TERMINAL EVALUATION OF PACIFIC ADAPTATION TO CLIMATE CHANGE PROJECTS PACC AND PACC+

FINAL REPORT

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GEF Project ID:	PIMS 2162
UNDP Project ID:	PACC: 00063283 PACC+: 00079996
Countries:	Regional (Cooks Islands, Federated States o Micronesia, Samoa and Vanuatu, Fiji, Papua New Guinea, Palau and Solomon Islands, Marshall Islands, Nauru, Niue, Tonga, Tokelau and Tuvalu)
Region:	Pacific
Focal Area:	Climate change adaptation
Implementing Agency	UNDP
Implementing Partner:	SPREP
Evaluation period:	11/2014 – 01/2015

Acknowledgements

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EXECUTIVE SUMMARY

- **INTRODUCTION**

The Pacific Adaptation to Climate Change Project has been implemented in fourteen countries (Cooks Islands, Federated States of Micronesia, Samoa and Vanuatu, Fiji, Papua New Guinea, Palau and Solomon Islands, Marshall Islands, Nauru, Niue, Tonga, Tokelau and Tuvalu) for five and a half years. It has been managed by the Secretariat of the Pacific Regional Environment Programme (SPREP) and the United Nations Development Programme (UNDP) with funding from the Global Environment Fund (SCCF) and Ausaid. The project was formulated in 2007 to (i) address climate change already affecting Pacific nations, (ii) improve in-country coordination on climate change through mainstreaming and awareness raising and (iii) enhance the capacity of participating countries to link up with other nations as a strategy to disseminate successful approaches and methodologies instead of developing isolated interventions as had been mostly done prior to PACC.

The project was expected to achieve tree main results: (i) integrating climate change risk into relevant sectoral policies and strategies, (ii) develop demonstration adaptation measures with accompanying guidelines so as to provide information to decision takers, (iii) enhance the capacity of national and regional stakeholders through awareness raising. The initial baseline study remained mostly output oriented and was substantially delayed (±2 years) because of the difficulties into the initial contracting of country teams staff.

As a strategy to avoid resources dilution, 3 critical sectors for climate change were selected: water resources, food security and coastal management.

- **PROJECT SUMMARY TABLE**

Project Title:	Pacific Adaptation to Climate Change Project (PACC)			
GEF Project ID:	PIMS 2162		*at endorsement (Million US$)*	*at completion (Million US$)*
UNDP Project ID:	PACC: 00063283 PACC+: 00079996	GEF financing:	US$13.125million	US$13.125million
Country:	Regional	IA/EA own:	US$100,000	US$75,000
Region:	Pacific	Governments and SPREP:	US$ 500,000	US$ 375,000
Focal Area:	Climate change adaptation	Other (Government of Australia):	US$ 7.859 million	US$ 7.859 million
FA Objectives, (OP/SP):		Total co-financing:	US$ 44.284 (as per project document)	US$ 16.253million
Executing Agency:	SPREP	Total Project Cost:	US$ 65.868	US$ 37.687 million
Other Partners involved:	National governments	ProDoc Signature (date project began):		January 23, 2009
		(Operational) Closing Date:	Proposed: 31.12.2012	Actual: 31.12.2014

- **PROJECT'S FINDINGS**

Design:

The logic behind the design of the project was to crate at national and regional level mechanisms for learning and knowledge sharing on climate change. By focussing on 3 critical sectors, the project however

de facto limited its outreach and potential impact. This issue was partially acknowledged during implementation with more integrated cross-sectoral activities but overall, the national demonstration projects remained mostly centred on a single sector, which limited intersectional exchanges and knowledge sharing.

The project took into consideration several key lessons learned from previous interventions like the lack of financial resources and capacity of PICs and the inability to climate change interventions to be disseminated beyond research circles towards communities and governments for potential adoption.,

The initial logical frame was designed as a generic framework with most indicators output or sometimes result oriented. It was not designed to provide clear information to decision makers at outcome level, possibly because of the complexity of the intervention. The time lapse between initial project consultation and effective implementation was so long that priories changed over time and that remained a major issue for the project.

Because the whole concept of regional support on climate change to numerous SIDS was new, the approach to overall support and results' framework were revised over time to account for difficulties met during implementation and to reflect better the outcomes to achieve; the approach at first was top-down with guidance from SPREP as there was a clear lack of capacity of national project units. It substantially increased the workload of national coordinators that ultimately required training for management (see efficiency). Finally, a multiannual framework was designed and resulted in clearer orientation at national level for implementation.

A risk assessment was carried out initially but it appeared to be overoptimistic with (i) insufficient levels of co-financing of beneficiary countries (lower than expected commitments), (ii) limited local human resources capacity to implement the 3 pillars of the project and (iii) limited technical capacity of the project management unit to provide technical expertise / support to beneficiary countries. This was most detrimental for demonstration projects introducing innovative activities. It was assumed that through the dissemination of demonstration projects results and good practices (third PACC result), the project would foster replication and exchange of information both within countries between beneficiaries and between nations. There is little evidence that it did occur on its own; instead, the PACC+ was formulated just for that purpose, significantly enhancing the dissemination process of knowledge management, sharing and awareness raising on climate change.

The implementing agency (UNDP) had a significant comparative advantage in providing guidance (review of periodic reports & planning processes), managerial and financial (ATLAS system) support to the implementing partner (SPREP). The intervention proved to be highly complex with SPREP providing support to national teams that were to follow local administrative rules (e.g. procurement, staff contracting) and at the same time consolidating data from 15 different locations into a single reporting exercise to UNDP as per UN rules. This resulted in implementation delays cascading down to the delivery of activities.

Project implementation:

So as to keep SPREP updated of implementation and to facilitate the orientation of national coordinators, planning and budgets have been updated on a quarterly and annual basis since 2010. Since staff at national level was not familiar with project planning and logframe approach, trainings were organised and substantially improved project ownership by national teams. PACC+ was a welcomed additional support by accelerating the overall project implementation.

Through the development of specific and cross-sector activities, PACC sought numerous partnerships with international organisations and donors resulting successfully in the implementation of several activities like awareness raising, gender integration, cost-benefit-analysis… at regional level and with national institutions (ministries, private sector, semi-public authorities…) at country level for enhancing dissemination and awareness.

At initial stages, PACC funding mechanism was deemed not flexible enough for swift resource allocation, and combined with national coordinators knowledge gaps in management, resulted in substantial delays. The hiring of administrative assistants eased the workload on the national coordinators.

The redefinition of the M&E system after the mid-term review and subsequent strengthening of the

capacity of national coordinators enhanced substantially their capacity to monitor the project, albeit at a late stage during implementation.
In terms of finance, most resources were allocated to final beneficiaries through demonstration projects (outcome 2) and relatively little amounts for Governments to support institutional decision takers (outcomes 1 and 3). This approach was further reinforced through PACC+ with an enhanced focus on final beneficiaries; this resulted in Governments not fully investing themselves into the project. The project management costs are in line with other similar development interventions. The very slow delivery of results (9% in 2009) improved gradually over time (87% in 2014) through new innovative financial procedures that enabled the overcoming of administrative procedures that were cumbersome because of the complexity of the project. The rotation rate of national coordinators was unusually high evidencing some uneasiness in relation to the project workload, financial conditions and (apparent) lack of support in some beneficiary governmental institutions.
The initial project management unit (RPMU) had much difficulty in coping with the monitoring and reporting complexity and the technical expertise requirements of the project. Several solutions (in-house technical expertise, additional administrative and financial staff, roster of external consultants) were found but at a somewhat late stage during implementation to have an effective and substantial role during most of the project. Eventually, much technical support was provided to countries during the second half of the project, resulting in acceleration of project delivery rate.
With PACC's complexity possibly underestimated at project's start, UNDP had to provide substantial technical and administrative support to SPREP and to participating countries resulting in a confusion of roles from beneficiaries' viewpoint. UNDP's support to RPMU facilitated the review of activities, the appointment of coordinators, and reallocation of resources when relevant, etc. They were however the symptoms of lack of progress on the implementation side.

Project results:

On outcome 1: integration of climate change risks in policies & strategies:
Most countries have integrated or are finalising integration of climate change into relevant national / sectoral strategies and policies. It was most successful for the water sector; mixed results were seen for food security and coastal management initiatives struggled to mainstream climate change, both sectors because of limited policy expertise and project ownership. Gender was integrated into policies on climate change in several countries through external partnerships.
On outcome 2: demonstration measures to reduce vulnerability in coastal areas, on crop production and water supply, and related technical guidelines:
The demonstration projects focussing on the water sector reduced water insecurity through better catchment regularity and retention and create much awareness towards final beneficiaries; rainwater tanks and roof catchment systems were most successful with substantial increased water retention capacity; results were more mixed with solar purifiers, especially those targeting households.
The coastal management demonstration projects focussed on infrastructures for the protection of people and properties; most if not all demo projects increased protection but only the project in FSM was able to demonstrate effective protection through integrating climate projections and adaptation measures. Guidelines were not completed in all targeted countries though.
Food security demonstration projects focussing on adaptability and increased food productivity were successful in most countries but for PNG where there was an insufficient Governmental response to support PACC. Practical results (more food and more diverse food crops) were only emerging at the end of the project and several cropping seasons would be necessary to observe PACC results on communities. The most successful results were those initiatives focussing on saltwater/submerged crop varieties and targeting communities with a strong sense of ownership in PACC. Projects focussing on areas requiring highly skilled expertise and/or large infrastructures were those lagging behind or encountering difficulties.
On outcome 3: capacity to plan and respond to changes in climate change risks:
While little financial resources were devoted to communication and awareness raising, national coordinators were required to develop comprehensive community's strategies which proved to be a

challenge at national level. National communication plans were designed with mixed results – from a fully implemented strategy in FSM to half implemented plans in Tuvalu or even no activities in Palau due to lack of Government ownership.

Relevance:

PACC has been the first project to commit substantial resources to address climate change at regional level through climate change demonstration initiatives, mainstreaming, communication and awareness raising. This approach is highly relevant in the current context with increased risks related to climate change. The selection of the 3 sectors only (water, food security and coastal management) was quite limited but this was partially overcome in some countries during implementation with initiatives that embarked on a more integrated approach (e.g. ridge to reef). PACC supported climate change mainstreaming into government policies but there was little additional support to effectively carry out actions taken from those strategies (e.g. through national plans). The water sector demonstration projects were seen as critical given the scarcity of quality drinking water in most PICS, especially for atoll nations. Coastal management interventions were considered highly relevant for both atoll and high islands suffering from king tides, high-swell events as were food security initiatives focussing on land degradation and associated inundation risks.

Effectiveness and efficiency of national interventions:

Overall, the project 's efficiency has been low because of repeated implementation delays that also affected the number of beneficiaries; still, the project's approach and technical solutions that were proposed, were most effective to achieve its primary 3 outcomes.
In the water sector, there has been both an increase of quality and quantity of drinking water with some exceptions (e.g. Nauru) with awareness raising activities. The costs per m^3, households are unusually high for most infrastructures.
Coastal management interventions were highly effective resulting in increased movement of goods and persons (roads and harbours); costs were most often underestimated resulting in near-completion of planned activities or needs for additional financial resources; hence a relatively low efficiency. Seawalls were considered a cheap investment but their effectiveness against king tides and sea-swells remains to be seen.
Food security interventions are well adapted to increase crop production and productivity that impact the most climate change vulnerable people; the introduction of new farming methods that came with adequate technical support has been very effective (adapted crop varieties introduction, community lead dykes construction, bucket agriculture…). Government lead interventions were least effective requiring a lot of coordination with farmers.

Adaptive capacity and country ownership:

The project increased the adaptive capacity of the beneficiaries in all 3 sectors both through (i) technical solutions (e.g. solar purifiers, adapted crop varieties dissemination, calculators and CBA) and (ii) community awareness raising, resulting in finding alternative solutions to cope with climate change. The effects on institutions were mixed nonetheless; some governments fully took on-board the PACC approach (e.g. FSM, Fiji, Cook Island) with potential replication while others showed relatively little interest or did not use the resources as was initially planned with little Government ownership (e.g. Palau, PNG). Government ownership was evidenced by strong coordination capacity, involvement of technical ministries in planning and proposals for scaling up or replication. Final beneficiaries' ownership was reflected through local committees and adoption of new techniques. New promising tools and/or initiatives were designed / formulated (e.g. CBA, gender integration, adapted crop varieties adoption) but more engagement by governmental stakeholders would be required for effective dissemination.

Mainstreaming:

Gender mainstreaming has been systematised in PACC with both gender specific activities and the production of adapted communication materials and awareness raising methodologies PACC indirectly contributed to economic development and poverty alleviation through the development of infrastructures (wharf protection, roads upgrading, reclamation of inundated lands and increased crop productivity…). PACC contributed to natural disaster prevention through initiatives on coastal management, improved resilience of farmers in brackish areas with adapted varieties…).

Sustainability:

The sustainability of many demonstration projects – in particular for the water sector and for coastal management initiatives – was directly correlated with the degree of ownership of the installations and infrastructures by the beneficiaries (Government and/or communities). This has been enhanced through the production of technical guidelines. The adoption rate was key in determining the sustainability of food security related measures.
For the water sector, there was an overall strong sense of ownership at community level with resulting use of supported premises and infrastructures (water tanks, roof collection systems) or in some cases search of alternate solutions for measures not yet achieving planned results (e.g. reticulated systems). Coastal management infrastructures are being used but the development of fully operational maintenance mechanisms remains to be seen as I will depend in many cases of Government's own resources; efforts to raise awareness on alternative coastal management measures were not fully explored. The sustainability of food security interventions was not adequately ensured by project's end with many interventions still in early phases of development (PACC+) or yet to be fully implemented (e.g. drainage in Fiji). The main issue has been the implementation delays further exacerbated by the cropping cycle requirements, and the absence of a comprehensive exit strategy although at national level, there were intense discussions with both Government and communities on how to ensure the sustainability of project's results.

Evaluation Ratings:			
1. Monitoring and Evaluation	***rating***	**2. IA& EA Execution**	***rating***
M&E design at entry	S	Quality of UNDP Implementation	S
M&E Plan Implementation	S	Quality of Execution - Executing Agency (SPREP)	S
Overall quality of M&E	MS	Overall quality of Implementation / Execution	MS
3. Assessment of Outcomes	**rating**	**4. Sustainability**	**rating**
Relevance	R	Financial resources	ML
Effectiveness	S	Socio-political	L
Efficiency	S	Institutional framework and governance	ML
Overall Project Outcome Rating	S	Environmental	L
		Overall likelihood of sustainability	ML

Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution	***Sustainability ratings:***	***Relevance ratings***
6: Highly Satisfactory (HS): no shortcomings 5: Satisfactory (S): minor shortcomings 4: Moderately Satisfactory (MS) 3. Moderately Unsatisfactory (MU): significant shortcomings 2. Unsatisfactory (U): major problems 1. Highly Unsatisfactory (HU): severe problems	4. Likely (L): negligible risks to sustainability 3. Moderately Likely (ML): moderate risks 2. Moderately Unlikely (MU): significant risks 1. Unlikely (U): severe risks	2. Relevant (R) 1. Not relevant (NR) ***Impact Ratings:*** 3. Significant (S) 2. Minimal (M) 1. Negligible (N)
Additional ratings where relevant: Not Applicable (N/A) Unable to Assess (U/A		

Impact:

PACC's impact is more visible for outcomes 2 & 3 (demonstration projects and awareness raising). As for outcome 1 (mainstreaming), most countries did address climate change within policies and strategies but with unequal results: the impact of PACC o the water sector has been the increased access and availability of drinking water for residents – mainly atoll nations - during the dry season; coastal protection infrastructures resulted in increased safety of coastal areas and positive economic impact for wharfs rehabilitation and protection. The impact of demonstration projects on food security has been mixed within communities with some countries experiencing fast adoption of new varieties and cropping techniques and others adopting a more wait & see attitude because the demo projects were just being either initiated (PACC+) or finalised (PACC) due to long implementation delays that impacted on the planned cropping cycles of the project.

- **LESSONS LEARNED, RECOMMENDATIONS, BEST PRACTICES AND CONCLUSION**

Lessons learned:

On the design: (i) because PACC was amongst the first regional projects on climate change mainstreaming, the project design had to be as simple as possible for all participating PICs; still, by applying a generic project formula with limited ability to select the most appropriate responses (3 outcomes & 3 sectors), it resulted in asymmetric results with some countries faring much better than others because the project design and programming topics were more adapted to their specific context. There is a need to recognise differentiated contexts amongst PICs that require tailored responses for very similar climate change related issues. (ii) While a generic project design is valid, a bottom-up approach in responses design for regional / multi-country interventions should be investigated. (iii) Timing is the essence for effectiveness and there can be disconnections on the most appropriate responses when the design and actual implementation phases are far apart, hence the need to select the most appropriate measures for testing and potential dissemination at inception phase. (iv) Mainstreaming climate change into policies and strategies is only a first step and is successful if Governments can/are willing to allocate relevant human and financial resources for implementation; hence the need to support that stage as well either directly with funds (through or indirectly through added partnership and collaboration with other stakeholders). (V) Governmental capacity and empathy has been critical in the implementation of PACC; the project did not fare well where Governmental support was the weakest; this requires a careful assessment of national capacities. (VI) There has been several successful exchanges of experiences amongst the PICs (e.g. demo sites visits, water committees…); this practice should be more systematically carried out for future regional programmes.

On implementation: (i) it appeared that the complexity of PACC was underestimated with most direct stakeholders struggling to implement the project: there was initially an inadequate provision of managerial, technical and financial expertise resulting in implementation delays; future interventions for regional interventions will have to make provisions for enhancing the capacities of both beneficiaries and implementers. (ii) Most national coordinators did not combine both technical and managerial skills; this was an issue for national implementation; a closer integration within host institutions for similar interventions should be sought at inception stage for multi-country interventions. (iii) National coordination units had difficulties in raising PACC profile both within their host institutions and on the outside; this resulted in little leverage through PACC for added collaboration, partnerships to enhance the impact and potential sustainability of results.

