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Global Climate Change Alliance: Pacific Small Island States Individual Country Evaluation Report - Tuvalu

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REPORT PREPARED BY

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1. INTRODUCTION

This is one of nine individual country evaluation summary reports produced as part of the Global Climate Change Alliance: Pacific Small Island States post-project evaluation¹.

The Global Climate Change Alliance: Pacific Small Island States (GCCA: PSIS) Project is a European Union (EU) funded initiative to assist nine smaller Pacific Island states (Cook Islands, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu) to adapt to climate change. The project was implemented by the Pacific Community (SPC), with an implementation period from July 2011 through to November 2016².

The overall objective of the project was to support the governments of nine small island states of the Pacific in their efforts to tackle the adverse effects of climate change.

The GCCA: PSIS project consisted of on-ground climate change adaptation activities in specific sectors – coastal protection, marine resources, health, agriculture, and freshwater; supported by mainstreaming of climate change into national and sectoral policies, plans, budgets and procedures. The project also provided technical assistance, capacity building and supported regional collaboration.

The four components and key result areas (KRA) of the project were:

1. Climate change mainstreamed into national and/or sector response strategies.
2. Well-articulated sectoral adaptation strategies that address budget support criteria.
3. National climate change adaptation projects implemented.
4. Streamlined technical assistance that supports national adaptation responses delivered by regional organisations in a collaborative manner.

The individual country evaluation report presented below is guided by responses to the key evaluation criteria provided in the original terms of reference:

- Relevance & EU Coherence
- Effectiveness
- Impact
- Efficiency
- Sustainability
- Cross-Cutting themes of gender and the environment
- Visibility

The report also provide a summary of best practices and any specific recommendations for future action or improvement.

¹ The evaluation report is presented as a full report containing all sections, as well as separate executive summary, individual country evaluation summaries and case studies.

² The project was granted a one-year extension.

2. TUVALU EVALUATION REPORT

Sector for Climate Change Adaptation Project

Agriculture sector

Project

Improving agroforestry systems to enhance food security and build resilience to climate change in Tuvalu

The Tuvalu project developed three agroforestry trial sites, two on Funafuti and one on Nukufetau. A nursery was established on Funafuti to grow seedlings for the two Funafuti sites. The project funded the re-equipment of the agricultural research station on Vaitupu.

The project also funded the development of the Tuvalu Agriculture Strategic Marketing Plan 2015-2025, which aims to revive domestic and international trade of locally-produced agricultural products through domestic activities and trade arrangements.

Implementing Entity

The Department of Agriculture (DoA) was selected as the implementing entity for the climate change adaptation project due to its management of the selected sector and its having the required expertise to implement the on-ground project. The Department of Environment (DoE) was the overall coordinator for the GCCA: PSIS project in Tuvalu. This structure worked well as it leveraged off the expertise and resources of the department overseeing the selected sector. The partnerships approach built strong relationships based on working towards a common goal, whereas in the past projects had poor coordination.

Relevance & EU Coherence

Tuvalu's GCCA: PSIS project is highly relevant and demonstrates coherence with EU programmes. Discussions from stakeholder consultations noted that six of the seven prioritised adaptation needs had been covered under NAPA I and NAPA II. The seventh priority area, 'health' had not been covered by any of the projects being implemented in Tuvalu. In the end, the agriculture sector was selected, with a focus on improving food security through an agroforestry demonstration project.

Traditional farming resembled agroforestry practices but projects over the past three decades encouraged mono-cropping of cash crops (e.g. coconut), thus decreasing productivity and variety and depleting the soil.

The agroforestry project was consistent with the Tuvalu Joint National Action Plan on Climate Change and Disaster Risk Reduction (JNAP), as well as Tuvalu's NAPA document, which highlights food security and agriculture as a key area for adaptation activities, and the Tuvalu Agriculture Tuvalu Agriculture Strategic Plan (2014-2023). The Te Kakeega II: National Strategy for Sustainable Development also prioritises subsistence agriculture production and mitigating climate change related agricultural impacts.

Two trial sites were on Funafuti as the Tuvalu Government wanted the project to focus on the capital as 60% of the population reside there.

