote a clean environment through spraying and community clean-ups, which prevent vector-borne diseases from spreading.
- The project established a health database linking the Environmental Health data and the Health Information medical clinic data using Geographic Information System (GIS) mapping software. Computers were supplied for all 13 of the clinics in South Tarawa resulting in a decrease in errors and more efficient transfer of data (previously managed manually). This database resulted in faster identification of outbreaks and being able to link environmental health hazards (i.e. dirty water tanks) with the location of outbreaks (by community groupings).
- The project also supported new regulations for the Kiribati Public Health Ordinance (1977). These regulations provided legal backing for EHU to enforce removal of environmental health hazards (i.e. old tires where mosquitoes can breed) and also legal backing to the Communicable Disease Surveillance and Response Committee to monitor and respond to outbreaks.
- Diarrhoea in particular is a major cause of deaths in children under five years of age in Kiribati. In order to reduce the incidences of child mortality due to poor water quality and sanitary conditions, the GCCA: PSIS project adopted a behavioural change approach and as a result promoted 'tippy taps' as hand washing stations, and introduced a water disinfection method called SODIS (or solar disinfection). SODIS involves placing contaminated water in clear, plastic, PET bottles on a reflective surface in direct sunlight for six hours, after which the water is drinkable. Tippy taps are handwashing stations with



running water that are easy to build using simple materials.

- Following a scientific study, SODIS was trialled for six months (October 2014 to March 2015) in Kawan Bairiki community, one of the poorest and most densely populated areas of Tarawa; it was reported that during the trial period, rates of childhood diarrhoea had reduced considerably. The clinic in Bairiki reported the number of cases of diarrhoea decreased from an average of 235 cases per month from January–September 2014 to 163 cases per month from January–September 2015 (30% decrease). There were also considerable savings for households in the demonstration community, as residents no longer had to buy kerosene to boil water.
- In 2013 and 2015, 14 men and 20 women – mainly from government and some from the private sector – were trained in proposal preparation using the LFA. In the six months following the two trainings, the LFA was used in the preparation of 14 proposals, as well as being integrated in regular work duties.

2. Establishment of agreement between SPC and Kiribati

A Letter of Agreement (LOA) was signed on 27 August 2012 between SPC (Director-General) and the Government of Kiribati (Permanent Secretary, Office of the President, and Permanent Secretary, Ministry of Finance and Economic Development). The LOA outlined: the roles and responsibilities for the two parties; governance arrangements; confidentiality and intellectual property rights; arrangements for recruitment of a National Coordinator; implementation of a climate change adaptation project; and financial guidelines. Furthermore it provides up to EUR 54,000 for the National Coordinator, and up to EUR 500,000 for the climate change adaptation project.

Additional funds of EUR 20,000 were provided to Kiribati for the purpose of Cyclone Pam response. This was reallocated from the Nauru climate change adaptation project following a decision by the Project Steering Committee.

3. Climate change adaptation project

3.1 Selecting project focus

- March 2012: Climate change profile. A literature review was conducted of the projects, programmes and activities relating to climate change that were ongoing or recently implemented in the country. Information from the review was compiled into a climate change profile for Kiribati. This profile was updated in 2013. The document provided a useful background for identification of a focus area for the adaptation project in Kiribati.
- March–April 2012: Consultative mission to Kiribati. A consultative mission with other SPC climate change projects was conducted on 19 March–3 April 2012. During this mission a number of stakeholders especially the Ministry of Environment, Lands and Agricultural Development, highlighted the health sector as a gap and noted the recently completed National Climate Change and Health Action Plan 2011, which was prepared with assistance from the World Health Organization (WHO). Consultations with WHO and SPC Public Health Division strengthened the case for working with the health sector.
- May 2012: Discussions at GCCA: PSIS Steering Committee Meeting. At the first GCCA: PSIS steering committee meeting, 28–29 May, 2012, specific consultations were conducted with country representatives to clarify adaptation needs and priorities. In the case of Kiribati, adaptation in marine



resources, human health, agriculture and food security were discussed. The representative from the Office of the President indicated the need for further consultations.

- June 2012: Health sector selected. E-mail correspondence with the Office of the President, and discussions during other meetings with Kiribati representatives, confirmed the selection of the health sector as a focus for the climate change adaptation project for the GCCA: PSIS project.

3.2 Consultations and preparation of project design document

- August–October 2012: Project concept note preparation and approval. A consultative mission was conducted 20–30 August 2012. Following consultations with key stakeholders, a draft project concept was prepared entitled, *Improving implementation of environmental health surveillance and response to climate sensitive health risks in Kiribati*. The project concept note outlined the key activities, implementing agencies and partners, estimated cost, objectives, and rationale.
- October 2012: The concept note was approved by EUD in October 2012.
- January 2013: Project planning workshop. The Kiribati Adaptation Project Planning Meeting was held from 22–23 January 2013 in Taboreo, South Tarawa and involved 25 participants (11 men and 14 women) from six different ministries from the government of Kiribati, plus the Kiribati Climate Action Network; NIWA; the University of Fiji; SPC Public Health Division; and WHO.
- June 2013: Project design document. The PDD was signed after preliminary approval by the EUD. This was signed by GCCA: PSIS Project Manager, MHMS, Ministry of Finance and Economic Development, and the Office of the President. The PDD became the equivalent of a work plan and was amended as the project progressed.

3.3 Detailed design and implementation

Procurement

- The mission in January 2013 was scheduled to coincide with a visit by the NIWA team, who were implementing a Kiribati water quality monitoring project funded by NZAID, and opportunities for synergy were confirmed. This partnership was formalized in April 2013. It resulted in:
 - NIWA procuring the required laboratory equipment for MHMS to test water quality in a laboratory, with funds from the GCCA: PSIS project, following confirmation from MHMS; and
 - free transportation for the first order of equipment on the NZ navy ship that was travelling to Kiribati.
- Kiribati does have an up-to-date procurement policy, which was acceptable to SPC and other donors. These procedures were followed to purchase the vehicle for the environmental health lab for the purposes of food and water quality sampling, vector-borne disease spraying, and community awareness and clean-ups.
- Kiribati advertised for tenders for a construction company to refurbish the public health laboratory. Six tenders were received and evaluated and the contract was awarded to IMBO Electronic & Refrigeration Services.
- The refurbishment of the public health laboratory was completed in April 2014, and an opening ceremony was held in Kiribati with the EU Commissioner for Development, SPC Director of GSD, and the Minister of Health and Medical Services on 24 April 2014.
- Other required laboratory equipment (i.e. for food quality testing) was requested by Kiribati and purchased by SPC (i.e. spectrophotometer; water quality meter).



Oversight

- The Communicable Disease Surveillance Committee was appointed as the technical oversight committee for the climate change and health adaptation project. Meetings were held as required.
- The Kiribati National Experts Group was appointed as the overall Project Steering Committee, for both the adaptation project and technical assistance. Meetings were held as required.

Recruitment of project officers

- October 2013: A driver for the environmental health vehicle was hired by MHMS both for efficiency and to properly look after and maintain the vehicle.
- December 2013: The positions of Project Technical Officer and Finance Officer were advertised by MHMS. Only one application was received for the Project Technical Officer and four for the Finance Officer. Interviews were held and appointees selected. The Project Technical Officer began work on 12 December 2013 and the Finance officer on 3 February 2014. Both contracts ended on 31 December 2015.
- December 2014: Six temporary staff were hired as water champions in the community of Kawan Bairiki in South Tarawa to help implement the communications campaign developed under KRA 1. Their contracts were from 10 November 2014 to 31 March 2015.
- Other temporary workers were hired on a short-term basis (under 2 months) for the Environmental Health Unit, using Kiribati government procedures for the purposes of vector spraying after an outbreak, and for other overtime work.

Implementation

- The project logframe as amended in March 2015 was used to report on implementation.
- **Overall objective:** To increase resilience of i-Kiribati to the adverse health effects of climate change.
 - The indicator specifying that more than 50 per cent of the population of Kiribati be covered by environmental health surveillance and appropriate response mechanisms by September 2015 has been achieved. South Tarawa makes up more than half of the population of Kiribati.
- **Project purpose:** To contribute to the prevention and control of climate-sensitive diseases through improving environmental health surveillance and response.
 - The indicator specifying that one laboratory be equipped and functioning for environmental health monitoring by June 2014 has been achieved.
 - The indicator specifying that a minimum of two technical trainings, and attachments for six environmental health staff for surveillance and response to climate-sensitive diseases be implemented by September 2015 has been achieved.
- **Key Result Area 1:** Information provided to communities to address health risks of climate change.
 - The indicator specifying that environmental health education resources be prepared collaboratively and incorporated into new curriculum for at least one grade level by December 2015 has been achieved. Videos, posters and other outputs on SODIS were distributed to all teachers (150 copies).

- The indicator specifying that at least one awareness campaign on climate change resilience-building activities and environmental health be conducted by December 2015 has been achieved.
- **Key Result Area 2:** Routine systems for surveillance of environmental hazards and climate-sensitive diseases strengthened.
 - The indicator specifying that a health database for environmental health parameter and disease outbreaks be operational by December 2015 has been achieved.
 - The indicator specifying that 20 persons be trained in monitoring, data analysis and data application procedures for environmental health risk and disease surveillance by March 2015 has been achieved.
- **Key Result Area 3:** Preparedness for response to outbreaks of climate sensitive diseases strengthened.
 - The indicator specifying that a National Environmental Health Action Plan be in place by December 2015 has been achieved. This serves as a work plan for environmental health from 2016 to 2020.
 - The indicator specifying that a minimum of three national events for awareness on climate sensitive diseases be undertaken by September 2015 has been achieved. The project also supported travel for EHU staff to three of the outer islands in the Gilbert group to monitor environmental health issues and to raise awareness.
- **Key Result Area 4:** Coordinating, planning and budgeting mechanism improved.
 - The indicator specifying that a maintenance and financing plan for EHU be prepared by December 2015 has been achieved.

Monitoring and evaluation

- Regular quarterly reporting was provided by Kiribati using a standard ‘traffic light’ template. Financial reporting was provided on a similar schedule.
- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions, provided the project team with regular updates and were used to alter or amend activities, revise log frame indicators and monitor budgets.
- Annual GCCA: PSIS planning and steering committee meetings were another opportunity for discussion and evaluation.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion. A midterm evaluation was also held in 2013 and a final evaluation in 2016. A visit to Kiribati was part of the final evaluation conducted in the first quarter of 2016.

3.4 Sector mainstreaming

Mainstreaming climate change into the health sector in Kiribati was completed through the development of new regulations for the Kiribati Public Health Ordinance (1977). The new regulations were drafted by a consultant recommended by the WHO. The regulations provide legal backing for enforcing prevention of environmental health hazards and also legal backing to the Communicable Disease Surveillance and Response Committee to monitor and respond to outbreaks. The new regulations were submitted to the Secretary of MHMS in November 2015, for submission to cabinet.



The MHMS also requested training in Public Health Lab-based Surveillance, and this was supported through technical assistance provided by two trainers from SPC's Public Health Division.

4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

Mainstreaming climate change in Kiribati was completed through developing the Kiribati Climate Change and Climate Risk Communications Strategy 2014–2018. This communications strategy was linked with the Kiribati Joint Action Plan for Climate Change and Disaster Risk Management 2015–2020 (KJIP), to which the project also contributed resources.

A Communications Officer was hired by the Office of the President from 6 October 2014 to 31 October 2015 to help implement the Climate Change Communication Strategy. The Office of the President advertised for the position, and only one suitable applicant applied, who was interviewed and hired.

The officer's main outputs were: creating a logo for the KJIP through a competition; running an awareness campaign on the KJIP at schools during the Independence week celebrations; and joining in the SODIS roadshow campaign. In the SODIS roadshow, the Communications Officer partnered with the water champion supervisor from the trial SODIS community, and with the EHU.

The GCCA: PSIS project also contributed to the Whole-of-Island approach, a donor partnership that worked with government to complete a vulnerability assessment for the outer island of Abaiang. Sectoral priorities related to climate change were identified, and the GCCA: PSIS project contributed to the health sector by installing water tank systems for eight health clinics.

4.2 National coordination

The project's National Coordinator position was advertised by the Office of the President in July 2013 and the appointee was contracted from 12 August 2013 to 31 December 2015.

4.3 Assisting Kiribati to access climate change finance

A review of climate change mainstreaming into national plans and policies in Kiribati was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of Kiribati qualifying for direct budget support for climate change was medium-low given its capacity constraints.

5. Training

5.1 Formal training

5.1.1. Proposal preparation using the Logical Framework Approach

In 2013 and 2015, 14 men and 20 women – mainly from government, and some from the private sector – were trained in proposal preparation using the LFA. In the six months following the two trainings, the LFA was used in the preparation of 14 proposals, as well as being integrated in regular work duties.

5.1.2 Sector training

The sector trainings and attachments in Kiribati are outlined below.

Communications campaign design and reflection workshop on SODIS and tippy taps

| Date | Topic | Location | Men | Women | Total |
|-------------------|--|----------|-----|-------|-----------|
| 24 Feb–1 Mar 2014 | I- Communication Planning Audience Research Workshop | Kiribati | 9 | 18 | 27 |
| 12–16 May 2014 | II- Message & Communication Product Development | Kiribati | 9 | 21 | 30 |
| 18–22 Aug 2014 | III- Training & Communication Planning Workshop | Kiribati | 9 | 18 | 27 |
| 20–24 Oct 2014 | IV- Message & Communication Product Development Workshop | Kiribati | 14 | 17 | 31 |
| 25–26 May 2015 | V- Campaign Reflection Workshop | Kiribati | 9 | 11 | 20 |

Water quality testing

| Date | Topic | Location | Men | Women | Total |
|-------------------|---|----------|-----|-------|----------|
| 2 Mar 2015 | Training on Water Quality Monitoring Equipment I by NIWA | Kiribati | 2 | 5 | 7 |
| 28 Apr–2 May 2015 | Training on Water Quality Monitoring Equipment II by Fiji National University (FNU) | Kiribati | 2 | 4 | 6 |
| 10 Aug 2015 | Training on Water Quality Monitoring Equipment III by NIWA | Kiribati | 2 | 5 | 7 |
| 13–14 Oct 2015 | Training on Water Quality Monitoring Equipment IV by FNU | Kiribati | 2 | 4 | 6 |



Food safety testing

| Date | Topic | Location | Men | Women | Total |
|-----------------|--|----------|-----|-------|----------|
| 15–22 June 2015 | Food Safety Monitoring Workshop by FNU | Kiribati | 4 | 5 | 9 |

Vector-borne disease surveillance and control

| Date | Topic | Location | Men | Women | Total |
|--------------------|--|-----------------------|-----|-------|-----------|
| 29 Sep–17 Oct 2014 | Vector-borne disease attachment for EHU staff to Fiji’s Ministry of Health | Suva, Fiji | 0 | 1 | 1 |
| 9–20 July 2015 | Vector-borne disease attachment for EHU staff to Pasteur Institute | Noumea, New Caledonia | 1 | 0 | 1 |
| 4–8 Aug 2015 | Vector-borne disease training by Pasteur Institute staff | Kiribati | 4 | 6 | 10 |

GIS database trainings (KRA 2)

| Date | Topic | Location | Men | Women | Total |
|--------------------|---|------------|-----|-------|-----------|
| 29 Sep–31 Oct 2014 | GIS database attachment from MHMS to SPC GSD | Suva, Fiji | 2 | 1 | 3 |
| 10–15 Apr 2015 | GIS database training workshop led by SPC GSD | Kiribati | 6 | 11 | 17 |
| 7–11 Dec 2015 | GIS database training workshop led by Kiribati Lands Division | Kiribati | 9 | 13 | 22 |

In-house trainings

| Date | Topic | Location | Men | Women | Total |
|--------------|---|----------|-----|-------|-----------|
| 26 July 2014 | In-house training I on Food Safety | Kiribati | 4 | 6 | 10 |
| 8 Nov 2014 | In-house training II on Vector Control and Quarantine | Kiribati | 3 | 6 | 9 |
| 28 Feb 2015 | In-house training III on Chikungunya control work | Kiribati | 3 | 4 | 7 |
| 25 Apr 2015 | In-house training IV on Food Safety | Kiribati | 2 | 4 | 6 |



Other training

| Date | Topic | Location | Men | Women | Total |
|-------------------|---|----------------------------|-----|-------|-----------|
| 28 Oct–1 Nov 2013 | Epidemiology Data for Decision Making Training I (accredited course with FNU) | Kiribati | 8 | 20 | 28 |
| 8–13 Sept 2014 | Epidemiology Data for Decision Making Training II | Kiribati | 13 | 18 | 31 |
| 11–14 Aug 2015 | Public Health Lab-based Surveillance Training (technical assistance) | Kiribati | 8 | 18 | 26 |
| 30 Sep–7 Oct 2015 | Christmas Island: Introducing the National Public Health Emergency Plan | Christmas Island, Kiribati | 12 | 11 | 23 |

5.2 Informal training

Informal on-the-job training was provided in reporting and financial management to the National Coordinator and Project Finance Officer, through continuous communication with the GCCA: PSIS finance team, the project manager, and the climate change adviser for Kiribati.

6. Communications and visibility

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, video, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2013: Adapting to climate change in Kiribati: The social dimension – video
- 2013: SPC EU support for Kiribati health system – media release
- 2014: EU and Kiribati against climate change diseases – media release
- 2014: Kiribati takes action against climate-sensitive diseases – article
- 2014: Kiribati GCCA: PSIS project fact sheet
- October 2014: New solar disinfection method addresses water security in Kiribati – media release
- 2015: Responding to climate sensitive health risks in Kiribati – video
- 2015: Low-cost solar water disinfection campaign rolled out in Kiribati – article
- 2015: Water disinfection method proves successful in Kiribati – radio interview
- 2015: Solar disinfection (SODIS) – fact sheet, poster, research report, frequently asked questions
- 2015: Kiribati launches simple solar water purification initiative – radio interview



7. Gender and special groups

An analysis of the gender disaggregated data for all consultation and training activities in Kiribati showed that there was a predominance of women participating (339 women, 246 men). Women were the main participants in many of the SODIS consultations and trainings, and four of the six water champions were women.

SODIS has benefitted women in particular as it is most often the women in the households who are responsible for providing potable water and who take care of the children when they are sick. With reduced incidences of diarrhoea in children, women in the demonstration community have more time to do other things for their family and they are also able to save money, as they are spending less on medical care and transportation to the hospital when children are sick, and on buying kerosene to boil water. More importantly, the children grow up healthier and stronger with less absenteeism in schools. An unanticipated benefit was that elderly women benefitted through less exposure to smoke from fires used to boil water; although this observation was only anecdotal.

Trainings on the SODIS method were conducted in schools and communities in South Tarawa, including women and youth groups and disability schools. The aim was to reach as many potential change agents as possible.

8. Environmental issues

Many of the project's activities in Kiribati have been focused on environmental issues and environmental change. In particular, the focus on improving environmental health surveillance include regular monitoring of water, food and vector breeding grounds. The revised Public Health Ordinance Regulations (once endorsed) will support the clean-up of vector breeding grounds such as rubbish dumps. Furthermore the uptake of SODIS in Kiribati has resulted in the reuse and recycling of plastic PET bottles.

9. Sustainability

9.1 Mainstreaming

Through the technical assistance activities

- Two trainings were conducted to build skills in proposal preparation, which will enable participants to apply for further funding for project activities.
- Three project staff (National Coordinator, Project Technical Officer, and Finance Officer) have been hired by additional projects, so their training and skills enhancement will continue to be utilized. Additionally, the National Coordinator attended the UNFCCC negotiations and has become a key climate change negotiator for Kiribati. The Office of the President plans to have him continue in this role.
- The new regulations for the Public Health Ordinance have been submitted to Cabinet and are expected to be endorsed shortly. The regulations will legalize the work of the Environmental Health Unit in cleaning up communities, and also legalize the public health teams to take the necessary measures to monitor and respond to outbreaks.