On M&E: the governance system of PACC was an efficient mechanism to evidence lessons learned, implementation difficulties; this is why there were responses to improve all aspects of management and

M&E. It was critical in evidencing the initial weaknesses of M&E at national level and resulted in addressing that issue during PACC implementation.

Operational recommendations at national level:

1. *Cook Islands*: the Mangaia Coastal Management Plan should be used as a template for other communities for reference by National Environment Service and the Office of Climate Change; the demonstration guidelines should be redrafted in a more operational document and linked with legislation in the future; there should be more oversight at national level of climate change projects through the Climate Change Cook Islands and Ministry of Finance Aid Coordination Division; the Mangaia wharf should be included in the Infrastructure Cook Islands Business Plan 2015-16.
2. *Vanuatu*: infrastructures need to be completed to ensure impact as originally planned; the guide on climate proofing steep rural roads and community planning for road relocation needs to be completed.
3. *Samoa*: cross agency coordination must be improved through PACC LiRaS Manual distribution, role clarification of PACC stakeholders and review of the Coastal Infrastructure Management Strategy; future interventions must be subject to VA and CBA assessment and current site survey should be carried out to determine final sea wall heights; the technical guidelines should be completed by project's end; alternative coastal protection methods should be emphasized in the future.
4. *Federated States of Micronesia*: the demonstration and operational guidelines for KIRMA should be completed together with relevant on-the-job training to KIRMA; a road clearance plan should be established to monitor assets (roads and equipment).
5. *Fiji*: the drainage guidelines should be finalised through the contracting of a specialist and the project team mobilise the farmers to operationalise the drainage committee; reinforcement of creek banks should be considered where houses are at risks; a more sustainable mechanism to provide adapted seeds to farmers should be designed through differentiated basic and multiplication seeds by research and farmers.
6. *Solomon Islands*: NGOs should follow-up APCC results on isolated atolls and hybrid seeds use should be abandoned; community extension residents should be trained as an alternative to periodic / irregular Government staff visits; a quarantine system should be established to monitor planting material movements between islands.
7. *Palau*: upland agriculture should be enhanced through the use of organic fertilisation with awareness raising and model farms; relevant expertise should be provided (funds allowing) to enhance crablet productivity.
8. *Marshall Islands*: a metering system should be installed together with the identification of non-revenue water in the system; MWSC's institutional authority and capacity should be strengthened through policy development and capacity building activities.
9. *Nauru*: the solar water purifiers are not operational (poor installation, low-grade material, no monitoring or maintenance); an outside contractor should be hired to review all the systems, perform inspection and train a team to carry out the required activities. Demonstration systems should be installed within church or hospital premises and remove the non-operational household systems. Seawater reticulation systems should be considered for future interventions instead of solar water purifiers.
10. *Niue*: the rainwater catchment installation system should be finalised as planned.
11. *Tokelau*: community mainstreaming is a priority with the training of villagers on the water and sanitation plan, the climate change strategy, disaster risk reduction plan, and the gender and WASH guidelines; new plumbers should be trained for regular awareness raising.

12. *Tonga:* responsibilities are fragmented between stakeholders on the current water supply system; a more coordinated response among institutional stakeholders should be devised to support the VWC; a monitoring and observation system is required for maintenance of the current system and support should be provided for wastewater management.
13. *Tuvalu:* construction should be completed together with relevant trainings and surveys.

Recommendations at project level:

On the technical side:
(i) V&A and CBA should be systematic at project design; (ii) there is a need to look beyond adaptation measures and consider non-climate drivers behind exposure, vulnerability and risk; (iii) adequate documentation should be made available for other countries / stakeholders through dissemination; (iv) use of local human resources and on-the-job training should be prioritised to enhance ownership and empowerment so that sustainable local maintenance and knowledge transfer mechanisms are put in place; (v) the 'ridge to reef' concept should be considered more systematically for future project designs.

On mainstreaming and management:
(i) Local policy and institutional environment should be carried out prior to implementation so as to identify opportunities for policy mainstreaming; (ii) more proactive cross-agency oversight should be considered to enhance institutional coordination; (iii) future projects should keep emphasizing specific topics/domains of interventions but allow mechanisms for secondary support through other relevant sectors.

On partnership arrangements:
(i) Prior to project formulation, a comprehensive assessment of the comparative advantages of potential stakeholders is necessary so as to enhance potential partnerships; (ii) projects should be more aligned with national systems and interventions for ownership enhancement, taking into consideration institutional ethos; (iii) detailed planning and accompanying resources are required at project inception stage prior to implementation; (iv) communication and knowledge management should be adequately resourced so that efficient (national and regional level) communication strategies are devised; PMU should focus on the timeliness of project delivery through prioritisation of activities, the provision of adequate technical expertise.

Best practices:

Close engagement with state and national policy processes and local municipal councils are leading to legislative changes that incorporate CCA+DRR in development planning (FSM); designs based on CBA should become systematic for interventions focusing on climate change (FSM); the combination of different demonstration measures enhances the impact of a project (Fiji, Solomon Island, Palau); close cooperation with communities increased decisively ownership and empowerment for sustainable resource management and adaptation (Vanuatu).

Conclusion:

As a first experience of regional support on climate change adaptation, PACC adopted an innovative integrated approach with demonstration, mainstreaming and awareness raising. It came out to be a complex intervention due to the number of stakeholders and their widely different contexts. While the starting phase was problematic with unusual implementation delay, the delivery rate improved over time thanks to a strong governance system that fed back information to decision makers. The demonstration

measures were effective and has been viewed as a stepping stone to support Governments in supporting climate change measures on a more systematic basis. Finally, PACC managed to bring together isolated PICs that share common issues to find and exchange innovative adaptation solutions to climate change.

LIST OF ACRONYMS AND ABBREVIATIONS

C3D+	Climate Change Capacity Development project
FSM	Federated States of Micronesia
GCCA	Global Climate Change Alliance
GEF	Global Environment Fund
GIZ	Gesellschaft für Internationale Zusammenarbeit
ICCAI	International Climate Change Adaptation Initiative (from Ausaid)
IUCN	International Union for the Conservation of Nature
IWRM	Integrated Water Resource Management
LFA	Logical Framework Analysis
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
MPR	Multi-Partite Review
NGO	Non-Governmental Organisation
OEERC	Office of the Environment and Emergency Response Coordination
PACC	Pacific Adaptation to Climate Change (project)
PNG	Papua New Guinea
PIC	Pacific Island Country
PIFACC	Pacific Islands Framework for Action on Climate Change
PWD	Public Works Department
RMI-EPA	Marshall Islands Environment Protection Authority
RPMU	Regional Project Management Unit
SCCF	Special Climate Change Fund
SMART	Specific, Measurable, Achievable, Realistic and Timely.
SOPAC	South Pacific Applied Geoscience Commission
SPREP	Secretariat of the Pacific Regional Environment Programme
TA	Technical Assistance
TC	Technical Cooperation
ToRs	Terms of Reference
ToT	Training of Trainers
UNDP	United Nations Development Programme
UNITAR	Unite Nations Institute for Training and Research
WUTMI	Women United Together Marshall Islands

1. Introduction

1.1. Purpose of the evaluation

1. The objective of the terminal evaluation is to provide an external (independent) assessment of the project and provide relevant decision makers with sufficient information to make an independent assessment of the performance of the PACC and PACC+ projects financed with GEF/SCCF and Australian Government funds in relation to the achievement of the overall project goal: "increased capacity of the participating countries to adapt to climate change, including variability". This goal was to be achieved through 3 outcomes: (i) policy changes that deliver immediate vulnerability reduction benefits in context of emerging climate risks and (ii) the implementation of demonstration measures to reduce vulnerability in coastal areas (in Cooks Islands, Federated States of Micronesia, Samoa and Vanuatu) and crop production (in Fiji, Papua New Guinea, Palau and Solomon Islands) and in water management (in Nauru, Niue, Marshall Islands, Tonga, Tokelau and Tuvalu); and (iii) improved capacity to plan for and respond to changes in climate-related risks through technical assistance and regional cooperation. The implementation period ran from early 2009 until the end of 2014.

2. The Terms of Reference are presented in annex 1.

3. As per ToRs[1], the consultants will assess project against the criteria of relevance[2], effectiveness[3], efficiency[4], sustainability[5] and impact[6]. In addition and complimentary to this the evaluation will also pay particular attention to the following:
   - Strengths and weaknesses of the project design in relation to the degree of achievement of results
   - The management model, implementation and monitoring arrangements and their evolution over the course of the project
   - Project exit / sustainability strategy

   In addition, it will identify key lessons learnt, best practices and make practical recommendations for follow up.
   Ultimately, the results of the evaluation should support UNDP and SPREP for their future programming of new interventions on climate change adaptation.

1.2. Scope & Methodology

4. The original scope of the evaluation was defined as follows: on-site review in all project countries but Palau, Papua New-Guinea, Tokelau and Niue. To reduce the workload of the water sector specialist and increase the quality of his analysis, it was decided to reduce his country visits from 5 to 4, deleting the visit in Tuvalu. Phone interviews were held with four of the five countries not visited (Palau, Niue, Tokelau and Tuvalu).

[1] Terms Of Reference
[2] Extent to which the objectives of the project are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies
[3] Extent to which the project's objectives were achieved, taking into account their relative importance
[4] Measure of how economically resources/inputs (funds, expertise, time...) were converted to results
[5] Continuation of benefits from the project after completion and probability of continued long-term benefits
[6] Positive and negative, primary and secondary long-term effects produced by the project, directly or indirectly, intended or unintended

Country	Documentary review	In-country visit	Phone interviews
Cooks Islands	X	X	
Federated States of Micronesia	X	X	
Samoa	X	X	
Vanuatu	X	X	
Fiji	X	X	
Papua New Guinea	X		
Palau	X		X
Solomon Islands	X	X	
Nauru	X	X	
Niue	X		X
Marshall Islands	X	X	
Tonga	X	X	
Tokelau	X	X*	X
Tuvalu	X		X
*** Interview conducted at the Tokelau office in Samoa with project officials**			

Table 1: Scope of the evaluation

5. The evaluators used a combination of direct and indirect data acquisition techniques ranging from documentary review to focus groups and individual interviews. Most of the evaluation was spent on project sites and the main stakeholders were involved in the evaluation process. A documentary review of the project in all countries was carried out.

6. The evaluation methodology is detailed in Annex 8. The evaluation matrix with the main evaluation questions, indicators, sources of information and stakeholders to interview is located under Annex 5. The questionnaires (for stakeholders and beneficiaries of the interventions) are under Annex 6.

7. The main limitations of the evaluation were (i) the timing of the evaluation team arrival that never met together to discuss the methodology and (ii) the very small amount of time in each country with the UNDP striving for a review of as many countries as possible (11 out of 14 as per original ToRs) with the risk of not fully looking at the whole picture when assessing the results and impact of the project. This is why the team requested at the start of the evaluation the reduction of the number of visited countries. Some countries were evaluated based on distance interviews over the phone and literature review only. This might not reflect the actual situation at community level.

1.3. Structure of the evaluation report

The Evaluation Report has been structured as follows:

- *Executive summary*
  8. This chapter includes the main findings of the evaluation including ratings in terms of design, implementation, results, and also the recommendations and conclusions, in particular for future interventions related to climate change.

- Introduction
  9. The introduction includes a description of the purpose of the evaluation report and of its structure.

The evaluation methods are briefly described and the evaluation matrix that details the main questions, indicators and potential sources of information is also referenced, as are the main questionnaires for stakeholders and beneficiaries.
Finally, the chapter highlights the problems of evaluation and the approach in visiting participating countries.

- Project description and development context

10. The chapter aims to provide the action framework for the project, by describing its context, the problems that it was to address, the immediate and development objectives, baseline indicators and the main stakeholders at the time of formulation.

- Evaluation findings

11. As per ToRs, the evaluation reviewed the project design: this paragraph provides basic information on the project structure and stakeholders, a description of the main institutional stakeholders involved in implementing the project, including their role and responsibilities.
The logical framework including validity of indicators, assumptions and risks has been analysed and put into context as were the assumptions and risks. The linkages with other interventions and participation of stakeholders in the intervention were assessed. As the project has been implemented by UNDP, its comparative advantage was checked.

12. The subchapter on project implementation assesses the quality of management during the implementation of the project: it includes changes to the project design and project outputs during implementation, the partnership arrangements with relevant stakeholders involved in the country/region. It reviewed as well the M&E systems and their contribution to adaptive management for improved implementation. The financial aspects of the project were briefly scrutinized and the management quality of both the implementing and executing agencies were assessed.

13. The chapter on evaluation results reviews the project through the evaluation criteria: overall results, relevance, effectiveness & efficiency, country ownership, mainstreaming, sustainability and impact with an emphasis on the 3 sectors.

- Conclusions / lessons learned

14. The conclusions address the consistency between the actually achieved results – in-countries - and the initial objectives. The evaluation team estimated the degree of achieving the specific objectives of the project and the targets by correlating the objectives of the project, initial results and activities planned, and the actual results from the analysis performed.

15. The Evaluation team detailed the factors that contributed to the success or failure of the intervention for the entire project and within each country taking into account the efforts put in place by the stakeholders to correct and improve the project implementation
Finally the lessons learned are mentioned as a way to move forward for future programming.

2. Project description and development context

2.1. Project start and duration

17. The project is a response to the request from Pacific Islands' leaders for support to tackle the consequences of climate change in the region. The idea originated from discussions during the 14th SPREP Council Meeting and the Pacific Island Forum Leaders Meeting that took place in 2003 and 2004. UNDP submitted to GEF a concept note in 2005 and was awarded a Project Development Facility (PDF) grant. It took considerable time to prepare a coherent proposal taking into account the diverse and unique needs of the Pacific island nations. By early 2008, 13 countries (Cooks Islands, Federated States of Micronesia, Samoa, Vanuatu, Fiji, Papua New Guinea, Palau, Solomon Islands, Nauru, Niue, Marshall Islands, Tonga and Tuvalu) had been identified together with detailed potential proposals of interventions in each country. The 5 years' project document was designed in 2008 and by late 2008, the project was approved and initiated in January 2009 for an effective duration of 4 years (December 2012).

18. The project's 6-months inception phase (until September 2009) focused on recruitment but also on redesign of the PACC project taking into account the comparative advantage of UNDP and GEF. Therefore, changes were made to (i) reformulate the PACC project document into a capacity development and institutional strengthening type intervention, (ii) not focus prominently on infrastructures, (iii) support demonstration projects with an emphasis on capacity development activities. These changes in the project document required alignment and focus changes from participating countries that would be reflected in national reports, log frame, demonstration project proposals, etc.

19. By 2010, the PACC completion deadline was extended one year to December 2013 and again in 2012 to December 2014. By 2011, AusAid and UNDP signed an agreement to add funds to the PACC project through the "PACC+" initiative that would cover the original 13 countries plus Tokelau. Eventually, PACC+ was implemented in all PACC countries excluding Fiji, Marshall Islands, Papua-New Guinea and Palau. It supported the scaling-up of successful activities from PACC.
    Finally, by late 2014, the PACC+ component only was once again extended until June 2015 to enable selected countries to finalize their activities.
    The implementation period was extended from 48 months to 66 months (02/2009 – 06/2015) in addition to a preparation phase that lasted more than three years (2005-2009).

2.2. Problems that the project sought to address

20. By the early 2000s, climate change was already affecting the livelihoods of Pacific SIDS populations: more frequent and extreme events such as high rainfall, droughts, cyclone, storm surges coupled with inappropriate land use, overexploitation of resources, increasing urbanization and population were and still are resulting in economic disruption for low lying atolls that potentially will lead to population relocation and therefore social and cultural disruption.

21. At the time of project formulation in 2007/8, the region was characterized by limited national commitment and capacity to address climate change adaptation and disaster management due to insufficient awareness and limited financial resources diverted to other critical sectors (health, education, poverty reduction, etc.). Governments were up against difficulties associated with decision-making and coordination when dealing with climate change - at the time – acknowledged as a cross-sectoral issue. This further constrained capacity. There were also few examples of

successful demonstration interventions using innovative methods or approaches that could be replicated and serve as examples for further development at national or even regional level. Development initiatives focusing on climate change were rather isolated interventions responding successfully to a specific, local and immediate need / problem, but leaving little space for pooling knowledge and experience or adoption of successful measures (little outreach).This issue was recognized by PICs (e.g. through the 2005 Pacific Plan for Strengthening Regional Cooperation and Integration and the Pacific Island Framework of Action on Climate Change (PIFACC)) with the adoption of regional approaches as a way of addressing common problems, including climate change.

22. In that context, a regional intervention focusing on climate change adaptation was designed as a response to capacity weaknesses of PICs to mainstream climate change risks into policies and strategies so as to strengthen national and regional approaches to climate change and enabling easy resources earmarking. This would be based on successfully tested interventions that can be widely adopted and on an overall increasing of knowledge on climate change issues both at Government and local / community levels through various channels like education, communication or information sharing.

2.3. Immediate and development objectives of the project

23. The logic behind the project was to integrate long term climate change risks into development and resource management planning by (i) focusing on enhancing the resilience of current development activities to long term climate change, (ii) incorporating adaptation to climate-change risks and related vulnerabilities into existing institutional and decision-making processes ("mainstreaming") at both the community and national planning levels, (iii) recognizing the role of gender-sensitive approaches in enhancing communities' resilience, through community-based ("bottom-up") vulnerability assessment and participatory adaptation planning approaches, (iv) promoting real community engagement in the processes of improving capacity to deal with climate-related risks, (v) delivering tangible adaptation measures through practical demonstration at selected pilot sites, (vi) setting a foundation for a strategic approach to replicate and upscale adaptation a regional level.