The project complemented Taiwan's Horticulture Crop Development Project on Funafuti, which focuses on vegetable gardening, as well as a UNDP-funded project focused on implementing Tuvalu's NAPAs through home gardening. An Australian Aid funded project implemented by SPC's LRD division, which focused on developing and testing climate-ready plant varieties in two outer islands, and an SPC-GIZ CCCPIR climate change coordination project are also complementary.

SPC and the country project team consulted with representatives of other food security projects (e.g. FAO, Taiwan) to learn lessons and minimise duplication (Trip Report, November 2013).

Effectiveness

The project was most effective in establishing three agroforestry sites and providing the foundations for enhanced food security in Tuvalu

The project's achievements against the revised logframe (revised February 2015) are presented below. The Tuvalu GCCA: PSIS project was effective in achieving its purpose and key result areas.

Expected result	Indicator	Indicator achieved
Overall Objective: Increase resilience to climate change impacts in Tuvalu	Lessons learnt from food security initiatives compiled, analysed and shared with other atoll countries by 12/2015	Achieved: Lessons learnt video on 'Promoting Local Food Production in Tuvalu' ³ completed and shared. National lessons learnt workshop held at end of project (November 2015) with all project partners including the farmers and representatives from other projects. Crop database established to evaluate effectiveness on an ongoing basis and shared with different projects.
Purpose: Enhance food security in Tuvalu	At least two demonstration sites operational in 2 different islands by 12/2015	Achieved: Two sites on Funafuti completed, and one in Nukufetau (on Funaota islet).
	Operation and maintenance of demonstration sites are incorporated into the 2015/2016 work plan for the Department of Agriculture by 12/2015	Achieved: Funds for maintenance of the demonstration sites and for the wages of two of the projects' temporary workers allocated in the Department of Agriculture's 2016 budget.
Key Result Area 1: Enhanced understanding of agro-forestry among community members, land owners and Kaupule through	At least 10 farmers effectively applying agro-forestry practices by 09/2015	Achieved: Four trainings held; two delivered by SPC LRD staff on Funafuti (Oct 2014 and Oct 2015), one by DoA on Funafuti, and one by DoA and National Coordinator on Nukufetau.

³ <https://www.youtube.com/watch?v=TFdFHC68n8o>

Expected result	Indicator	Indicator achieved
awareness raising, capacity building and training		Funafuti farmer survey indicates 16 farmers indicated they had applied agroforestry design. Nukufetau farmer survey pending.
	At least 6 education/awareness activities implemented by 12/2015	Achieved: (1) At least 9 radio shows by the DoA and DoE (2) Participation at two annual Environment Week events (2014 & 2015); (3) Pamphlets on steps for agroforestry and composting in both English and Tuvaluan; (4) Four billboards at 3 project sites and DoA nursery; (5) Home gardening workshop run by TNCW on 23-24 October 2014; (6) Video in Tuvaluan with English subtitles 'A Guide to Developing Agroforestry in Tuvalu' developed for Tuvalu farmers to explain steps required to develop their own agroforestry sites. (7) Go Local Campaign in November 2015 to promote local produce.
Key Result Area 2: Improved agro-forestry system implemented in demonstration sites in Funafuti and one outer island	4 sites for demonstration selected in 2 islands in a participatory manner by 12/2014	Achieved: MoUs with landowners for two sites on Funafuti, and MoUs for two sites on Nukufetau. Nukufetau Kaupule (council) preferred to have project on only one site for ease of ongoing maintenance.
	10 farmers across 2 islands have access to equipment needed for agro-forestry by 12/2015	Exceeded: Between 30 and 50 farmers on Funafuti, and members of the Funaota farming association on Nukufetau, have access to chipper, tractor, excavator and small equipment. Tractor operator/maintenance training in May 2015. Excavator operator training 19-20 May 2015 on Funafuti.
	2 nurseries established or enhanced in 2 islands to supply planting material to farmers by 12/2015	Achieved: Nurseries on Funafuti and Nukufetau, and Agricultural Research Station in Vaitupu re-equipped.