Through the adaptation project

- Trainings in food, water and vector-borne disease surveillance and response are self-sustaining in that the environmental health staff now know how to manage and maintain the laboratory and equipment.
- SODIS was endorsed by the Minister of Health in March 2015 and resources have been circulated to all ministries. SODIS has been incorporated into the 2016 school curriculum for Year 6 students, and teachers and medical staff, along with many students and communities around South Tarawa, have been trained in SODIS. Fourteen SODIS demonstration tables have been built and distributed to schools in South Tarawa, and 14 more are being built for all the clinics and the Environmental Health Unit Office.
- Other water projects in Kiribati have incorporated SODIS into their activities. These include:
 - NZAID, which is incorporating SODIS into their ongoing rainwater harvesting project in 15 communities in South Tarawa
 - Kiribati Adaptation Project III, which is incorporating SODIS into an ongoing drinking water project with six communities in North Tarawa
 - South Tarawa Sanitation Improvement Sector Programme, which is incorporating SODIS into ongoing community awareness programmes on WASH in South Tarawa
- A training of trainers workshop was held for partners by SPC and EHU staff and the water supervisor from Kawan Bairiki on 14 August 2015 (4 men, 8 women).
- SODIS has been incorporated into UNICEF's disaster relief materials for Fiji, and the rainwater harvesting manual and website for Kiribati.
- Funds for reagents and maintenance for the laboratory equipment, the EHU vehicle driver, and additional staff for EHU, have been incorporated into the 2016 environmental health budget.

9.2 Further funding

- The WHO Pacific Headquarters has agreed to continue with the SODIS component of the project, both in Kiribati and across the Pacific. They plan to support it in Kiribati through the upcoming GEF Least Developed Country project and through their in-country officer. They also plan to duplicate the research carried out in Kiribati to other Pacific Island nations, beginning with Fiji. Other partners, such as SPC's Water and Sanitation Unit and the EU Pacific Technical and Vocational Education and Training (PacTVET) on Sustainable Energy and Climate Change Adaptation project also plan to incorporate SODIS into their projects that are being rolled out across the Pacific.

10. Anticipated potential impacts (2016–2020)

- Decreased outbreaks of climate-sensitive diseases due to surveillance and response programmes for food, water and vector-borne diseases set up at the environmental health laboratory
- Quicker response to outbreaks and identification of the source of outbreaks through the environmental health surveillance data and the medical clinic data being entered into the GIS health database established through the project
- Cleaner communities as a result of the new public health regulations that allow Public Health to enforce community clean-ups to prevent diseases



- Decrease in child mortality and diarrhoeal disease due to the SODIS method being used to disinfect water as an alternative to boiling, and due to increased hand washing using tippy taps
- A more educated, organised, and efficient environmental health team as a result of trainings and attachments completed; completion of the five-year National Environmental Health Action Plan; and the vehicle for monitoring and response work is in place
- More awareness on clean drinking water, hand washing, and SODIS in schools leads to healthier students and youth

11. Lessons learned

- A regional lessons learned meeting was held in Yap State, FSM, 3–4 September 2015.
- A national lessons learned meeting was held in Kiribati in November 2015.

12. Supporting documents

Supporting public documents are available online:

- SPC website (<http://ccprojects.gsd.spc.int/eu-gcca-psis/>)
- Pacific Climate Change Portal (<http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>)

All supporting documents are stored on SPC's internal electronic archive for the GCCA: PSIS project.



Chapter 5: Marshall Islands



Timeline

| | |
|-----------------|--|
| Jan 2013 | Letter of Agreement signed outlining governing roles and responsibilities of SPC and the Government of Republic of Marshall Islands |
| Aug 2013 | Climate change adaptation project concept note finalised |
| Feb 2014 | Consultation held on the draft feasibility study on Woja Causeway |
| Apr 2014 | Coastal processes and feasibility study , and final design and costing report finalised |
| Apr 2014 | National Climate Change Finance Assessment consultation held |
| Jun 2014 | Project Design Document version 1 signed |
| Aug 2014 | National Climate Change Finance Assessment Report finalised |
| Sep 2014 | National Climate Change Dialogue held |
| Feb 2015 | Project Design Document version 2 signed , confirming the revised process for project implementation |
| Apr 2015 | Heavy construction equipment acquired by Ministry of Public Works |
| May 2015 | Coastal planting training conducted with Woja community and students |
| Jun 2015 | Construction of Woja Causeway commenced |
| Jul 2015 | Coastal planting training conducted with Woja community and students |
| Oct 2015 | Coastal planting training conducted with Woja community and students |
| Nov 2015 | Construction of Woja Causeway completed and formal opening held |
| Nov 2015 | Letter of Agreement amended to extend Project Coordinator position |
| Nov 2015 | National lessons learned meeting held in Majuro |
| Dec 2015 | Marshallese Climate Change Glossary completed |
| Dec 2015 | Final coastal planting training conducted with Woja community and students |



1. Highlights

The Marshall Islands are located in the North Pacific Ocean and the 2010 census recorded a population of 55,000. The country is an atoll island nation located at equal distance between Hawaii and Australia. The country comprises 34 major islands and atolls, including the atolls Bikini, Enewetak, Majuro, Rongelap, and Utirik. Approximately 1,225 low-lying islets make up the twenty-nine atolls of the Marshall Islands. The islands are scattered in an archipelago consisting of two rough parallel groups: the eastern *Ratak* (sunrise) chain and the western *Ralik* (sunset) chain. Twenty-two of the atolls and four islands are inhabited, and almost 70 per cent of the population live on Kwajalen and Majuro, the capital.

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Majuro on 4 November 2015.

- Communities on Woja Island now have safe passage between the two parts of the island, and all residents can safely access services such as the health clinic and the schools, regardless of tide levels.
- Capacity of the Ministry of Public Works (MPW) enhanced in planning, designing and constructing coastal protection measures in the outer islands. This was achieved through the successful completion of the Woja Causeway project on Ailinglaplap Atoll where the MPW was the main on-the-ground implementing agency. The approach adopted, which will include planning, investigation into coastal changes, feasibility and design, followed by implementation, will be used in the future for other coastal projects.
- Community and school students of Woja Island trained in home gardening to promote food security, and in the planting of coastal trees and shrubs to help protect shorelines from erosion.
- The climate change adaptation project activities were implemented through a collaborative partnership between the MPW, Office of Environmental Policy Planning and Coordination (OEPPC) and the EPA – one of the first times this has occurred in the Marshall Islands for a climate change project.
- An illustrated Climate Change Glossary explaining and defining climate change terms in Marshallese, produced with collective participation from the community, NGOs, schools, the Marshall Islands Government, and the Marshall Islands Language Commission.
- In 2013 and 2015, 19 men and 8 women – primarily youth council representatives from all of the outer islands, as well as several members from the government – were trained in proposal preparation using the LFA.

2. Establishment of agreement between SPC and the Republic of the Marshall Islands

A Letter of Agreement (LOA) was signed on 30 January 2013 between SPC (Director-General) and the Government of the Marshall Islands (Chief Secretary, Government of Marshall Islands, Secretary, Ministry of Finance, Secretary, Ministry of Foreign Affairs, and Director, OEPPC). The LOA outlined: the roles and responsibilities for the parties; governance arrangements; confidentiality and intellectual property rights; arrangements for recruitment of a National Coordinator; implementation of a climate change adaptation project; and financial guidelines. Furthermore it provided up to EUR 54,000 for the National Coordinator and up to EUR 500,000 for the climate change adaptation project.



The LOA was amended on 19 November 2015 to provide an additional EUR 15,295 totalling up to EUR 69,295 available as support for national coordination. The amended LOA extended the contract of the National Coordinator to 31 December 2015. This ensured that all end-of-project reporting and financial acquittals could be captured and submitted to SPC by the National Coordinator in a timely manner. The allocation also included provision for the cost of equipment – e.g. computer hardware. These funds came from additional monies held in the climate change adaptation budget line – a total of EUR 4.64 million of which EUR 4.5 million had been committed.

3. Climate change adaptation project

3.1 Selecting project focus

- May 2012: A review of background information involving a literature review of the projects, programmes and activities relating to climate change that were ongoing or recently implemented in the Marshall Islands was conducted. The review was compiled into the first version of the Marshall Islands climate change profile and was published online. It was subsequently updated in 2013. The document provided a useful background for initial identification of a possible focus area for the adaptation project in the Marshall Islands.
- July 2012: Following a presentation on the project to the National Climate Change Committee, a small working group was set up – consisting of OEPPC, Ministry of Foreign Affairs, EPA, Ministry of Internal Affairs and Ministry of Resources and Development – to develop a set of options for the GCCA: PSIS project in the Marshall Islands. The sectors initially being considered were coastal management, freshwater and food security. During a follow-up visit in November 2012, a multi-sectoral stakeholder meeting was held involving all key government agencies as well as several individual meetings where sectors and ideas were developed for advancing a climate change adaptation in the water sector.
- January 2013: During a visit to the Marshall Islands, the Chief Secretary indicated that the government had decided that the water and sanitation sector was sufficiently covered by other partners, and that the GCCA: PSIS project represented an opportunity to provide some seed funding to address the issue of coastal erosion in the outer islands. The 2010 survey of vulnerable coastal infrastructure undertaken by the MPW was used as the basis for selecting Ailinglaplap Atoll.
- February 2013: A team from OEPPC visited Ailinglaplap to conduct a vulnerability study and consult with stakeholders; Woja Island was identified as the preferred site.
- August 2013: A project concept note was submitted by the Marshall Islands and accepted after review by EUD.

3.2 Consultations and preparation of project design document

- October 2013: Services of a coastal engineering company procured by SPC using non-competitive procurement provisions to: analyse coastal changes at Ailinglaplap; prepare a feasibility study; hold consultations in the Marshall Islands and then complete a final design; and costing.
- February 2014: A consultation involving various government agencies and the Marshall Islands National Climate Change Committee on the draft feasibility study on Woja Causeway was held.
- April 2014: Coastal processes and feasibility study, and final design and costing report finalised.
- June 2014: Project design document (PDD) version 1 signed - *Protecting atoll habitability, land and infrastructure in Ailinglaplap, Marshall Islands*.
- February 2015: Version 2 of the PDD: *Building capacity to address coastal protection in the Marshall Islands* signed, confirming major project revisions (see below under 'Procurement').



3.3 Detailed design and implementation

Design

- October 2013–April 2014: A feasibility and final design report (including engineering drawings) detailing the first priority and preliminary costings for the Woja Causeway Project was completed.

Procurement

- July 2014: MPW advertised for construction of Woja Causeway. One full proposal was received on 28 October 2014. Following this, a full Bid Evaluation Report was prepared, outlining the rejection of the one bid due to a significant difference between the available budget (EUR 500,000) and the bid amount submitted. The Bid Evaluation Report recommended that MPW carry out the work themselves, and purchase three pieces of heavy equipment through solicitation of three quotes, without posting an international advertisement, given the urgency for this equipment to be mobilised.
- November 2014: Cabinet Minute issued confirming the waiver for the international advertisement.
- February 2015: Version 2 of the PDD was signed confirming the revised approach. The PDD stood as an agreement and guiding document for implementing the project.

Recruitment of project officers

- January 2015–December 2015: MPW contracted a Project Engineer to oversee construction in Ailinglaplap.

Implementation

- The project logframe as amended in February 2015 was used to report on implementation.
- **Overall objective:** To Improve resilience to the effects of coastal climate change in the Marshall Islands.
 - The indicator specifying the demonstrated use of integrated coastal management tools as an effective resilience-building approach has been achieved. The involvement of the three different agencies in this project (MPW, OEPPC and EPA) has illustrated the benefits of an integrated coastal management approach, including: a combination of hard and soft engineering methods; full consideration of environmental permitting and sensitive issues; and full involvement of a wide range of stakeholders and the local communities. For example, following completion of the causeway in October 2015, the EPA carried out an inspection and identified several minor environmental issues that violated the environmental management plan. These were then fully addressed through mitigation by the MPW.
- **Project purpose:** To increase capacity of Marshall Islands stakeholders to plan and implement effective coastal protection measures that reduce vulnerability to climate change.
 - The indicator specifying that MPW skills and capacity be enhanced to implement coastal protection measures, especially in outer islands, has been achieved. The capacity of the MPW has been enhanced to plan, design, implement and monitor coastal protection measures in the outer atolls. The process at Ailinglaplap involved detailed technical studies as well as feasibility and design studies, and the MPW has learned from this process. In addition, the equipment



stock for coastal protection has been enhanced with the purchase of an excavator with claw attachment, a compactor, and a rock truck.

- **Key Result Area 1:** Increased awareness in some local communities in the Marshall Islands about integrated coastal management approaches.
 - The indicator specifying that a schedule of education and awareness activities be prepared has been met.
 - The indicator specifying that at least four education and awareness activities be delivered has been met. These included training students and community members in Woja Island on: (i) collection, nurturing and planting of coastal plant seedlings along the coast; (ii) constructing coastal berms using natural materials; (iii) school gardening programmes; and (iv) water quality monitoring.

- **Key Result Area 2:** Capacity of MPW enhanced to plan and construct coastal protection measures.
 - The indicator specifying that at least two community consultations be conducted to gather input on project design was met. These consultations included a: (i) meeting with community leaders on Woja on 5 November 2013, and with the women’s group on Woja on 6 November 2013; and (ii) workshop in Majuro with government partners, and representatives from the College of Marshall Islands, the University of the South Pacific (USP), and the Coastal Management Advisory Council on 26 February 2014.
 - The indicator specifying that at least one coastal protection measure be selected, designed and costed was met in full. The outcome exceeded expectations, as the coastal causeway was completed.
 - The indicator specifying that heavy duty equipment (compactor, large rock truck and excavator with claw attachment) be procured and purchased by MPW and available for coastal protection works was met.

- **Key Result Area 3:** Marshallese glossary of climate change terms available for use in primary and secondary schools and local communities.
 - The indicator specifying that a report on National Climate Change Dialogue be prepared was met. A two-day dialogue was held on 9–10 September 2014 to facilitate discussions on the long-term future of the Marshall Islands in the face of climate change, and to collect feedback on what the government was planning; it was attended by 320 people.
 - The indicator specifying that a Marshallese glossary of climate change terms be made available for use in primary and secondary schools was met. The glossary was prepared in 2015 and involved extensive consultation in the Marshall Islands, including with the Marshall Islands Language Commission.

Monitoring and evaluation

- Regular quarterly reporting was provided by the Marshall Islands using a standard ‘traffic light’ template. In 2015 this system of reporting was replaced by separate reports from the coastal engineer on the adaptation project, and from EPA on the community activities. Financial reporting was provided on a quarterly basis throughout 2014 and 2015.

- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions, provided the project team with regular updates and were used to alter or amend activities, revise logframe indicators, and monitor budgets.
- Annual planning and steering committee meetings provided other opportunities for discussion and evaluation.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion. During the midterm evaluation in the fourth quarter of 2013, the evaluators conducted a site visit to the Marshall Islands.

3.4 Sector mainstreaming

The Marshall Islands 2008 Coastal Management Framework is the main strategy that helps mainstream climate change into the coastal management sector.

There was no formal sector training undertaken; however the approach adopted was to provide on-the-job training through the activities in Woja using the principles of integrated coastal management, including: (i) extensive consultation throughout the process; (ii) technical assessment including environmental, social and gender issues; (iii) following national regulatory procedures (environmental management plan, marine and coastal survey, review by EPA and conducting an EIA if necessary); (iv) combining hard and soft engineering measures; (v) combined implementation involving different agencies; and (vi) community involvement.

4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

The Marshall Islands JNAP for Climate Change Adaptation and Disaster Risk Management 2014–2018, is the key strategy that helps integrate and mainstream climate change nationally and into the various government sectors' policies and strategies.

The consultations and questionnaire conducted as part of the National Climate Change Dialogue, provided important information about community perceptions, which can be used to inform future policy development and planning.

4.2 National coordination

The Marshall Islands National Coordinator was appointed in the OEPPC from October 2013 to December 2015.

4.3 Assisting the Marshall Islands to access climate change finance

A review of climate change mainstreaming into national plans and policies in the Marshall Islands was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of the Marshall Islands qualifying for direct budget support for climate change was low, given its capacity constraints.

Starting in 2013 and together with other partners, including the Pacific Islands Forum Secretariat, a National Climate Change Finance Assessment Report was prepared for the Marshall Islands. This was presented to 50 partners in the Marshall Islands in April 2014. The assessment report was finalised in August 2014.



5. Training

5.1 Formal training

5.1.1. Proposal preparation using the Logical Framework Approach

In 2013, 19 men and 9 women, mainly from youth organisations in Majuro and the outlying atolls, and with some representatives from government agencies and NGOs, were trained in proposal preparation using the LFA. In the six months following the training, only one proposal was prepared using the LFA. This can largely be attributed to the level of pre-existing skills and experiences of the participants who attended, as well as the language barrier; most of the youth participants had very limited knowledge of English – both written and spoken.

5.1.2 Sector training

Training activities have already been included in section 3, under the climate change adaptation project, and are repeated below:

- 320 people participated in the National Climate Change Dialogue in 2014; this included small group sessions on water, energy, food security, coastal management and environmental education and awareness
- Community members and students from Ailinglaplap Atoll were trained in climate change and coastal planting techniques
- Three people from the Marshall Islands (1 man, 2 women) participated in the sub-regional climate change and energy efficiency media training held in FSM in October 2012

5.2 Informal training

Informal on-the-job training was provided in financial management during the course of project implementation.

6. Communications and visibility

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, video, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2014: Marshall Islands GCCA: PSIS project fact sheet
- 2014: Strengthening coastal resilience in the outlying atolls of the Marshall Islands – video
- 2014: Marshall Islands holds first National Climate Change Dialogue – article
- 2015: Coastal protection project opened in Ailinglaplap, Marshall Islands – media release
- 2015: Coastal protection projects opened in Tonga and the Marshall Islands – 2 articles
- 2016: Climate Change Glossary launched in Marshall Islands – article



7. Gender and special groups

An analysis of the gender disaggregated data for all consultation and training activities in the Marshall Islands showed that there was a predominance of men participating (51 men, 26 women). Unfortunately no gender statistics were collected for the public Climate Change Dialogue in 2014.

The construction of the Woja causeway improved access to school and health services, benefiting the entire community, especially the school children. Separate consultations were conducted with the men and women's groups to obtain their views during the project planning stage. A parallel and complementary activity – namely the coastal planting and school garden programme – was specially designed and implemented so as to involve women and children in the project.

The training on proposal preparation was especially targeted toward the outer island youth (86% of the participants were outer island youth), since the government had identified them as a priority group requiring special attention. However, language limitations hindered the potential benefits of this training, and it was determined that future training activities for this group should be conducted in the local language; this was one of the catalysts for the preparation of the Marshallese Climate Change Glossary.

8. Environmental issues

Most of the project activities in the Marshall Islands focused on environmental issues. Using an integrated coastal management approach, three main government agencies: EPA, MPW and OEPPC, worked together on this intervention, together with the communities. National processes were followed in the planning stage; a marine survey and a coastal changes/feasibility study were prepared, which were reviewed by EPA, who determined there was no need for an environmental impact assessment. All required permits were obtained and an environmental management plan was prepared and used for monitoring the impact. Post-project monitoring identified some minor violations that were subsequently addressed by MPW to the satisfaction of the EPA.