24. This was streamlined into one main objective: 'reducing vulnerability and to increase adaptive capacity to the adverse effects of climate change in the water resources, food security and coastal management sectors for participating countries' with an emphasis on countries' capacity building to adapt to climate change, including variability, in these selected development sectors.

2.4. Baseline Indicators established

25. The baseline that was developed for the original logical framework was very loose in terms of indicators as the outputs and outcomes were generic to account for variability of results related to climate change adaptation and knowledge. It referred mainly to the number of 'products' (number of policies developed, elaboration or not of specific reports, number of measures demonstrated at community level, number of guidelines approved, etc.).

26. *A contrario*, the selection of baseline indicators for the demonstration projects was due to be more project specific for each country. Originally planned to be completed by the end of the inception phase and presented at the 'inception workshop'(07/2009), it took actually considerable time

before the sets of indicators for all demonstration projects were indeed formulated and validated (e.g. the 2011 country specific annual work plans mention baseline indicators).The reason might be that many countries did not have national project management units established nor the project coordinators on board to focus on identifying, developing and setting indicators. Existing officers were either CEOs, ACEOs, other projects officers that were overloaded with their regular program work.

2.5. Main stakeholders

27. UNDP is the GEF implementing agency for the PACC project; it provided assistance to the Regional Technical Agency in providing technical and managerial backstopping, identifying recurrent and/or systemic issues, and reporting.

28. SPREP:
    The institution is the Regional Technical Agency or UNDP's implementing partner and lead agency in the region for coordinating climate change related interventions. It has been responsible for providing both administrative and technical support to each national executing agency in all 14 countries and their respective PMUs, using its own resources and contracting inputs from other sources.

29. Governments are both beneficiaries and implementers of the PACC project: their effective participation is critical as (i) PACC national coordinators are most often located within Government departments and require their support, (ii) they are knowledge recipients for policy making and strategy elaboration (outcome 2 & 3), (iii) project implementation is carried out by line ministries and funds delivery uses government procedures to avoid extra project specific implementing structures.

30. Local communities are the main beneficiaries of the demonstration projects (outcome 2); they ranged from village communities with provincial and/or local administrations to ad-hoc settlements. The effective participation of local communities at both identification and implementation stages is crucial for the success or failure of demonstration project activities; indeed, this can be measured by the rate of adoption and/or degrees of ownership / empowerment of project results.

31. In addition to the implementing partner (SPREP) and implementing agency (UNDP), and beneficiaries, the main project stakeholders identified during the inception phase whose cooperation was deemed critical at the time, were the following:
    (i) University of Hawaii – Hazards &Climate Programme, for their potential contribution on climate change socioeconomics, especially in the Northern Pacific
    (ii) ICCAI that provides assistance to PICs in order to adapt to climate change impacts, in particular for elaborating climate projections and train relevant beneficiaries
    (iii) IUCN that mobilizes research for measuring the impact of climate change on biodiversity as a strategy to propose conservation and management solutions
    (iv) SOPAC that provides expertise on integrating DRM and climate change into sectoral policies and technical advice on land and water related issues through the Integrated Water Resources Management (IWRM) regional project.
    (v) SPC for its potential contribution through technical assistance as it has dedicated expertise in all three PACC sectors with an emphasis on land resources and agriculture

(vi) USP that deals with capacity building and has experience in collaborating with the Regional Technical Agency (SPREP) and other climate change interventions like GCCA

(vii) UNITAR: provides assistance to SPREP in research and training to identify, develop, test and apply new tools and methods so as to enhance capacities needed to deal with a future of increasing climatic uncertainty.

32. Other stakeholders came in at a later stage during implementation like GIZ for its support to SPC through the project 'Coping with Climate Change in the Pacific Island Region' and its collaboration on specific PACC activities like gender and, cost-benefit analysis

2.6. Expected Results

33. The project was designed with a view to achieve 3 main outcomes:

1. **Integration of climate change risk into national and sectoral polices, strategies and related instruments**. This was to be achieved through reviewing existing, or developing new frameworks carry out various activities like developing regionally tailored tools and methodologies (e.g. mainstreaming guide to integrate climate change risks and resilience into policies / strategies, vulnerability assessment trainings, cost benefit analysis) and supporting the elaboration of sectoral policies (coastal, water and agriculture).

2. **Implement on-the-ground** demonstration **adaptation measures in selected pilot communities, and develop technical guidelines based on them**. The demonstration process was to include vulnerability assessments, identification and evaluation of adaptation options and the implementation and monitoring of selected measures. The demonstration measures would be documented (identification, formulation, implementation monitoring and follow-up) and guides produced so that they can be replicated in other locations. This methodology would feed-in institutional decision makers with relevant information for policy making through a bottom-up approach and then a top-down approach when replicating successful measures.

3. **Systematically build capacity of national stakeholders through a set of regional and national level training, knowledge management and communication actions**. This outcome would be achieved by referencing regional expertise so that national stakeholders would tap in this expertise for direct technical assistance ('backstopping') either for policy mainstreaming (outcome 1) or demonstration projects (outcome 2). The project would also support the divulgation of project results and inform relevant stakeholders through an adequate communication strategy.

34. Three priority development sectors were pre-selected at formulation stage: Water Resources, Food Security and Coastal Management. The choice of sectors was at the time the conclusion reached by the PDF formulation team based through documentary review and meetings.

3. Findings

3.1. Project design

3.1.1. Analysis of logical framework matrix /Results Framework

35. The original 2008 log frame reflects logically the strategy of the PACC project that was to provide a learning and knowledge-sharing mechanism that would foster and strengthen climate change adaptation at (i) local level through demonstration measures, (ii) nationally by mainstreaming climate change considerations into governance systems and (iii) regionally by divulging knowledge, lessons learned and successful stories for further development or integration in other countries and/or communities. These three levels were turned into the three main outcomes of the intervention. This vertical approach is holistic because it takes into account the different kinds of stakeholders and beneficiaries.

    In terms of sectors, water resources, food security and coastal management were selected for support. This selection appeared highly relevant at the time, but experiences and results suggest that as the project progressed, changes in the design leaned more towards a multifaceted and integrated approach. The selection process nonetheless led to important sectors such as energy, health, education and tourism being left out. What was lacking from the sectors' selection was integration: climate change is impact many different sectors even at community level; therefore, singling out one sector only per country and demonstration measure is not the most efficient strategy to combat climate change: demonstration measures can be maladaptive if adaptation interventions do not consider multi-sectoral impacts and causes of current vulnerabilities.

36. The 2008 logical framework provides a common structure and hierarchy of objectives for all participating countries. As it is generic in design, the indicators should have been formulated in a way to provide information as to whether the intervention is having any impact at outcome level; this would have required the formulation of impact indicators; instead, the vast majority of the indicators are output or at most results oriented: they are measurable, attainable, time bound (end of the project). They are however neither specific nor relevant and cannot inform decision makers as to whether the project did increase beneficiary capacity to adapt to climate change

37. The project strategy was devised in 2010 with a revised action work plan and a new result framework; additional activities and outputs were added; this revised version was supposed to reflect better how to achieve the project outcomes. This top-down approach was chosen possibly because of the lack of capacity building (for e.g. project management trainings, UNDP AWP and RBM frameworks) provided to the countries to effectively implement the project with a generic log frame. Interviews showed that it increased complexity of implementation for some of the national coordinators. An overall Multi-year Work Plan was prepared with streamlined structure of regional and national outputs and generic set of activities and corresponding time schedules. This was specified and adopted by each country along a harmonized framework. This was a major undertaking supported by SPREP/RPMU and UNDP and set a consistent framework for work planning and related M&E actions. An intervention with the 2013 M&E support and national level LFA has assisted national coordinators to monitor the progress.

    When dealing with multi-country interventions, the programme-level log frame can remain relatively generic (with impact indicators as mentioned above) and the emphasis should be put on designing a proper / tailored result framework at country level that will serve the actual implementers of the project. This was considered with the training of national coordinators in log frame analysis, it resulted in a bottom-up approach with country specific result frameworks feeding into a generic project log frame.

3.1.2. Assumptions and Risks

38. The original log frame identified different types of risks (political, technical, climate related…), many of which were related to the actual participation of stakeholders.

Some risks were somewhat overlooked with negative consequences on the implementation of the project:

- Insufficient level of co-financing: the original financial commitments of participating countries (identified as early as 2006 during the formulation mission) were not followed-up and adapted (co-financing was not honoured by some countries, reflecting a lack of ownership); with such a long formulation and inception phase (4-5 years), commitments were bound to change over time and it affected negatively the outcomes of the projects that were not substantially adapted since inception ; examples: low co-financing by the Solomon Government resulting in little participation of Government technical staff in activities, lack of co-financing for several infrastructures related to coastal management (FSM road; Vanuatu wharf; Cook Islands wharf); lack of co-financing in water sector (i.e. Nauru salt water reticulation system)
- Insufficient country management capacity: this was somewhat overlooked at formulation stage but taken into account at inception level with several trainings that took place to enhance the capacity of national coordinators to effectively manage their country intervention; these efforts can only be partly successful as national coordinators had to deal with both project and line ministries financial and reporting procedures.
- Limited technical capacity at RPMU and more generally for identified sectors at country level should have been identified earlier on, although addressed with a "register of experts" late during implementation. There was little information / knowledge / appreciation from national coordinators as to how to access this database and for what purpose. Nauru is a good example here with technical supervision on the installation of solar water purifier and due to the lack of technical and social intervention, most of the units are not working at present.

3.1.3. Lessons from other relevant projects:

39. The PACC project at design stage incorporated several key lessons learned from other climate change related interventions; these lessons learned contributed to the elaboration of relevant activities, outputs or outcomes:

- There was limited commitment to invest in CC measures by PICs: there was some awareness (to be strengthened) but limited financial resources within PICs; therefore, PACC responded with communication and divulgation activities (outcome 3) and CC mainstreaming into Governments (outcome 1)
- Climate change research results might be divulged but measures are actually rarely adopted because risk/vulnerability assessment are not carried out: PACC responded with CBA training (outcome 3) and systematic vulnerability assessment (outcome 2); in addition, interventions do not move forward from applied research to actual demonstration project which sole objective is to convince potential buyers of the newly developed measures (at local, national and regional levels). PACC addressed that issue.

In that sense, PACC was at the time a ground-breaking intervention that adopted both a bottom-up and top-down approach for enhancing knowledge among CC stakeholders.

3.1.4. Planned stakeholders' participation

40. Given the length of time (> 3 years) that elapsed between the original consultations and the

effective implementation in 2010, many priorities had changed for stakeholders; this was particularly the case for project beneficiaries (e.g. land drainage in Fiji to enhance food security, mismanagement within Tonga communities on water meters - the community survey was not covered properly and distribution was mismanaged as some household received 2 or more meters whereas some got nothing. This delayed the operationalization of the system).

The inception phase was an opportunity to review all the needs and requirements. It was viewed by SPREP/UNDP as an opportunity for stakeholders to strengthen the overall project design. As it was country driven, it was a lengthy process to establish sound NPMUs and SCs. This largely stems from the PACCs pioneering role. It did not encourage project ownership by national steering committees resulting in poor accountability, reporting and cross-agency coordination at national level. Consequently, national coordinators were overwhelmed with tasks and did not receive sectoral and/or hierarchical support to facilitate PACC implementation. Hence a very high turn-over of national coordinators in the project. The technical advisory committee was not effective in some countries (e.g. Nauru).

3.1.5. Replication approach

41. The logic behind the demonstration projects was that successful measures would benefit communities through reduced vulnerability and that these would feed into the development of strategies for identifying larger scale investment opportunities from other stakeholders (e.g. donors, multilateral banks), hence positioning PACC as the lead intervention from which other stakeholders would pick up the most relevant methodologies, measures… for scaling-up. This partly held true with the implementation of PACC+ dedicated exclusively for scaling-up successful measures and associations of PACC with other stakeholders to replicate successful measures.

3.1.6. UNDP's comparative advantage

42. The roles attributed to the implementing agency were the following:
    (i) Review the annual work plans submitted by the implementing partner, verify coherence with the actual project document, endorse them and release funds accordingly
    (ii) Review the (consolidated) narrative and financial periodic reports
    (iii) Update the ATLAS system using the FACE forms and generate the combined delivery reports.

43. In addition, UNDP was to provide backstopping support to the implementing partner (technical / administrative / financial / managerial) human resources from its Regional office in Bangkok, should there be a need / request from the implementing partner.

    By project start, there were substantial implementation delays due to the difficulties met by national coordinators that had to conform to their line ministries procedures on procurement, funds access through Ministries of Finance and to PACC Project's reporting requirement. The project's complexity was also new for SPREP with RPMU unable to comply with UNDP's reporting and financial procedures. The major difficulty that SPREP experienced was the seemingly impossible task of appropriating multiple projects within the PACC (15 projects total) into a single executed project requirement. This resulted in substantial delays in funds releases. UNDP and SPREP worked closely together in identifying innovative ways of mainstreaming reporting, financial and administrative requirements in order to comply with reporting quality and timing criteria of UNDP's reporting and financial procedures.

3.2. Project implementation

3.2.1. Adaptive management

44. The 2008 regional log frame was adapted in 2009, 2010 and 2014 with added outputs. However, these modifications were minor in nature and did not significantly alter or result in updating of country plans and budgets that remained as per originally agreed upon in 2006 (hence outdated for many of them).The project, however, chose to update its plans and budgets both annually and quarterly since 2010. Most countries, as a result, incorporated and updated log frame information such as outcome and output indicators, targets and baselines from 2010 onwards within these annual and quarterly work plans. Country specific log frames were only developed from the 2012 MPR meeting onwards. The regional log frame was updated in 2014 through a refresher training that led to refined outputs and monitoring features. The project coordinators improved ownership of the project log frames from 2012 onwards.

45. If not multi-sectoral, several projects were enhanced with other activities not initially contemplated. These complemented the original demonstration projects for added impact (e.g. in Fiji and Solomon islands, crop applied research activities were added to the original PACC activities).

46. The arrival of additional funding through PACC+ was a major improvement of the PACC project because it contributed to accelerating the overall implementation and eventually exposing the most visible project results (demonstration). The log frame was amended through the addition of PACC+ targets and outputs but it did not alter the outcomes, resulting in either an additional layer or reduced number of outputs for the project. One significant change was the inclusion of the gender aspect in the elaboration of technical guidelines (under outcome 2).

3.2.2. Partnership arrangements

47. PACC has been effective at creating successful partnerships in order to add impact and/or increase outreach; PACC sought donor cooperation for
    - Cost-benefit-Analysis with SPC, GIZ and New-Zealand Aid, PIFS, USAID
    - Gender integration into CC interventions / measures ('gender toolkit') with GIZ, SPC, UNDP Pacific Centre, UN Women
    - Awareness creation on CC under school programs in Fiji with GIZ, SPC
    - Enhancing water security through better water management with IWRM (e.g. in Nauru, Niue, Marshall Islands and Tuvalu)

    Partnerships at country level were numerous and included the following:
    - Cook Island: Institution of Professional Engineers, Climate Change Division, Mangaia Aronga Mana, Mangaia Island Government, Ministry of Internal Affairs
    - Tuvalu: TANGO Project, Lofeagai Community, Red Cross Society, Government (Disaster Officer, MET Office, PWD Water & Environment Office)
    - Fiji: CSO/NGOs (PCDF, EEZ, USP), District Offices, Government Ministries (Education, Health, Rural Development, Forestry and Fisheries)
    - FSM: Kosrae a national Government, NGO's (women, youth, church groups), MCT, IOM,USGS, UH PREL, USFS
    - Nauru: CBOs, Division of Environment, Water Technical Working Group, Climate Change Office, NUC, NRC, Statistics, NDRM Unit, Health, PAD unit

- Niue: Government, GCCA, PSIS, Niue Water Steering Committee (NWSC), Department of Environment & Water Division of PWD Village Councils (VC) and communities, NGOs (e.g. Niue council of women, Niue council of churches)
- Palau: Chamber of Commerce), GEF SGP, SEDREA, GCCA–PSIS, NCD (health), disaster risk, SLM, CC
- PNG: CSO/NGOS (e.g. PNG Eco-forestry Forum), Government (OCCD, Land Department, DEC, Milne Bay provincial government, Mineral Resources Authority, private sector (e.g. BNBM. KKKinston, Monier Ltd, Southern Cross, Central Water Drillers
- RMI: Jaluit, Wotho, Mejit and Likiep atoll communities & local government, Chamber of commerce, CMI Land Grant, EPA, MWSC, WUTMI, PREL, Government (health, internal affairs, resources & development & education, youth), Uniting church.
- Samoa: Government (LTA, MWCSD, MoF, SROS) and Internal MNRE divisions – WRD, EC, LMD, MET, NGOs (SUNGO) and village communities
- Solomon Island: Government (Environment, Climate Change, Disaster Management and Meteorology, Agriculture & Livestock, ACOM, Infrastructure, Development Planning & Aid Coordination, provinces), Red Cross, communities, provate sector (e.g. Shipping Services Company), NARI Projects, Adaptation Fund Project (SWOCK)
- Tokelau: village Taupulega, health & transport department, SPC, SOPAC
- Vanuatu: CSOs/NGOs, Government (province, Vanuatu television and broadcasting corporation, fisheries, forestry, agriculture, women's affairs), Epi island communities, private sector (e.g. hardware suppliers & shipping companies), PACSAP Adaptation Project, Vanuatu Coastal Adaptation Project - UNDP

48. Indirectly, these activities contributed to spread and increase awareness of PACC results both nationally and at regional level.

3.2.3. Feedback from M&E activities used for adaptive management

49. Discussions with the national coordinators showed that PACC was not flexible enough in terms of resources allocation to M&E and it was not well executed early in the project. In addition, national coordinators had to cover both the technical and administrative aspects of PACC in their respective countries, which did not allow sufficient time to concentrate on M&E and reporting. This improved after the hiring of administrative assistants to national coordinators in a number of countries after the mid-term review in 2012. During the last year of the project, the M&E framework was satisfactory but countries requested M&E training at the beginning of the project.

