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

PREPARED FOR

Pacific Community

23 May 2016


**REPORT PREPARED BY**

**PACIFIC RESEARCH AND EVALUATION ASSOCIATES**

Martin Pritchard martin@prea.com.au
Damien Sweeney damien@prea.com.au
**www.prea.com.au**

# 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 evaluation[1].

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 2016[2].

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. NIUE EVALUATION REPORT

## Sector for Climate Change Adaptation Project

Water sector

## Project

**Augmentation of Rainwater Harvesting in Niue**

The GCCA: PSIS project in Niue is an upscale of the GEF-funded Pacific Adaptation to Climate Change (PACC) and Australian Aid-funded PACC+ project to provide 5,000 litres water tanks to Niue households.

The project aimed to secure a reliable supply of potable water especially during extreme events such as tropical cyclones. By the time of the first SPC trip to Niue (September 2012), a cost-benefit analysis (CBA) had been conducted for the rainwater harvesting project as part of PACC project, and the tendering process was in train to get a private company to provide water tanks.

With the addition of the GCCA: PSIS funds, the overall project was up-scaled so as to build a tank manufacturing facility in Niue to manufacture rainwater harvesting tanks as well as tanks for other purposes.

## Implementing Entity

The project was implemented by Niue's Department of Environment. The Niue Water Steering Committee (NWSC) provided project oversight[3].

This structure was effective in that it used an existing committee that was involved in previous projects (Integrated Water Resource Management (IWRM) and PACC).

## Relevance & EU Coherence

The project was implemented as a Disaster Risk Management (DRM) initiative to provide an independent water supply during cyclone events, when the reticulated water supply can be cut off.

The relevance of the household rainwater tank project, as designed and implemented in Niue, is debatable in terms of meeting identified national targets. This assessment is not a criticism of the project design process for the GCCA component of the Niue project, but rather reflects changes in justification between the project design and the project implementation. The project was placed on a certain pathway whereby the 'problem' was unclear, and the alternative interventions were not clearly articulated.

The GCCA: PSIS project in Niue simply built on the already-commenced PACC and PACC+ projects. As such, the GCCA project could be considered relevant in that it built on an existing project, but the overall relevance of the rainwater tank project is debatable.

The justification of the household rainwater project has been through a number of clarifications during the course of the project.

[3] Consisted of the Department of Environment, Public Works Department, and private sector, Finance and Non-Governmental Organisations (NGOs).

The GCCA: PSIS project provided, at Niue's request, an upscaling of the PACC and PACC+ projects. The justification provided in the GCCA:PSIS Niue Concept note is that the "*National Integrated Strategic Plan (NISP 2009-2013) and the Joint National Action Plan on Climate Change Adaptation and Disaster Risk Reduction (JNAP) for Niue have identified the need to increase the amount of potable water available to households*".

The justification of the rainwater tank project also refers to the benefits in terms of reduced consumption of fossil fuels (to pump water), reduced pressure on the groundwater supply, and the provision of a back-up supply in case of pollution of the groundwater lens[4].

The NISP 2009-2013 in fact specifies a target for rainwater tanks to make up 20% of water supply by 2013. The NISP also has a 20% renewable energy target due to the high reliance on fossil fuel to power the water pumps. A 2011 report on water supply options in Niue notes that "*one primary motivation [for rainwater tanks] is allowing Niue a buffer against system failure in the groundwater pumping system. For example, rainwater tanks would be used in the case of temporary cyclone damage to the groundwater pumping system"*[5]. This does support the project, but providing rainwater tanks as an alternative household water supply to meet the NISP target of 20% requires rainwater tanks to be plumbed in to houses, and a water pump at each household to pump water from the tank to the house[6]. In the present implementation scenario, households have to access water directly from the tank, making it less convenient as an alternative to reticulated household supply as per the NISP target[7]. The present implementation scenario does provide households on the upper terrace with a secure source of water during electricity outages. However, the houses on the lower terrace would still receive gravity-fed water during short electricity outages.