Expected result	Indicator	Indicator achieved
Key Result Area 3: Marketing potential and access evaluated	Agricultural production marketing plan for Tuvalu prepared by 06/2015	Achieved: Tuvalu Agriculture Strategic Marketing Plan (TASMP) 2015-2025 endorsed by Cabinet February 2016.
Key Result Area 4: Enhanced coordination and capacity of the Department of Agriculture	Department of Agriculture Nursery equipped to supply planting material for two new crops/ crop varieties to farmers by 06/2015	Achieved: Nine varieties of crops supplied by SPC CePaCT to DoA nursery in Tuvalu. Crops were also collected nationally from outer islands of Tuvalu. DoA maintains database of plants supplied to project sites in Funafuti.
	Minimum 2 government employees trained in propagating climate ready crops by 12/2014	Achieved: 105-day attachment for Tuvalu Agricultural Extension officer at CePaCT. Research paper completed titled " <i>In vitro and in vivo screening of sweet potato (Ipomoea batatas) varieties for tolerance to salt, using two methods.</i> " The extension officer is now looking after all material propagation in the Agricultural Research Station. Tuvalu Biosecurity Officer had an 8-week attachment to SPC Land Resource Division, Suva, Fiji. Biosecurity training has helped with progressing the potential of breadfruit for exportation; and with monitoring agricultural pests. 4-week attachment to CePaCT and SPC for Tuvalu GCCA: PSIS Capacity Building and Communications Officer.

The agroforestry project in Tuvalu demonstrated an effective use of regional resources, through the partnership with the SPC Centre for Pacific Crops and Trees (CePaCT). The partnership worked well as CePaCT was approached at the project design stage, and the project provided CePaCT with the required funding to effectively assist Tuvalu in providing plant cultures, as well as training through attachments. CePaCT had previous experience with Tuvalu's DoA, and built on this knowledge to deliver effective assistance (e.g. supplying cultures in small batches, knowing that the DoA is not able to look after larger batches).

The GCCA: PSIS project in Tuvalu also delivered a parallel food security project targeting women, as most of the farmers involved in the demonstration project were men. Home gardens were set up on every island of Tuvalu through the Tuvalu National Council of Women (TNCW) as demonstrations to further strengthen backyard food gardening by women in rural outer islands. Initially a training was

held covering 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. A competition was run to further encourage women to develop home gardens⁴. Gardens were evaluated by judges from the Department of Agriculture, and prizes were given to the best gardens. The TNCW have indicated that they will continue the gardening competition in 2016.

Additional Activities beyond the focus of the Agriculture Sector

A 'Review of mainstreaming of climate change into national plans and policies: Tuvalu' (November 2013) was undertaken as part of the project's technical assistance component. The report notes that climate change adaptation is clearly articulated in national plans and strategies and these are starting to be included in sector master plans as they are developed. Importantly, there needs to be improvements in linking budget expenditures and estimates to plans, strategies, and there needs to be better monitoring and reporting processes. The report notes that lack of capacity within the Department of Environment may be a barrier to responding and reporting of climate change adaptation.

A review and assessment of national and sector policies in relation to budget support modalities in the Pacific Smaller Island States (2013) indicates Tuvalu's likelihood to qualify for direct budget support for climate change activities is rated as medium.

The project co-funded the delivery of Environmental Impact Assessment (EIA) training in Tuvalu (23 February to 5 March 2015), and conducted a review of Tuvalu's National Environmental Management Strategy (NEMS) 2015 – 2020. Additionally, one government staff was funded to attend procurement training in Fiji.

Training in 'Proposal Preparation using the Logical Framework Approach (LFA)' was delivered to 29 people (16 women, 13 men) in November 2013. The post-training evaluation indicated that the training was successful in building capacity and motivation of Tuvalu government staff and community based groups to use the LFA to design projects and inform the preparation of proposals. A 'Refresher training in the LFA and in Monitoring and Evaluation' was conducted in March 2015, attended by 19 people (12 men, 7 women). The post-training evaluation noted that participants who attended the initial LFA training benefited from the refresher and extended their knowledge with project monitoring and a more detailed look at project timeline and budget. Participants who were new to LFA also benefited and the feedback indicated they can see the value of the LFA and most obtained a degree of confidence to use the LFA in their work. The benefit from the training is demonstrated by the following quote from a participant from the first LFA workshop.