50. The mid-term evaluation evidenced the need to overhaul entirely the M&E system and this resulted in (re-)design of country level log frames and M&E frameworks as most national stakeholders had little knowledge on how to follow-up indicators and/or reformulate these into SMART indicators; the adoption of M&E frameworks at country level enhanced the capacity of national coordinators and line ministries to monitor PACC progress ; this shortcoming was recognized only very late during implementation with a comprehensive training workshop in early 2014 on M&E, log frames and on monitoring tools and communication. National coordinators acknowledged that it substantially improved their capacity to monitor the project. It should however have occurred at the beginning of the project. The allocation for at least two staff in national PMUs - one project coordinator and one admin assistant - would have greatly improved national capacity to monitor and evaluate progress.

3.2.4. Project Finance

51. PACC project was financed through GEF with 13.125M$ and from 2011 on through AusAid under 'PACC+' with 7.859M$. Budget review shows that there are somewhat resources allocation imbalances between outcomes. The logic behind the PACC was to increase capacity through a bottom-up approach with demonstration projects (outcome 2) and top-down approach to inform decision makers to effectively respond to climate change threats (outcome 1 & 3). A significant amount of resources was allocated for the final beneficiaries (half the budget for demonstration measures) and much fewer resources to Governments to enhance their capacity (around a quarter of the budget). Through PACC+, stakeholders took on the challenge to focus more on ground activities for replication and empowering beneficiaries rather than capacity building activities at government level. This resulted in line ministries not fully investing themselves into PACC (e.g. by allocating own resources or through external donor fundraising) at least until the emergence of successful results from demonstration projects although PACC tried to align resources with other resource mobilization opportunities (example 1: in Niue, PACC and PACC+ combined resources with GCCA to provide country-wide water tanks ; example 2: in FSM, PACC team prepared a follow-up proposal for Adaptation Fund with SPREP).That could become an issue at project's closure with governments not owning project's results if demonstration measures are not completed and validated by project's end (e.g. by the time of the terminal evaluation, crop research activities at farm level in Fiji and Palau have only produced preliminary results and would have required extension for several years to fully appreciate tolerant planting materials for distribution).

	2009	2010	2011	2012		2013		2014		Total		%
	GEF	GEF	GEF	GEF	AUSAID	GEF	AUSAID	GEF	AUSAID	GEF	AUSAID	
Outcome 1 Policy changes to deliver immediate vulnerability	347.265	112.536	458.809	242.580		61.297		26.243		1.248.730		7
Outcome 2 Demonstration measures to reduce vulnerability	311.649	275.312	1.446.529	1.795.695	610.678	1.039.276	2.154.713	460.220	1.940.977	5.328.681	4.706.368	56
Outcome 3 Capacity to plan for and respond to changes in climate	-	270.804	1.124.323	812.002	118.506	341.710	346.374	146.232	676.762	2.695.071	1.141.641	21
Outcome 4 Project Management	468.513	168.497	390.866		640.893		952.017		311.129		2.931.915	16
Overall Total ($)	**1.127.427**	827.149	3.420.528		4.220.353		4.895.387		3.561.562		18.052.407	100

Table 2: PACC budget per outcome

(Source: SPREP)

52. The 16% project management costs (see Table 2) are in line with other development interventions and could be considered in the lower end given the complexity of this multi-layered project (more around 20-25% for complex interventions). This figure however does not account for national representatives' attendance at annual reviews (from national project allocations) nor currency conversion fees.

53. As mentioned previously, there were significant financial delays until 2013 that slowed down project implementation (at some point to a standstill) in all sectors. By that time however, innovative but more complex financial procedures had been found by UNDP and RPMU through the recruitment of a financial expert to comply with UNDP's constraints for funds releases in addition

to application of direct payment: fund transfers between countries were effected so that countries could request additional funds once committed budgets are above UNDP's procedural threshold (80%). This enabled countries to implement activities at their own pace and somewhat accelerated the overall implementation rate of PACC.

	2009	2010	2011	2012	2013	(mid) 2014	TOTAL
Overall Total (in $) (total = 20.120.000)	1.127.000	827.000	3.423.000	4.236.000	4.893.000	3.128.000	17.635.000
Delivery Target Rate per Year (in %)	17	33	50	67	83	92	92
Accumulated delivery rate per year against total programming (in %) (total = 20.120.000)	9	15	41	48	73	87	87

Table 3: Performance against overall target

(Source: UNDP)

The overall project efficiency ("delivery target rate per year" within Table 3) has increased overtime from less than 20% of funds committed by year 1 to over 90%, only by project's end, evidencing the slow progress of RPMU taking into consideration project complexity and challenges both at national and regional level at the beginning stage of the project towards speeding up the implementation of the project at the later stages of the project (late start of project, delayed recruitment of national coordinators and high rotation afterwards, increasing national level support…). The accumulated yearly delivery rate increased over time but a slower pace because of PACC+ that as an add-on of PACC did experience implementation issues at its start in mid-2011.

54. The rotation of national coordinators has been unusually high for a project: 3 coordinators out of 14 remained at their post during the whole project duration; for some countries, over 4 coordinators have succeeded one another (around 1/year).This is a clear indication of job responsibilities and working intensity being too high in relation to financial conditions and in some cases lack of support of line ministries resulting in discouragement and therefore leading coordinators for other more promising opportunities (better pay elsewhere, attracting scholarships…).

3.2.5. Monitoring and evaluation

55. *M&E at entry*: according to the 2008 project document, the implementing agency, UNDP is in charge of M&E. The original M&E plan consisted of several standard activities (inception phase, review of indicators, audit, periodic reporting and meetings and evaluation) that were followed by the stakeholders. This plan did enable RPMU and national stakeholders to monitor progress of activities but not of outcomes. This inability to monitor progress of outcomes was also due to the initial log frame design and definition of baseline that did not allow effective monitoring of results (the project log frame was generic and there were no national log frames at the start of the programme) (see paragraph 36).

56. The monitoring of outcomes, however, was emphasized heavily in the annual project implementation review (APIR) reporting requirement of GEF. This allowed both the implementing agency (UNDP) and the implementing partner (SPREP) to discuss and rate the level of achievement of each of the outcomes every year since 2012. The annual multipartite review (MPR) meetings served as one of the key monitoring activities that allowed all parties to monitor progress of the outcomes, outputs and activities in one. The APIR was presented at these meetings and results presented to the board with key recommendations for further actions on achieving the outcomes.

Given the slow start-up of the project in 2010/11, the *M&E implementation plan* was reviewed; it resulted in national coordinators' trainings and subsequently improved monitoring of results as can be seen in the latest 2014 MPRs.

The *overall M&E* is satisfactory given that the design was adequate but the actual implementation required extensive improvements that did result in good monitoring of results by the national coordinators.

RATING M&E at entry: Satisfactory

RATING M&E implementation plan: Satisfactory (when updated; poor at project's start)

RATING overall M&E: Satisfactory (by project's end)

3.2.6. UNDP & Implementing Partner implementation, execution, coordination & operational issues

Quality of SPREP / RPMU execution

57. RPMU within SPREP consisted of a Regional Project Manager and a Project Office at the programme's start. A Finance and Operations Officer was added later; their responsibilities were providing project management oversight, through technical and operational advisory support. This included collecting, reviewing, and rewriting of narrative and financial information from national coordinators for consolidation and the production of (quarterly, semi-annual and annual) progress reports, statements of assets and equipment. Requests of specialised technical assistance from national coordinators and PACC line ministries were met either through external consultants or through SPREP in-house staff that included specialists from the Climate Change Division. Either way, the approach was not flexible enough to provide swift responses to national coordinators: consultants' responsibilities were limited to their ToRs and timeframes, and in-house staff was not dedicated exclusively to PACC. Technical assistance provided to all countries faced a number of technical and operational challenges that hindered the ability to deliver in timely fashion and impacted the efficient implementation of the interventions (example 1: NIWA reports in Fiji were never handed over due to difficulties into collecting local information, resulting in a near complete stop of demonstration project for months; example 2: only one (Cook Islands) of the four coastal countries received additional technical engineering support to integrate CCA before the design and implementation of adaptation measures; example 3: the design and installation of solar water purifier in Nauru were inadequate and there was no follow-up). It was noted that the provision of technical assistance by the experts and the RPMU however became more efficient and effective following the mid-term evaluation period of the project.

58. A register of experts long discussed was introduced too late during implementation to give substantive advice as most activities were already underway and national coordinators did not see the usefulness of such resources at that stage of project implementation; as a result, by project's closing stage, several critical activities important for divulgation (technical guidelines) had only been drafted for the remaining countries. These included coastal infrastructures countries (Samoa, FSM, Vanuatu, Cook Islands), Fiji and Solomon Islands for food security countries. Should the register be maintained and improved by SPREP, it might become a critical source of expertise in the region on CC and an important lesson for the development of the Regional Technical Support Mechanism (RTSM).

59. Advisors on resilient infrastructure, coastal processes, water management and agriculture/food security could have been procured from the beginning of PACC and been deployed at RPMU's premises to provide support to countries on a needs basis. This did not happen because it was not

identified as an issue during the inception phase and as a result no funds had been allocated for that purpose within PACC's budget and budget revisions.

60. The lack of capacity of both national coordinators and RPMU combined with the lack of flexibility in UNDP's financial and reporting procedures and recurrent changes of reporting formats resulted in substantial funding delays that halted the project on some occasions; there were efforts (ex1. standard Q reporting and advance disbursement timeline from 2010 onwards ; ex2: contracting a high level operational specialist in 2010 that resulted in the drafting of a guide on Operations and administrative procedures) to simplify and streamline WP, reporting and financial procedures, facilitated by UNDP and jointly with RPMU and NPMUs. However, the situation was solved in 2013 only with the recruitment of a financial specialist within SPREP dedicated to PACC; all these managerial and administrative issues diverted line ministries and national coordinators from focusing on the essential and more substantive outcomes on the ground. The records note the RPMU had requested a dedicated finance officer since 2011 to address the lack of capacity, supported by audit recommendations but there was no Board agreement on the issue until 2013.

61. Advisors on all sectors, including advisors on knowledge management, cost benefit analysis, and monitoring and evaluation were procured, however, into the latter half of the project period and were deployed directly to countries that needed the support. This seemed to be evidence of the new structural changes within the RPMU with the recommended financial specialist on board helping to remediate the lack of capacity within RPMU. Technical reviews of adaptation options, technical designs evaluating sustainability, effectiveness of the options demonstrated were carried out as a result of the advice and guidance of the RPMU. In view of the early years of the project with the lack of capacity built within RPMU, it seems that much of the adaptive management within the RPMU to address the bottlenecks accelerated in 2013 and this is well correlated by their performance to meet the project targets as planned (see Table 3).

62. The RPMU itself built capacity on gender mainstreaming into climate change activities of the project by calling for a gender assessment of the PACC project. It trained the Regional Project Officer and built his capacity as a Gender & Climate Change Trainer and advocator. This capability within the RPMU was put to immediate use, and provided the much needed technical, advisory and training support to coordinators; PACC project partners such as GIZ, SPC; regional partners (Pacific Waste & Water Association) and beneficiaries on the ground (for example the island council and island communities of Mangaia Island, Cook Islands). The RPMU incorporated first hand gender and climate change case studies in the Pacific Gender & Climate Change Toolkit modules on food security, agriculture, water and coastal sectors.

63. The capacity of RPMU to coordinate activities to project's end should have been identified as a key issue that requires close monitoring and systematic support from UNDP and the Board. This is to ensure the RPMU is in a position to successfully close the project with countries and handover any outstanding implementation, monitoring and maintenance program and activities to government partners in countries. With the regional project manager having resigned (January 2014), coupled with many of the country project coordinators leaving as well for both personal (further studies) and professional (other jobs) reasons over the course of 2014, the RPMU is once again facing capacity constraints to safely and successfully complete the project. The increasing production, however, of planned technical guidelines, and continued technical and advisory support on knowledge management, timely monitoring and evaluation, and continued project management support still very active from the RPMU is evidenced in the current RPMU team. This is coupled with support from the CCD team of SPREP and UNDP programme team. All seem to suggest capacity issues are kept at bay and risks are low. This is important at this closing stage of the project until project's end in June 2015.

RATING: Satisfactory (by project's end) for SPREP / RPMU

Quality of UNDP implementation

64. The capacity of both UNDP and SPREP to provide technical and managerial backstopping to RPMU and national coordinators should have been clarified explicitly right at project start, with gaps identified and strategies to fill those gaps acted on at regional level early on.

    The complexity of PACC remained a challenge for both UNDP & SPREP for most of the project duration. UNDP provided support (through its fee recovery) to SPREP in the definition of multi-year and annual work plans, the revision of narrative and financial reports, payment and finance, recruitment of experts, documentation and archives, etc. All these activities should have been the sole responsibility of SPREP and diverted UNDP's resources from its core responsibilities as the GEF Implementing Agency.

    The lack of RPMU capacity meant UNDP had to assist SPREP and RPMU to provide further support directly to participating countries, hence adding confusion about the roles and responsibilities of each stakeholder.

65. UNDP supported RPMU's leading to the review of activities' backlogging in several countries with resulting reallocation of resources to other countries (e.g. PNG lost PACC support altogether because of lack of progress) and appointment of coordinators in new executing institutions (e.g. PNG identified by RPMU as high organizational and operational risk and moved to hold back submission of significant funds; it reallocated these funds to other countries with support from UNDP), advised in selection of new executing institutions including appointment of coordinators (e.g. Palau), advised in appointment of new coordinators and trained and built their capacity on PACC tools, guides, assessments, negotiations, and project management (Cook Islands, Fiji, Nauru, PNG, Palau). These last resort measures were often the culmination of lack of progress and communication by the national stakeholders (either national coordinators, line ministries or both).

RATING: Satisfactory (by project's end) for UNDP

3.3. Project results

Sectors	**Findings**
Food security	
Fiji	National policy on climate change endorsed 3km of drainage improved through mechanical cleaning; no evidence of maintenance system in place floodgates upgrading not yet finalised; drainage guidelines not yet drafted Multiplication of food crops resistant to waterlogging conditions resulting in distribution of planting material; nurseries unable to cope with demand
Palau	National food security policy and agriculture & aquaculture policy drafted Large scale distribution of taro varieties resistant to waterlogged conditions; effective dykes to increase runoff and water stagnation; unsuccessful upland mixed farming and low production levels of clam and crabs; crab production activity viable as an income generating activity
PNG	Overambitious demonstration project resulting in successive downscaling Farmers losing interest in project Little Government commitment to support the project and project team
Solomon Islands	National policy on climate change endorsed Atoll permaculture / backyard farming introduced on atolls ; mixed results according to social / cultural context (more successful on Sikaiana Islands than on Peleu Islands) Demonstration dryer completed and tested, requiring minor adjustments

Water resources	
Marshall Islands	CC and gender integration into policies completed WATAN policy produced Increased water availability for residents through increased water retention rate, tank renovations; solar purifiers operational Greater awareness on climate change of residents including women and students
Nauru	Non-functional solar purifiers resulting with limited outreach (nr. of residents) Interest from additional communities to participate Guidelines established and awareness raising carried out
Niue	CC not yet integrated into Water sector policy Half of water infrastructures completed (on-going) resulting in missing part of target beneficiaries; no technical guidelines yet
Tonga	CC not yet integrated into Water sector policy Soar pumps installed on boreholes together with piping in 2/3 of participating villages resulting in increased storage capacity
Tokelau	Climate change policy only drafted ; community planning Partly completed rainwater catchment reservoir upgrades
Tuvalu	Community water management plans drafted 70-90% of population with min 40L/day during the dry season through substantial increase in rainwater harvesting & storage capacity Gender & technical guidelines produced & distributed
Coastal management	
Cook Islands	Little dialogue with authorities to enable CC mainstreaming into infrastructures development policies Wharf upgraded but undersized to resist extreme events; technical guidelines drafted but needing fine-tuning
FSM	Climate change was integrated into numerous plans and creation of a Climate Change Unit 7km of road upgraded together with monitoring capacity (sea gauges and rainfall station); guidelines not completed
Samoa	Partly successful CC mainstreaming into infrastructures development policies and integration into village by-laws Nearly 1.7km coastal rock revetment completed; coastal spring rehabilitation and guidelines not yet completed; guidelines drafted but not completed
Vanuatu	CC mainstreaming into Public Works Plans Upgrading through slaps, drainage completed in half inland road section; airstrip widening not completed; pilot aquaculture ponds abandoned (to demonstrate ridge-to-reef approach)
Cross-sector	Gender guidelines to be integrated in relevant line ministries CBA used by recipient countries (mainly those with infrastructures demonstration projects)

Table 4: Summary country findings per sector (as of October / November 2014)

3.3.1. Overall results

66. **Outcome 1**: Integration of climate change risk into national and sectoral polices, strategies and related instruments (see summary in Table 5).

67. By the time of the terminal evaluation, mainstreaming CC into national water resources policies and master plans were completed for Marshall Islands and Nauru. Tuvalu revised Te Kake'ega II. As for Niue, it was still discussed and in Tonga, the national policy was approved but not yet endorsed by Parliament. For Tokelau and Tuvalu, approved the Joint National Action Plan (JNAP) and the emphasis was on community planning.

68. 3 of 4 coastal countries (Cook Islands, Vanuatu and Samoa) had limited success in mainstreaming climate change in national or local policies. Cook Islands developed an Integrated Coastal Management Policy for Mangaia, but there is little local ownership in this document. Vanuatu succeeded in mainstreaming climate change in the Public Works Department Corporate Plan but a planned National Coastal Guideline was not progressed beyond the draft stage. Samoa similarly aimed to develop a National Coastal Adaptation Strategy, however this was not completed. Samoa was partly successful at the local level by contributing to a local water resources bylaw in one of three target villages, integrating upstream and downstream coastal risks.