Considerable planning, in terms of technical design and economic analysis, was conducted as prior to, and as part of the PACC project. The 2011 Concept Note states that "*A cost benefit analysis carried out recently under the PACC project supports the supply of 5,000 litres of rainwater storage to individual households*."

Closer reading of the cost-benefit analysis (CBA) prepared in 2012 as part of the PACC project in Niue reveals that "*household rainwater tanks were not identified as a priority measure in the Niue Drinking Water Safety Plan (2009) or in the Integrated Water Resource Management (IWRM) project design document (2007)*" (Buncle, 2012, p15).

The CBA actually notes that there is only a Net Present Value (NPV) for the provision of rainwater tanks to households on the upper terrace of Niue , as these houses are dependent on the electricity

[4] "*At the present time the water supply is sourced primarily from the underground aquifer. The extraction, storage and distribution of underground water supplies to households are highly dependent on the use of fossil fuels. The underground water source is also vulnerable to land based pollution and contamination*." Niue Concept Note, February 2013, p2.

[5] Ambroz, A. (2011). Least-Cost Analysis of Water Supply Options in Niue: (Integrated Water Resource Management Technical Report), SOPAC Technical Report 447.

[6] See Figure 6, page 22, of Ambroz, 2011.

[7] Chapman, 2012, notes (p17) "*The design layout of tanks to allow for future improvements such as a pressure pump directly linked to the house, a lift pump to an elevated header tank or allow for a hybrid rainwater / public reticulated water supply system*".

supply for the provision of potable water[8]. It should be noted that the assumed costs for the calculations of the rainwater tanks may be underestimated, and therefore the NPV may change in favour of a positive NPV for tanks in the lower terrace as well[9].

The CBA notes that there are considerable behavioural barriers to using rainwater tanks[10]. The current groundwater supply is clean enough to be supplied untreated and comes at no direct cost to Niue households[11]. The current lack of water pricing for the reticulated water supply acts as a disincentive to using alternative supplies such as rainwater[12].

A relevant document that is not referred to in the Concept Note (2012) or PDD (2013) is the 2011 'Least-Cost Analysis of Water Supply Options in Niue'[13]. This report compares the status quo (fossil-fuelled reticulation) with rainwater providing 20% of household water use (80% reticulated), and a solar/diesel hybrid pumping system, where 16% of the electricity for the reticulation system is solar powered. The rainwater option was determined to only be viable through a donor grant, and that "*there remains considerable work to make this option both technically and socially feasible*" (Ambrose, 2011, p7). A key social barrier to the success of rainwater tanks in reducing the use of reticulated water is maintenance requirements, and ongoing costs, such as pumping water from the rainwater tanks to the house.

The PACC mid-term review noted that the Niue rainwater tank project was originally framed as a drought resilience measure, and subsequently as an adaptation to increased cyclone hazard, whereby rainwater tanks provide a potable water supply when the electricity is cut off, and the reticulated water supply is unavailable[14]. The mid-term review also notes that the "*project in Niue has been hampered by a weak assessment of country vulnerability and adaptation options and an inadequate project design*." Niue's response to this criticism was that the "*project in Niue was not hampered by a weak assessment of country vulnerability and adaptation option but from poor communications during the consultation phase which influenced the project design, resulting in a drought resilience measure.*

[8] "*NPVs for all tank storage capacity options (i.e. 5KL and 10KL) in lower-terrace areas of Niue were shown to be significantly negative for all of the groundwater contamination scenarios modelled - primarily because public water supply to these areas are pressure-fed and so household rainwater tanks would not generate reduced water supply interruption benefits. Lower-terrace areas of Niue are therefore not assessed to be a worthwhile demonstration site(s) for household rainwater tanks under the PACC demonstration project*." Buncle, 2011. Also see Chapman, 2012, PACC Rainwater Harvesting Project Technical Report, p18.