"This is a very good training, I have learnt a lot and so fortunate to have this great opportunity to be part of this training! I feel confident that I could be able to write successful project proposals."

Impact

Whilst some project impacts will not be known or proven until one or more years into the future, some noted short term impacts have been observed.

The first agroforestry site has had its first harvest

⁴ The competition was delayed as many home gardens in outer islands were damaged during Cyclone Pam (Trip Report, July 2014).

The first harvest of kumala, banana, yam and coconut, was reaped at the first agroforestry site on Funafuti by December 2015. The crops were showcased at the Go Local Campaign Fair. The crops belong to the landholders, and any excess is encouraged to be sold to the community. Annual food crops, mainly root crops such as sweet potatoes, xanthosoma and cassava, are in their second cropping stage.

The agroforestry project's impact for perennial food crops will be in a better position to be assessed in two years or more once more plants become established and bear fruit. Interestingly, mature coconut palms that were left behind during the thinning out process at the demonstration sites are reported to be in full production, and providing the landowners with a consistent supply of more than 100 coconuts per week. Such production levels are reported to be much greater than before the land was converted to agroforestry.

Data on crops and crop yield will continue to be collected and compiled by the Department of Agriculture, and shared nationally and with other Pacific island nations. The demonstration project is likely to contribute to food security through a more resilient food supply⁵.

Farmers on Funafuti have taken up agroforestry practices

The training of farmers was important as it provided hands-on demonstration of new farming methods. Results from the farmer survey indicate that farmers have increased knowledge on agroforestry and have implemented measures on their farms⁶.

At present, most of the farmers do not sell the produce they grow, so the likelihood that the food security benefits are spread to non-farming households will depend on an increase in farmers selling produce over time, though sharing of produce through the informal economy will also lead to increased food security for a greater number of people. The implementation of the TASMP 2015-2025 will help promote the marketing of locally produced food. The TASMP will also build on the 'Go Local' campaign that was supported by the GCCA: PSIS project. The TASMP will also help in the planned export of breadfruit and banana to New Zealand.

The project's PDD notes that the project will benefit Funafuti's population (over 6,000 people). This may occur if more unused land on Funafuti is put into agroforestry production.

Skills learnt through attachments are being put to use.

The three attachments have built the skills of Tuvalu government staff, particularly in tissue culture and biosecurity which will have positive impacts on food security and resilience. The staff members from two attachments are back working in Tuvalu.

⁵ More varieties of crops means that it is more likely some crops will survive, or grow back, after extreme weather events, or adapt to climactic changes.

⁶ 18 of 22 respondents indicate agroforestry is a good system for all crops, 16 respondents have used agroforestry design, 15 have used nursery techniques, 14 have used budding/grafting, and 14 composting. Farmer Survey.

Efficiency

Time

Though it took some time for Tuvalu to select its sector focus⁷, the project was efficient in terms of delivering all its activities within the project timeframe and budget⁸. Farmers participating in the project noted the short timeframe for the project, and that the plants would have fruited more if there was a longer timeframe (Lessons learnt report, November 2015).

There were some issues with landowners signing the MOU on Funafuti due to land disputes (Trip Report, May 2014) but these were resolved. The demonstration sites on Funafuti were completed ahead of the outer island site on Nukufetau, which required more time due to transport logistics⁹.

Cost

Tuvalu had acquitted 100% of its €560,000 allocation for the on-ground project by March 2016. €54,000 was allocated for national coordination and 100% of these funds were acquitted.

The project was undertaken in a cost efficient manner, with all outputs delivered on budget. The project made use of local labour which was cost-effective to undertake the required work in a short period of time.

The large machinery purchased proved to be value for money. (It should be noted that the SPC, while not a formal member of the bid committee, recommended that the tender be awarded to another bidder). The Tuvalu Government selected their preferred bidder based on lowest cost and preferred supplier.

Staffing

The establishment of a country project team of five staff contributed to the ability to deliver on all the project activities though staff indicated that they had to work longer hours to get the project implemented on time¹⁰. There were some staff changes during the course of the project, but suitable replacements were quickly found meaning that there was no interruption in the project's delivery.