    Limited success in mainstreaming can be attributed to limited policy expertise and technical

support provided to countries, limited collaboration across national policy agencies, and lack of strategic leadership by national implementing agencies despite regional efforts to develop a "mainstreaming guide". Earlier country-specific analysis and policy engagement could have identified appropriate entry points and secured high-level support for policy changes.

69. Mainstreaming was highly successful in FSM however with the Climate Change Act, Kosrae Strategic Plan, Kosrae State Joint Strategic Action Plan and Kosrae Shoreline Management Plan incorporating CC and DRR. FSM went even further with the creation of a CC and disaster coordination unit, inaugurated under the Kosrae State Governor's office. This was achieved through close engagement with the Kosrae State Governor, State Legislature and national policy agencies spearheaded by the National Coordinator.

70. Mainstreaming CC in Government policies was easier for some countries that supported food security: Fiji and Solomon Islands have had their national climate change policies approved and endorsed. However, in Palau and PNG, the lack of Government support impeded the development of such policies that remained relatively low level priorities. For Palau, two documents were drafted but not endorsed yet, as they are work in progress: policy on 'Palau CC resilience to agriculture and aquaculture' and the 'National Strategy for Climate Resilient Agriculture and Aquaculture (NSCRAA)'. In PNG, several actions were initiated but not completed (e.g. Climate Smart Agriculture Development Policy, contribution to mainstreaming CC into Agriculture department sector frameworks).

71. Gender integration (PACC+ requirement) was added in several countries at national level (e.g. Cook Islands, Marshall Islands, Niue, Nauru, Tuvalu) through toolkits elaborated with SPC, GIZ, UNDP and UN Women.

Country	**Product**	**Status (end 2014)**
Cooks Islands	Mangaia Island Policy Framework for Coastal Management	Draft. Requires longer government consultation process and approval
Fiji	NCCP (2012), Community Development Plans and Actions, Community Facilitators	Endorsed
FSM	NCCP (2009); KS-CC Act (2011); KSRD (2012); EIA Guidelines (2013); KSDP (2013)	Endorsed
Marshalls	NCCP Framework (2013), NCCP Marshallese, JNAP in review, WATSAN Policy – gender mainstreamed	Endorsed
Nauru	National WATSAN & Hygiene Policy; established CIE Water Unit, National Drought Management Strategy, Climate Change Adaptation Action Plan	Endorsed
Niue	NCCP, JNAP, Working with Gender Policy	Approved, not endorsed
Palau	National Food Security Policy, CC integration in others	Draft
PNG	Drought & Food Strategy, Sector Policy Framework, Assisted in formulating National CC Development Policy	Draft
Samoa	Bi-law enforced, Sand mining Policy in review, Coastal Monitoring system – in concept	Draft
Solomon	National Climate Change Policy	Endorsed
Tokelau	Support of National Climate Change Policy, Water Management Strategy	Draft
Tonga	National Water Policy, drafted N W Management Plan, N W Bill	Approved, not endorsed
Tuvalu	Tuvalu National Strategic Action Plan 2012-2016 (for CC and DRM) (Eng, Tuvaluan); Tuvalu Climate Change Policy 2012 (Eng, Tuvaluan), Community Water Management	Approved, endorsed Draft (water management

	Plans	plan)
Vanuatu	A Draft Meteorology, Geological Hazards and Climate Change Act, CC integrated into Public Works Department Corporate Plan	Draft

Table 5: Status of policies incorporating CC

(Source: UNDP, SPREP)

72. **Outcome 2**: Demonstration measures implemented to reduce vulnerability in coastal areas (in Cook Islands, FSM, Samoa and Vanuatu), crop production (in Fiji, Palau, Papua New Guinea and Solomon Islands) and in water management (in Marshall Islands, Nauru, Niue, Tokelau, Tonga and Tuvalu) and develop technical guidelines based on them.

73. As for the water sector, the demonstration projects were to reduce water insecurity through better catchment regularity and retention, water supply (availability, quality and access); this objective was achieved partly or entirely in most countries and resulted in a high level of satisfaction from demonstration project beneficiaries:

- Marshall Islands: the airport reservoir water retention rate increased from 50% to 80% with three renovated tanks retaining 100% of water; customer water access increased from 2-3 hours per day to 8 hours per day, reservoir water availability increased during drought from 3 to 4 weeks to 3 to 4 months; solar purifiers for outer islands were installed and are operational resulting in access to quality water and availability during dry season and a reduction in water borne diseases.

  Nauru: installed solar water purifiers were not functional and the salt-water reticulation systems were not installed due to lack of co-financing. Solar water purifiers are installed in 18 households with to support 150 residents but most of them are not operational; 10 communities have signed MoUs to have community solar water purifier shelters installed; 4 remaining communities were trying to secure land by the end of the project; the planned salt water reticulation systems that completed assessment and design was not installed due to significant amount of funds required to decommission, demolish old system, and construct and commission the new system. More time was needed as well to carry this out and there was high risk of going over project period time. The reticulation system activity has since been planned under a new project concept proposal; demonstration guidelines have since been published as well;
- Niue: 420 rainwater-tanks manufactured (5,000lt) (100% of target completed) with 100 additional tanks manufactured for homeowners wanting an extra (paid) tank. The supplier made these in Niue for Niue, Galloways international Limited based in Auckland, New Zealand. 272 tank bases completed in 14 of the 14 villages on Niue (65% of target). The technical/demo guidelines are finalized and published in Mid-February; the construction of the household water catchment systems (rainwater tank base construction and tank installation) was still ongoing (96% completed).The project partnered with the SPC GCCA:PSIS project in construction of Niue's Tank Moulding Facility and manufactured a total of 420 (target) +100 extra water tanks (123%).

- Tokelau: the rainwater catchment system upgrades were completed (100% of tanks repaired, installation of guttering and downpipes completed and over 50% of first flush systems installed, and the rest on track for completion by March 2015).Conservation awareness targeted schools at all levels, operational and maintenance programs targeted household residents, including the use of WASH Guide, water and sanitation measures seem to show improvements in water and health care practices at household level.

- Tonga: 6 boreholes with solar water pumps were installed for Hihifo District community water supply together with the installation of water meters and nearly 22km of piping for 4 out of 6 originally planned pilot villages; the village water committee office building completed construction in December 2014 and is not yet operational; the water storage capacity was increased to over 450 m³ with an additional 486,000 Litres of storage being added.

Tanks Capacity (L)	Number of Tanks	Total Capacity (L)
45,000	3	135,000
25,500	2	51,000
10,000	30	300,000
	TOTAL	486,000

Table 6: n° of tanks / capacity in Tonga

- Tuvalu: Over 90% of the Lofeagai and Tekavatoetoe population now have access to a minimum of 40 litres of water per day from community rainwater storage during drought (5-6 months and 2-3 months respectively); 70% of Lofeagai households have access to good quality water and over 80% of all water test results now meet WHO standards. 80% of Lofeagai households (613 residents) (700m³ of storage capacity was installed) and 100% Tekavatoetoe households (635 residents) were satisfied with the PACC project (280m³ of storage capacity was installed); an additional roof catchment was constructed but is not yet operational; the community water pump have not been installed; gender sensitive technical guidelines have been published and are available.

74. The coastal management demonstration projects focused mainly on hard structural defences for the protection of infrastructures and people. While increased protection to existing risks was achieved in all countries, only FSM demonstrated effective protection against climate change impacts with the integration of climate projections in the design of adaptation measures. Technical guidelines were not satisfactorily completed for all coastal projects.

    - Cook Islands: Cook Islands successfully upgraded the outer-island wharf of Mangaia, improving the strength of the wharf platform, widening the main access channel and quay platform and installing seawall extensions to protect the wharf from strong wind-wave conditions. The wave-force strength of the wharf has been enhanced, although the usability of the wharf under higher sea-level conditions is not assured due to the maintenance of low platform and seawall heights. The project has not clearly demonstrated how climate change considerations were integrated into the wharf design. Seawall extensions do not provide adequate protection for seasonal high- swells (evidenced by erosion behind the wharf platform). Grading and smoothing of the old harbour structure was planned to create a beach standing area for front loading barges alongside the reconstructed platform. This was not satisfactorily completed. This has meant villagers now use sand backfill on the rough landing area each time the front loading barge docks in the harbour. This sand backfill is resulting in sand accumulation in the main channel (verified through interviews and site visit). The Cook Islands Coastal Calculator is an important tool for coastal risk assessment and is being used for design of seawalls. There was however little evidence that the calculator was used for the wharf design itself. Draft guidelines on climate resilient and integrated coastal zone management and harbour facility development were developed however not yet available at the time of review.

    - FSM: The FSM project successfully upgraded 7km of inland farm road in Tafunsak municipality, installing larger capacity culverts, enhancing side drainage and lifting 1.6km of

low-lying road sections to enhance resilience to flooding. This road can now cater for increased intensity rainfall exceeding the projected 1-25 year rainfall level in 2050, drawing on earlier modelling conducted by ADB. Side-sloping was not completed however due to issues with accessing sufficient land from landowners.
Sea-level monitoring gauges were also installed at Lelu Harbour, Okat, Walung and Utwe together with an automatic rainfall station at the Kosrae airport.
Demonstration guidelines to integrate climate risks into road design and construction were not completed at the time of review.

- Samoa: Coastal rock-revetment structures at Tafitoala, Lefagaoalii and Lalomalava were completed protecting a total 1.8km of coastline (minus approximately 100m at Tafitoala village, which was destroyed after Cyclone Evan in 2012) together with coastal replanting activities behind seawalls for all three sites (500+ plants at each site). These rock revetments were completed based on a standard design without adequate site-specific investigations of impacts from climate change or upland flood risk – demonstrated by the partial failure of the Tafitoala seawall during the project period. Ongoing maintenance of the coastal vegetation is being undertaken by the Forestry Division. A nursery was setup for the Tafitoala water catchment area and the river estuary cleared of debris in collaboration with the Water Resources and Forestry Divisions; rehabilitation of the coastal spring at Tafitoala was not yet completed at the time of review. The technical demonstration guideline for Samoa was not yet completed although a number of technical studies were produced investigating the failure of the Tafitoala seawall.

- Vanuatu: Vanuatu installed concrete road slaps and improved drainage on 3 out of 7 steep inland road sections in the north of Epi Island, to provide "all weather access" to critical services for an estimated 2,291 people. Works on widening Lamen Bay airstrip to avoid coastal erosion were being completed however levelling, compaction, fencing and coastal re-vegetation had not been carried out. 10km of inland road re-alignment to reduce the vulnerability of Epi's east coast villages was yet to commence at the time of review. Vanuatu had insufficient project funds to complete all planned activities. The funds of the regional component of the project were re-allocated to Vanuatu to complete the remaining activities.

  5 pilot aquaculture ponds were planned for construction in Rovo Bay, as a demonstration of a ridge-to-reef approach with EU and PACC+ funds but the project was altogether abandoned due to insufficient funds remaining in the PACC project.
  The guidelines on climate proofing road access have been drafted but are not yet completed.

75. Food security demonstration projects focused on increasing land productivity through cultivated land area and/or increased crop diversity. The objective was mostly achieved, noting that the longer term impacts of the interventions may take years to manifest in some instances: concrete results were only emerging by the very end of the project and additional seasons would have been necessary to secure impact. The demonstration projects combined different farming activities so as to enhance impact. In that sense, they were more integrated than for the coastal management and water resources initiatives.

    - Fiji: 13 coastal and low land communities were to benefit from improved drainage and flood gate rehabilitations ; 3 km of drainage network were improved but all flood gate works were not completed at the time of review (works were still under way because of contractor's delays); vegetation cleaning were completed in 2009/2010 but vegetation

came back evidencing the need for more consultations between authorities that mechanically clear large waterways and farmers that clear manually secondary waterways ; in order to do this, the drainage policy should have been reviewed; the satisfaction rate of reviewed communities was very low with regards to the drainage issue following the back growth of waterway plants on the creeks due to a lag period of clearance by the government and no plans with communities to clear their secondary water ways. The drainage guidelines (with either mechanical and/or chemical removal solutions) had not been produced by project's end which is why Government was holding on additional cleaning activities.

Some gender specific activities were carried out (food preservation) but were considered marginal by farmers who wanted the PACC project to focus on the issue of land water-logging.

Old water resilient crop varieties were re-discovered by the Agriculture Ministry and tested on-site (65 farmers) to substitute more productive varieties used by farmers that did not produce well on waterlogged land. Farmers showed a very high level of satisfaction with the new varieties and there is an unmet demand for planting material; this activity however came in too late to enable wide-scale multiplication of planting materials to accommodate all 13 communities; By PACC's end, the Ministry of Agriculture was considering taking over this activity by the extension division and training multiplication farmers for selling planting material to setup a mechanisms for long-term dissemination of planting material; however, farmers are used to receiving material from Government.

- Solomon Islands: improved varieties resistant to waterlogging were tested and adopted by Red Beach communities. Solar dryers were tested successfully in Red Beach; however, it is not clear to what extend this has been adopted as an income generating activity (no organized committee yet). Atoll permaculture has been tried and tested (6 demonstration plots) on Peleu atoll to support communities; however, the experiment did not result in wide-spread adoption of the technique with residents showing more interest in sea products. Permaculture was tried again on Sikaiana atoll and just initiated in Temotu islands (PACC+ funding) with apparently much more interest from residents, possibly because of strong social cohesion due to extreme isolation. Transportation costs and monitoring of results remained an issue in Ontong Java and Sikaiana (barely 1 or 2 visits per year for Sikaiana) but not on Temotu where the Ministry of agriculture has an extension officer.

- Palau: the core group of stakeholders managed to implement most activities despite poor management by the original national implementer.
  (i) the distribution of water resistant taro varieties resulted in increasing substantially the food security of farmers; the varieties were so successful that they were sent to Fiji for further adaptation / testing; (ii) for dykes, communities were easily mobilized resulting in increasing land area for taro cultivation and interest from another community and individual farmers; (iii) there were no significant results from upland mixed cropping (iv) clam production was abandoned because of unprofitability while & crab production with even low production has been adopted by 16 producers in order to supply the tourism sector (±10US$/pound).

- PNG: the original proposal to deal with drought through drip irrigation was abandoned because technical issues and lack of funding; manual watering was considered as well; drought tolerant crop were multiplied through local nurseries and created a large demand; 3 food processing workshops were delivered resulting in chip, jam and flour preparation by

women; however, because of lack of progress / communication, PNG was removed from PACC in 2014.

76. **Outcome 3**: Capacity to plan for and respond to changes in climate change risks is improved:

77. Within all 3 sectors, most activities concentrated on local divulgation, communication and youth education. Countries were asked to develop a comprehensive communication strategy although no specific expertise was budgeted for that purpose: this activity therefore fell under the responsibility of the already overwhelmed national coordinators.

- Marshall Islands: over 60% of the residents of atoll communities were involved in climate risk awareness activities including youth, schools, churches, women, politicians, business sectors. 80% of elementary school students improved their understanding of climate change and 40% of women have improved their understanding of climate change impacts. Since 2011, PACC provided financial and technical support to WUTMI's annual conferences, bringing climate change awareness directly to women. Promotion material (T-shirts, brochures, posters) was produced and distributed. Presented at major side events in Marshall Islands targeting high level audience - Presidents, Chiefs, Governors, Prime Ministers, at the Pacific Island Leader's Forum meeting in 2013 and the SPREP Meeting 2014, and at the annual Micronesia Executive & Chief's Summit meetings.

- Nauru: the community engagement component of the project has not been fully implemented. Only the Aiwo community had deep consultation on water issues and climate change. The community survey was not conducted to determine a change in awareness about climate change. The National Communications Plan has been developed but not fully implemented (50%); promotion and media material was produced and released, Nauru Bulletin articles published. PACC was present for promotion at World Water Day 2013. Documentary on the conjunctive water use, water quality testing developed 2012.

- Niue: 14 village communities were consulted through the 14 village councils (VCs); a community survey template was to be developed in November 2014; the National Communications Strategy was developed with cooperation with IWRM Niue, revised and delivered. The communications plan and community events in support of climate change adaptation were partially implemented because of lack of funds and support staff; the development, production, and sharing of knowledge management products were partially completed. The costs of production and airing of television and radio materials proved to be too prohibitive. A video ("Water") was produced; best practices at both national and regional level were shared. Another video documenting the construction, and manufacturing of HPDE water tanks built to standard; of the Tank Manufacturing Facility in collaboration with the SPC GCCA: PSIS project was released at a major side event at the 3rd SIDS meeting in August 2014 in Apia - Samoa.

- Tokelau: the objective was to enhance Tokelau's Water and Sanitation and Climate Change Framework by developing and/or translating Village Water and Sanitation action plans, the Tokelau Climate Change Strategy, and the Tokelau Disaster Risk Reduction Plan. In collaboration with other programs, the PACC+ project increased community awareness and knowledge on water and sanitation by developing, translating and using a Gender WASH Guide. It also implemented village school and community WASH programs, WASH ToT workshops in Apia and launched WASH poster competition for Atafu; education programs

targeted women, men, taupulega, and youth groups; implementing. Launched the PACC 'Vital Health' Video, in Apia at Apollo Cinemas, December 2014.

- Tonga: limited activities were implemented: school visits, radio and TV Programs, documentary entitled "Long walk to Freedom".

- Tuvalu: The community surveys did not capture data on changes in understanding of climate change impacts and awareness or in perceptions of resilience. Two workshops were conducted to encourage water conservation. These workshops targeted children and covered water saving methods. Surveys did not capture any evidence that actions have been taken based on these workshops. A National Communication Plan was developed and 50% of its activities were implemented including a DVD documentary; promotional material was produced; the project funded a World Water Day radio program. It visited four schools twice a year for outreach and to promote awareness. Knowledge management products were produced (DVD Documentary "Vital Water"). Demonstration Guidelines were published for the design and implementation of community-managed water storage in Tuvalu.