[9] The CBA assumed the cost of a tank at NZD2,500, installation cost of NZD1,299, and other costs, based on the Technical Design document. See CBA Report by Buncle, A (2012), p20.

[10] "*Community consultations indicate that a lack of information about how to properly maintain rainwater tanks and a lack of confidence in the durability and safety of the plastic tanks*." P5, CBA Report, August 2012.

[11] "*The water from the Niue groundwater lens is deemed safe and of good quality and is thus pumped directly to consumers without any form of treatment. The costs for maintaining the drinking water supply are currently met by the Niue Government. Consumers are not charged for water use*." P8, Niue GCCA:PSIS PDD, August 2013.

[12] "*A very worthwhile measure/reform to be progressed as part of PACC and/or PACC+ appears to be a water tariff system, including roll-out of household meters. This is consistent with the Niue National Strategic Plan: 2009-2013, which includes introduction of a water tariff system by 2013 as one of its targets*." Buncle, A (2012) CBA Report, p8.

[13] Ambroz, A. (2011). Least-Cost Analysis of Water Supply Options in Niue: (Integrated Water Resource Management Technical Report), SOPAC Technical Report 447.

[14] Future climate change scenario for Niue predicts a decrease in the frequency of cyclones but an increase in the proportion of more intense cyclones. Current and future climate of Niue. http://www.pacificclimatechangescience.org/

*With poor communications, options would have been limited to what was presented resulting in the adaptation intervention at the start of the project*." (PACC Snapshot evaluation report).

The relevance of the project to the original alignment with the NISP target would have been improved if water tanks were plumbed in to households (e.g. to the kitchen) and had a water pump (as was presented to the community in briefings held in 2013). This would provide an alternative water supply at all times, thereby working towards the 20% target of household supply from rainwater tank (with a tap on the water tank for when there are power cuts). Though this design would have cost more, the implementation could have been targeted at homes in the upper terrace, and those on low-income and is still an option for householders.

The current groundwater supply is safe to drink, so the justification of providing an alternative supply is based on an assumption that households will maintain water tanks (which is questionable unless incentives (financial and behavioural) are put in place. The new EU-funded ACSE project in Niue plans to mould and install septic tanks which will also reduce the likelihood of groundwater pollution, thereby helping maintain a safe groundwater supply.

Overall, whilst the project is relevant to Niue's climate by providing a DRM measure during cyclones, this appears to have been an iteration over the course of the project (predominantly by PACC), which strayed from its initial design to augment rainwater supply as a means to relieve pressure on the groundwater supply.

In terms of EU-coherence, the project builds on the EU-funded IWRM project, which funded the Ambroz report.

## Effectiveness

***The project was effective in building capacity and capability to produce and install rainwater tanks on a remote island nation, and augmenting rainwater capture and storage in Niue***

The project's achievements against the revised logframe (revised January 2015) are presented below. The Niue GCCA: PSIS was effective in achieving its revised indicators. There were some slight delays in the installation of rainwater tanks but these were mostly weather related.

| Expected result | Indicator | Indicator achieved |
|---|---|---|
| **Overall Objective:**<br>To contribute to building climate change resilience and reducing vulnerability in the water sector for Niue communities | Infrastructure and skills available in Niue by 06/2015 to mould tanks for storage of water or other purposes, e.g. septic tanks, beyond project life | Achieved: Tank moulding facility built and operational. Agreement to retain tank moulding equipment for 6 months post-project. Funding secured under EU-funded ACSE programme to manufacture septic tanks (2016-17) using the existing infrastructure and moulding machine (though new mould required). 10 men trained in moulding; 7 men trained in tank base construction; 3 men trained in installation/connections. |