The approach adopted of conducting investigations into coastal changes before moving to the feasibility and design stage, is one that will be used in the future for other coastal projects.

The causeway design and coastal planting represented a combination of hard and soft engineering techniques. The Marshallese Glossary provides explanations of climate change and coastal management terms, such as shoreline, ocean current and storm surge, in the local language.

9. Sustainability

9.1 Mainstreaming

- The partnership between environmental, policy and infrastructure ministries/agencies – namely OEPPC, EPA and MPW – to implement the project in Woja, is an important one which will serve as a guideline for implementation of similar projects in the future.



- Strengthening the technical capacity of MPW has been important, especially as they now understand the need for site-specific technical and feasibility studies before embarking on coastal protection measures.
- MPW now has a blueprint for implementing similar coastal protection and coastal maintenance projects in the outlying atolls.
- The MPW's heavy equipment stock has been increased.
- Use of the Marshallese Climate Change Glossary will help students and communities understand and respond to climate change issues.
- The GCCA: PSIS National Coordinator has taken up a position with the Ministry of Finance in 2016, and it is anticipated that he will be able to apply much of the learning on project management and new forms of climate finance gained through involvement in the GCCA: PSIS project, to his new position.

10. Anticipated potential impacts (2016–2020)

- Communities in Woja continue to have safe access to community facilities regardless of tide levels
- Communities in Woja maintain the coastal planting near the causeway so as to build ecosystem resilience
- MPW plan (and possibly implement) additional large-scale coastal protection projects in the outlying atolls using a similar approach to the one adopted in Woja Island
- The Marshallese Climate Change Glossary becomes a recognised tool for use in primary and secondary schools in the Marshall Islands, and as a result more young people and community members have an in-depth understanding of climate change and what it means for the Marshall Islands

11. Lessons learned

- A national lessons learned meeting was held in the Marshall Islands in November 2015.
- A regional lessons learned meeting was held in Yap State, FSM, 3–4 September 2015.

12. Supporting documents

Supporting public documents are available online:

- SPC website (<http://ccprojects.gsd.spc.int/eu-gcca-psis/>)
- Pacific Climate Change Portal (<http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>)

All supporting documents are stored on SPC's internal electronic archive for the GCCA: PSIS project.



Chapter 6: Nauru



Timeline



| | |
|-----------------|---|
| Jun 2012 | Climate change adaptation project concept note finalised |
| Nov 2012 | Letter of Agreement signed between SPC and Government of Nauru |
| Mar 2013 | Project planning consultation held in Nauru |
| Nov 2013 | Engineering review of roof conditions and selection of households for roof refurbishment completed |
| Jan 2014 | Training in proposal preparation using the LFA conducted |
| Apr 2014 | Project Design Document Version 1 completed (but not signed) |
| Jun 2014 | Nauru Government decision to change the scope of the project to national water storage systems since the original project could not be completed within the project timeframe |
| Jul 2014 | Services of a water engineering firm procured to conduct a feasibility and design study for increasing national water storage capacity |
| Aug 2014 | Findings from the study presented at technical working group workshop. Nauru selected to demolish an existing tank and construct a new storage tank |
| Oct 2014 | Final design report completed for improved water storage capacity |
| Nov 2014 | Project Design Document Version 2 signed |
| Jan 2015 | The Republic of Nauru Framework for Climate Change Adaptation and Disaster Risk Reduction published and launched |
| Feb 2015 | Request for proposals for national water storage improvements advertised |
| Apr 2015 | Nauru advised during a country mission that there was insufficient time and funds to construct a new tank (based on bids received) |
| Apr 2015 | Training in Water, Sanitation and Hygiene (WASH) conducted |
| Jul 2015 | Contract awarded for demolition of B10 tank |
| Nov 2015 | 20-year Nauru Water and Sanitation Master Plan finalised |
| Dec 2015 | South-south exchange in Nauru/Kiribati for water quality programme training and development |
| Mar 2016 | Contract for demolition of B10 tank terminated and a new contract issued to a State Owned Enterprise |
| May 2016 | B10 tank demolition completed |



1. Highlights

Nauru lies close to the equator in the western Pacific Ocean and the 2010 census recorded a population of 10,084. It is a raised atoll with an area of 21 km² and a maximum elevation of 71 m. The island is surrounded by a fringing coral reef between 120 and 300 m wide. The reef drops away sharply on the seaward edge to a depth of about 4,000 m. The land area consists of a narrow coastal plain ranging from 100 to 300 m wide, which encircles a limestone escarpment rising some 30 m to a central plateau, known locally as 'Topside', and which has been the focus of extensive phosphate mining over the last 80 years.

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Nauru on 23 November 2015.

- The completion and publication of the Republic of Nauru Framework for Climate Change Adaptation and Disaster Risk Reduction (RONAdapt) will help support progress towards the country's national development priorities and the goal of environmental sustainability, by ensuring that a focus on reducing vulnerabilities and risks posed by climate change is incorporated into planning and activities across all sectors of the economy and society.
- Nauru has also completed the Nauru 20-year Water and Sanitation Master Plan. It has been noted that Nauru has underinvested in water and sanitation infrastructure for many decades and significant capital investment will be necessary to meet both the current and future needs of the island in terms of safe drinking water and adequate sanitation. The Master Plan details the investigation of the water supply and sewerage infrastructure needs of Nauru for the next 20 years. The Master Plan will provide a blueprint for the country to meet a key goal under the Nauru National Sustainable Development Strategy: 'Provide a reliable, safe, affordable, secure and sustainable water supply to meet socio-economic development needs'. Proposals have been prepared to help Nauru source funding for the implementation of the Master Plan.
- The project has helped to improve water security in Nauru through the demolition of a large obsolete 4,000 KL water storage tank. This will pave the way for a new storage tank to be built in the future.
- In 2014, 10 men and 10 women – mainly from government and some from the private sector – were trained in proposal preparation using the LFA. In the six months following the training, the LFA was used in the preparation of two proposals, as well as being integrated in regular work duties.
- A Water Supply, Sanitation and Hygiene (WASH) Training of Trainers workshop was held in 2015, which trained 12 men and 8 women. The main objectives of the training were to raise awareness on water, sanitation and hygiene issues in Nauru, and to train trainers on how to effectively practice water conservation and raise awareness in schools and communities.
- A south-south exchange with the GCCA: PSIS project in Kiribati provided an opportunity to learn about the establishment of a water quality monitoring programme in a neighbouring country, and provided important information for Nauru's future planning.

2. Establishment of agreement between SPC and Nauru

A Letter of Agreement (LOA) was signed on 8 November 2012 between SPC (Director-General) and the Government of Nauru (Secretary, Department of Commerce, Industry and Environment [CIE] and Secretary, Department of Finance). The LOA outlined: the roles and responsibilities for the two parties; governance arrangements; confidentiality and intellectual property rights; arrangements for recruitment of a National Coordinator; implementation of a climate



change adaptation project; and financial guidelines. Furthermore it provided up to EUR 54,000 for the National Coordinator and up to EUR 500,000 for the climate change adaptation project.

3. Climate change adaptation project

3.1 Selecting project focus

- April 2012: A literature review was conducted of recent and ongoing projects, programmes and activities in Nauru relating to climate change. Information was compiled into a climate change profile for Nauru describing the legislative and planning background for climate change in Nauru; this was revised in 2013 and a second version was prepared.
- August 2012: During a project mission to Nauru in May 2012, the government identified household rainwater catchments as the focus of the adaptation activity. The project concept note was prepared together with CIE and was approved by the EU in June. During a second project mission in August, the focus of the project was formally endorsed by letter from CIE.
- February 2013: The household rainwater catchments project was endorsed by Cabinet. The long delay between project selection and official endorsement was due, at least in part, to intense government activity associated with Australia's decision in 2012 to re-open its Regional Processing Facility for asylum seekers in Nauru.
- June 2014: At the 4th GCCA: PSIS Steering Committee Meeting in Niue, the Nauru government decided to change the scope of the project from household rainwater catchments to national water storage systems, as the original project could not be completed within the project timeframe.
- August 2014: The change in focus of the climate change adaptation project was approved by Cabinet.

3.2 Consultations and preparation of project design document

- March 2013: A project planning workshop was held in Nauru and attended by 17 people (9 men and 8 women), including government representatives from CIE and other ministries, as well as seven community representatives. Strategies to ensure community ownership of the project were discussed in the workshop included: financial and/or in-kind contributions towards the project's cost; raising community awareness on maintenance of rainwater harvesting systems; and benefits of proper water management.
- November 2013: Engineering review of roof conditions and selection of 403 households for refurbishment was completed. This included: (i) households with a working water tank; and (ii) the most vulnerable households and people.
- January–March 2014: Extensive discussion at national and regional levels (SPREP, AusAID, UNICEF, EU) about the disposal of roof materials containing asbestos. In the absence of a confirmed national strategy for the disposal of asbestos in Nauru, a temporary solution was designed and described in the project design document.
- April 2014: Version 1 of the project design document (PDD) for household roof improvements was prepared and finalised with partners in Nauru during a visit to Nauru in April 2014. This PDD listed 239 households for roof refurbishment based on vulnerability, cost, gender and social factors. However the PDD was never signed.
- August 2014: Following the change in scope of the project (see 3.1) the services of a water engineering firm were procured to conduct a feasibility and design study for increasing national water storage



capacity in Nauru. The feasibility report identified several different options for increasing the national water storage capacity in Nauru. These options were then presented on 13 August 2014 at a technical working group (TWG) workshop for their review, and to solicit guidance on the feasibility of these options with the objective of nominating a preferred design solution. With the support of the TWG and the preliminary report prepared by the engineering firm, Nauru selected Option A: to demolish the existing tank B10 and construct a new storage tank with overhead fill point with reticulation from tank B13.

- November 2014: Version 2 of the PDD for expanding national water storage capacity and improving water security, was signed. The PDD became the equivalent of a work plan.

3.3 Detailed design and implementation

Design

- November 2013: Engineering review of roof conditions and selection of households for refurbishment was conducted (see 3.2).
- September 2014: A feasibility and preliminary design report describing required improvements to Nauru's national water storage capacity with estimated costings was completed.
- November 2014: A final design report was completed for improvements to Nauru's national water storage capacity.

Procurement

- November 2014–April 2015: Discussions were held with the USAID-funded Coastal Community Adaptation Project (C-CAP), which was planning a similar initiative (national water storage tank) in Nauru to see if there was potential for combining funds and delivering the project jointly; however in April 2014, it was concluded this was not possible due to USAID's procurement policy.
- December 2014: Request for quotation (RFQ) 14/94 – Demolition of B10 tank – was advertised on the SPC website and was restricted to local contractors only at the request of the Government of Nauru. The RFQ was also advertised locally.
- February 2015: Request for proposals (RFP) 15/20 – National water storage improvements for both demolition and installation work – was advertised on the SPC website for international tender.
- April 2015: The two complete bids were reviewed and discussed with Nauru during a country mission. All the bids were well over budget and extended beyond the available timeframe. Neither the Government of Nauru nor SPC could identify additional funding for this project.
- May 2015: After discussion with EU and virtual discussion with steering committee members from the other countries, the decision was taken to reallocate EUR 389,437 from the funds committed to Nauru, to the project countries – Kiribati and Tuvalu – impacted by Cyclone Pam (March 2015), and FSM, which was impacted by Typhoon Maysak (April 2015). This decision was further endorsed at the 5th Steering Committee Meeting in September 2015.
- July 2015: The procurement review report for RFP 15/20 (demolition and installation) was completed and closed with the bid not being awarded.
- July 2015: The procurement review report for RFQ 14/94 (demolition only) was prepared; only one tender was received and the contract was awarded to a local firm in August 2015. This contract required considerable additional work because no liability insurance was available for Nauru, and special exceptions had to be included.



- March 2016: Contract with the local firm to demolish the tank was terminated for non-compliance and a Letter of Agreement signed between the Government of Nauru and SPC, which allowed for the demolition to be completed by a state-owned enterprise.
- May 2016: Demolition of B10 tank completed.

Recruitment of project officers

- The Nauru National Coordinator position was filled by a staff member of the leading implementing agency—the Department of Environment—under the Ministry of Commerce, Industry and Environment. The Coordinator was in place from 19 June 2013 to 31 December 2015, and also played a key role in the climate change adaptation project. The position was governed by the Nauru Government employment policies.
- The General Manager, Power Operations, Nauru Utilities Corporation, provided oversight of the demolition of the B10 water storage tank.

Implementation

- The project logframe as amended after the May 2015 reallocation decision was used to report on implementation.
- **Overall objective:** To contribute to building the resilience of communities in Nauru to the effects of climate change.
 - The indicator specifying that climate variability and change be incorporated into RONAdapt was achieved. RONAdapt provides a clear strategy and plan for mainstreaming climate change adaptation and disaster risk management in all sectors of the Government of Nauru. Several agencies contributed to this process and there was an extensive consultation process in Nauru to prepare the document. It was completed in September 2014, endorsed by Cabinet in October 2014, published in December 2014, and launched in Nauru in January 2015.
- **Project purpose:** To improve planning for water security in Nauru.
 - The indicator specifying that a 20-year Water and Sanitation Master Plan be prepared was achieved. The preparation of the Master Plan involved three drafts and extensive consultation in Nauru between each draft. This activity was funded jointly with SPREP under the PACC project. At the request of the Government of Nauru, three funding proposals have been prepared to assist the government in securing funds for implementation of the plan. The Plan was submitted to Cabinet in August 2016.
- **Key Result Area 1:** Improvements to Nauru's national water storage designed with participation of all key stakeholders.
 - The indicator specifying that an assessment of Nauru's water storage capacity be undertaken was achieved. Two technical reports were prepared that contributed to this assessment: the household roof assessment conducted in 2013 and the feasibility and pre-design report for national water storage conducted in 2014.
 - The indicator specifying that key stakeholders, including Cabinet and technical experts, be involved in the design process was met. During the household assessments in 2013, there was extensive involvement with community groups. During the assessment and design of the



national storage, there was extensive consultation with government and the Water Technical Group. In addition, in Nauru, Cabinet endorsement for all projects is required, and this process was adhered to – e.g. Cabinet endorsement of the PDD version 2.

- The indicator specifying that at least one lessons learned video be prepared and shared with other countries was also achieved.

- **Key Result Area 2:** Existing derelict water tank effectively and efficiently demolished.
 - The indicator specifying that the old tank be demolished and material disposed of appropriately was completed in May 2016.
- **Key Result Area 3:** Increased community awareness and capacity to improve water conservation.
 - The indicator specifying that at least two awareness and education activities relating to water security and climate change be undertaken has been achieved. Training in WASH was conducted in April 2015 for 21 people (14 men, 7 women), representing government, NGOs and the National Youth Council.
 - A south-south exchange took place in December 2015 and February 2016. A member of the Nauru CIE travelled to Kiribati to work with the Kiribati Environmental Health Unit to learn about the management of their water quality monitoring programme set-up, as part of the GCCA: PSIS project.

Monitoring and evaluation

- Regular quarterly reporting was provided by Nauru using a standard ‘traffic light’ template. Financial reporting was provided on a similar schedule.
- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions, provided the project team with regular updates and were used to alter or amend activities, revise logframe indicators and monitor budgets.
- Annual planning and steering committee meetings provided other opportunities for discussion and evaluation.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion, as did the midterm evaluation in the fourth quarter of 2013.

3.4 Sector mainstreaming

- The Nauru National Water, Sanitation and Hygiene Policy provided the platform for mainstreaming climate change into the water sector in Nauru.
- The project has contributed significantly to sector mainstreaming through the:
 - Household roof assessment in 2013, which involved government and communities; and
 - Preparation of the 20-year Water and Sanitation Master Plan, which also involved extensive consultation with government and communities.



4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

The RONAdapt laid the foundation for mainstreaming climate change and disaster risk management into government and the private sector and also involved extensive consultation.

4.2 National coordination

The Nauru National Coordinator position was filled by a staff member from the Department of Environment, CIE. The Coordinator was in place from 19 June 2013 to 31 December 2015.

4.3 Assisting Nauru to access climate change finance

- A review of climate change mainstreaming into national plans and policies in Nauru was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of Nauru qualifying for direct budget support for climate change was medium-low given its capacity constraints.
- The GCCA: PSIS project contributed to the preliminary discussions in 2012 for the Pacific Climate Change Finance Assessment: Nauru Case Study.

5. Training

5.1 Formal training

5.1.1 Proposal preparation using the Logical Framework Approach

In 2014 10 men and 10 women – mainly from government and some from the private sector – were trained in proposal preparation using the LFA. In the six months following the training, the LFA was used in the preparation of two proposals, as well as being integrated in regular work duties.

5.1.2 Sector training

- 21 individuals (14 men, 7 women) took part in the WASH training
- 1 CIE officer (male) trained in water quality assessment via south-south collaboration (Nauru/Kiribati)

5.2 Informal training

Informal on-the-job training was provided in financial management.



6. Communications and visibility

Awareness work in Nauru has mainly been conducted through radio programming.

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, video, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2014: Nauru GCCA: PSIS project fact sheet
- 2014: Securing safe drinking water in Nauru – video
- 2015: Partnership results in climate and disaster resilience plan in Nauru – media release
- 2015: Partnership results in climate and disaster reliance plan for Nauru – article
- 2016: South-south exchange to inform water quality monitoring in Nauru – article

7. Gender and special groups

An analysis of the gender disaggregated data for all consultation and training activities in Nauru showed that there was comparable representation of men and women (40 men, 30 women). Women featured prominently in the project planning consultation, where a special effort had been made to include community representatives (9 men, 8 women).

The original adaptation project focused on improving roof catchments. After the roof surveys were conducted, criteria to identify the most vulnerable households were developed; these included a variety of parameters, such as the number of household occupants, gender ratio, and the number of children per household, number of people with disabilities, and cost of the roof replacement/repair.

The project that was implemented on improvement of national water storage will benefit women in the long term, especially since they are the ones most involved in family health and child rearing.

8. Environmental issues

Most of the project activities in Nauru focused on environmental issues and environmental change; in particular the safe and efficient storage and use of water at both the community and national government levels.

During the planning for the household roof improvements, extensive work was conducted on the safe disposal of asbestos in Nauru and the Pacific countries. A temporary method was developed for the storage of roof asbestos in Nauru – involving locked containers in the landfill – while Nauru developed a national strategy for asbestos disposal/storage. (This particular project was not implemented.)



9. Sustainability

9.1 Mainstreaming

- RONAdapt provides a blueprint and action plan for mainstreaming climate change adaptation and disaster risk management across all sectors of government in Nauru. Based on extensive consultation and support from several different regional organisations, this document will provide a framework for Nauru's strategic and national planning for at least the next few years.
- At the sector level, the 20-year Water and Sanitation Master Plan provides a clear way forward for the water sector over the next 10 and 20 years. Backed by consultations and proposals for funding, the Government of Nauru is now in a much better position to seek funding for major infrastructure improvement of the water sector, and to move away from the existing high-risk situation with regard to their water supply.
- The demolition of the existing B10 storage tank clears the way for construction of a new storage tank, and thereby contributes to a more robust water storage supply for Nauru. The feasibility and final design studies for a new tank have been provided to Nauru, which will hopefully shorten any future tender processes.
- The WASH training and the south-south exchange with the Kiribati Environmental Health Unit have built capacity in CIE in water quality monitoring and management, especially at the community level.