- Cook Islands: PACC project has been only marginally effective in increasing understanding and awareness of climate change impacts and adaptation strategies at local level. Meetings with Mangaia Island Council members were held together with presentations at community meeting and essay competition at a local school. 5 national articles were published and a video presentation developed for regional audience. Launched the PACC 'Vital Harbour' Video at the 3rd SIDS meeting in Apia, Samoa, August 2014 (refer to Side Event report).

- FSM: a comprehensive strategy was developed to increase understanding and awareness of climate change impacts and adaptation strategies in Kosrae from school children to policy makers, land owners, and teachers through a variety of knowledge products (posters, factsheets, newsletters) and outreach activities; presentations were made in 5 villages in addition to *ad-hoc* presentations during mass gatherings. An online blog was regularly updated to increase outreach. PACC Vital Series video currently being filmed to capture all results of the project.

- Samoa: the evaluation did not have sufficient time to adequately assess awareness changes. Although the development of Tafitoala Bylaw is evidence of awareness of the impact of tree clearance and farming on erosion and water quality, community actions did not show increased awareness on coastal risks as Tafitoala village is still allowing building constructions within the coastal hazard zone. Community members are considering moving down to the coastline in Lefagaoalii, which suggests that they may be overestimating the security provided by seawalls. A number of promotional materials were produced (video, newsletters, T-shirts, school competition). Coastal management guidelines were produced together with other relevant documents on coastal management – though it is unclear whether these will be implemented across various national agencies with responsibility for coastal infrastructure. There should have been greater emphasis on education on the different types of coastal protection measures available, rather than rock revetment walls as the standard option. A technical review of coastal protection measures in Samoa concluded that communities considered seawalls as the only solution for coastal protection because there is little to no knowledge and awareness of other mechanisms that can be put in place other than seawalls. PACC Vital Coasts Video (Nov 2014)

- Vanuatu: the PACC national communications plan was developed but not fully implemented, due to limited capacity within the national PMU to generate communications

materials. The project did however reach an estimated 150 Epi island community members through the P3D consultation process in 2013 and conducted consultations with 9 communities in the project area. PACC team participated in a regional meeting attended by all Pacific Island Country members of SPREP and the Pacific Meteorological Council. PACC technical report no.10 describes the P3DM process used in Vanuatu for a regional practitioner audience. The technical guidelines were not finalized. PACC Vital Roads video (1st PACC video, 2012)

- Fiji: a communication plan was developed in 2013; it increased awareness through 2 workshops with communities, over 12 schools visits, the Vital Food and Fiji PACC documentary and the training of 18 community members to become focal points for climate change adaptation at village level; the drainage Guidelines were not finalised, which resulted in halting critical drainage activities. Interviews showed that farmers are very much aware of CC issues.

- Solomon Islands: a communication plan was partly implemented with climate change brochures, posters, quarterly newsletters and pamphlets; high schools were visited (3 in Honiara; 3 in Ontong Java); more than 80% of communities were targeted through public meetings in Peleu, Luaniua, and Sikaiana. Island communities in Honiara also briefed (e.g. Red Beach community).

- Palau: awareness raising and communication strategies were insignificant due to inactivity of the implementing agency over the course of the project. Not enough time was left to start developing a strategy when the Palau Community College took over the implementation of the PACC project. Video documentary in production.

- PNG: the mission did not have the opportunity to assess CC awareness among beneficiaries.

Overall Project Outcome RATING: Satisfactory (by project's end)

3.3.2. Relevance

78. Project relevance
Assisting PICs to adapt to future climatic and environmental conditions has become necessary as they are subject to ever increasing negative impact of CC like more extreme weather pattern, sea-level rise or ocean warming. This is reducing their resilience and is directly affecting country economies and population livelihoods.

79. PACC was the first comprehensive regional project focussing on climate adaptation measures; its approach was novel: combining CC mainstreaming into policies and demonstration projects to enhance adaptation capacity proved to be an efficient approach as it targeted both government decision makers and populations. For countries that already had CC adaptation plans, it enabled them to test new measures and enhance awareness. For countries that had not yet integrated CC, it was a first opportunity to establish a situation analysis on CC impact in their country. It was expected that PICs would benefit from a regional approach by sharing information, knowledge, experience and CC measures, therefore making use more efficiently of scarce donor resources. In that context, the institutional arrangements for PACC were just as important to enable collaboration between countries.

80. The selection of 3 priority sectors was relevant as well but limited somewhat the outreach of CC adaptation measures; national coordinators' interviews showed that during demonstration projects implementation, it became necessary to carry out activities in other sectors so as to enhance the impact of the demonstration project or make it just more effective.

81. CC integration into policies was a first step to establish an institutional framework for programming adaptation measures at country level but the logic was not complete (but also outside the project's scope) as no further support was provided to actually mainstream CC actions into Government actions (by systematically assessing the need of CC actions into Government planning and relevant budgets).

RATING: Relevant

82. Relevance by sector - WATER

Many PICs are characterised by the poor quality and/or low levels of groundwater resources; they are highly dependent on rain water and desalinated water and because of ever increasing use, need to search for alternative sources of fresh water. For atoll islands, the selection of the water resources sector was a priority.

- In Marshall Islands, PACC project's goal was to increase water security in times of drought through demonstrated measures to improve water retention so as to ensure clean source water and reduce losses. The focus was put on increased supply through increased capture and retention in Majuro through PACC and on though PACC+ the outer islands solar purifiers at hospitals so as to reduce water insecurity and increase reserves in times of drought. PACC supported the drafting of many plans and policies like RMI National Climate Change Policy Framework (NCCPF), the Joint National Action Plan (JNAP), the National Water and Sanitation Policy, Vision 2018 Strategic Development Plan, and the RMI Climate Change Roadmap 2010. The PACC demonstration outcomes were clearly linked to NCCFP goals, but all of these policies and plans addressed significant challenges to the country.

- PACC introduced in Nauru innovative, low cost technology - solar water purification systems - to the community as the community's main issue (in Aiwo) is poor groundwater quality, and poor rainwater quality due to phosphate dust. People are not relying on the system because of the good rain they have been receiving. Respondents of the recent survey have said, these will become useful to them once drought hits. The project objectives also fully supported the National Sustainable Development Strategy (NSDS). A Water Unit under the Department of Commerce, Industry, and Environment (CIE), Water Technical Committee, and Projects Steering Committee (PSC) were setup; they facilitated the endorsement of the plans and policies.

- Niue's selection of the water sector resulted from consultations with key stakeholders; the project is in line with GEF priorities (water resource Management, infrastructure development) ; support community and institutional capacity building for prevention, planning, preparedness and management of disasters relating to climate change included contingency planning, in particular for droughts and floods in areas prone to extreme weather events.

- Tokelau focussed on Village Water & Sanitation Plan development through SOPAC (SPC) and PACC+ with a view to encourage a more holistic approach to community level water and sanitation challenges.

- Tonga's water system was unreliable with water shortages, pump failures, system leakage, and an absence of a proper water supply and monitoring system. Therefore, PACC project demonstrated a model water supply and monitoring system that include additional boreholes, pumps, distribution networks and a metering system. This complete package proved difficult to operationalise through village water committee, hence evidencing the need for strong institutional structure at village level.

- Tuvalu: based on documentary review, the PACC project focused on Water Resource Management. The project contributed significantly to climate change adaptation in Tuvalu by mainstreaming policies and plans to build resilience under emerging climate risk; as communities were water insecure during droughts, the project focussed on enhancing communities' resilience to climate change risks and build community level capacity on climate change impacts with gender mainstreaming.

83. Relevance by sector – COASTAL MANAGEMENT

Both atoll islands and high islands suffer from coastal erosion, inundation and flooding due to king tides, high-swell events and heavy rainfall events. These hazards are becoming more prevalent with climate change.

- Cook Island: in response to national development priorities to rehabilitate coastal infrastructure damaged after a severe cyclone in 2005, PACC Cook Islands focused on enhancing the design of harbour infrastructure on the outer island of Mangaia. The project aimed to strengthen the durability, accessibility and operational utility of Mangaia wharf to stronger wind and wave conditions and higher sea levels. While an earlier objective of enhancing integrated coastal zone management was not carried through, the project is nonetheless relevant for the adaptation of wharf infrastructure in the country. Enhancing the resilience of coastal areas to climate change and disasters is identified as a national priority for the Cook Islands in the Joint National Action Plan (JNAP) for Disaster Risk Management and Climate Change Adaptation. The JNAP is itself aligned to the National Sustainable Development Plan (NSDP), the Medium Term Budgeting Framework (MTBF), and the Disaster Risk Management Act 2007. The project also aligned with GEF SCCF priorities to support adaptation in infrastructure development.

- Both the road network and ¾ of households in FSM are located in the coastal zone. Therefore adapting coastal infrastructure is a high priority for Kosrae state. Coastal adaptation is also noted as a high priority in the FSM national climate change policy (2009). The PACC focus on climate-proofing coastal road infrastructure in FSM is thus highly relevant. The PACC pilot site in the northern area of Tafunsak however did not address the most vulnerable coastal areas on the island located in the south and eastern sides – as highlighted in Kosrae's Shoreline Management Plan (2014), nor maladaptive coastal protection methods currently used for the most vulnerable areas. The PACC road section, moving inland from the coast through mangrove swamp to the base of the volcanic part of the island, instead provides an example of how primary coastal roads in future will need to be relocated to avoid increasing risks due to sea-level rise.

- In Vanuatu, the need to adapt to increasing coastal risks is highlighted in 'Vanuatu's National Adaptation Programme of Action'. Sustainable development of transport infrastructure is identified as a national priority in the Vanuatu Infrastructure Investment Plan and Vanuatu's Priority Action Agenda (2006-2015). While the original objective of the Vanuatu project was "strengthened coastal infrastructure and coastal protection on Epi Island", the project has instead focused on improving the resilience of steep inland roads vulnerable to heavy rainfall and landslides, re-aligning a vulnerable coastal road and

widening a coastal airport runway to reduce exposure to coastal erosion. As re-alignment of coastal roads and relocation of coastal assets will be ultimately more sustainable measures than coastal protection, the approach taken is highly relevant for adaptation to climate change in Vanuatu.

- PACC Samoa addressed a priority project identified in Samoa's National Adaptation Programme of Action, which aimed to pilot implementation of Coastal Infrastructure Management (CIM) Plans for selected vulnerable communities, in Tafitoala, Lefagaoalii and Lalomalava. The major adaptation option chosen was the construction of seawalls, in response to extensive damage to low-lying villages due to a tsunami in 2009. As the immediate community response to reducing coastal risk is often hard protection, the efficacy and sustainability of this option is relevant for future coastal adaptation in Samoa and other islands across the Pacific. Relevance would have been strengthened if hard measures were also combined with other soft measures (e.g. staged relocation or building design measures).

84. Relevance by sector – FOOD SECURITY

Climate change is affecting farmers' livelihoods in various ways: coastal farming land becomes waterlogged and undergoes sea intrusions, runoff from more extreme weather events associated with deforestation affects both sloped areas with erosion and flat land with more inundation. These issues affect land productivity and therefore farmers economic situation but also their assets through inundations.

- Fiji: from early 2000s, Fiji agriculture was characterised by government led agriculture development and dependency on hand outs. The focus shifted to a more balanced approach to sustainable agriculture development, food security, value adding to satisfy domestic demand and efficient production for import substitution. The policy of introducing structured based agriculture system and exploring wider uses of root crops such as ginger, cassava, yam, and taro is an area of opportunity toward transforming subsistence agriculture to commercial agriculture. The subsistence farmers located along coastal areas are mostly affected by climate change and in particular water logging, sea intrusion and inundation. In that context, PACC project supported the Deumba and Nakelo communities along the coast with activities that would restore agricultural productivity through drainage (canals' rehabilitation and canals' cleaning) and decrease of inundation intensity (floodgates rehabilitation). The main focus was initially on drainage with infrastructures' rehabilitation and the production of drainage guidelines. However, slow progress resulted in adding a component on water logging adapted crop varieties.

- Solomon Islands: The project focussed mainly on atoll communities with support to both populations still located on atolls and relocated ones. This is most relevant because Government support remains very limited due to remoteness. Still, these communities are at the forefront of climate change. The project concentrated support on food diversification though the distribution of planting material that is locally adapted to water logging ad saline conditions for relocated atoll populations and planting material.

- Palau is dependent on both marine and agricultural resources for local food security. In that context, the approach considered by PACC was to support a series of relevant stakeholders ('core group') that would implement very small scale demonstration initiatives: trials of taro adapted to waterlogging conditions, clam & crab production, drainage interventions, upland mixed cropping. Guidelines for the resilience of coastal food production systems to

the impacts of climate change would be produced. The combination of measures was highly relevant because nearly all coastal communities are affected by the same issues (waterlogging, low productivity of aquaculture, needs for agricultural diversification).

- PNG: the regulatory framework of the National Food Security Policy aims to increase and diversify food production in order to achieve greater self-sufficiency in food and attain food security at the national and household levels. In that context, PACC came in to enhance irrigation systems on the Markham plains of Morobe which utilized surface water since the early 90s. With droughts occurring on a more regular basis, adaptation in terms of water supply for agriculture was required through a new (gravity) irrigation system that would use groundwater. The demonstration system proved to be too complex for farmers to implement and technical advice was inadequate. It was replaced with the distribution of drought tolerant planting material. Eventually, there were production issues with the nurseries and little planting material was distributed resulting in disappointed farmers. This sequence of events indicates that the original 2008 proposal was not adapted to the actual farmers needs and that PACC did implement activities without a comprehensive needs assessment at project's inception.

RATING: Relevant

3.3.3. Effectiveness & Efficiency

85. In most countries, efficiency[7] was relatively low mainly because of issues related to the demonstration projects (implementation delays because of inadequate designs leading to revisions, poor management of contracts). Efficiency was also affected by the number of direct beneficiaries from demonstration measures, which varied considerably among countries. The PACC was nonetheless effective[8] in most (but not all) countries in achieving its primary outcomes (mainstreaming, successful demonstration measures and divulgation).

- Marshall Islands: the collaboration with other organizations (e.g. RMIEPA-IWM, WUTMI, Ministry of Internal Affairs, and Ministry of Education) proved to be effective in increasing water supply in Majuro under PACC and providing an alternative water supply in remote islands under PACC+, contributing to reduction in water borne diseases. While the capacity of MWSC is still under development, a major institutional transformation is required to see the effectiveness and efficiency of PACC contributions: without strong technical and infrastructure assistance, it will not be possible to reduce non-revenue water losses. Strong regulations are required to enforce water tariffs. Better measurement and meter systems must be put in place to achieve this: out of 3,000 customers, only 700 currently have meters.

  The alternative water sources (i.e. solar water purifier) in the outer islands were successful as demonstrations. The project was coordinating with other Ministries to prioritize the provision of solar water purifier units to health centres in the northern atolls. JICA will be supporting provision of solar water purifier units to schools. This technology is a replica from the Nauru project. The water resource management system for the country is not holistic and the ministry encounters conflicts with other agencies. The project did not have its own steering or technical advisory committee, instead the PACC team used another

[7] Measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results/outputs

[8] The extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance

existing committee (i.e. National Water Task Force) to make decisions and set goals. Avoiding the multiplication of committees is an adequate strategy to limit overheads and costs and facilitate the presence of stakeholders.

Nauru: several factors might have contributed to poor levels of achievement of outcomes 2 and 3: deficient project management, faulty infrastructure design, lack of supervision from the regional organization and communication from the national coordination. Only two units of solar water purification is active out of 18 units and the salt water reticulation system was not implemented within the project period. The project undertook a vulnerability and adaptation assessment (V&A) to evaluate current and future drought threats to selected sites and to review the available technical solutions. Household level demonstrations were not an effective option for demonstration. This technology has been replicated in the Marshall Islands benefitting hospitals and other infrastructures targeted for technology transfer.
The project attempted to enhance understanding of the conservation and demand management issues on climate change impacts in all 14 communities and schools. Aiwo community was the only recipient of a consultation. Still, Nauru, under PACC+ is installing larger arrays of solar water purifiers to serve 10 of Nauru's 14 communities Community water shelters will soon be constructed to mount the water purifier units on to process polluted groundwater and store purified water in water tanks for use by the community.

- Niue: the project intended to purchase rainwater catchment tanks but these proved to be too expensive; the PMU secured additional funding from AusAID, GCCA-PSIS Project so as to build a rainwater catchment tank manufacturing facility. This proved to be an efficient strategy. However by the time of the evaluation, barely half of PACC objectives had been met as the project was still being implemented. There is still a strategy to devise as to what to do with the manufacturing facility by project's end.

- Tokelau: the project was highly effective: prior to PACC, 25% of people in the country had access to safe drinking water, 95% of households had damaged or leaking water tanks and dysfunctional guttering. By December 2014, 90% of the community would be covered with safe water and storage facilities. With additional underground communal tanks, PACC+ enhance storage facilities for Nukunonu, Atafu & Fakaofo to about 8 million gallons, 10 million gallons and 7 million gallons, respectively. Training and capacity building focused on local plumbers and guidelines manuals for repairs of water infrastructures; still villages remain with limited plumbing personnel and might still require external support.