| Expected result | Indicator | Indicator achieved |
|---|---|---|
| **Purpose:**<br>To augment rainwater capture and storage in Niue | At least 60% of households have properly maintained and operational rainwater capture and storage systems by 06/2015 | Achieved late: By Jan 2015, 188 tanks (44%) were installed, 96% of the tank bases constructed and 93% of the tanks delivered to the households. |
| | 40% of inhabited households in Niue have made monetary contribution to installation of rainwater capture and storage systems by 12/2014 | Achieved: Owners have to have facia board and guttering installed at own cost before tank is installed. This delayed installation as some households were slow in undertaking their required contribution. |
| **Key Result Area 1:**<br>Education, awareness and understanding of rainwater capture and storage on Niue strengthened and enhanced | At least 1 awareness workshop conducted in each community by 03/2014 | Achieved: Community meetings held in Q4 2013 about the project, presented by Haden Talagi and Clinton Chapman. |
| | At least three effective communication tools prepared and disseminated to communities by 07/2014 | Achieved: Includes media, TV adverts, music video clip, video, posters and other products, and visits to moulding facility, celebration of World Water Day March 2014 |
| | At least 200 primary aged school children engaged in specific activities relating to water conservation by 07/2014 | Achieved: Includes poster competitions on climate change and water themes and visits to the moulding facility |
| **Key Result Area 2:**<br>Rainwater capture and storage systems procured, supplied and installed in occupied households in three communities | At least 60% of the households effectively using the rainwater capture and storage systems by 06/2015 | Partial: Only 55% of households with water tanks installed by Q2 2015. Indicator reached by December 2015. Delays resulting from households reluctant to commit their own funds to fix fascia and guttering and the unavailability of these supplies in Niue. |
| | At least 3 local people trained in installation of water capture and storage systems by 12/2014 | Achieved: 3 men trained in installation/connections. |
| **Key Result Area 3:**<br>Newly installed rainwater storage systems monitored | 1 operation and maintenance training workshop conducted, by 12/2014 | Achieved: Operation and maintenance training conducted with contractors in December 2014. |

| Expected result | Indicator | Indicator achieved |
|---|---|---|
| and maintained regularly throughout Niue | | Rainwater tank maintenance training delivered by installers to each household following installation. |
| | Minimum 5 persons from Dept. Environment, Health and Water trained in water quality testing by 12/2014 | Achieved: 4 from Health, 2 from Public Works, 4 from Environment trained by Senior Technician from IAS USP Suva. |
| | 30% of households are aware of and using the translated O&M guidelines for rainwater storage and capture by 09/15 (Changed) | Indicator changed: Replaced by one-on-one training which was given to the householders by the contractors as they installed the systems (Achieved) |

Overall, the project was effective in building the capacity and capability to mould and install rainwater tanks in Niue. As a result of the project, most residents now have new rainwater tanks installed, thereby providing them with an alternative water supply in case of disruptions to the main supply during cyclones or maintenance work.

### Additional Activities beyond the Focus of the Water Sector

The project funded technical assistance to develop an institutional framework for a Climate Change Division in Niue and three options were prepared. The government's preferred option was for some of the duties of the Climate Change Division to be delivered by the Project Management Unit under the Premier's Office. A Project Management Coordinating Unit (PMCU) was established in December 2014 under the Premier's Office. The PMCU can directly recruit staff and does not have to go through the Public Service Commission. It is reported that the PMCU became operational in 2015.

It is reported that the Director General of MNR has all the necessary documents, including full job descriptions, from the GCCA: PSIS supported consultancy to progress the Climate Change Division. However, this will likely be on hold until procedures with the PMCU become clearer, as well as to the roles and links between the Climate Change Division, PMCU, and DOE.

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 that Niue would qualify for direct budget support for climate change is low given its capacity constraints.

Training in 'Proposal Preparation using the Logical Framework Approach (LFA)' was delivered to 23 people (12 women, 11 men) in August 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 May 2015, attended by 22 people (12 women, 10 men). 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 of the refresher training is demonstrated by the following comment from a Niue participant.