10. Anticipated potential impacts (2016–2020)

- The Government of Nauru accesses new funding for some of the major infrastructure improvements identified in the 20-year Water and Sanitation Master Plan
- WASH training expanded to communities throughout Nauru thereby decreasing the incidence of diarrhoea and other disease outbreaks
- A new water storage tank is constructed to replace the old B10 tank

11. Lessons learned

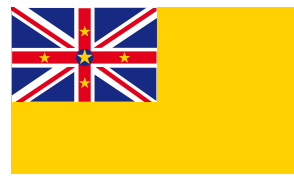
- A national lessons learned meeting was held in Nauru on 23 November 2015.
- A regional lessons learned meeting was held in Yap State, FSM, 3–4 September 2015.

12. Supporting documents

Supporting public documents are available online:

- SPC website (<http://ccprojects.gsd.spc.int/eu-gcca-psis/>)
- Pacific Climate Change Portal (<http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>)

All supporting documents are stored on SPC's internal electronic archive for the GCCA: PSIS project.



Chapter 7: Niue



Timeline



| | |
|------------------|---|
| Apr 2012 | Technical and design report for rainwater harvesting in Niue completed (by PACC project) |
| Aug 2012 | Cost benefit analysis report completed (by PACC project) |
| Nov 2012 | Letter of Agreement signed outlining governing roles and responsibilities of SPC and the Government of Niue |
| Dec 2012 | Letter from Government of Niue confirms the water sector as the project focus |
| Feb 2013 | Climate change adaptation project concept note finalised |
| Mar 2013 | Consultation workshop conducted in Niue on design of adaptation project |
| Apr 2013 | Contract for the tank moulding facility awarded |
| Aug 2013 | Project design document signed |
| Aug 2013 | Training in proposal preparation using the LFA conducted |
| Dec 2013 | Tank moulding facility opened |
| Jun 2014 | 420 tanks manufactured |
| Jun 2014 | GCCA: PSIS Planning and Steering Committee Meeting held in Niue and tank moulding facility featured at the event |
| Sept 2014 | Side event held on the adaptation project at the UN-SIDS meeting in Samoa |
| Dec 2014 | Institutional framework developed for the Climate Change Division in Niue |
| Jan 2015 | Additional 100 tanks manufactured |
| Apr 2015 | Amendment to Letter of Agreement signed |
| May 2015 | Second round of training conducted in proposal preparation using the LFA |
| Dec 2015 | 60% of the tanks installed in the villages |



1. Highlights

Niue is situated in the southwest Pacific Ocean and the 2010 census recorded a population of 1,611. It is the world's largest and highest single coral atoll with a land area of 259 km². Niue lies about 2,400 km northeast of New Zealand. Niue is characterised by three terraces; the rim of the lower terrace averages 28 m above sea level, with the upper rim averaging 69 m above sea level. The slopes of the terraces are rough, with jagged coral outcrops. The island has a rugged, rocky coastline, featuring steep cliffs, caves, deep chasms and blowholes. The reef is continuous, and is breached at one small area opposite the Alofi wharf. There are 14 villages scattered around the island's coast, including Alofi, which is the capital.

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Niue on 3 December 2015.

- For the first time in any of the nine project countries, a tank manufacturing facility was constructed and Niueans were trained to manufacture plastic storage tanks. Five hundred and twenty 5,000-litre water storage tanks were made, one for each inhabited house in Niue. This is a major achievement for a small country with a population of around 1600 people.
- Niue provided an example to other countries by combining the funds from three donors: Global Environment Facility, AusAID and EU, through three projects: Pacific Adaptation to Climate Change (PACC), PACC+, and GCCA: PSIS, to create the moulding facility and provide tanks to all inhabited houses, rather than applying a piecemeal project approach.
- The moulding facility generated interest among other countries (e.g. Nauru and Cook Islands), and will be used in Niue by another project – Adapting to Climate Change and Sustainable Energy, implemented by EU/Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) – to manufacture septic tanks.
- An institutional framework providing clear options for the improved management of climate change within the Government of Niue was prepared.
- In 2014 and 2015, 24 women and 21 men – mainly from government and some from the private sector – were trained in proposal preparation using the LFA. In the six months following the two trainings, the LFA was used in the preparation of 14 proposals, as well as being integrated in regular work duties.

2. Establishment of agreement between SPC and Niue

A Letter of Agreement (LOA) was signed on 29 November 2012 between SPC (Director-General) and the Government of Niue (Director, Department of Environment and Financial Secretary, Department of Treasury). The LOA outlined: the roles and responsibilities for the two parties; governance arrangements; confidentiality and intellectual property rights; arrangements for recruitment of a National Coordinator; implementation of a climate change adaptation project; and financial guidelines. Furthermore it provided up to EUR 54,000 for the National Coordinator, and up to EUR 500,000 for the climate change adaptation project.

The LOA was amended on 28 April 2015 to provide an additional EUR 82,200 for the manufacture of 100 additional tanks for households inadvertently missed during the initial assessment, and for sale to the public. These funds came from additional monies held in the climate change adaptation budget line – a total of EUR 4.64 million of which EUR 4.5 million had been committed at the start of the project.



3. Climate change adaptation project

3.1 Selecting project focus

- May 2012: First Steering Committee meeting held; during the bilateral meeting, Niue identified the water sector, and specifically activities that would augment the ongoing PACC project, as the focus for the GCCA: PSIS project.
- July 2012: Niue climate change profile was prepared describing the legislative and planning background for climate change in Niue, including the JNAP and sector plans, as well as activities over the past five years. This profile was revised in August 2013.
- September 2012: During a country mission to Niue, it was confirmed by the Niue Government that the GCCA: PSIS funds would be used to augment the PACC project. PACC has USD 400,000 from the Global Environment Facility, and PACC+ has AUD 500,000 from AusAID. The three projects combined would supply a total of 420 individual households with tanks. This was confirmed by the Government of Niue in a letter dated 12 December 2012.
- February 2013: Project concept note submitted by the Government and approved by EUD.

3.2 Consultations and preparation of project design document

- March 2013: A consultation workshop was held in Niue and a preliminary logframe prepared. There were 12 participants, including representatives from the Department of Environment, other government departments, as well as four community members (6 women and 6 men).
- August 2013: The project design document (PDD) was signed after preliminary approval by EUD. This was signed by GCCA: PSIS Project Manager, Department of Environment and Department of Treasury. The PDD became the equivalent of a work plan and was amended as the project progressed.

3.3 Detailed design and implementation

Design

- April 2012: A technical and design report was completed for rainwater harvesting in Niue, which provided justification for sizing the tanks (prepared for the PACC project).
- August 2012: A cost-benefit analysis report was prepared for the PACC project.

Procurement

- 2012: Niue did not have a procurement policy in 2012, so the tendering process was informed by SPREP's processes (SPREP were the implementing entity for PACC and PACC+).
- December 2012: With the signing of the GCCA: PSIS LOA in November 2012, the tender advertisement was issued on 12 December 2012 and closed on 24 January 2013. The tender was for the supply and delivery of 400 household water tanks (each 5,000 litres) and accessories to be manufactured offshore and delivered to Niue or manufactured in Niue.
- January 2013: The procurement review report was prepared; of the five tenders received, only two were for tank manufacture in Niue.
- April 2013: Contract for tank manufacture in Niue awarded.



Recruitment of project officers

- Niue's Department of Environment's existing PACC Project Officer took on the additional work required for the GCCA: PSIS project. This was not ideal, and there were many discussions with the Public Service Commission, which is responsible for all government positions. During 2014 and into 2015, as the PACC funds had been exhausted, the individual was paid using funds from the GCCA: PSIS National Coordinator budget; but the individual continued to act as both Project Officer and National Coordinator.
- The PACC evaluation report (see Monitoring and evaluation section) recommended the need for a project finance officer and this recommendation is also endorsed by the GCCA: PSIS project.

Implementation

- The project logframe as amended in January 2015 was used to report on implementation.
- **Overall objective:** To provide infrastructure and skills in Niue to mould tanks for storage of water or other purposes. The tank moulding facility was opened on 12 December 2013; 520 tanks have been manufactured, 20 people have been trained (10 in moulding, 7 in tank base construction, 3 in connections), and the facility is to be used by the EU-GIZ Adapting to Climate Change and Sustainable Energy (ACSE) project to mould septic tanks for the Alofi waste water project in 2016-2017.
- **Project purpose:** To augment rainwater capture and storage in Niue.
 - The indicator specifying that at least 60% of households in three communities have properly maintained and operational rainwater capture and storage systems by June 2015 has been achieved; although it should be noted that only 60% of the installations were completed as of December 2015.
 - The indicator specifying that 40% of inhabited households in Niue make monetary contributions for installation of rainwater capture and storage systems by December 2014 has been achieved, with 60% complying; although it should be noted that it has been very difficult to convince the remaining house owners to buy their own guttering and fascia boards, and as of December 2015, this was impeding final completion.
- **Key Result Area 1:** Education, awareness and understanding of rainwater capture and storage on Niue strengthened and enhanced.
 - The indicator specifying that at least one awareness workshop be conducted in each community/village by March 2014 was achieved.
 - The indicator specifying that at least three effective communication tools be prepared and disseminated to communities by July 2014 has been achieved; these included the preparation and frequent screening of media clips on water conservation, and organised visits to the moulding facility.
 - The indicator specifying that at least 200 primary-aged school children be engaged in specific activities relating to water conservation by July 2014 was achieved; these included poster competitions on climate change and water themes, World Water Day activities, and visits to the moulding facility.

- **Key Result Area 2:** Rainwater capture and storage systems procured, supplied and installed in occupied households in three communities.
 - The indicator specifying that at least 60% of the households in the three communities be using the rainwater capture and storage systems effectively by June 2015 was completed; further details are provided under 'Project purpose'.
 - The indicator specifying that at least three local people be trained in installation of water capture and storage systems by December 2014 was completed; further details are provided under 'Project purpose'.

- **Key Result Area 3:** Newly installed rainwater storage systems monitored and maintained regularly throughout Niue.
 - The indicator specifying that one operation and maintenance training workshop be conducted by December 2014 was achieved.
 - The indicator specifying that a minimum of five representatives from the departments of environment, health and water be trained in water quality testing was completed. Ten people were trained at a workshop in October/November 2012.
 - The indicator specifying that 30 per cent of households be made aware of and begin using the translated operation and maintenance guidelines for rainwater storage and capture by September 2015 was replaced by the delivery of one-on-one training, which was conducted by the contractors as they installed the systems in the households. (It was determined that direct hands-on training was more appropriate in the Niue context than written guidelines.) The contractors themselves were trained during the operation and maintenance training workshop (see 1st bullet under this KRA).

Monitoring and evaluation

- Regular quarterly reporting was provided by Niue using a standard 'traffic light' template. Financial reporting was provided on a similar schedule.
- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions, provided the project team with regular updates and were used to alter or amend activities, revise logframe indicators and monitor budgets.
- Annual planning and steering committee meetings provided other opportunities for discussion and evaluation.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion; the evaluator conducted a site visit to Niue during the 2015 ROM. A midterm evaluation of the entire project was also conducted during the fourth quarter of 2014.
- A final evaluation completed by the PACC project in 2014 provided further insight.

3.4 Sector mainstreaming

Mainstreaming climate change into the water sector in Niue was largely undertaken by the PACC and PACC+ projects and is not reported here.



4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

In 2014 an institutional framework was developed by contracted consultants for a Climate Change Division in Niue. Three options were presented and discussed in detail: (i) a Climate Change Division in the Department of the Environment; (ii) a Climate Change Division within the Ministry of Natural Resources; and (iii) some of the duties of the Climate Change Division being encompassed in the Project Management Unit under the Premier's Office. The third option was the one favoured by the Government of Niue at the end of 2015.

4.2 National coordination

As discussed above under section 3.3, the Government of Niue combined the role of Project Officer and National Coordinator in one position. This was not a very satisfactory arrangement as it put too much pressure on the individual.

4.3 Assisting Niue to access climate change finance

A review of climate change mainstreaming into national plans and policies in Niue was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of Niue qualifying for direct budget support for climate change was low given its capacity constraints.

5. Training

5.1 Formal training

5.1.1 Proposal preparation using the Logical Framework Approach

In 2014 and 2015, 21 men and 24 women – mainly from government and some from the private sector – were trained in proposal preparation using the LFA. In the six months following the two trainings the LFA was used in the preparation of 14 proposals, as well as being integrated in regular work duties.

5.1.2 Sector training

- 10 persons trained in tank moulding in 2013 and 2014 (all men)
- 7 persons trained in tank base construction in 2014 (all men)
- 3 persons trained in connections in 2014 (all men)
- 10 persons trained in water quality testing in 2012 (7 men, 3 women)

5.2 Informal training

Informal on-the-job training was provided in procurement – e.g. through the mainstreaming technical assistance activity in 2014. Two of the reviewers who had no previous experience in reviewing applicants using set criteria gained skills in this area.



6. Communications and visibility

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, video, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2013: Rainwater tank manufacturing facility opens in Niue – media release
- 2014: Delegates discuss successes and challenges in national climate change adaptation projects – media release
- 2014: Niue GCCA: PSIS project fact sheet
- 2014: Rainwater capture and storage systems: Partnerships to strengthen Niue’s water security – video
- 2014: Vital Harbour Launch at SIDS 2014 – article
- 2015: Manufacturing water tanks for water security – article
- 2015: GCCA Pacific small island stories featured at the Pacific Climate Change Roundtable – article

7. Gender and special groups

An analysis of the gender disaggregated data for all consultation and training activities in Niue showed that there was equal representation of men and women (33 men, 32 women). It was observed that young graduates in particular benefitted from the second training on proposal preparation.

All of the training in construction, such as tank moulding and base construction, was solely attended by men, as this is a male-dominated area, with a focus on private sector contractors.

8. Environmental issues

Most of the project activities in Niue are focused on environmental issues and environmental change in the water sector.

The project has the potential to reduce pressure on groundwater resources, and provide opportunities for improved maintenance of the distribution system, thereby reducing water loss through leakages. The technical assistance provided to restructure climate change, environment and natural resource divisions may improve national environmental management in the future.



9. Sustainability

9.1 Mainstreaming

- The project's technical assistance in the form of providing options and institutional structure support for a Climate Change Division in Niue, moved the option forward. In December 2015, a Cabinet paper had been prepared to merge the Meteorological Office and the Environmental Division into a new division that would also include climate change.

9.2 Further funding

- The moulding facility constructed under this project has the potential to be used to mould other products in Niue, thereby making these products more affordable and more readily available.
- The facility is to be utilised by the ACSE Project implemented by EU/GIZ, for the manufacture of septic tanks in 2016–2017.
- Under the ACSE project, the moulding facility building will be retrofitted to withstand a category 5 cyclone.
- Lessons learned from the project have been incorporated into new projects – e.g. with the ACSE project there is no direct contribution from the households (this requirement created significant issues and delays in the GCCA: PSIS/PACC project).
- Niuean staff have been trained in the manufacturing process to contribute to its sustainability.
- Other potential uses for the facility include waste bins, honey containers and canoes.
- The Government of Niue is seeking funds to develop a business plan for the moulding facility.

9.3 Private enterprise

- Homeowners are responsible for general care and maintenance of the rainwater harvesting systems, gutters and fittings.
- Private sector contractors have been trained in the maintenance and monitoring of the rainwater harvesting systems.
- There is the possibility that the moulding facility could become a private enterprise; although the Government of Niue is not considering this option at the moment.

10. Anticipated potential impacts (2016–2020)

- The tank moulding facility is operated in an efficient and business-like manner either by the Government of Niue or the private sector
- The groundwater supply system is better maintained, with regular shut-down periods for maintenance, since households have an alternative supply of water
- Householders are better prepared for future cyclones when electricity supplies are disrupted.
- A government division responsible for climate change is in place and adequately staffed



11. Lessons learned

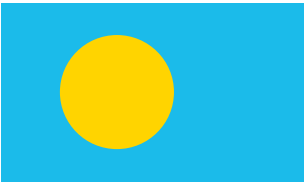
- Lessons learned were shared regionally in Yap State, FSM, 3–4 September 2015.
- A national lessons learned meeting was held in Niue on 3 December 2015.

12. Supporting documents

Supporting public documents are available online:

- SPC website (<http://ccprojects.gsd.spc.int/eu-gcca-ipsis/>)
- Pacific Climate Change Portal (<http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>)

All supporting documents are stored on SPC's internal electronic archive for the GCCA: PSIS project.



Chapter 8: Palau



Timeline

- 
- Aug 2012** **Water** selected as the sector of focus by Cabinet with particular attention to **outlying island states**
 - Oct 2012** Climate change adaptation project **concept note** finalised
 - Mar 2013** Work starts on **Palau Climate Change Policy**
 - May 2013** **Letter of Agreement** signed outlining governing roles and responsibilities of SPC and the Government of Palau
 - Jul 2013** **Project design document** signed
 - Mar 2014** **Training conducted in proposal preparation** using the logical framework approach
 - May 2014** **Additional Letter of Agreement** signed between Government of Palau, National Development Bank and SPC for the Palau Water Conservation Incentive Program
 - Jul 2014** **Engineering design and costing** for the planned water infrastructure in five outlying states **completed**
 - Feb 2015** **Palau-Tonga south-south exchange** on coastal protection completed
 - Apr 2015** **Water tanks delivered** to Palau
 - Apr 2015** Second round of **training in proposal preparation** using the LFA conducted
 - Sep 2015** **Water Operations Certification programme** completed
 - Nov 2015** **Palau Climate Change Policy endorsed** by Joint House Resolution
 - Dec 2015** **Scope and terms of reference for a hydrogeological assessment** of water availability prepared
 - Dec 2015** **Rainwater tanks** installed in Tobi and Sonsorol and **leak detection and repair** completed in Peleliu
 - Mar 2016** **Improvements to Koska Well** in Angaur completed



1. Highlights

Palau is located in the north-west tropical Pacific and the 2010 census recorded a population of 20,643. Palau lies around 800 km east of the Philippines. There are over 500 islands in Palau, most of which are the small, uninhabited Rock Islands. Only nine islands are currently inhabited. Palau is divided into 16 states. The total land area is 535 km². About 80 per cent of the population live on the state of Koror Island. The capital is in the state of Melekeok, centrally located on Babeldaob, while Koror remains the centre for commerce.

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Palau on 17 December 2015.

- Through a highly participatory process, the Palau Climate Change Policy for Climate and Disaster Resilient Low Emissions Development was completed and endorsed by Congress. This policy covers climate change adaptation, disaster risk management and sustainable energy. The policy includes a five-year action plan, which identifies and prioritises interventions covering ten objectives – including governance, health and critical infrastructure – and is costed at USD 500 million.
- The Office of Climate Change established within a line ministry and with its own budget; and a reinigorated National Environment Protection Council mandate.
- Water security strengthened in five outlying island states with locally appropriate infrastructure interventions benefitting all their citizens; a successful community outreach education campaign implemented (assisted by the ‘Wonder of Water’ mascot, *Faucetina*) and video productions filmed in the Palauan language.
- Following a complex merger, the Palau Public Utilities Corporation (PPUC) financial management capacity was strengthened. This included areas such as internationally-compliant procurement, management of service consultancies, and development and implementation of a locally-tailored standard operating procedures certification training course for water operators.
- Private sector water conservation incentives scheme criteria developed and trialled, including training of private sector contractors in the installation of rainwater harvesting systems, including first flush diverters.
- Partnerships and exchange of knowledge about integrated coastal management through the south-south exchange with Tonga, and development of the coastal climate change toolkit. Building relationships between national and state government agencies and communities, especially in Koror.
- Following two training workshops for 47 people (36 women, 11 men) in proposal preparation using the LFA, this framework has been adopted and will be used for developing concept notes for implementation of the Palau Climate Change Policy and other grant applications.