The project team at SPC-Suva also hosted Mr Kilifi O'Brien, Assistant Secretary, Ministry of Home Affairs, Tuvalu, in an attachment to the GCCA: PSIS project¹¹. During this period he worked with the project team and participated in the Steering Committee Meeting, the Climate Finance Meeting,

⁷ Letter of Agreement signed in November 2012, agriculture selected as sector in February 2013 (February Trip Report) and Concept Note completed August 2013.

⁸ A number of stakeholders (e.g. FAO consultants and representative from Taiwan ICDF) indicated concern that the project's time frame was too short (Trip Report, November 2013). A one year extension to the GCCA:PSIS project allowed the demonstration sites to be completed. Considering the MoUs with farmers were signed in mid-2014, the demonstration sites were completed in less than 18 months on Funafuti, and less than a year in Nukufetau.

⁹ Discussions on procuring and transporting necessary equipment and material for the outer island project are noted in February and April 2015 trip reports. By April 2015 the first project site on Funafuti site was 95% complete in April 2015. By July 2015, the first project site was complete and second Funafuti site 75% complete.

¹⁰ National Coordinator, Finance Officer, Agroforestry Technical Officer, Capacity Building and Communications Officer, and Vehicle Operator.

¹¹ He was funded from 1 July – 20 December 2013 as a Greg Urwin award recipient under the Pacific Leadership program. The GCCA: PSIS provided oversight for the technical aspects of the attachment.

proposal training in Kiribati as well as undertaking specific activities relating to climate change in Tuvalu.

Sustainability

The agroforestry project is likely to be sustained in the near future, with the MoUs with landholders of the two Funafuti sites allowing for a five-year monitoring period (until mid-2019)¹². The Tuvalu national budget for 2016 includes provisions (AUD 30,000) for the Department of Agriculture to work with the landowners and farmers to maintain the agroforestry project sites and equipment. The provision for ongoing budget support was discussed as early as October 2014 (Trip Report, October 2014; 2016 Budget Support Submission).

Farmers and government staff have been trained in the maintenance of the agricultural equipment provided to implement the demonstration sites. Ownership of the heavy equipment on Funafuti will be transferred to the Department of Agriculture, and equipment on Nukufetau will be transferred to the Kaupule. The PDD notes that a maintenance and financial plan between the Department of Agriculture and the Kaupule will be developed at the close of the project. Chippers were purchased under the NAPA procurement to ensure consistency of brand/dealer, meaning that there is commonality for spare parts and technical skills (Email communication, February 2014).

The machinery to facilitate development of agroforestry will be available for hire to farmers (from the Department of Agriculture on Funafuti, and Kaupule on Nukufetau).

Farmers and other stakeholders have been trained in agroforestry (total of 4 training workshops) including agroforestry design and methods, compost making, plant grafting and breeding techniques, and in planting new crops such as sandalwood. The October 2014 training report indicated a high likelihood of replication of agroforestry should funding be available¹³.

Other projects are looking to build on the agroforestry project, specifically:

- USD439,534 FAO-funded Technical Cooperation Project (TCP) '*Strengthened capacity to adapt and extend resilient integrated coconut based agro-forestry and livestock farming systems*' expected to start June 2016 and extend to Niutao and Vaitupu islands (taking lessons from GCCA: PSIS project).
- GEF-funded 'Implementing a 'Ridge to Reef' approach to protect biodiversity and ecosystem functions in Tuvalu (R2R Tuvalu)¹⁴, planned to commence June 2015 (but not started implementation yet) to December 2020.

The home gardening project is likely to be sustained through the involvement of the TNCW, who have indicated that they will continue with the home gardening competition in 2016.

¹² Privately held land was selected for the demonstration sites as government land was considered to be less sustainable due to lack of government capacity to maintain the projects (Trip Report, November 2013).

¹³ "All groups presented their activity before lunch and from their design, it was evident that they all understood the concept of agroforestry and there was possibility to turn their design into a project should some funding be made available." Agricultural Training Report, October 2014

¹⁴ Component 2.1.3: Agroforestry Integration Production implemented, including coconut rehabilitation and underutilized local crop species with involvement of Kaupule, NGOs and womens' organizations in about 3 islands towards improving livelihoods and securing food production. GEF Project Document

The government has endorsed the TASMP (February 2016), and this should assist in promoting local produce, along with the 'Go Local' Campaign.