"*Thank you for the training. It was good to have refresher as there are new things and templates from the initial training. Need a follow-up as well in 2016*"

## 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 project's immediate impact is most visible in establishing a moulding facility in Niue***

The moulding facility (warehouse and moulding machine) established for the rainwater tank project will be used to mould septic tanks for the EU-funded ACSE project (noting that a new mould is required). The rainwater mould will be kept in Niue over the short term future at least, so that further rainwater tanks can be manufactured if required.

***Households have an independent water supply during disruptions to the reticulated supply***

The project will provide an alternative water supply during disruptions to the main reticulated supply (e.g. during power disruptions associated with cyclones and which can last for days/weeks, or during routine maintenance of the main system). The project also offers a back-up supply in case of pollution of the groundwater lens.

The concept note made reference to other benefits such as reduced consumption of fossil fuels (to pump water), and reduced pressure on the groundwater supply. However, it is unlikely that rainwater tanks will provide a day-to-day alternative to the reticulated water supply as they are not plumbed into homes. If the tanks were to be plumbed into homes at a future time, and other incentives were introduced (e.g. price signals, metering), a more regular use of the rainwater supply could lead to reduced consumption of fossil fuels and reduced pressure on groundwater supply.

## Efficiency

### Time

The project start-up was efficient as it built upon the preparatory work of the PACC project. For example, at the time of the stakeholder consultation meeting for the GCCA: PSIS Niue project (March 2013), the tender for construction and installation of rainwater tanks was in the last stages of being contracted to the company to manufacture the water tanks in Niue.

Delays still occurred during implementation due to inclement weather that affected the construction of tank bases, and delays in households installing guttering. However, the project managed to complete the target for installation of tanks in households by December 2015.

The national coordinator worked on both the PACC and GCCA projects. It was noted that this arrangement led to a high work burden placed on one staff member. During implementation, the project team were required to report against two different mechanisms (PACC and GCCA). This led to some inefficiency in the use of limited staff resources. In addition, Niue instituted a four-day work week which meant five days of work needed to be completed in four[15]. Noting the staffing constraints for this multi-donor project, it is likely that Niue would have experienced staffing issues had GCCA: PSIS funded a completely separate project.

[15] It was not effective to work on the fifth day as other government departments (e.g. Treasury) were not staffed.

**Cost**

The project used funds from three separate funding sources: GEF (USD400,000), AusAID (AUD500,000) and GCCA:PSIS (EURO582,000). This allowed Niue to scale up the original project from a pilot to a community-wide supply and installation of rainwater tanks.

Niue had acquitted 100% of its €587,000 allocation for the on-ground project by March 2016. €54,000 was allocated for national coordination and 100% of these funds were acquitted.

The tender selection process was thorough and transparent. Tender responses received included manufacturing in Niue and manufacturing in Fiji and shipping to Niue. The manufacturing in Fiji was the cheapest tender (NZD$706,598.70) compared to the winning tender (NZD$1,022,910), but was not selected due to "*barge delivery not a very flexible option in terms of delivery and adjustment in number of tanks, very little control on Quality Assurance and no benefit to the local economy*" (Tender Review Report, 2013, p1).

The overall cost per 5,000 litre tank manufactured in Niue is stated to be approximately NZ$3,000. Though the cost of local manufacture was higher than imported tanks, the guaranteed quality and local capacity and capability built is an added benefit. The future financial efficiency of local manufacturing of tanks is discussed in the sustainability section.

**Staffing**

The project experienced some significant staffing issues, in terms of staff changeover (from design stage to implementation stage), slow recruitment, and insufficient staff numbers. The PACC Snapshot report noted (p16) that "*the project was designed for a team to implement but this was not the reality in a country where the lack of capacity and technical expertise made activities challenging.*"

There were delays in recruiting the national coordinator, largely due to the Public Service Commission (PSC) being slow on resolving HR issues. SPC noted that it was unsatisfactory for the PACC project coordinator to also act as national coordinator for the GCCA project due to the workload. In addition, Niue moved towards a four-day work week, which further added to the work load of the national coordinator. Issues with the PSC also resulted in the technical advisor position being nearly 12 months in arrears with remuneration.