  Tonga: PACC was affected by reorganization of ministries that were to implement the project. Tonga's overall water management mandate remains unclear to stakeholders. The project has had difficulties identifying water resource responses to climate change as a critical component for delivering increased community resilience and participatory adaptation as also mentioned in the MTR report. The infrastructure design in the pilot demonstration for water supply addressed long term CC trends (up to 2030) so as to allow limits on freshwater extractions for future uses.
  The institutional capacity of the Hihifo Village Water Committee (VWC) to manage the overall water supply system is currently very weak. The VWC does not have the necessary funding and expertise to operate and maintain the current system. The automatic chlorination system does not work properly; as a result, chlorine is added manually as groundwater quality does not meet WHO Standards for salinity. There were issues in the allocation and distribution of water meters in the community with 4 of them receiving water meter and 2 nothing, and residents receiving more than one meter. The Water Resources Bill (2010) did not provide information about the existence of Village Water

Committee and did not provide for any formal institutional recognition of or authority to the VWC. As a result, the VWC does not have the authority to enforce and collect water tariffs.

The project promised to reduce water loss due to pipe leakage from 30% to 15%. There seems to be no monitoring calculations or records, however to suggest whether or not the water loss has been reduced to that percentage. On the other hand, on-the-ground evidence of new pipe fittings replacing these pipe leakages all along the network from the reservoir, supply lines, to the homes suggest this water loss problem has been addressed if not significantly.

- Tuvalu: the PACC Project was mostly involved in public awareness programs ("Global Hand Washing Day", "World Cleaning Up Day") focusing on Tuvalu students and the public around climate change impacts and ways to mitigate climate change problems. The installation of 700,000L cistern in Lofeagai achieved an additional 40L of drinking water per household per day for the Lofeagai community, for up to 6 months during drought periods and 90% of the Lofeagai population have access to the minimum water supply; 70% of households in Lofeagai have good quality water based on water quality test results (*Lofeagai Water Quality Report, 2014*). A community survey revealed that the majority of the people were satisfied with the outcomes brought by the project and confident that it will address water shortage issues that the community will face in the future (see PACC Technical Report 9, p25).

- Cook Islands: prior to the project, the Mangaia harbour was considered unsafe for a substantial period of the year. As a result of redevelopment of the wharf by PACC, fisherman, boat users and representatives indicated that the wharf was now safer than before, allowing greater access. Nonetheless, high waves continue to limit use of the wharf approximately twice per month. As the project did not lift the height of the wharf platform, longer-term sea-level rise means that the platform will be completely submerged more often and wave overtopping will increase, affecting the viability of the wharf in the future.
  Real costs for the wharf re-development were much higher than originally planned: the Cook Islands Government committed 1,4M$ for a failed harbour re-development attempt in 2011. Adding the final PACC reconstruction costs (920.000$), total costs for the re-development were in the order of 2,3M$. The CBA of the project demonstrated a positive NPV return on investment (based on PACC costs). The cost per beneficiary amounts to 4.000$. The overall efficiency of the project is thus very low.

- FSM: 7km of unsealed inland farm road were upgraded reducing the vulnerability of the road to flooding and intense rainfall. The new road withstood the last heavy rainfall event after the project was completed. However some erosion of side slopes was observed – leading to blockages in side drainage. Over 1450 people were involved directly in outreach activities either through workshops, conference or presentations. Staff from the Department of Transportation and Infrastructure were involved in construction of the new road, building their capacity to consider climate change factors in road design. The project was highly successful in engaging state governance institutions, and enhanced collaboration with other donors and partners.
  The relative costs of the FSM project are very high however because of the few direct beneficiaries (100 estimated) from improvements to an inland farm road, which does not connect to a significant settlement. The original plan was to complete a 16km gap in the circumferential road of Kosrae State, which would have benefited the entire island. This did not eventuate however as 6,9M$ was reallocated. This substantially reduced the project's efficiency. Total costs for 7km were 840.000$ or 120.000/km or $8.415 per direct

beneficiary which is very high.

- Samoa: The limitations of seawall designs used in Samoa were highlighted when approximately 100 metres of the Tafitoala wall was washed away by overland floods during cyclone Evan in 2012, also affecting the foundations and stability of the remaining wall. Engineering designs were based on standard drawings with no site-specific design measures, design water levels, or consideration of sea-level rise. The lack of site-specific designs brings into question their effectiveness in protecting communities against current variability or future climate conditions. This has demonstrated the importance of robust assessments prior to implementation of adaptation measures. Completion of the technical demonstration guideline will thus be critical to improving design standards for future coastal protection works in Samoa.
  While the efficacy of seawall designs in Samoa is questionable, the hard structures provide some form of direct protection for almost twice the number of people affected in FSM and Cook Islands combined, improving the project's efficiency. Seawalls in Samoa benefited an estimated 1,291 people at $436 each.

- Vanuatu: Improvements to inland roads in Vanuatu have reduced the vulnerability of an estimated 2,291 people on Epi Island to landslides and road damage due to heavy rainfall – though some works are yet to be completed. Funds were insufficient to complete concrete paving for 3 remaining steep road sections, nor slope stabilization of road sides, reducing the effectiveness of the project. Widening of the Lamen Bay Airstrip to reduce vulnerability of the asset to coastal erosion has not been accompanied by planned re-vegetation or coastal protection measures and hence the southern edge is still exposed to further land loss.
  An estimated shortfall of USD $104,000 will be required to complete planned measures.
  The costs per beneficiary for Vanuatu is the lowest among the coastal projects at $241 per beneficiary, due to road improvements targeting a high-volume stretch of road connecting major settlement areas on the island of Epi. The number of direct beneficiaries is almost double that of Samoa and twenty-fold higher than FSM. Vanuatu was also able to undertake construction works at lower cost through the training and hiring of island-based local contractors and use of local resources at no-cost with the agreement of land owners.

- Fiji: PACC supported activities to drain land and rehabilitate floodgates in order to reclaim agricultural land and reduce the incidence of inundations affecting vulnerable farmers along the coast; the drainage works reduced somehow the incidence of inundations affecting over 2.500 farmers (Deumba). However, some areas remained affected: in Nakelo area, a floodgate was still under construction; hence, the situation for those farmers had not improved significantly since 2009. Mechanical vegetation removal was done once at project's start but farmers cleaning of secondary canals was not properly enforced (either by government or hypothetical farmers drainage committees); hence reduced effectiveness of measures. The drainage guidelines were not ready by project's end with final cleaning works at a standstill. PACC cooperated with the Research Division of the Ministry of Agriculture, resulting in successful testing of water resistant crops. Planting material multiplication efforts were underestimated because farmers showed much interest. The activity was very effective.
  Poor contract management resulted in excessive delays in product (guidelines) delivery; changes in management affected the efficiency of the project; 2 coordinators were contracted over the course of the project and there were significant HR changes within the national implementing agency.

- Solomon Islands: Solar dryers have the potential to increase the income of Red Beach vulnerable farmers and enhance substantially the food security of atoll inhabitants (especially for fish). The dryers should supplied with the production of new crop varieties that were tested and are adapted to waterlogged conditions. Dryers have neither been deployed in atolls yet, nor implemented on a commercial basis within relocated communities. Permaculture was tested on Ontong Java with somewhat mixed results: inhabitant's mind-sets had not changed significantly yet to adopt permaculture on a large scale basis. On Sikaiana and Temotu islands, backyard farming was being demonstrated mostly successfully (some crops were not successful through – low germination rate) although it was too early to evidence adoption (PACC+).
  Efficiency is very low due to extreme remoteness of some atolls (e.g. Temotu, Sikaiana). Considerable resources were allocated to transport only and technical assistance was intermittent resulting in suboptimal quality.

- Palau: the original implementer (OEERC) was replaced in late 2013 with the Palau Community College due to lack of action and poor/mismanagement. However a core group of stakeholders (Palau Community College, Government Bureau for Agriculture, Bureau for Marine Resources, Palau Community Action Agency, and Environment Quality Protection Board) was involved from the start of PACC; one 'state' was selected as a demonstration centre: (i) water resistant taro varieties were successfully trialled in intercropping resulting in over 6.000 plants being distributed ; (ii) dykes were constructed to block tides which resulted in improving land drainage; (iii) upland mixed cropping was tested on 2 sites unsuccessfully with farmers unwilling to use chemical fertilizers because of cost and possibly negative opinion on chemical fertilizers; (iv) clam & crab production were initially considered in the PACC project although it soon came out to be an income generating activity; clam production was very low possibly because of lack of leading-edge expertise; crab productivity was low (cannibalism due to high densities in enclosures) but still profitable.

- PNG: Most of the demonstration activities did not succeed resulting in reallocation of financial resources to other PACC countries in 2014. The activities suffered organizational and operational risks at the government level seriously undermining efficiency of the planned activities. SPREP, UNDP, and the Board provided assistance and intervention, through on-the-ground in-village assistance to assessments, consultations, awareness activities, as well as decisions to proceed on a number of fronts; nurseries established to distribute new planting materials of drought tolerant crop varieties that had been trialled; establishment of the farmer's co-operative society organization to assist local farmers access local markets; training in jam making, chip making & flour / drying for both men and women of Kivori communities. Implementing most of the activities were therefore not efficient but somehow proved effective for at least some beneficiaries.

RATING effectiveness: Satisfactory

RATING efficiency: Satisfactory

3.3.4. Adaptive capacity

86. The PACC project has increased the adaptive capacity of the targeted countries to address coastal and water related hazards. The solar water purification technology (Marshall Islands, Nauru), rainwater harvesting (Tokelau, Tuvalu) and water conservation (Marshall Islands) system will enhance communities' resilience to address water stress condition. Cook Islands coastal calculator has potential applications in other countries (e.g. Samoa) and has demonstrated its ability to model

disaster risk reduction for coastal communities. The participatory 3D mapping techniques used in Vanuatu enhanced the capacity of communities to plan resource management decisions. A ridge-to-reef concept has been adopted in Samoa and has potential applications to other Pacific countries by integrating coastal community climate change management plans and integrated water resources management plans. While traditional knowledge of plant species in Samoa suitable for coastal re-vegetation was enhanced, community awareness of alternative methods for coastal protection was not improved.

87. All of the projects increased the adaptive capacity of target communities by way of raising awareness about climate risks and strategies to adapt, however the degree to which PACC activities led to improved governance institutions for adaptation at local and national levels were mixed (see country ownership below). There could be greater focus on this element of adaptive capacity in future interventions.

88. The countries that selected the food security sector focussed on CC adaptation: the effects of climate change (inundations, water logging and pest incidence) resulted in farmers adopting improved varieties, focussing on crop diversification, reclaiming waterlogged lands and so as to increase food production and storage. Activities in Palau were more diverse reflecting the specific context of the islands with intertwined agriculture and seafood resources.

3.3.5. Country ownership

89. Marshall Islands: unlike other water supported countries PACC Marshall Islands activities showed a strong coordination and cooperation to utilize its resources, which obviously contributes to the ownership by the country. The solar water purification system has been handed over to the Ministry of Health, which will ensure its distribution, installation, and maintenance. MWSC valued the contribution of PACC that ensured clean water conditions at sources and reserve water capacity for drought conditions.

90. Vanuatu was particularly successful in engaging the local community, evidenced by the establishment of a local climate change committee and resource sharing agreements among village chiefs. National government ownership was reflected in cross-agency involvement in participatory planning processes. FSM was particularly successful in engendering ownership by Kosrae State Government, reflected in amendments to the State Code and state planning policies, however this did not extend to proper plans for maintenance of the asset. Endorsement of a new Adaptation Fund proposal to scale up lessons from Kosrae State indicate national level ownership of PACC FSM. While Samoa successfully engaged village level support, in particular through agreement by Tafitoala village to a Water Resources By-law, national government support for policy reform was weak. In Cook Islands, weak national level project management coupled with limited local level engagement compromised country ownership for most of the project, until late efforts by the incoming national coordinator improved delivery and engagement. Continued use of the PACC Cook Islands coastal calculator indicates some ownership of results at national level. Experiences from coastal PACC countries highlight the need for closer engagement of stakeholders at both local and national levels from initial design, during implementation, through to maintenance and adoption of new policies and guidelines.

91. For food security, country ownership remained weak except in Fiji where Government was committed to continue supporting farming communities with extension services (planting material multiplication) although there was no formal agreement yet; in Palau, the activities were decentralized with the core group stakeholders but community ownership was strong; in Solomon islands, there were country-wide consultations (in relation to outcome 1) with strong ownership at

project's consultation stage but Government had much difficulty in taking over PACC activities because of a lack of resources; there was actually little integration between PACC and the line ministry, mainly because of the costs incurred for implementing activities on atoll islands. Beneficiary ownership appeared to be strong (at least for the Sikaiana community visited during the evaluation). In PNG, the government's lacked commitment and support lead to PACC failure.

3.3.6. Mainstreaming

92. Gender mainstreaming was systematic in PACC with specific activities (although men were also invited); these included activities on food transformation and preservation, gender specific focus groups (e.g. on assessing results, surveys…) and communication, the production of gender toolkits (e.g. Nauru); gender specific guidelines were produced (e.g. WASH, water guidelines in Tuvalu & Tokelau). This enabled project staff to capture detailed opinions on the project results and better target beneficiaries.

93. Improved governance was most significant through interagency collaboration (e.g. Tonga and Tuvalu, Cook island, Fiji islands) and significant for Marshall islands thanks to functional Joint National Action Plan (JNAP) for Disaster Risk Management and Climate Change Adaptation. A counterexample was PNG with an evident lack of government commitment in PACC implementation or Palau where funds were misused by the initial coordinating agency resulting in stopping the PACC implementation until a new coordinating institution was found.

94. PACC contributed to poverty alleviation indirectly through transport improvement (facilitating movement of goods and people for trade) (e.g. road & harbour rehabilitation). Several food security demonstration projects might significantly contribute to poverty alleviation should they be up-scaled (e.g. crablet aquaculture in Palau, large scale multiplication of planting material resistant to waterlogging [with attractive taste]).

95. Part of the PACC project on coastal defence obviously was a positive contribution to natural disaster prevention (e.g. Samoa) including the construction of new floodgates in Fiji to protect crops. Indirectly, farmers were provided waterlogging resistant planting material (e.g. Solomon island, Fiji, Palau) that also enhanced their resilience to natural disasters (e.g. inundations).

3.3.7. Sustainability

96. The PACC project sustainability varies from country to country; as for the water sector and coastal management interventions, the demonstration measures were essentially dependent on ownership of assets by both communities and/or government institutions and the presence (or lack thereof) of maintenance and monitoring plans. Technical guidelines (currently being finalised) will have to be satisfactorily completed before project closure so that project sustainability is not negatively affected. For food security, the measure could be considered successful with a wide adoption rate of new farming practices. Consolidation has been considered by UNDP with the submission of a concept to SCCF for PACC phase 2 integrated with OWRM and R2R

    - Marshall Islands: an assessment was conducted in June 2013 by a technical consultant. It was suggested that the project was sustainable because (i) of long-term groundwater supply (ii) the technology is not new (low risk of technical failure) and (iii) there are clear short and mid-term benefits; involvement of government resulted in a strong ownership leading to the creation of a climate change unit in charge of implementing Climate Change Projects. A team was trained to install and maintain the solar water purification system in

country.

- Nauru: Nauru lacks the legal basis to regulate, monitor, and protect water supply sources. With no legislation, strategy, or overarching guidelines for rainwater and groundwater harvesting, the activities are unlikely to be sustainable. The PACC has, however, together with other projects and organizations (IWRM, GCCA-PSIS, and SPC) initiated grounds for legal basis by developing and endorsing the National Water & Sanitation Policy, set up the Water Unit and called for development of a Nauru Water Master Plan. This will be the policy framework that will see regulation and legislation to set up and protect water supply sources for the country in view of adverse impacts of climate change. In any case, additional funding to support the training of the relevant local trades people and stakeholders is required to maintain the SWP.

- Niue: the policies (Climate Change policy), plans (Niue joint action plan), and institutions (Climate Change Division) that now exist at national level provide long term guidance on climate change adaptation and disaster risk reduction. The manufacturing plant for rainwater catchment tanks can be leveraged in the future for other water-related production (e.g. rainwater catchment tanks, septic tanks, recycling bins, plastic drums). Trainings on water-tank maintenance, water conservation, and leak reporting) are planned to be replicated in 2015 and rainwater catchment activities are expected to be replicated and up-scaled in Niue and other countries. Households incur maintenance costs and are provided with information on tank maintenance.
  The environmental sustainability was preserved by using local and sustainable raw materials and ensuring that tanks are recyclable and manufactured to regional safety standards.
  Social sustainability was ensured by developing local labour capacity at all phases of development: facility construction, tank construction, and rainwater system installation and connection. The project contracted international specialists to guide the process. Project activities can be replicated and up-scaled to service sectors not included in the demonstration site such as farmers and tourist accommodations. The project also supported the private sector through construction installation and supply.
  Financial sustainability remains weak for the manufacturing facility as but no business plan was established by project's end.

- Tokelau: local government interviews showed that there is willingness to continue the operation and maintenance efforts for major infrastructure supported by PACC+. The community is well aware of the situation and are willing to invest themselves to keep the system operational. There is a need to support the establishment of national frameworks with the assistance through Regional Roundtables & International exchanges.

- Tonga: due to the lack of institutional arrangement and capacity of the Village Water Committee (VWC), the sustainability of the water supply and enforcement of the tariff structure of the Hihifo system will be a challenge. There is a need for continuous consultations with land owners on the importance of the water bill to ensure long-term sustainability of the water resources. There is no regular monitoring and observation system in place for the freshwater lenses and recharges control. To sustain water demand and avoid depletion of water resources, an alternative water supply is required. Rainwater is used by most families, but the collection systems are sometimes not well maintained, therefore reducing the overall sustainability of PACC activities; PACC demonstrated rainwater-harvesting technology in other countries; however, these were not applied here.

- Tuvalu: technical sustainability is ensured through cistern's walls thickness likely to withstand harsh conditions; the community degree of satisfaction of very high (80%) and the organization that operates and maintains the system is well regarded in the community.