Cross-Cutting

Gender

The Tuvalu project demonstrated good consideration of gender (see Table 1). SPC advised the TNCW that since demonstration project would not focus on women there was an opportunity for a separate project focussing on women as part of the GCCA project. This led to the home gardening project (catering to 48 women) although it took some considerable time for TNCW to develop the project concept.

Overall, women and men were closely represented in the training numbers. Whilst there was little female representation in the tractor and excavator maintenance training, it was positive to see women making up approximately 30% of the combined agroforestry training.

Table 1. Male and female representation in country training activities

Date	Training	Male	Female	Total
July 2012	CC & Media Training	6	6	12
Nov 2013	Proposal Preparation Training	13	16	29
Oct 2014	Women's Home Gardening Workshop	0	48	48
Oct 2014	Agroforestry Training I- participants from all islands	47	13	60
Jan 2015	Agroforestry Training II	27	17	44
Feb 2015	Environmental Impact Assessment (with SPREP)	12	6	18
Mar 2015	Proposal Preparation Training (Part II)	12	7	19
May 2015	Tractor Maintenance and Repair training	12	2	14
May 2015	Excavator Maintenance and Repair training	11	0	11
Oct 2015	Agroforestry training III including sandalwood	25	11	36
Jan-Mar 2014	Attachment to Kiribati Live and Learn Farm & SPC CePaCT	1	0	1
Aug-Dec 2014	Attachment to SPC CePaCT on crop propagation	0	1	1
May-July 2015	Attachment to SPC LRD in Biosecurity	1	0	1
Total		167	127	294

Environment

The areas cleared for the agroforestry sites were primarily old coconut groves. The agroforestry project will improve the local environment through practices such as composting that will help improve the soil. Environmentally-friendly farming methods including agroforestry and intercropping will also help increase biodiversity.

Tuvalu was able to test the effectiveness of climate-ready crops provided by SPC's CePaCT, as well as locally available crops. A database was set up to monitor the climate-ready crops and other crops in Tuvalu to evaluate their effectiveness.

The project also supported activities such as home gardening, EIA training, and two Environment Week events, all of which have a positive impact on the environment.

Visibility

Tuvalu did not develop a national communications plan. However, there was highly relevant EU visibility on communications materials (newspapers, radio, videos, media releases) and reports. Media training was provided in July 2012, and the Tuvalu project included a Capacity Building and Communications Officer.

There were over nine radio shows nationally, and the project was also featured on the Australian 'Dateline' television programme. Billboards at the demonstration sites have the EU and GCCA logos prominently displayed. The GCCA project booth at Environment Week (Trip Report, May 2014) also provided visibility for the project.

An informational pamphlet on steps to develop agroforestry (in English and Tuvaluan) had clear logos of the EU, SPC and GCCA.

A national lessons learnt workshop (November 2015) was held to enable the project team and local partners to identify and document lessons learnt. A regional workshop (September 2015) involving all SPC GGCA: PSIS project teams and other development partners provided a forum to share national and regional lessons.

A lessons learnt video was also produced to promote the project. This video is available on YouTube and has been screened both nationally and regionally on Pacific Way. Additionally, an agroforestry training video was produced in the local language and was supported by a pamphlet printed in both English and Tuvaluan. SPC's involvement and the EU's funding contribution were highlighted in all of these products.

Best Practices & Recommendations

Best practices from the project in Tuvalu

1. The project team had the right mix of skills and sufficient capacity (agroforestry technical officer, national coordinator, finance officer, communications and capacity building officer) to deliver the project.
2. The implementing entity (Department of Agriculture) had the technical expertise to deliver the project.
3. The project built the capacity of the key stakeholders through comprehensive training to support project sustainability.
4. The project engaged the government to fund project maintenance early in the project implementation.

Recommendations

1. SPC and EU should consider funding a small impact evaluation (3-years post-project) to assess the productivity of the three pilot sites and ongoing farmer engagement and replication of the project. Results and lessons would be beneficial to inform similar food security initiatives, particularly in atolls and islands with poor soil conditions.