2. Establishment of agreement between SPC and Palau

- A Letter of Agreement (LOA) was signed on 1 May 2013 by the Pacific Community (SPC) and the Government of the Republic of Palau (ROP), and amended in October 2015 to cover additional funding provided for the National Coordinator arrangements. The Palau signatories to the LOA were the President of the Republic of Palau, and the Minister of Finance. The LOA outlined: the roles and responsibilities for the parties; governance arrangements; confidentiality and intellectual property rights; arrangements for national coordination; implementation of a climate change adaptation project; and financial guidelines.

- Under the LOA, the ROP had the leading role in coordinating and providing human resources for broad and inclusive national participation in the project; in particular: (1) the mainstreaming of climate change in national and sectoral responses; and (2) the identification, design, implementation and evaluation of a specific climate change adaptation project.
- In consultation with the ROP and other stakeholders, SPC provided training, technical advice, and support for national coordination, and funded adaptation projects agreed on in the ROP, to be carried out by the government, NGOs and other participants.
- The LOA included provision of up to EUR 500,000 for an adaptation project, and with the amendment, up to EUR 95,290 for country engagement (national coordination). Other funds for technical assistance (in-country training, workshops, and participation in meetings) were available on request.

3. Climate change adaptation project

3.1 Selecting project focus

- February–May 2012: Preparation of country profile version 1. A literature review of the projects, programmes and activities relating to climate change that were ongoing or recently implemented in the country was prepared in consultation with the Office of Environmental Response and Coordination (OERC). The profile provided a useful background on the limited legislative, planning and institutional arrangements for climate change in Palau and helped in the identification of a focus area for the adaptation project. This profile was updated and a second version prepared in July 2013.
- May 2012: At the first GCCA: PSIS Steering Committee Meeting, specific consultations were conducted with the country representative from the Office of the President – Protected Areas Network, to clarify adaptation needs and priorities. Adaptation in water, marine resources, human health, agriculture, and food security were discussed.
- July 2012: In-country discussions generated a list of possible project concepts. This list was then refined with the Environmental Consortium and PACC Core Group on 24 July 2012. Most stakeholders highlighted adaptation to climate change in the water sector as a gap. Stakeholders identified Angaur as a state with particular water issues such as an unpleasant smell and high sedimentation in the water. It was noted there was a need to seek higher level endorsement for the selection of the water sector.
- August 2012: Confirmation from the Government of Palau of the water sector as the focus for GCCA: PSIS adaptation activity, particularly in selected outlying island states. This was formally confirmed by the President of Palau in December 2012.
- September–October 2012: Project concept note: *Addressing water sector climate change vulnerabilities in the outlying states of Palau*, prepared and approved on 27 October 2012.
- November 2012–March 2013: Palau’s national November 2012 elections resulted in a change in government, with associated movement of personnel and institutional restructuring. Waiting on the appointment of new officials and the establishment of administrative arrangements, delayed work on the project design by four months.
- December 2012: Palau was struck by Typhoon Bopha and OERC representatives were unable to participate in the GCCA: PSIS 2nd Regional Steering Committee Meeting.



3.2 Consultations and preparation of project design document

- April–May 2013: Consultation in Palau to design activities with PWSC. The process involved document review, field visits to Peleliu and Angaur, meetings, consultations, and a participatory planning workshop using the LFA to elaborate the project concept with 27 representatives (12 men, 15 women) from government agencies, NGOs and state government. A preliminary budget and schedule was developed with PWSC officials.
- Technical information and assessment reports that had been provided by a representative from US-EPA were discussed via teleconference. The project concept was discussed with SPC-GSD Water Sanitation Programme, IWRM, WERI, and other partners; although none could commit time to the design work.
- July 2013: The project design document (PDD) was signed.
- August 2013: The recently formed PWSC was merged with PPUC and there were subsequent delays and changes in institutional arrangements and staff.
- The PDD became the equivalent of a work plan and was amended as the project progressed.
- October 2014: After consultations with state governors, detailed costing and design was carried out and the PDD was amended.

3.3 Detailed design and implementation

Engineering studies to inform final design

- January–June 2014: Detailed project planning continued alongside assessments, surveys and site visits from the GCCA: PSIS project team.
- March–July 2014: Engineering designs and costs of the planned water infrastructure activities in five outlying island states were completed. These costs showed a significant increase over those estimated in the original PDD. This budget shortfall was largely due to under-estimation of the cost of local transport as well as changes in the priorities identified by the island states in 2013.
- July 2014: Following extensive discussions, a decision was made to reduce the scope of the hydrogeological study (KRA 3), and replace it with a concept and terms of reference for a follow-up, stand-alone project. The project aim would be to assess the availability and quality of water resources in the outlying island states, and would involve extensive fieldwork, possibly including drilling. It was agreed to use most of the funding previously allocated to KRA 3 to cover the budget over-runs for the water sector infrastructure improvements in the outlying island states.

Procurement

- With five separate outlying island states all undertaking different activities, there was a range of procurement activities. PPUC took on the bulk of the procurement responsibilities using their procedures for the operator training (KRA 1), education and awareness (KRA 4), and some of the infrastructure activities (KRA 2). The SPC team was involved in the review of the tenders.
- Only the rainwater harvesting systems (tanks and accessories) for Sonsorol, Tobi and Kayangel were purchased directly by SPC, with the involvement of Palau counterparts in the review and selection of tenders. Tanks for FSM and Palau were purchased jointly to save money, especially on transportation. The contract was awarded in December 2014.



- In Kayangel, after investigating the feasibility of household filtration systems, it was decided to install a demonstration solar photovoltaic desalination system. However, during the procurement's due diligence process, it became apparent that the only company producing the type of locally-appropriate system required, was about to enter receivership, and had not yet completed its work in Nauru. Activities in Kayangel were replaced with the provision of pumps and tanks to improve water supply quality.
- After consultations with several organisations, SPC-GSD were contracted to prepare the terms of reference for the hydrogeological assessment (KRA 3).

Recruitment of project officers

- Palau's Grants Officer became a focal point for the project following the merger of PWSC with the PPUC.
- A former Outreach Officer was contracted by PPUC as Project Officer from 9 February 2014 to 31 December 2015.
- Under a separate LOA 14/372, a Finance Assistant was appointed from 25 August 2014 to 31 December 2015.

Implementation

- The PDD logframe as amended in October 2014 was used to report on implementation.
- **Overall objective:** To increase the resilience of the water sector to the effects of climate change in Palau.
 - The indicator specifying that climate variability and change be incorporated into PPUC's long-term planning and operations has been achieved. This is reflected in the PPUC's input into both the utility and natural resource sector action plans in the climate change policy and action plan, and in the ongoing preparation of the strategic plan, which includes applying a core budget for conducting hydrological assessments based on KRA 3 output.
- **Project purpose:** To help ensure water quality and supply meets the needs of the people in the outlying island states of Palau.
 - The indicator specifying that more than 20% of the population of two of the outlying states of Palau have improved water storage capacity has been achieved, with all the population of Sonsorol and Hatohobei being served by new rainwater harvesting systems (13 stand-alone systems with two 750-gallon tanks).
 - The indicator specifying that community water catchment areas be increased by 10% in one outlying island state was achieved in the island of Angaur through upgrades to the catchment system at the community centre, with tanks and roof improvements, as well as installation of the Koska Well tank and fencing of the surrounding area. In addition, three 750-gallon tanks with bases and accessories were installed at the community buildings in Kayangel in the wake of Typhoon Haiyan.
 - The indicator specifying that 10% of the population adopt long-term water conservation measures has been accomplished through the activities listed above, as well as through household leak detection and repairs in Kayangel, Peleliu and Angaur, with the five combined outlying island states making up approximately 10% of Palau's population. The education awareness campaign also reached a significant percentage of the population.

- **Key Result Area 1:** Enhanced capacity of key stakeholders in Palau to monitor and maintain water systems in the outlying states.
 - The indicator specifying that four water technicians successfully complete the water operations certification course was successfully achieved with the design of a locally relevant water operations certification programme. In 2015, water operators (36 men) from 19 different water systems in Palau were trained, and 68 per cent passed and received certification. PPUC plans to use the certification programme as a standard for all water operators.
 - The indicator specifying that a water operations maintenance schedule be prepared for the outlying island states for January–December 2016 was achieved.

- **Key Result Area 2:** Appropriate improvements made in water sector infrastructure in the outlying states.
 - The amended PDD indicator specifying that one new community water distillation demonstration site be operational in Kayangel, was not achieved. This was due to the procurement issue with the insolvent company (see 3rd bullet under Procurement). This activity was replaced with enhancing conservation and water efficiency for the existing distribution system by installing two new pumps at the existing wells and conducting leak detection and repairs, as well as installing three publically-accessible tanks and accessories in community buildings.
 - The original PDD indicator, which specified that one new community water catchment demonstration site be operational in Angaur was achieved, with both the Koska Well, and new community centre tanks installed with first flush diverters. This was undertaken through:
 - ⇒ Detailed engineering design and rehabilitation of the Coastguard (Koska) Well as an emergency water supply; and
 - ⇒ The addition of one pressure pump and storage tank, and two rainwater harvesting tanks at the community centre.
 - The indicator specifying that rainwater catchment capacity be increased by at least 20 per cent in Sonsorol and Hatohobei was exceeded. There was refurbishment of one cistern; the purchase, transport and installation of six stand-alone water catchment systems in Sonsorol and 13 stand-alone systems (12 on Tobi and one on Helen’s Reef); and the provision of plastic roofing for one large community tank, contributing to reliable and safe rainwater catchment systems for 100 per cent of the population.
 - The indicator specifying that a contribution be made to water conservation and efficiency in Peleliu and other states was achieved through procurement of equipment, training and undertaking leak detection, repairs and fencing.

- **Key Result Area 3:** Outline scoping for an assessment of the availability and quality of water resources in the outlying island states.
 - The indicator specifying that the scope and terms of reference for a hydrogeological assessment of water availability in the outlying island states be prepared was achieved. The SPC-GSD Water Sanitation Programme reviewed information provided by PPUC to develop a draft terms of reference for a hydrogeological study into the sustainability of the water lens and the quality of ground water in the outlying island states of Angaur, Kayangel and Peleliu.

- **Key Result Area 4:** Level of awareness about water conservation raised and appropriate measures implemented by Palauan residents.
 - The indicator specifying that an awareness-raising plan be developed by March 2015 was achieved, with the contracted firm preparing and implementing an action plan for water conservation and climate change education and awareness activities in Palau.
 - The indicator specifying that at least two water conservation awareness activities be implemented and evaluated was achieved. These involved the five Wonder of Water Campaign events in outlying islands and Koror communities, which were monitored through pre- and post-surveys, and various television productions.

Monitoring and evaluation

- Regular quarterly reporting was provided by Palau using the logframe as a reporting template. Financial reporting was provided on a quarterly schedule.
- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions, provided the project team with regular updates and were used to alter or amend activities, revise logframe indicators and monitoring budgets.
- Annual planning and steering committee meetings provided other opportunities for discussion and evaluation.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion, as did the midterm evaluation in the fourth quarter of 2013.

3.4 Sector mainstreaming

- In Palau there are constraints, in that several agencies at the national level are responsible for aspects of water and climate change, with PPUC, Ministry of Environment, Environmental Quality Protection Board, Ministry of Health, Ministry of Education, state governments, staff from related projects – PACC, USP GCCA, IWRM – and NGOs, all having a part to play. The GCCA: PSIS project helped coalesce some of these actors with a focus on integrating water and climate change, bringing different stakeholders together in the Water Adaptation Steering Committee to consider the various areas, such as education and awareness, health, as well as the overall policy sessions.
- The national lessons learned workshop on the water adaptation project held in December 2015, emphasised two-way learning, based on the knowledge of local communities on how to cope with water shortages in their areas, and the sharing of new technologies and scientific information.
- The communities and households had to sign recipient agreements in the case of Sonsorol and Hatohobei, which included maintenance commitments. Some of the materials from the Fais Island, Yap, FSM water conservation campaign, and the Wonder of Water campaign, were exchanged through the regional steering committee meeting hosted in Yap.
- A LOA was signed in May 2014 between the government of Palau, National Development Bank of Palau (NDBP) and SPC, for the Palau Water Conservation Incentive Program, a pilot subsidy programme to integrate water catchment systems into the existing housing and commercial loan programme as well as into renovations. This was an effort under the GCCA: PSIS project to engage in a public-private partnership, and build on an ongoing approach used for renewable energy and energy efficiency. Funds in the amount of USD 56,450, were transferred to the NDBP in June 2014. The LOA was amended in July 2015 with several activities reduced in scope and cost. A brief analysis showed the need for a full marketing survey to be completed prior to launching such an initiative.

- Input by PPUC was integrated into both the utility and natural resource sector action plans in the climate change policy.

4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

- The GCCA: PSIS put significant time, effort and funding into the preparation of the Palau Climate Change Policy. The major milestones are listed below:
 - December 2012: Request for assistance from President of Palau for a climate change policy.
 - March 2013: Phase 1 – The Community Engagement Strategy was completed by a Palauan NGO.
 - August 2013: Phase 2 – The Gaps and Needs Assessment was completed by a Palauan consultancy firm.
 - April 2015: Phase 3 – The Climate Change Policy final draft was prepared by a team of national and international consultants and was a joint effort with Palau government agencies.
 - August 2015: Phase 4 – The Action Plan was completed by a Palauan consultant team and was actually undertaken in parallel and in conjunction with the policy process. It involved extensive consultations with all sectors.
 - November 2015: Joint House Resolution endorsed the policy.
 - Support for the preparation of the policy was provided by:
 - ⇒ GCCA: PSIS project;
 - ⇒ GIZ-Coping with climate change in the Pacific Island Region (CCCPIR) programme, which entered into a funding agreement with SPC-GCCA: PSIS in 2012 to jointly fund the policy development; and
 - ⇒ USAID, which supported a Climate Change Adviser in Palau from 2014–2015.

4.2 National coordination

The National Coordinator was appointed in the OERC from 9 September 2013 to 31 December 2015, along with an Office Manager from 26 August 2013 to 31 August 2015. Palau made a special request in 2013 for two officers because OERC documents and records prior to the 2012 elections had disappeared.

4.3 Assisting Palau to access climate change finance

A review of climate change mainstreaming into national plans and policies in Palau was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of the ROP qualifying for direct budget support for climate change was low, given its capacity constraints and limited sectoral and national strategic plans incorporating climate change endorsed or enacted at the time.



5. Training

5.1 Formal training

5.1.1 Proposal preparation using the Logical Framework Approach

Training in proposal preparation using the LFA was conducted in Palau twice – once in 2014 with a follow-up in 2015. A total of 49 people (13 men, 36 women) were trained, mainly from government and the private sector. In the six months following the training, the LFA was used in the preparation of a total of nine proposals, as well as being integrated in regular work duties.

5.1.2 Sector training

Some training activities have already been described as part of the climate change adaptation project, these included:

- September 2012: One (male) participant from Palau was funded to participate in the sub-regional North Pacific Media training in FSM
- February 2013: Two (female) participants attended the Pacific Climate Change Portal Training
- April 2015: Training in best practice installation of rainwater harvesting systems was given to 19 (male) private sector contractors as part of the NDBP Water Conservation Incentive Program
- August 2015: Water operators' certification course and field training in Angaur, Peleliu and Kayangel on standard operating procedures provided to 36 PPUC water operators (all men)

5.2 Informal training

- Informal on-the-job training was provided in project financial management and in procurement through liaison by the project team, with Palau counterparts in PPUC, OERC and Finance.
- The National Coordinator and Office Manager funded through the project were both supported to attend the GIZ-CCCPIR training on the Coastal Change Module of the Climate Change Toolkit, as well as several SPC disaster risk management workshops.
- February 2015: South-south cooperation on coastal protection and management options was fostered when a team of seven national and state government representatives visited the coastal protection project sites in Tonga and exchanged ideas on coastal protection issues with Tongan counterparts. They presented the findings to their stakeholders on their return. This was jointly funded by the GCCA: PSIS project and the Government of Palau.
- The National Coordinator was supported to attend negotiations training through participation in the United Nations Framework Convention on Climate Change Conference of Parties.
- Refresher training provided during field visits to community members by the Project Officer and Climate Change Adviser to improve understanding of installation and maintenance of rainwater harvesting systems.
- March 2015: The Climate Change Adviser presented on climate change and the policy consultations to the Ministry of Education Principals Planning Workshop.



6. Communications and visibility

There have been extensive awareness activities carried out within Palau, and this has been referenced under the climate change adaptation activities and included in the Palau Wonder of Water campaign, World Water Day, Climate Change and Disaster Resilient Development Summit. All of these events received extensive coverage in the local media.

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, video, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2013: Portal training programme heads to northern Pacific – media release
- 2014: Palau GCCA: PSIS project factsheet
- 2014: From coconuts to fresh water – video
- 2015: SPC and EU support south-south cooperation between Palau and Tonga – media release
- 2015: GCCA Pacific small island stories featured at the Pacific Climate Change Roundtable – article
- 2015: Contractors in Palau trained in the installation of rainwater harvesting systems – article
- 2015: Palau’s climate change policy to prepare the island nation for ‘unpredictability’ – article
- 2015: Time for global action on climate change says Palau’s president – media release
- 2016: Palau climate change policy endorsed by Congress – article

7. Gender and special groups

An analysis of the gender disaggregated data for all consultation and training activities in Palau showed that there was equal representation of men and women (53 men, 58 women). However, there were challenges in achieving proportional gender representation in individual trainings; for example the training on rainwater harvesting installation was only attended by contractors (19 men), and the LFA training participants were predominantly female (11 men, 36 women), despite the invitations being widely distributed.

In the development of the sector strategies for the climate change policy, the consultancy team ensured gender considerations were included; although this was not reflected in detail in the overarching policy document. Land inheritance in Palau is matrilineal and women have significant roles in decision making; at the time of the project, two states had female governors. This context is likely why both men and women were very involved in most aspects of the water project implementation in Palauan communities.

8. Environmental issues

Many of the project activities focused on environmental issues and environmental change – in particular: the sector strategies for the policies; the Wonder of Water Campaign; the coastal protection exchange with Tonga; and the participation in the Climate Change Toolkit Module development with GIZ-CCCPIR. In addition, the preparation of a draft terms of reference for hydrogeological assessment, incorporates baseline data needed to monitor environmental change.



9. Sustainability

9.1 Mainstreaming

- The endorsement by the president and adoption by both houses of the Palau Climate Change Policy, is an important milestone, as the policy supported by its prioritised and costed action plan represents a blueprint for moving forward over the next decade. Furthermore, the policy is fully owned by Palau and is not seen as a donor-driven initiative.
- The water operator certification program is a standard way to certify all present and future water operators, and will be fully absorbed by PPUC.
- Awareness and education on water conservation is to be an ongoing responsibility of PPUC in partnership with other agencies.
- Memorandum of Agreement with states on the long-term maintenance of the water infrastructure improvements provides for their continual maintenance.
- The development of the Palau Climate Change Policy proved to be the catalyst for the establishment of the new Climate Change Office in 2015.

9.2 Further funding

- Palau is accessing the Green Climate Fund readiness grant and preparing an application for National Implementing Entity status at the same time as developing proposals with regional and multilateral implementing entities to implement the food security sector action plan.
- PPUC is implementing an ADB project, including a capacity building component that may replicate some of the project activities and approaches in areas such as procurement.
- Three agencies (Palau Energy Office, National Emergency Management Office and Office of Climate Change) have been designated to lead the implementation of the Palau Climate Change Policy, and will be receiving additional budget appropriations in the next fiscal year to fund core staff salaries.