The Niue Climate Change Profile (2013) notes that a large number of projects, with the associated monitoring and reporting burden, are managed by a small number of departments, making disproportionate demands on Niue's public service. The project would have benefited with more staff (e.g. finance officer) on the project team but it was reported that recruitment processes were too complicated.

The cost of managing external assistance within public sector resources is unsustainable, and is made worse by the fact that there is no centralised mechanism for aid coordination. An Aid Management Unit was set up in Finance when the GCCA project was established, but it was under-resourced. The new PMCU has been established to coordinate external projects with national governments.

## Sustainability

The project is considered sustainable in a number of ways, and at the same time, the sustainability can be questioned for several reasons.

The quality of the water tanks should be assured by the manufacturer required to meet relevant Australian/New Zealand standards, and tanks undergoing a quality test following the moulding process. The operator of the moulding facility also provided a guarantee of 20 years with a 10-year warranty.

The decision to manufacture tanks in Niue has meant that further tanks can be produced relatively quickly, whilst the rainwater tanks mould remains in Niue. Further, the facility built for the mould can be used for future projects, such as the ACSE septic tank moulding project.

There is a need to develop a business plan for the moulding facility to ensure its long term viability as noted at the national lessons learnt meeting. Technical assistance and funding will be required for this, as the government has not allocated funding.

The project has manufactured an extra 100 tanks for sale to the private sector at NZ$ 1,200 per tank (similar to the price of a 5,000 litre tank in New Zealand), which will raise NZ$120,000 to help contribute to the maintenance of the moulding facility and purchase of water testing kits. However, the cost to manufacture tanks is approximately NZ$3,000 per unit. This brings into question the long term financial sustainability of the moulding facility, without external project funding.

Householders have been trained in rainwater tank maintenance, and the Health Unit has a water testing kit. However, there is no government budget allocated to test tank water.

Though households had to contribute some funds towards ensuring their homes were eligible for a rainwater tank, the project subsidised the tank and installation. The Technical Design Report (Chapman, 2012) noted (p44) that "*subsidies can also set an unsatisfactory precedent and may encourage dependency*" whilst "*not using subsidies at all would pose the risk of depriving those in hardship*." The CBA report (Buncle, 2012) also noted that the project should be limited to a small scale pilot to avoid any unintended effects on the Niue rainwater tank market.

The level of community ownership of the rainwater tanks is difficult to gauge at this moment. Since the reticulated groundwater supply was installed in 1982-1983, most homes have not maintained their existing tanks. There is currently no water tariff, though metering is being rolled out as a precursor to a cost recovery for mains water supply. As rainwater tanks were planned as a back-up supply during cyclones, there will need to be a sustained change in behaviour for households to maintain tanks on a regular basis to ensure that the water quality is safe.

The introduction of a price signal may act as an incentive for the rainwater tanks to be plumbed into homes, and used more frequently. This would also assist in achieving the NISP target of 20% of water supply coming from rainwater tanks[16].

[16] The Technical Design Report (Chapman, 2012) noted (p46) that it was "*recommended that water meters be installed in some households to ascertain how much of the rainwater system has been used by the householder to determine if the objective of rainwater constituting 20% of the water supply is achieved*". The report also noted (p47) noted that it was "*also critical that a strategy be implemented to encourage the use and turnover of the rainwater tanks so that energy savings can be realised and the objectives of the Adaptation Plan achieved*."

The project's technical assistance to provide options and institutional structure for a Climate Change Division in Niue has provided a sound basis for ongoing climate change adaptation planning and implementation. A Cabinet paper in December 2015 was prepared to merge the Meteorological Office and the Environmental Division into a new division that would also include climate change.