10. Anticipated potential impacts (2016–2020)

- Prioritised sector action plans (included in the Palau Climate Change Policy) and application of the use of the LFA in project proposals, enable the preparation of more country-led proposals to access new climate funding
- Strengthened project procurement, financial reporting and management, particularly at PPUC, leading to increased funding
- Lessons learned through the NDBP water conservation incentives program provide guidance for the development of further public-private partnerships
- Communities in Angaur, Kayangel, Peleliu Sonsorol, Hatohobei, and Palau are better able to effectively cope with droughts and extreme events
- Hydrogeological assessment implemented and effectively used to advise on the prevention of over-extraction or contamination of ground water
- Progressive water operators' certification and application of standard operating procedures for maintenance of systems, leads to improved water supply



11. Lessons learned

- A regional lessons learned meeting was held in Yap State, FSM, 3–4 September 2015.
- A half-day national lessons learned meeting focusing on the water security adaptation activities, including the NDBP program, was held in Koror, Palau, 17 December 2015.

12. Supporting documents

Supporting public documents are available online:

- SPC website (<http://ccprojects.gsd.spc.int/eu-gcca-psis/>)
- Pacific Climate Change Portal (<http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>)

All supporting documents are stored on SPC's electronic archive for the GCCA: PSIS project.





Chapter 9: Tonga



Timeline

- 
- Aug 2012** Climate change adaptation project **concept note** finalised
 - Dec 2012** **Consultation workshop on** design of the adaptation project conducted in Tonga
 - Jan 2013** **Letter of Agreement** signed outlining governing roles and responsibilities of SPC and the Government of Tonga
 - Mar 2013** **Project National Coordinator contracted** for March 2013–December 2015
 - Mar 2013** **Foreshore committee set up** to provide a link between government and the communities
 - Jun 2013** **Stakeholder design workshop** held on the initial coastal engineering design and costing
 - Aug 2013** **Final coastal design and maintenance plan** completed
 - Aug 2013** **Project design document** signed
 - Feb 2014** **Civil engineer**, seconded from national government, **contracted for one year**
 - Jul 2014** **Construction company contracted** to implement the coastal protection measures
 - Aug 2014** **Ground-breaking ceremony** to mark the beginning of construction held in Talafo'ou community
 - Feb 2015** **Tonga-Palau south-south exchange** on coastal protection held
 - Feb 2015** National launching of the video documentary ***Buying time with better coastal management in Tonga***
 - Oct 2015** **Construction of coastal protection measures and parks completed**
 - Oct 2015** **Official launch ceremony** held with Prime Minister of Tonga and EU Deputy Ambassador
 - Oct 2015** **National lessons learned** meeting held in Tonga
 - Feb 2016** **Tonga Climate Change Policy (2015-2020)** endorsed by government

1. Highlights

The Kingdom of Tonga is located in the South Pacific and the 2010 census recorded a population of 103,365. Tonga is an archipelago of 172 coral and volcanic islands; 36 of these islands are inhabited over a land area of 649 km². Tonga consists of four main island groups: (i) Tongatapu and 'Eua in the south; (ii) Ha'apai in the middle; (iii) Vava'u in the north; and (iv) Niuafu'ou and Niua Toputapu in the far north. The islands of Tonga are formed on the top of two parallel submarine ridges, stretching from southwest to northeast and enclosing a 50 km wide trough. Several volcanoes, some of which are still active, exist along the western ridge, while many coral islands have formed along the eastern ridge.

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Tongatapu on 16 October 2015.

- Three coastal communities have beaches that have been extended seaward through coastal protection measures and sand recharge. As a result, these coastal communities are better protected from the effects of storms and storm surges. Furthermore, the population of Tongatapu is benefitting from the three coastal recreation areas established by the project.
- The process established through this project for implementing coastal protection measures, which included: a review of historical erosion data; developing a feasibility study, and an environmental impact assessment; design and costing of the coastal measures; ongoing community meetings through the entire process; and a monitoring plan, has become a model for coastal protection projects and is being replicated by other projects (EU/GIZ-ACSE and ADB Strategic Program for Climate Resilience) in Tonga.
- The preparation of a detailed coastal diagnostic study has provided important input for a future integrated coastal management plan.
- The Tonga Climate Change Fund Bill has been accepted by Cabinet and the fund is likely to be officially established in 2016. This would enable Tonga to have continual access to funds for small-scale projects, both for communities and to fill the gap between larger project funding cycles.
- Tonga's Climate Change Policy (2006) has been revised to the Tonga Climate Change Policy: A Resilient Tonga by 2035. The priorities from the policy are to be incorporated into Tonga's Joint National Action Plan for Climate Change and Disaster Risk Management II 2016–2020 (JNAP II). It was endorsed by Cabinet in February 2016.
- The south-south exchange in February 2015 provided an opportunity for Tonga to showcase the coastal protection project to national and state government representatives from Palau.
- In 2014 and 2015, 29 men and 29 women – mainly from government and some from the private sector – were trained in proposal preparation using the LFA. In the six months following the two trainings, the LFA was used in the preparation of seven proposals, as well as being integrated in regular work duties.

2. Establishment of agreement between SPC and Tonga

A Letter of Agreement (LOA) was signed on 9 January 2013 between SPC (Director-General) and the Government of Tonga (Director, Department of Environment and Climate Change, and Permanent Secretary, Ministry of Finance and National Planning). An addendum covering customs and import arrangements was also signed. The LOA outlined: the roles and responsibilities for the two parties; governance arrangements; confidentiality and intellectual property rights; arrangements for recruitment of a National Coordinator; implementation of a climate change adaptation



project; and financial guidelines. Furthermore they provided up to EUR 54,000 for the National Coordinator, and up to EUR 500,000 for the climate change adaptation project.

3. Climate change adaptation project

3.1 Selecting project focus

- May 2012: A literature review was conducted of the projects, programmes and activities relating to climate change that were ongoing or recently implemented in the country. Information from the review was compiled into a climate change profile for Tonga. This profile was updated in 2013. The document provided a useful background for identification of a focus area for the adaptation project in Tonga.
- May 2012: Tonga's adaptation needs and priorities were discussed at the first GCCA: PSIS Project Steering Committee Regional Meeting held from 28–29 May 2012 in Suva, Fiji. At this meeting, bilateral meetings focused on identification of possible focus areas for adaptation, and other areas including mainstreaming, national coordination activities, working arrangements, and training and/or capacity building needs. Tonga had already identified coastal protection in eastern Tongatapu as their adaptation project focus area through their JNAP.
- June 2012: In-country consultations. A mission was conducted to Tonga in June 2012. During this mission, signing of the LOA was discussed and the project focus area of coastal protection was selected.
- August 2012: A project concept note on *Trialling coastal protection measures in eastern Tongatapu, Tonga* was developed by the Ministry of Environment and Climate Change and submitted to the GCCA: PSIS Project and the EUD for approval. The concept note was approved in August 2012.
- September 2012: A further in-country mission was held to advance the adaptation project and to follow up on arrangements for signing of the LOA. A number of key documents relating to the adaptation project were made available during the visit. Tonga had already conducted: (i) a feasibility study on the various coastal protection measures for the project area (March 2012); and (ii) an environmental impact assessment for the project area (August 2012) – these provided the basis for advancing the planning documents.

3.2 Consultations and preparation of project design document

- December 2012: A consultation workshop was held in Tonga on 12–13 December 2012 with 23 participants (13 men, 10 women) from government agencies, as well as the town councillors from the affected communities, to discuss the overall objective and purpose, key results and activities of the project. It was agreed that there was a need to recruit coastal engineering technical assistance to design and cost a hard and soft coastal protection measure for the affected area, based on the feasibility study already conducted.
- June 2013: Technical assistance to provide a design and costing for one soft and one hard coastal protection option was procured by SPC and an international consulting firm was contracted. The draft coastal design was completed in June 2013, which identified and costed two options: (i) permeable groynes and sand recharge along the beach front in Talafo'ou and Makaunga villages; and (ii) detached breakwaters and sand recharge along the 350 m stretch east of Manuka village.
- June 2013: The two coastal protection measures were presented to stakeholders (government, non-government, local/community representatives) at a design workshop in Nuku'alofa, Tonga, 20–21



June 2013 (23 men, 20 women). The objectives of the workshop were to: (i) revise and finalise a draft logframe; (ii) review proposed design and costing of coastal protection measures; (iii) select and agree on the most appropriate coastal protection measures for implementation; and (iv) discuss and agree on the budget for the project. The workshop also discussed a monitoring and maintenance plan developed by the consultant.

- August 2013: A final coastal design and costing report and monitoring and maintenance plan was completed by the international consultant. It was decided that 15 groynes and 10 breakwaters would be constructed in the communities of Talafo'ou, Makaunga, and Manuka. This was used to formulate the call for proposals for constructing the coastal measures.
- August 2013: The project design document (PDD) was signed after preliminary approval by EUD. This was signed by GCCA: PSIS Project Manager, Ministry of Lands, Environment, Climate Change and Natural Resources, Ministry of Finance and National Planning, and Ministry of Infrastructure. The PDD became the equivalent of a work plan and was amended as the project progressed.


3.3 Detailed design and implementation

Procurement

- January 2014: A first amendment to the PDD was signed as it was agreed that the procurement and construction of the coastal protection measures be implemented by the Ministry of Lands, Environment, Climate Change, and Natural Resources instead of the of SPC so as to use the national processes and procedures.
- Tonga advertised internationally for tenders for a construction company to implement the final coastal protection design. The tender advertisement was issued on 18 February 2014 and closed on 27 March 2014. The tender was for the construction of nine groynes and ten breakwaters, plus sand recharge. Six of the planned groynes were omitted so that the first nine could be trialled, and were to be added to the contract later on if they proved satisfactory and if funds allowed.
- Five bids were received and reviewed by an evaluation committee. The contract was awarded to a local company and a contract was signed in July 2014.
- Construction began on 15 August 2014, with a ground-breaking ceremony in Talafo'ou community with the Minister for Lands and Natural Resources, laying the first cement.

Oversight

- March 2013: A foreshore committee was set up, consisting of six town officers, plus the district officer and government representative for the eastern district. The foreshore committee provided a link between government and the communities. Following this, multiple community meetings were held.
- March 2013 onwards: A technical working group from all relevant ministries was set up to oversee the project implementation, including the adaptation project and technical assistance. Meetings were held as required.
- January 2014: A request was received from Tonga to contract the same international consultant that did the design work, to monitor the project implementation and possible adjustments of coastal protection measures.
- Following this, the consultant was contracted by SPC for this purpose, using non-competitive procurement procedures, due to their previous involvement in the coastal design and consultations; the contract was signed in September 2014.

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- Following this, the consultant made four visits to Tonga from the period October 2014 to July 2015 to oversee the site construction.

Changes to the coastal design

- During the oversight process, it was recommended that five additional groynes be constructed between the groynes that were initially placed 120 metres apart. The aim of these additional groynes is to encourage sand recharge at a higher rate, based on the results of the initial beach profiles. The contract with the construction company was amended towards this purpose and signed in April 2015.
- The six additional groynes that were originally budgeted for in the project design document, but were not incorporated into the construction contract, were added into the amended contract, as the first nine performed satisfactorily and the funds allowed for the additional six.
- Extra costs due to variations in the source of sand for recharge were incorporated into the changed contract amount with the construction company.
- The communities also requested the community monitoring and awareness activities to focus on creating coastal recreational areas with rubbish bins and environmental messaging to encourage sustainable use of the coast that is being protected. It was decided that construction of the recreational areas was to be carried out by the same construction company, as they were able to complete the recreational areas quickly, and at the same time as completing the coastal construction along the same stretch of land. This change was also reflected in the contract amendment.
- All of these changes are outlined in the 2nd amendment to the PDD, signed in April 2015.

Completion

- October 2015: The construction of the coastal protection measures and parks were completed by BB construction.
- Following this, an official launch ceremony took place on 15 October 2015 with the Prime Minister of Tonga and the European Union Deputy Ambassador for the Pacific.

Recruitment of project officers

- February 2014: A civil engineer was seconded from the Ministry of Infrastructure to the Ministry of Climate Change for one year. His role was to oversee the construction of the coastal protection measures. After his contract expired at the end of February 2015, he returned to the Ministry of Infrastructure but continued to work on the project part-time from 1 March to 31 August 2015, while construction was completed.
- July 2014: A request letter was sent to SPC for the project to recruit a Finance Officer to manage the GCCA: PSIS project finances. A LOA was signed on 29 August 2014 for a one-year contract. Tonga then advertised for the position and three applications were received. A contract was signed, and then extended to 31 December 2015.

Implementation

- The project logframe as amended in April 2015 is used to report on implementation.

- **Overall objective:** To increase resilience to the effects of climate change in Tonga.
 - The indicator specifying that a minimum of two new modes of delivery for sharing information on climate change adaptation and coastal management be made available by June 2015 has been achieved through the regional Pacific Climate Change Portal (<http://www.pacificclimatechange.net/>), which has information about the GCCA: PSIS project, as well as other climate change information. The GIZ-CCCPIR project also assisted Tonga to develop a national climate change portal. A second mode of delivery was the development of a foreshore committee and the continual community meetings that were carried out throughout all of the phases of the project. This way of sharing climate change information has been duplicated by the ADB Strategic Programme for Climate Resilience project and the EU/GIZ-ACSE projects.
 - The indicator specifying that climate change adaptation/disaster risk reduction measures be incorporated into a diagnostic study that informs an integrated coastal management plan by June 2015 has been achieved. This diagnostic study was handed over to the Department of Environment to be incorporated into their Integrated Coastal and Marine Spatial Plan for all of Tonga.

- **Project purpose:** To trial coastal protection measures in eastern Tongatapu
 - The indicator specifying that lessons learned from these coastal protection interventions be shared with other Pacific Island nations and stakeholders in Tonga by December 2015 has been achieved through two lessons learned videos: *Buying time with better coastal management in Tonga* produced by SPC, and *Looking above and beyond climate change in Tonga: A success story of the GCCA project* produced by the Government of Tonga. Both videos were shared at the GCCA: PSIS 5th Steering Committee Meeting and lessons learned meeting in September 2015. The lessons learned were discussed nationally through a lessons learned workshop, which all stakeholders were invited to. Also, multiple meetings were held with relevant upcoming coastal protection projects to share the lessons (i.e. the ADB Strategic Programme for Climate Resilience project and the EU/GIZ-ACSE project).
 - The indicator specifying that at least 50 stakeholders from national government, local government and communities provide input (written or verbal) into the diagnostic study to inform an integrated coastal management plan by March 2015 has been achieved. In 2014, two separate consultations were held with government and members of the technical working group (26 persons) and a wider community consultation was held (35 men, 8 women).

- **Key Result Area 1:** Education and awareness on coastal management in the context of climate change enhanced in Tonga.
 - The indicator specifying that a communications schedule of education and awareness activities be prepared by June 2014 has been achieved.
 - The indicator specifying that at least four education and awareness activities be conducted by September 2015 has been achieved through:
 - ⇒ Parks with rubbish bins, project billboards, and plaques from the launch event;
 - ⇒ Beach monitoring with schools;
 - ⇒ Research field trip to the project site with USP students;
 - ⇒ Videos from a climate change speech competition;
 - ⇒ Pictures from a 30-minute interview on Tongan Television on climate change and the project conducted on 14 May 2012;
 - ⇒ National launch of the *Buying time with better coastal management in Tonga* documentary by the CEO of MEI DECCC – February 2015.

- **Key Result Area 2:** Coastal adaptation measure involving hard and soft protection elements identified, designed and constructed for a vulnerable coastal community in eastern Tongatapu.
 - The indicator specifying that coastal protection measures be selected, designed and costed by September 2013 has been achieved.
 - The indicator specifying that one coastal protection measure be completed and in place by June 2015 has been achieved, as the nine groynes were in place by April 2015.
- **Key Result Area 3:** Effectiveness of the coastal protection measures monitored, in collaboration with other related projects.
 - The indicator specifying that staff in MEIDCCCC be regularly engaged in beach monitoring by December 2014 has been achieved, through staff at the Department of Geology regularly engaging in beach profiling.
 - The indicator specifying that at least two schools be involved in coastal monitoring by September 2015 has been achieved.
- **Key Result Area 4:** Capacity of key stakeholders in Tonga enhanced to plan for coastal change in the context of climate variability and change.
 - The indicator specifying that a diagnostic study for a coastal management plan be prepared by March 2015 has been achieved.

Monitoring and evaluation

- Regular quarterly reporting was provided by Tonga using a standard ‘traffic light’ template. Financial reporting was provided on a similar schedule.
- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions (13 altogether), provided the project team with regular updates and were used to alter or amend activities, revise log frame indicators and monitor budgets.
- Annual GCCA: PSIS planning and steering committee meetings provided other opportunities for discussion and evaluation; the 2013 meeting was held in Tonga.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion; a visit was made to Tonga during the 2015 ROM mission. A visit to Tonga was also part of the midterm evaluation conducted in the fourth quarter of 2013 and the final evaluation in the first quarter of 2016.

3.4 Sector mainstreaming

Mainstreaming climate change into the coastal sector in Tonga was largely completed through the development of the diagnostic study for a coastal management plan, which has already been reported on above.

4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

Mainstreaming climate change in Tonga was largely completed through revising and updating the Tonga Climate Change Policy (2006). SPC advertised for consultants to revise the policy and an international consultant was



selected. The consultant travelled to Tonga twice once for approximately one month so that extensive consultation could take place. The final document was completed in September 2015, and endorsed by Cabinet in February 2016.

4.2 National coordination

The project's National Coordinator position was advertised by the Department of Climate Change and the selectee was appointed from 15 February 2013 to 31 December 2015.

4.3 Assisting Tonga to access climate change finance

Climate finance was addressed through developing the Tonga Climate Change Fund. Two consultancies took place for establishing this:

- SPC advertised for consultants to design the Tonga Climate Change Fund and an international consultant was selected. This included the choice of model for the fund, potential contributors and proposals for sustainability. A draft of the revised Tonga Climate Fund Bill was also developed through this consultancy.
- A local consultant was contracted to amend the draft National Climate Change Fund Bill and national climate change fund regulations, and to revise the trust fund operational manual to fit local legal requirements. Additional days were added to her contract to draft a cabinet paper for the Climate Change Fund Bill and to present it to the National Law Review Committee meeting.

Also, a review of climate change mainstreaming into national plans and policies in Tonga was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of Tonga qualifying for direct budget support for climate change was high.

5. Training

5.1 Formal Training

5.1.1 Proposal preparation using the Logical Framework Approach

In 2014 and 2015, 29 men and 29 women – mainly from government and some from the private sector – were trained in proposal preparation using the LFA. In the six months following the two trainings, the LFA was used in the preparation of seven proposals, as well as being integrated in regular work duties.

5.1.2 Sector training

- Project Design and Costing Stakeholder Workshop in 2013 (reported on above)
- Community consultations and training throughout the coastal protection process (reported on above)
- Tonga-Palau exchange on coastal protection in 2015, where seven participants from Palau and 18 from Tonga participated in a coastal protection workshop (25 participants in all – 16 men, 13 women). This was a way to discuss the lessons learned from the coastal protection process that Tonga went through: i.e. a feasibility study; review of historical erosion data; environmental impact assessment; design, costing, and monitoring and evaluation; and to share this process with Palau. The consultant who carried out the design also attended this exchange



5.2 Informal Training

Informal on-the-job training was provided in reporting and financial management to the National Coordinator and Project Finance Officer through continuous communication with the GCCA: PSIS finance team, the Project Manager and Climate Change Adviser for Tonga.

6. Communications and visibility

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, video, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2013: Delegates talk national budget support for delivery of climate change finance – article
- 2014: Construction begins on coastal protection measures in Tonga – media release
- 2014: Tonga GCCA: PSIS project factsheet
- 2015: South-south exchange of coastal protection strategies – article
- 2015: National launch of the Tonga *Buying time with better coastal management* video – article
- 2015: SPC and European Union support south-south cooperation between Palau and Tonga – media release
- 2015: *Buying time with better coastal management* in Tonga – video
- 2015: Coastal protection project opened in Tonga – media release
- 2015: Coastal protection projects opened in Tonga and Marshall Islands – article
- 2016: New climate change policy contributes to more resilient Tonga by 2035 – media release

7. Gender and special groups

An analysis of the gender disaggregated data for all consultation and training activities in Tonga showed that there was comparable representation of men and women (276 men, 197 women). The six community consultations conducted during the planning and implementation phases also showed proportional representation from both men and women (86 men, 75 women).

As a result of the community consultations that were conducted throughout the project design and implementation phases, there was a request, particularly from the women in the communities, to construct three coastal parks for the children in the area as well as for visitors from Tongatapu; sufficient funds were available in the project budget to meet this request.



8. Environmental issues

Many of the project's activities in Tonga are focused on environmental issues and environmental change.

National procedures were followed in the project, with the environmental impact assessment informing the design plan and monitoring plan. The process adopted by Tonga to conduct the technical coastal changes study, feasibility study, environmental impact assessment, design and costing study, followed by the monitoring plan, and with full community involvement throughout, is a procedure that conforms to all the principles of integrated coastal management. Tonga plans to use the same process at other sites.

The completion of the coastal diagnostic study will also contribute to the Integrated Coastal and Marine Spatial Plan for all of Tonga.

The revision of the Tonga Climate Change Policy covers both climate change and environmental issues.

At the community level, the rubbish bins and the signage at the new coastal parks display environmental messages.

9. Sustainability

9.1 Mainstreaming

Through the technical assistance activities

- The priorities in the revised Tonga Climate Change Policy are to be incorporated into Tonga's JNAP II (2016-2020).
- The Department of Environment is developing an Integrated Coastal and Marine Spatial Plan for all of Tonga; the Diagnostic Study for Tongatapu prepared through the project is an important input to this plan.
- Two trainings were conducted to build skills in proposal preparation, which will enable participants to apply for further funding for project activities.

Through the adaptation project

- The EU/GIZ-ACSE project is also planning to apply the same design and monitoring process established in the GCCA: PSIS project to protect the coast in Western Tongatapu. They also plan to use the same coastal engineer; however the protection methods differ.
- The Ministry of Infrastructure is also planning to duplicate the coastal protection process in the outer island of Ha'apai.
- Beach monitoring is ongoing with the Department of Geology through regular beach profiles. The most recent profile was completed in January 2016. They will continue to monitor the project sites as part of their mandate.
- The Project Engineer is now CEO of the Ministry of Infrastructure and as such will be able to apply the skills developed from the adaptation project to infrastructure development in Tonga.



9.2 Further funding

- Once the Tonga Climate Change Fund is fully established, there will be opportunities to sustain key project activities and other community projects with resources from the fund.
- The ADB Strategic Programme for Climate Resilience is planning to extend the GCCA: PSIS pilot project to three more villages in eastern Tongatapu. They have also indicated that they will fund any needed maintenance for the GCCA: PSIS coastal protection measures during the lifetime of the project. Based on recommendations from GCCA: PSIS, they are considering using the same construction company and coastal engineer.

10. Anticipated potential impacts (2016–2020)

- Three coastal communities have beaches that have been extended seawards and are better protected from the impact of storms and storm surges
- The population of Tongatapu has benefited from the three coastal recreation areas established by the project and has kept the coastline in that area clean
- The process established through the project for effectively implementing coastal protection measures is successfully duplicated by other projects in Tonga and Palau
- Tonga to have continual access to funds for small-scale projects, both for communities and to fill the gap between larger project cycles through the Tonga Climate Change Fund
- Tonga's Climate Change Policy and JNAP II are aligned and implemented jointly
- More proposals are funded as a result of the proposal preparation trainings

11. Lessons learned

- A regional lessons learned meeting was held in Yap State, FSM, 3–4 September 2015.
- A national lessons learned meeting was held in Tonga on 16 October 2015.

12. Supporting documents

Supporting public documents are available online:

- SPC website <http://ccprojects.gsd.spc.int/eu-gcca-psis/>
- Pacific Climate Change Portal <http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>

All supporting documents are stored on SPC's internal electronic archive for the GCCA: PSIS project.



Chapter 10: Tuvalu



Timeline

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- Nov 2012** **Letter of Agreement** signed outlining governing roles and responsibilities of SPC and the Government of Tuvalu
 - Feb 2013** **Agriculture** was selected as the sector of focus by Cabinet
 - Jul 2013** Climate change adaptation project **concept note** finalised
 - Aug 2013** **Project planning workshop** held in Tuvalu
 - Aug 2013** **National Coordinator and Communications Officer** appointed, based in the Department of Environment
 - Jan 2014** **Five week attachment** from Tuvalu's Department of Environment to Kiribati Live and Learn Farm and SPC's Centre for Pacific Crops and Trees (CePaCT)
 - Mar 2014** **Agroforestry Technical Officer and Finance Officer** appointed, based in the Department of Agriculture
 - Jul 2014** **4.5 month attachment** from Tuvalu's Department of Agriculture to SPC CePaCT to research the effectiveness of the climate ready crops
 - Jul 2014** **Tenders sought for large-scale farming equipment**, contract awarded **December 2014**
 - Oct 2014** **Home gardening training** held for women from all islands of Tuvalu
 - Oct 2014** **Project Field Mechanic** was appointed, based in the Department of Agriculture
 - Apr 2015** **Video** on *Promoting local food production in Tuvalu* launched
 - May 2015** **Two-month attachment** from Tuvalu's Department of Agriculture to SPC Land Resource Division in enhancing Tuvalu's biosecurity
 - Oct 2015** **Results from a competition for the best community garden**, developed with the women's group on all islands of Tuvalu, were announced and **prizes distributed**
 - Nov 2015** **National lessons learned meeting** was held in Tuvalu
 - Nov 2015** **Tuvalu Agriculture Strategic Marketing Plan 2015-2020** endorsed by government
 - Dec 2015** **Three agroforestry demonstration sites and two nurseries completed** in Funafuti and the outer island of Nukufetau



1. Highlights

Tuvalu is situated in the western South Pacific Ocean and the 2010 census recorded a population of 11,035. It consists of five low atolls and four raised limestone reef islands, with a total land area of approximately 26 km². Land levels are very low, with maximum heights above mean sea level typically ranging from 3 to 4 m and the highest elevation being 4.6 m. The capital is Funafuti, where approximately 55 per cent of the population reside.

The following project highlights were identified and discussed by national stakeholders during a lessons learned meeting held in Funafuti on 3 November 2015.

- Three agroforestry demonstration sites – one in an outer island – have been implemented on underutilised land, and are contributing to food security in Tuvalu. Agroforestry is an integrated farming practice that combines agricultural crops with fruit-bearing trees. Using this method created more productive, profitable, and sustainable land-use systems.
- These agroforestry sites are trialling crop varieties from around Tuvalu and from SPC's Centre for Pacific Crops and Trees (CePaCT) climate-resilient crop collection. The trees planted include coconut, banana, fig, breadfruit, cordia, calophyllum, and sandalwood; the crops planted include taro, pulaka, cassava, alocassia, pandanus, papaya, noni, lime, yam, bele, sweet potato, and chaya. The trees and crops planted are being recorded in a database so that each variety can be identified for their effectiveness in the Tuvalu atoll environment.
- Farmers and landowners have contributed to creating the agroforestry demonstration sites and at the same time have been trained in agroforestry design and methods, compost-making, plant grafting and breeding techniques, and in planting new crops such as sandalwood. Four trainings took place with 171 farmers and landowners from all islands of Tuvalu (116 men 55 women).
- Home gardens were set up on every island of Tuvalu through the Tuvalu National Council of Women. Initially a training was held on home garden design, plant grafting techniques, and how to best plant fruits, vegetables and root crops (48 women trained from all islands of Tuvalu). Equipment was then provided for the women's group on each island to implement their own home garden. These gardens were then evaluated by judges from the Department of Agriculture, and prizes were given to the best gardens.
- The Tuvalu national budget for 2016 includes provisions for the Department of Agriculture to work with the landowners and farmers to maintain the agroforestry project sites and equipment.
- Training in proposal preparation using the LFA in 2013 and 2015 trained 48 people (25 men, 23 women), mainly from government and some from the private sector. In the 2015 training, the government planners from all islands of Tuvalu participated. In the six months following the two trainings, the LFA was used in the preparation of 27 proposals, as well as being integrated in regular work duties.

2. Establishment of agreement between SPC and Tuvalu

A Letter of Agreement (LOA) was signed on 20 November 2012 between SPC (Director-General) and the Government of Tuvalu (Permanent Secretary, Ministry of Foreign Affairs, Trades, Tourism, Environment and Labour and Permanent Secretary, Ministry of Finance and Planning). The LOA outlined: the roles and responsibilities for the two parties; governance arrangements; confidentiality and intellectual property rights; arrangements for recruitment of a National Coordinator; implementation of a climate change adaptation project; and financial guidelines.



Furthermore it provided up to EUR 54,000 for the National Coordinator and up to EUR 500,000 for the climate change adaptation project.

Additionally EUR 60,000 was provided to Tuvalu for Cyclone Pam recovery activities. This was reallocated from Nauru's climate change adaptation project budget.

3. Climate change adaptation project

3.1 Selecting project focus

- May 2012: A literature review was conducted of the projects, programmes and activities relating to climate change that were ongoing or recently implemented in the country. Information from the review was compiled into a climate change profile for Tuvalu. This profile was updated in 2013. The document provided a useful background for identification of a focus area for the adaptation project in Tonga.
- May 2012: Tuvalu's adaptation needs and priorities were discussed at the first GCCA: PSIS Project Steering Committee Regional Meeting held from 28–29 May 2012 in Suva, Fiji. At this meeting, bilateral sessions focused on identification of possible focus areas for adaptation, and other areas, including: mainstreaming; national coordination activities; and working arrangements and training and/or capacity building needs. During the bilateral meeting with Tuvalu, coastal protection and food security – especially in outer islands – were among the potential focus areas identified.
- July 2012: A mission was conducted to Tuvalu to: (i) introduce GCCA: PSIS project in Tuvalu; (ii) meet with the Tuvalu climate change country team; and (iii) discuss possible sectors for the adaptation project.
- October 2012: Subsequent to this mission, four possible sectors for the adaptation project were selected by the government: water resources, coastal protection, disaster risk management, and agriculture/food security.
- January 2013: A mission was conducted to advance identification of the sector.
- February 2013: Agriculture was selected as the sector of focus by Cabinet. Upon confirmation of the adaptation focus area, work started on the preparation of the project concept note.
- July 2013: Project concept note submitted by the government and approved by EUD. The concept note was translated into Tuvaluan.

3.2 Consultations and preparation of project design document

- August 2013: A project planning workshop was held in Tuvalu and a preliminary logframe prepared. There were 28 participants: 11 from the Government of Tuvalu, seven from other national projects, five from SPC (two from other projects), and five community representatives (15 men, 13 women).
- December 2013: The project design document (PDD) was signed after preliminary approval by EUD. This was signed by GCCA: PSIS Project Manager, Ministry of Natural Resources, Ministry of Finance and Economic Planning, and Ministry of Foreign Affairs, Trades, Tourism, Environment and Labour. The PDD became the equivalent of a work plan and was amended as the project progressed.



3.3 Detailed design and implementation

Design

- February–July 2013: Discussions were held with SPC’s Land Resource Division and CePaCT and the Department of Agriculture, regarding agroforestry and similar work with the Food and Agriculture Organization (FAO) in Tuvalu and with the AusAID project, to develop plant nurseries.
- SPC’s Land Resource Division, the United Nations Development Programme – National Adaptation Programme of Action (UNDP NAPA) project in Tuvalu, and the Tuvalu Director of Agriculture, were consulted on the types of large-scale farming equipment that were required by the project. The specifications in the tenders were drawn up based on these meetings.

Procurement

- March 2014: Tuvalu does have an up-to-date procurement policy, which was acceptable to SPC and other donors. UNDP’s NAPA I project in Tuvalu was ordering seven chippers from Australia and had already completed the procurement process using Tuvalu’s procurement procedures. They agreed to order two more chippers for the GCCA: PSIS project, in order for the chippers to all be of the same make for repair purposes and to reduce shipping costs. This decision was endorsed by the Department of Agriculture and the Tuvalu GCCA: PSIS Project Steering Committee.
- For the other large-scale farming equipment (tractors, trailers, and excavators) Tuvalu was able to advertise for tenders internationally. The tender advertisement was issued on 15 July 2014 and closed on 15 August 2014. The tender was for the supply and delivery of two tractors, two trailers, and two excavators (1 x 1 ton and 1 x 1.5 ton in size).
- September–November 2014: The procurement review report was prepared; four tenders were received, but only three were complete.
- December 2014: Contract awarded and issued by Government of Tuvalu. This was amended in February 2015 to include spare parts and training on maintenance of the equipment.

Recruitment of project officers

- March 2014: The positions of Agroforestry Technical Officer and Finance Officer were advertised by the Department of Agriculture. Three applications were received for the Agroforestry Technical Officer and one for the Finance Officer. Following interviews, the Agroforestry Technical Officer and the Finance Officer began work on 31 March 2014.
- October 2014: The position of Field Mechanic for the project was advertised by the Department of Agriculture and only one application was received. The applicant was acceptable and began work on 27 October, 2014.
- November 2014: The Finance Officer resigned and was replaced by a new Finance Officer on 24 November, 2014.
- March 2015: Following the resignation of the Technical Officer, he was replaced by the Project Field Mechanic who was already experienced in the project. An acting form was signed according to Tuvalu Government procedures.
- One staff member was hired by SPC CePaCT to produce the required climate-ready crops for Tuvalu from 1 April 2014 to 31 December 2015.

- Temporary workers were hired using Tuvalu Government procedures, starting from May 2014 and continuing throughout the duration of the project. The number of workers varied depending on the ongoing project activities. At the close of the project, two of those temporary workers were hired by the Department of Agriculture to help monitor and maintain the project sites and nursery on Funafuti.

Implementation

- The project log frame as amended in February 2015 was used to report on implementation.
- **Overall objective:** To increase resilience to the effects of climate change in Tuvalu.
 - The indicator specifying that lessons learned from food security initiatives be compiled, analysed and shared with other atoll countries by December 2015 has been achieved through Tuvalu’s lessons learned video: *Promoting local food production in Tuvalu*”, which was shared at the GCCA: PSIS 5th Steering Committee Meeting and lessons learned meeting in September 2015. The lessons learned were discussed nationally through a lessons learned workshop. Also, a crop database has been produced and has been shared with other upcoming agriculture projects.
- **Project purpose:** To enhance food security in Tuvalu.
 - The indicator specifying that at least two demonstration sites be operational in two different islands by December 2015 has been fully achieved, as three sites are now fully operational: two in the capital of Funafuti and one in the outer island of Nukufetau.
 - The indicator specifying that operation and maintenance of demonstration sites be incorporated into the 2016 work plan for the Department of Agriculture by December 2015 has been achieved; in fact, funds for maintenance of the demonstration sites and for the wages of two of the projects’ temporary workers have also been requested and allocated in the Department of Agriculture’s 2016 budget. This, together with the land owners’ MOUs (see KRA 2), provides for sustainability of the activities beyond the project’s life cycle.
- **Key Result Area 1:** Enhanced understanding of agroforestry among community members, land owners and *Kaupule* through awareness-raising, capacity building and training.
 - The indicator specifying that at least ten farmers effectively apply agroforestry practices by September 2015 has been achieved.
 - The indicator specifying that at least six education/awareness activities be implemented by December 2015 has been achieved through:
 - ⇒ Radio shows by the Department of Agriculture and Environment;
 - ⇒ Support for two annual environment week events;
 - ⇒ Pamphlets on steps for agroforestry and composting in both English and Tuvaluan;
 - ⇒ Four billboards at three project sites and Department of Agriculture nursery;
 - ⇒ Lessons learned video: *Promoting local food production in Tuvalu* was launched nationally in February 2015;
 - ⇒ A video: A guide to developing agroforestry in Tuvalu, was developed for the farmers of Tuvalu to explain the steps required to develop their own agroforestry sites. This was produced in the Tuvaluan language with English subtitles; and
 - ⇒ Go Local Campaign – local food awareness week in November 2015.

- **Key Result Area 2:** Improved agroforestry system implemented in demonstration sites in Funafuti and one outer island.
 - The indicator specifying that four sites for agroforestry demonstration be selected in two islands in a participatory manner by December 2014 has been achieved.
 - The indicator specifying that ten farmers across two islands have access to equipment needed for agroforestry by December 2015 has been achieved.
 - The indicator specifying that two nurseries be established or enhanced in two islands to supply planting material to farmers by December 2015 has been achieved.

- **Key Result Area 3:** Marketing potential and access evaluated.
 - The indicator specifying that an agricultural production marketing plan for Tuvalu be prepared by June 2015 has been achieved. The final Tuvalu Agriculture Strategic Marketing Plan 2015–2020, was adopted by Cabinet in February 2016.

- **Key Result Area 4:** Enhanced coordination and capacity of the Department of Agriculture.
 - The indicator specifying that the Department of Agriculture nursery be equipped to supply planting material for two new crops / crop varieties to farmers by June 2015 has been achieved.
 - The indicator specifying that a minimum of two government employees be trained in propagating climate-ready crops by December 2014 has been achieved. One staff from the Department of Agriculture and one staff from the Department of Environment were attached with SPC CePaCT.

Monitoring and evaluation

- Regular quarterly reporting was provided by Tuvalu using a standard ‘traffic light’ template. Financial reporting was provided on a similar schedule.
- These reports, which were promptly reviewed by the project team, together with telephone calls, emails and country missions, provided the project team with regular updates and were used to alter or amend activities, revise logframe indicators and monitor budgets.
- Annual planning and steering committee meetings provided other opportunities for discussion and evaluation.
- The 2012, 2013 and 2015 ROM evaluations provided additional updates on progress and completion. A midterm evaluation was also held in 2013.

3.4 Sector mainstreaming

Mainstreaming climate change into the agricultural sector in Tuvalu was completed through the development of the Tuvalu Agriculture Strategic Marketing Plan 2015–2020. The marketing plan was developed by a local consultant from Tuvalu and involved extensive participation during two visits to Tuvalu.



4. Climate change mainstreaming at the national level

4.1 National climate change mainstreaming

In Tuvalu the emphasis was on sector mainstreaming. One staff member from the procurement unit in Tuvalu attended a UNDP procurement training in Fiji, which was supported. Other requests for technical assistance related to training in proposal preparation and monitoring and evaluation (delivered through the second round of proposal preparation training (see 5.1.1 below); and this included planners from the outer islands.

4.2 National coordination

February–June 2013: Tuvalu Department of Environment requested permission to hire a National Coordinator and a Communications Officer for project oversight with national coordination funds, since the funds were sufficient. They were hired in August 2013 and the Communications Officer resigned on 4 June 2014, while the National Coordinator continued until 31 December 2015.

4.3 Assisting Tuvalu to access climate change finance

A review of climate change mainstreaming into national plans and policies in Tuvalu was conducted in 2013. A subsequent assessment report of budget support readiness showed that the likelihood of Tuvalu qualifying for direct budget support for climate change was medium given the history it has in receiving donor support directly into its budget through a trust fund.