## Cross-Cutting

### Gender

Whilst the PACC-Technical Design Report (Chapman, 2012) indicated that the project should focus on homes on the upper terrace and financially vulnerable households, the project did not exclude anyone. The provision of an alternative rainwater supply will benefit all members of households.

Whilst the training in moulding and tank base installation benefited men only (20), the training in water testing included women (3 out of 10).

Only Niuean citizens residing in Niue were eligible to take part in the project. This meant that minority groups from other islands (e.g. Tonga, Samoa, Fiji, Philippines) were not included. It was reported that there was no clear policy on how to handle non-citizens, and those in rental properties.

### Environment

No environmental impact assessments were required for the work. The project did not lead to any negative environmental impact.

The site where the manufacturing facility was constructed was mainly covered by invasive species. The site was adequately landscaped and backfilled following the construction of the facility to reduce the reoccurrence of invasive species. Raw materials (aggregate, building chips, makatea) are accessed on the island and are sustainable. Rainwater tanks are manufactured to Australian and New-Zealand safety standards and can be recycled (material) where necessary. This will prevent it from being a waste problem, visual problem or other environmental problem at the end of its useful lifespan. Materials can be recycled at the end of life therefore reducing waste.

The existence of an alternative source allows for the improved management of Niue's groundwater resources (e.g. regular shutdowns can be scheduled so as to provide for maintenance of the pumps).

Technical assistance was provided to help Niue design options for combining their Climate Change Unit, Environmental Division and Meteorological Division under the Ministry of Natural Resources. This will assist Niue in having a more comprehensive approach to environmental management.

## Visibility

The project demonstrated collaboration and partnerships with the PACC and IWRM projects in awareness and communications initiatives. The PACC-media person trained by the project left the job and this resulted in a lack of capacity to implement the communications plan. The responsibility fell onto the national coordinator who did not have the required time/media skills to adequately implement the communications plan.

Nonetheless, the project resulted in high visibility of the funding bodies. The opening of the moulding facility resulted in significant media coverage and each water tank has stickers with the logos of the EU and other funding bodies.

There have been a variety of communication and visibility activities including media releases (e.g. SPC media release 2013 on the opening of the tank manufacturing facility), articles (e.g. 2014 SPREP Climate Change Matters: Vital Harbour Launch at SIDS 2014 featuring side event on partnership in Niue), fact sheets, case studies (e.g. 2015 compendium of case studies on climate and disaster resilient development has a case study on the Niue project: '*Manufacturing water tanks for water security*'[17]), video, and presentations at regional and international events (e.g. side event at the UN-SIDS event in Samoa).

Video (e.g. '*Rainwater capture and storage systems - Partnerships to strengthen Niue's water security*') was shown extensively at regional meetings, available on YouTube, and shown on television throughout the Pacific on the Pacific Way, and has been found to be one of the most useful forms of communicating project results and activities.

A national lessons learnt workshop (December 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.

## Best Practices & Recommendations

### Best practices

1. The project brought together a number of donors to fund a community-wide project, enabling efficiencies in procurement and implementation.

### Recommendations

1. Use the logical framework approach, in particular the problem analysis step, to clearly identify the core problem. This would assist in ensuring clarity of the project purpose (e.g. reduce pressure on groundwater vs DRM measure).
2. Establish multi-donor projects at the conceptualisation stage, so that all parties are able to contribute to the design, costing and implementation (including shared reporting arrangements).
3. Ensure there are sufficient staff in-country to implement projects.
4. Use behavioural change campaigns to shift behaviours and attitudes (e.g. maintenance of water tanks, reducing groundwater consumption).
5. Ensure regular water quality testing of rainwater harvesting systems.

[17] http://www.pacificdisaster.net/dox/case_studies_pacific.pdf