5. Training

5.1 Formal training

5.1.1 Proposal preparation using the Logical Framework Approach

Training in proposal preparation using the LFA in 2013 and 2015 trained 48 participants (25 men, 23 women), mainly from government and some from the private sector. In the 2015 training, the government planners from all islands of Tuvalu participated. In the six months following the two trainings, the LFA was used in the preparation of 27 proposals, as well as being integrated in regular work duties.

5.1.2 Attachment under the Greg Urwin Award 2013

July–December 2013: the Assistant Secretary, Ministry of Home Affairs, Tuvalu, was attached to the GCCA: PSIS project. During this period he worked with the project team and participated in the steering committee meeting, the Climate Finance meeting, proposal preparation training in Kiribati, as well as undertaking specific activities relating to climate change in Tuvalu.



5.1.3 Sector training

- Four agroforestry trainings in 2014 and 2015, training 171 farmers and landowners from all islands of Tuvalu (116 men, 55 women)
- One home gardening training in 2014, training 48 women from all islands of Tuvalu
- Five-week attachment in 2014 from Tuvalu's Department of Environment to Kiribati Live and Learn Farm & SPC CePaCT (1 man)
- 4.5-month attachment in 2014 from Tuvalu's Department of Agriculture to SPC CePaCT on crop propagation and researching the effectiveness of the climate ready crops (1 woman)
- One training on conducting environmental impact assessments in partnership with SPREP in 2015 – included all of the island planners from each outer island (12 men, 6 women)
- One training on tractor maintenance and repair (12 men, 2 women) and one training on excavator maintenance and repair (11 men) in 2015, specifically on the equipment models purchased through the project
- Two-month attachment in 2015 from Tuvalu's Department of Agriculture to SPC Land Resource Division in enhancing Tuvalu's biosecurity procedures (1 man)

5.2 Informal training

Informal on-the-job training was provided in reporting and financial management to the Director of Agriculture, National Coordinator, Project Finance Officer, and Agricultural Technical Officer through continuous communication with the GCCA: PSIS finance team, the Project Manager and Climate Change Adviser for Tuvalu.

6. Communications and visibility

There have been a variety of communication and visibility activities carried out, including media releases, articles, fact sheets, video, and presentations at national, regional and international events. Video has been found to be one of the most effective forms of communicating project results and activities.

A list of selected communication materials is shown below and the web addresses are listed in Annex 1.

- 2013: Adapting to climate change in Tuvalu: The freshwater dimension – video
- 2014: Promoting local food production in Tuvalu – video
- 2014: Agriculture attachment to SPC brings new techniques to Tuvaluan farmers – article
- 2014: SPC enhances scientific knowledge of Pacific Islanders – media release
- 2014: Tuvalu GCCA: PSIS project fact sheet
- 2014: Agroforestry training builds capacity of farmers in Tuvalu – media release
- 2014: Home gardening training empowers Tuvaluan women – article
- 2015: Enhancing islanders' skills to access climate funding – media release
- 2016: Agroforestry in Tuvalu begins to bear fruit – article



7. Gender and special groups

An analysis of the gender disaggregated data for all consultation and training activities in Tuvalu showed that there was comparable representation of men and women (223 men, 157 women).

Despite the fact that agroforestry is traditionally a male-dominated activity in Tuvalu, there was a reasonable representation of women at the two agroforestry training workshops (74 men, 30 women). However, during the project design phase, a decision was made to develop a complementary activity for women; home gardens were set up on every island of Tuvalu through the Tuvalu National Council of Women. Initially a training was held on home garden design, plant grafting techniques, and how to best plant fruits, vegetables and root crops for women (48 attended from all the islands of Tuvalu). Equipment was then provided for the women's group on each island to implement their own home garden. These gardens were then evaluated by judges from the Department of Agriculture, and prizes were given to the best gardens.

Women were also specifically consulted on the Tuvalu Agriculture Strategic Marketing Plan 2015–2020 through a half-day consultation with the Tuvalu National Council of Women.

8. Environmental issues

Many of the project's activities in Tuvalu were focused on environmental issues and environmental change.

Agroforestry, which was the focus of the adaptation project, is an environmentally-friendly farming method promoting diversification and intercropping. Climate-resilient (especially drought-resilient) species of crops were trialled during this project and performance and survival rate data was compiled in a database. This will provide important data for future use of the most appropriate crop varieties in the Tuvalu environment under climate change.

The project also supported national training in environmental impact assessment for island planners (together with SPREP).

9. Sustainability

9.1 Mainstreaming

Through the technical assistance activities

- Two trainings were conducted to build skills in proposal preparation, which will enable participants to apply for further funding for project activities.
- The National Council of Women plans to continue with the home gardening project and make the competition an annual event.



Through the adaptation project

- Funds for maintenance of the three demonstration sites and for the wages of the projects' temporary workers have been requested and allocated in the Department of Agriculture's 2016 budget.
- The MOUs between the landowners and the Department of Agriculture (see KRA 2) provide an agreement for sustainability of the activities beyond the project's life cycle. The MOUs for the project sites in Funafuti are for five years, and two years for the site in Nukufetau.
- The large-scale equipment purchased for Funafuti will be used by the Department of Agriculture to establish other agroforestry sites. This equipment will also be rented out to the local government and farmers for agricultural purposes.
- The large-scale equipment purchased for Nukufetau will be handed over to the local government (Kaupule) to manage, along with the project site. The Fuaoota farmers association will benefit from the crops produced.
- The project database of the crops and trees planted will continue to be updated by the Department of Agriculture staff. This will provide useful information on which crops and trees have been effective.
- The bioreactor provided to CePaCT will continue to provide climate-ready crops for Tuvalu as required.
- Farmers and landowners have been trained in agroforestry design and methods, compost-making, plant grafting and breeding techniques, and in planting new crops such as sandalwood, so they can take advantage of their new skills.

9.2 Further funding

- Two Funafuti temporary workers from the project have been hired by the Department of Agriculture to help maintain project sites 1 and 2 with the landowners and the Department of Agriculture nursery.
- A joint bank account for the land owners at one site in Funafuti and the Department of Agriculture has been set up, so that all funds earned through selling excess crops can be put back into the project site. The same will be set up for the second site once crops are being produced.
- The third project site is being managed by the local government (Kaupule). However, for the first year following the handover (2016), the Department of Agriculture has set aside funds to supplement the Kaupule's efforts, until the needs for the demonstration sites can be fully integrated into their budget in 2017.
- Other upcoming projects, such as the FAO's Technical Cooperation project and UNDP's Ridge-to-Reef project, intend to duplicate the GCCA agroforestry project in the other outer islands.

10. Anticipated potential impacts (2016–2020)

- Intensive agroforestry farming methods result in more sustainable farming (in terms of maintaining soil quality), making use of underutilised land, and increased variety of crops planted
- For specific farmers in Funafuti and for the farmer's association on Nukufetau, incomes are increased through selling crops from newly intensive farming practices
- The Tuvalu Agriculture Strategic Marketing Plan results in a local and international market for specific crops
- Successful climate-ready crop varieties are planted around Tuvalu, increasing resilience
- Home gardens on all islands result in more fruits and vegetables being available
- More proposals are funded as a result of the proposal preparation trainings



11. Lessons learned

- A regional lessons learned meeting was held in Yap State, FSM, 3–4 September 2015.
- A national lessons learned meeting was held in Tuvalu in October 2015.
- The lessons learned were shared at a project launch workshop and event on 15 February 2016.

12. Supporting documents

Supporting public documents are available online:

- SPC website (<http://ccprojects.gsd.spc.int/eu-gcca-psis/>)
- Pacific Climate Change Portal (<http://www.pacificclimatechange.net/project/global-climate-change-alliance-pacific-small-island-states>)

All supporting documents are stored on SPC's electronic archive for the GCCA: PSIS project.

Annex 1 Web addresses for communication materials

Cook Islands

- 2013: Adapting to climate change in the Cook Islands: The human health dimension. Video. https://www.youtube.com/watch?v=sOdAAd3T_CY
- July 2014: Silver surfers expand climate change knowledge in the Pacific. GCCA News.
- <http://www.gcca.eu/news-and-events/gcca-stories/silver-surfers-expand-climate-change-knowledge-in-the>
- 2014: Cook Islands GCCA: PSIS project fact sheet. <http://ccprojects.gsd.spc.int/factsheets/>
- 2014: Effectively managing marine resources in remote communities in the Cook Islands. Video. <https://goo.gl/Prastx>
- 2014: A lifetime of change: Marine fisheries. Video.
- <https://www.youtube.com/watch?v=RejAyW2Ewmk>
- 2015: GCCA Pacific small island stories featured at the Pacific Climate Change Roundtable. EU Capacity4Dev GCCA+ Community. News article. <http://capacity4dev.ec.europa.eu/gcca-community/blog/gcca-pacific-small-island-stories-featured-pacific-climate-change-roundtable>
- 2016: Adaptation Fund accredits Cook Islands as 24th National Implementing Entity. EU Capacity4dev GCCA+ Community. News article.
- <http://capacity4dev.ec.europa.eu/gcca-community/blog/adaptation-fund-accredits-cook-islands-24th-national-implementing-entity>

FSM

- 2012: GCCA Global Learning Event video interviews with GCCA: PSIS team. <https://youtu.be/AsbrYaiumow> and https://youtu.be/P2ylc_U-9tM
- 2013: Portal training programme heads to northern Pacific. SPREP media release. <https://www.sprep.org/climate-change/pacific-climate-change-portal-training-programme-heads-to-the-northern-pacific>
- 2013: Adapting to climate change in the FSM: The food and water security dimension. Video. <https://www.youtube.com/watch?v=7ggydf89Et0>
- 2014: Improving water security for traditional island living. Video. <https://goo.gl/Prastx>
- 2014: FSM GCCA: PSIS project fact sheet. <http://ccprojects.gsd.spc.int/factsheets/>
- 2015: Food, water and energy security tops SPC concerns following Typhoon Maysak. SPC media release. <http://www.spc.int/en/media-releases/2063-food-water-and-energy-security-top-spc-concerns-following-typhoon-maysak.html>
- 2015: Water tanks and solar panel repairs provide relief on Fais and Ulithi following Typhoon Maysak. EU/SPC media release. <http://www.spc.int/en/media-releases/2078-water-tanks-and-solar-panel-repairs-provide-relief-on-fais-and-ulithi-following-typhoon-maysak.html>
- 2015: Sustainable Climate change adaptation measures highlighted at regional meeting. SPC media release. <http://lists.spc.int/pipermail/press-releases/2015-September/000518.html>
- 2015: Needs of outer islands top lessons learned at Pacific meeting. SPC media release. <http://gsd.spc.int/component/content/article/629-needs-of-outer-islands-top-climate-change-lessons-learned-at-pacific-meeting>



Kiribati

- 2013: Adapting to Climate Change in Kiribati: The social dimension. Video. <https://www.youtube.com/watch?v=8VyOrZrIhFI>.
- 2013: SPC EU support for Kiribati health system. SPC media release. <http://www.spc.int/en/component/content/article/216-about-spc-news/1304-spc-eu-support-for-kiribati-health-system-.html>
- 2014: EU and Kiribati against climate change diseases. EU/SPC media release. http://eeas.europa.eu/delegations/fiji/press_corner/all_news/news/2014/20140424_04_en.htm
- 2014: Kiribati takes action against climate-sensitive diseases. SPREP Climate Change Matters, issue 24. https://www.sprep.org/attachments/Publications/Newsletters/CCM_June_2014.pdf
- 2014: Kiribati GCCA: PSIS project fact sheet. <http://ccprojects.gsd.spc.int/factsheets/>
- October 2014: New solar disinfection method addresses water security in Kiribati. SPC media release. <http://www.spc.int/en/component/content/article/216-about-spc-news/1892-new-solar-disinfection-method-addresses-water-security-in-kiribati-.html>
- 2015: Responding to climate sensitive health risks in Kiribati. Video. <https://goo.gl/Prastx>
- 2015: Low cost solar water disinfection campaign rolled out in Kiribati. EU Capacity4dev GCCA+ Community. News article. <http://capacity4dev.ec.europa.eu/gcca-community/blog/low-cost-solar-water-disinfection-campaign-rolled-out-kiribati#sthash.jMTJxmFz.dpuf>
- 2015: Water disinfection method proves successful in Kiribati. Radio New Zealand interview. <http://www.radionz.co.nz/international/programmes/datelinepacific/audio/201757862/water-disinfection-method-proves-successful-in-kiribati>
- 2015: Solar disinfection (SODIS). Fact sheet, poster, research report, frequently asked questions. <http://ccprojects.gsd.spc.int/solar-disinfection-sodis/>
- 2015: Kiribati launches simple solar water purification initiative. ABC News Australia, Pacific Beat Radio Programme. <http://www.abc.net.au/news/2015-11-10/kiribati-launches-simple-solar-water-purification/6926678>

Marshall Islands

- 2014: Marshall Islands GCCA: PSIS project fact sheet. <http://ccprojects.gsd.spc.int/factsheets/>
- 2014: Strengthening coastal resilience in the outlying atolls of the Marshall Islands. Video. <https://goo.gl/Prastx>
- 2014: Marshall Islands holds first National Climate Change Dialogue. SPREP-Climate Change Matters, issue 29. <http://www.sprep.org/newsletters/climate-change-mattershttp://www.sprep.org/newsletters/climate-change-matters>
- 2015: Coastal protection project opened in Ailinglaplap, Marshall Islands. SPC media release. <http://www.spc.int/en/media-releases/2279-coastal-protection-project-opened-in-ailinglaplap-marshall-islands.html>
- 2015: Coastal protection projects opened in Tonga and the Marshall Islands. EU Capacity4dev GCCA+ Community. News article. <http://capacity4dev.ec.europa.eu/gcca-community/blog/coastal-protection-projects-opened-tonga-and-marshall-islands>
- 2015: Coastal protection projects opened in Tonga and the Marshall Islands. SPREP Climate Change Matters, issue 41. www.sprep.org/attachments/Publications/Newsletters/CCM-Dec-2015.pdf.
- 2016: Climate Change Glossary launched in Marshall Islands. EU Capacity4dev GCCA+ Community. News article. <http://capacity4dev.ec.europa.eu/gcca-community/blog/climate-change-glossary-launched-marshall-islands>



Nauru

- 2014: Nauru GCCA: PSIS project fact sheet. <http://ccprojects.gsd.spc.int/factsheets/>
- 2014: Securing safe drinking water in Nauru. Video. <https://goo.gl/Prastx>
- 2015: Partnership results in climate and disaster resilience plan in Nauru. SPC media release. <http://www.spc.int/en/media-releases/1971-partnership-results-in-climate-and-disaster-resilience-plan-for-nauru.html>
- 2015: Partnership results in climate and disaster reliance plan for Nauru. SPREP Climate Change Matters, issue 32. https://www.sprep.org/attachments/Publications/Newsletters/CCM_March_2015.pdf
- 2016: South-south exchange to inform water quality monitoring in Nauru. EU capacity4dev GCCA+ Community. News article. <http://capacity4dev.ec.europa.eu/gcca-community/blog/south-south-exchange-inform-water-quality-monitoring-nauru>

Niue

- 2013: Rainwater tank manufacturing facility opens in Niue. SPC media release. http://www.pacificclimatechange.net/sites/default/files/documents/2.%20MR_GCCA-PSIS_Dec_Niue_Revised.pdf
- 2014: Delegates discuss successes and challenges in national climate change adaptation projects. SPC media release. <http://www.spc.int/en/sandbox/216-about-spc-news/1726-delegates-discuss-successes-and-challenges-in-national-climate-change-adaptation-projects.html>
- 2014: Niue GCCA: PSIS project fact sheet. <http://ccprojects.gsd.spc.int/factsheets/>
- 2014: Rainwater capture and storage systems: Partnerships to strengthen Niue's water security. Video. <https://goo.gl/Prastx>
- 2014: Vital Harbour Launch at SIDS 2014. SPREP Climate Change Matters, issue 29. http://www.sprep.org/attachments/Publications/Newsletters/CCM_Nov_2014.pdf
- 2015: Manufacturing water tanks for water security. Compendium of case studies on climate and disaster resilient development. http://www.pacificdisaster.net/dox/case_studies_pacific.pdf
- 2015: GCCA Pacific small island stories featured at the Pacific Climate Change Roundtable. EU Capacity4dev GCCA+ Community. News article. <http://capacity4dev.ec.europa.eu/gcca-community/blog/gcca-pacific-small-island-stories-featured-pacific-climate-change-roundtable>

Palau

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- 2014: Palau GCCA: PSIS project factsheet. <http://ccprojects.gsd.spc.int/factsheets/>
- 2014: From coconuts to fresh water. Video. <https://goo.gl/Prastx>
- 2015: SPC and EU support south-south cooperation between Palau and Tonga. EU/SPC media release. <http://www.spc.int/en/media-releases/1978-spc-and-european-union-support-south-south-cooperation-between-palau-and-tonga.html>
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- 2015: Contractors in Palau trained in the installation of rainwater harvesting systems. SPREP Climate Change Matters, issue 34. http://www.sprep.org/attachments/Publications/Newsletters/CCM_May_2015.pdf
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- 2015: Time for global action on climate change says Palau's president. SPC media release. <http://www.spc.int/en/media-releases/2257-time-for-global-action-on-climate-change-says-palau-president.html>
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Tonga

- 2013: Delegates talk national budget support for delivery of climate change finance. SPREP Climate Change Matters, issue 17. http://www.sprep.org/attachments/Publications/Newsletters/CCM_Oct_2013.pdf
- 2014: Construction begins on coastal protection measures in Tonga. SPC media release. <http://www.spc.int/en/spc-and-the-pacific-plan/1798-construction-begins-on-coastal-protection-measures-in-tonga.html>
- 2014: Tonga GCCA: PSIS project factsheet. <http://ccprojects.gsd.spc.int/factsheets/>
- 2015: South-south exchange of coastal protection strategies. SPREP Climate Change Matters, issue 32. https://www.sprep.org/attachments/Publications/Newsletters/CCM_March_2015.pdf
- 2015: National launch of the Tonga Buying time with better coastal management video. SPREP Climate Change Matters. https://www.sprep.org/attachments/Publications/Newsletters/CCM_March_2015.pdf
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- 2015: Coastal protection project opened in Tonga. EU/SPC media release. <http://www.spc.int/en/media-releases/2260-coastal-protection-project-opened-in-tonga.html>
- 2015: Coastal protection projects opened in Tonga and Marshall Islands. EU Capacity4dev GCCA+ Community. News article. <http://capacity4dev.ec.europa.eu/gcca-community/blog/coastal-protection-projects-opened-tonga-and-marshall-islands#sthash.YR18TcC5.dpuf>
- 2016: New climate change policy contributes to more resilient Tonga by 2035. SPC media release. <http://www.spc.int/en/media-releases/2400-new-climate-change-policy-contributes-to-more-resilient-tonga-by-2035.html>

Tuvalu

- 2013: Adapting to climate change in Tuvalu: The freshwater dimension. Video. <https://www.youtube.com/watch?v=Y1atvZXPUBo>
- 2014: Promoting local food production in Tuvalu. Video. <https://goo.gl/Prastx>
- 2014: Agriculture attachment to SPC brings new techniques to Tuvaluan farmers. SPREP Climate Change Matters, issue 21. http://www.sprep.org/attachments/Publications/Newsletters/CCM_March_2014.pdf
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- 2015: Enhancing islanders' skills to access climate funding. SPC media release. <http://ccprojects.gsd.spc.int/wp-content/uploads/2016/06/TU64-MR-LFA-second-training.pdf>
- 2016: Agroforestry in Tuvalu begins to bear fruit. News article. <http://www.pacificclimatechange.net/news/agroforestry-project-tuvalu-begins-bear-fruit>