- Cook Islands: the technical guidelines should provide a reference for engineers and infrastructure planners on design modifications for climate-proofing wharf and other coastal developments. This could include Coastal Calculator applications, local wave influences on wharf design, appropriate wharf platform heights, wave-force strength of platforms etc. These guidelines could provide the basis for developing a National Harbour Building Standard. Social/Institutional sustainability will be secured only if an asset management plan is formulated and budget allocated for asset maintenance. At this stage, asset management responsibilities were unclear at local level. Sustainability could be ensured with the inclusion of the Mangaia wharf in the Infrastructure Cook Islands Business Plan 2015 – 2016. Environmental and technical sustainability remains weak with wave overtopping on the wharf platform and scouring persisting without platform raising and extension. No environmental monitoring was established and sea levels are not being monitored. Residents use heavy machinery that is currently damaging the platform surface and might reduce its longevity. With no confirmed budget for wharf maintenance, the Mangaia Council should consider alternative methods for raising revenue for asset upkeep.

- FSM: the guidelines to ensure replication are in draft to date. Specific design parameters utilised under the PACC project should be outlined in this document, to provide a future reference for road engineers. Social and technical sustainability will be ensured only if maintenance and management of the road assets are secured and there are commensurate plans for monitoring instrumentation installed in Kosrae. This was not planned within PACC as an exit strategy. However, continued funding for the Office of Climate Change and Disasters is likely as the unit has been inaugurated under the Kosrae State Governor's Office (new funding subject to compact budget appropriation). The project has successfully sought additional support for CCA through the World Bank Pacific Pilot on Climate Resilience and PACC FSM has provided an example for national replication under a current proposal to the Adaptation Fund. Sustainability should be ensured with each state implementing the national policy by developing their own Climate Change Act based on Kosrae experience to ensure national CC adaptation.

- Samoa: as recommended by the MTR, appropriate coastal protection measures and ridge-to-reef approach should be adopted to avoid maladaptive practices, integrating water resource management, land management and coastal infrastructure. Institutional sustainability remains weak with the management of assets in the coastal zone split between multiple agencies without a central coordinating mechanism. As it is neither feasible not desirable to promote hard protection for all coastal villages, long term protection of the coastal areas will need to be balanced with greater awareness raising on alternative coastal protection methods and adaptation options. This should be reflected in the "Living with Rivers and the Sea" guideline.
  In order to ensure technical sustainability, knowledge gaps like coastal erosion processes and the impact of deforestation and sedimentation should be addressed. Because government cannot afford to respond to all communities demands, it is important to apply CBA and conduct robust vulnerability and risk assessments prior to engaging government resources.

- Vanuatu: PWD's allocation of VT $22 million for works on Epi in 2014- 2015 suggests a

continued commitment by PWD for routine road and airstrip maintenance. The works are of adequate quality. The sustainability of the coastal airstrip is not ensured as there are no measures to address the continued erosion and shoreline loss, which might render the existing airstrip unusable in the short term. Social support is ensured for maintaining project outcomes due to close community engagement. It is unclear whether the voluntary Epi Climate Change Committee will remain active after the project's end. Technical guidelines currently in draft will need to be completed and demonstrate modifications to standard designs to cater for climate change risks. There is also a need for continuing the upgrading of hilly roads to ensure low maintenance costs.

- Fiji: the sustainability of drainage activities is not ensured by project's end: it still requires the production of drainage guidelines and an effective commitment between Government and farmers communities for the cleaning of main and secondary canals. Social acceptance is low: some farmers are willing to upgrade floodgates and speed up drainage works while others would prefer removing floodgates and allow seawater inundation for cleaning up waterways vegetation and allowing farmers to live off sea products.
  The introduction of new varieties adapted to waterlogged conditions was met with great success by farmers; their adoption rate will probably follow the availability of planting material. Furthermore, the Extension Dpt. showed renewed interest in continuing support within the communities (new varieties introduction).

- Solomon Islands: the demo interventions are not sustainable without additional support: the design of dryers should be finalised to take into account design issues of test dryers. Red Beach farmers are interested in this technology but there were no signs of community mobilisation to contribute to building up a full scale dryer or to create user groups for running a donated solar dryer (need for a business plan, definition of member's responsibilities…). Permaculture has the potential to improve nutrition on isolated atolls. On Sikaiana atoll, backyard farming is at the early stages and any sustainability will depend mainly on technical knowledge of farmers as they will not receive TA on a regular basis due to isolation. The project promoted partly the use of hybrid seeds (e.g. maize) that would require a regular seed supply system from the main island although this was not considered by the project. This might not be the best strategy to ensure sustainability of backyard farming. However, the PACC project used a local NGO for promoting backyard farming that would continue support through affiliation.

- In Palau, integrated farm management was proposed as a strategy to reduce risks. crab production is sustainable and currently profitable thanks to the tourism sector if low crablets' densities are applied; clams were abandoned due to very low production rates; dykes are socially accepted and farmers are organised for maintaining the dykes. Technical assistance is available but funding remains limited.

- For Papua New Guinea, all PACC activities ceased to operate by 2014 for lack of progress reporting from the government implementing partner. The achievements could only be sustained with Government support which was precisely lacking.

Rating Financial resources: Moderately Likely

Rating Socio-political sustainability: Likely

Rating Socio-political sustainability: Likely

Rating Institutional framework and governance: Moderately Likely

Rating Environmental sustainability: Likely

Overall likelihood of sustainability: Moderately Likely

3.3.8. Impact

97. The PACC project's impact was strong mainly for both outcomes 2 and 3. CC mainstreaming was successful in most countries but the actual implementation of the policies and plans varied from country to country:

- Marshall Islands: the PACC project enhanced MWSC capacity to revisit their roles by assessing each storage tank leakage. The use of CBA provided important insight on how to maximize benefits for a given budget. These technical assessments helped design a tailored, relevant and effective demonstration project.

- Nauru: potable water supply is limited to domestic rainwater harvesting infrastructure and desalinated seawater produced at Nauru Utilities Corporation (NUC). As water is delivered to households by truck, there is no operational water network in Nauru. The daily truck delivery capacity of desalinated water is currently at less than 300m³/day with trucks frequently hired from other government entities to supplement the capacity. The impact on the demonstration was very poor while at the national level climate change action plan and drought management strategy and other policy and plan incorporated climate change adaptation has a significant contribution. It need to realize that several social and cultural issues contributed to the failure of the solar water purifiers in the community although it is unlikely that they were not identified during the V&A assessment and considered prior to implementation. No accountability and certification process was implemented to ensure the Several social and cultural issues contributed to the failure of the solar water purifiers in the households although it is unlikely that they were not identified during the V&A assessment and considered prior to implementation. contractor's installation of the solar water purifiers in Nauru. No accountability and certification process was implemented to ensure the contractor's installation of the solar water purifiers in Nauru.

- Niue: community members project participation, the construction of a facility to manufacture rainwater catchment tanks at a lower cost than importing, the creation of a national level Division of Climate Change, the development and endorsement of a Climate Change Strategy and progress towards a JNAP document point out towards a strong impact of the interventions. These outputs have the potential to be leveraged by Niue to address climate change resilience in water resource management and possibly other sectors as well.

- Tokelau: the PACC+ project resulted in decreasing the number of waterborne diseases. The project can be hailed as a typical example of successful technology transfer resulting from the original PACC project.

- Tonga: the PACC project delivered improved technical capacity to formulate and implement national and sub-national policies, legislation, and costing/assessment exercises; the water storage and supply infrastructure for Hihifo District are in place to ensure the water availability during times of drought. However, the impact can be hardly measured as the system is not yet fully functional (i.e. water meter is not used by the community).

- Tuvalu: the project was successful in mainstreaming climate change at a policy level and at increasing accessible drinking water to the targeted communities during times of drought; awareness was raised together with knowledge of climate change risks and resilience strategies.

- Cook Islands: the PACC project has increased safety for wharf users and greater access by cargo boats saving time and reducing damages to stock by an estimated 20-30%.; local fisherman can now access the harbour more often. Prior to the improvement, all cargo ships had to anchor outside the wharf, with the small local barge doing repeat trips to unload cargo. With greater safety and reduced costs for the transport of goods and supplies, community members are seeing additional economic opportunities in the export of fish, agricultural products and handicrafts to Rarotonga.

- FSM: community members' awareness on climate change issues has improved substantially; changes to the Kosrae State Law have led to revision of the Kosrae State Development Plan, the Kosrae Shoreline Management Plan, and Joint Strategic Action Plan on CCA and DRR, greatly increasing the integration of climate change into state development policies ; households along the improved road have started to move upland as a result of better access to ancestral lands; access to farmland has thus improved and electricity has been installed along the road as a result of the project.

- Samoa: due to an inadequate design of the Tafitoala seawall, the project increased awareness within the national executing agency of the need to revise current procedures for seawall construction. Communities are now more involved in caring for their coastal areas. The Forestry Division is now working more closely with the Ministry of Works on other seawalls to integrate the replanting of salt tolerant and wind resistant species to improve coastal stability.

- Vanuatu: the community is more aware of climate change impacts and has more knowledge on how to sustainably manage resources, as a result of participating in the P3DM process. Residents now have a better access to transport options, markets, health services, and schools – improving the quality of life and opportunities for business on the island. Cooperation among village chiefs has increased with local committees more able to better prioritise their needs.

- Fiji: PACC project's impact has been significant through CC mainstreaming; the endorsed National Climate Change policy is being implemented thanks to the already existing Climate Change Division. By project's end, the impact of drainage activities was mixed: some areas were reclaimed but others were not because of a lack of maintenance of drainage canals and still to complete floodgates. Improved varieties have the potential to enhance food security but the multiplication of planting material was underestimated; CC knowledge was evidenced during interviews thanks to PACC.

- Solomon Islands: PACC has been the main driver for mainstreaming CC issues in sector frameworks in the 'Department of Agriculture Strategies and Corporate Plan 2013 – 2017' and initiating the process of peer review of draft "Climate Smart Agriculture Development Policy". Permaculture divulgation remained low in Ontong Java (low acceptance because of communities more geared towards marine resources). On Temotu and Sikaiana Islands, backyard farming was barely being tested through PACC+ but there was evidence of resident's interest in the technology. On atolls, the impact will never be significant in terms of quantities produced because of lack of space but could significantly improve atoll resident's nutrition (source of vitamins). Discussions at Directorate level within the Ministry

of Agriculture showed that CC was not yet been integrated by departments when planning activities. On a political note, the intervention on Solomon atolls had brought forward to the Government the plight of isolated Polynesian communities that usually receive very little Government support due to isolation.

- In Palau: all demonstration activities remained low level until speeding up funds release in 2014 after changing the line implementer; clam farming and upland mixed cropping were unsuccessful but crab farming and dykes were widely accepted by the communities and was replicated (16 crab farms and interest from several villages in dykes construction). CC mainstreaming into policies and divulgation activities were not finalised by November 2014.

- For Papua New Guinea: all PACC activities ceased to operate by September 2014 for lack of proper planning and procurement.

4. Lessons learned / Recommendations / Best practices / Conclusion

4.1. Lessons learned

4.1.1. Design

98. PACC was at the time the first multi-country intervention tackling CC through mainstreaming and demonstrating. This approach was new and for the sake of simplicity, a generic approach was adopted not taking into account country specificities (differences in capacity, remoteness, original degree of integration of CC into policies…); this resulted in asymmetric results: some countries fared much better than others because the actual interventions were more appropriate for certain countries than for others; there is need to recognise the specific political, institutional, managerial conditions of Pacific SIDS that require differentiated design and implementation approaches; new multi-country interventions should be designed adopting a bottom-up approach where specific country / community needs in relation to CC, lead to the design of specific national project log frames. These are to be consolidated under a generic project or programme, which skeleton structure might be agreed upon by all participating countries before national project design starts (with ensuing capacity building including in project design / formulation).

99. Demonstration projects were for the most part highly successful for evidencing successful CC adaptation measures. These were largely influenced by the institutional and local context that allowed or not Governmental and community support and ownership. These must be probed at inception phase using a participative approach for determining the most relevant measures. It would mean that the exact demonstration measures cannot be identified precisely during the formulation phase but at inception phase ; this is most important as the original formulation phase and inception phase can be (heavily) time disconnected.

100. The demonstration projects took into consideration simple measures which provides clarity and efficiency; the project design did not take into account the environment around these demonstration projects that influenced the degree of success of demo measures; instead of choosing an issue, it would be more appropriate to adopt the log frame approach at design stage (cause / effect analysis, problem / solution tree) in order to increase the success rate of demonstration measures.

101. CC mainstreaming into policies and strategies has been mostly successful. The actual implementation of the CC related elements of sectoral policies into annual government work plans and associated financial resources has been very limited; the ministries of budget or finance need to be included (with relevant financial resources) into new interventions when mainstreaming CC; they have the authority to allocate resources including related to CC in addition to feeding in policy dialogue with demo results (bottom-up).

102. Government capacities remained weak in several countries; there is a need to integrate capacity building activities of line ministries staff into project design so that they can accompany project implementation, own project results because they were associated with it since inception and take over when activities are terminated.

103. There were few exchanges of experience within countries between communities although these can accelerate divulgation of concepts and increase adoption rates (e.g. functioning water committee, visits of demo sites by other communities not initially involved, gender integration approach).
Project design must allow for exchange of experiences between beneficiaries as a way to increase impact through awareness raising and foster replication.

4.1.2. Implementation

104. Multi-country interventions are complex operations requiring managerial, financial and technical expertise. PACC assumed that SPREP supported by UNDP, would be able to provide that expertise. Both partners underestimated this issue which should have led to a project revision to divert more resources for building up the capacity of SPREP; in that sense, the recruitment of a financial officer that bypassed financial bottlenecks impeding the overall project implementation is evidence of the need for high level expertise for complex operations. The situation is similar with technical expertise: the lack of it resulted in poor performance at country level (design issues, in-adapted activities or infrastructures) with ensuing delays and quality issues. Management difficulties were evidenced with the large number of changes in procedures and reporting formats. It is important that new multi-country projects take into account the weaknesses of implementing partners and that adequate budget is allocated for building up capacity and ensuring that technical, managerial and financial capacity allows for a smooth implementation; greater resources should be allocated to building the capacity of national management bodies (e.g. NAB in Vanuatu) and regional implementing partners. Overall, there should be a thorough analysis of what is the best combination of support suited to each country context and the sectors of interest. This should be based on a frank analysis of comparative advantage among regional agencies and development partners, *vis-à-vis* national implementation. Good regional examples of joint implementation are joint country work plans for CCA and DRR with national governments including CROPs, donors and development partners.

105. Coordinators do not have sufficient time to undertake financial management and communications responsibilities and executing agencies cannot be expected to have adequate support capacity. The project formulation phase must assess those capacities so that adequate resources can be allocated before the project starts. A minimum of two staff on NPMUs is recommended, one as the project coordinator with finance expertise and the other for technical matter and possibly communication (or at least 2 staff combining the 4 functions). Subject to budget availability, additional communications support should be provided either at the regional level or within NPMUs.

106. The PACC project suffered from low profile national coordinators in most if not all countries; the main disadvantages were difficulties into engaging high level dialogue within line ministries or associated ministries for mainstreaming CC into Government structures as well as with other external stakeholders (donors, NGOs). Very few national coordinators had leverage into raising more funds for added impact. With exceptions, this bottom-up approach mostly did not succeed in PACC. One advantage of low profile coordinators with relevant (managerial and/or technical) expertise is that they were effective in following-up management decision of the implementing partner and/or resolving on-the-ground technical issues. As most had not both qualities together, national implementation was difficult.

107. Future interventions should consider investing additional financial resources into contracting high-profile coordinators with policy engagement and advocacy skills so that they to add value to the project by divulging project information, 'lobbying' for CC policy mainstreaming or potentially establishing partnerships for added impact or improving sustainability. Where highly-calibre coordinators are not readily available, implementing agencies should provide additional managerial and advocacy support to up-skill national coordinators. Implementing agencies could also facilitate greater engagement and ownership from national agencies by better securing co-finance and in-kind contributions.

4.1.3. M&E

108. The governance system of PACC (yearly MPR and PB) functioned well: MPRs were effective platforms for showing demonstration project progress, evidencing challenges and exchanging process information on how best to implement national projects. PBs were more formal structures used for decision making. SPREP might have played a more prominent role in it. The implementation issues did not surface quickly enough at MPR or PB levels; many issues were discussed on an ad-hoc basis. Hence, a mechanism to collect and above all share information on operational issues should be set up for future interventions. Multi-country projects should adopt similar governance structures in the future.

109. While M&E at the regional level functioned satisfactorily, national and local level oversight was relatively weak. There is therefore a need to increase national capacity for M&E and strengthen national steering committees and coordination mechanisms to encourage cross-government collaboration on adaptation initiatives. Most coordinators interviewed mentioned the need for M&E and log frame training at the beginning of the project. National oversight committees often did not meet – suggesting the need for greater institutional capacity support.

4.2. Recommendations to follow up or reinforce initial benefits from the project

4.2.1. Cook Islands issues

110. The Mangaia Coastal Management Plan is not owned by the Mangaia Island Government. Local policy development requires much longer engagement addressing the priority needs of the local community, engaging appropriate national level agencies for technical support.
Alternatives:
1. Leave the plan with the Mangaia Island Government for improvement.
2. Use the plan as a template for other communities in Cook Islands for reference by National Environment Service and the Office of Climate Change.

Recommendation (2)

111. The current demo guideline does not provide practical guidance for engineers to design a climate-proofed wharf structure.
Alternatives:
1. Redraft the current draft guideline into a practical document suitable for national engineers to use as a reference document for future wharf developments.

2. Pursue a legislated requirement for future wharf designs to take into account climate and disaster risks as part of project design specifications.

Recommendation (1) and (2) for follow-up

112. National level oversight of the PACC project was insufficient due to an inactive national project steering committee. The NCCCT was too broad and could not carry out an oversight function. This hindered cross-agency coordination and accountability.
Alternatives:
1. Ensure all climate change projects have sufficient national level oversight with coordination through Climate Change Cook Islands and Ministry of Finance Aid Coordination Division.
2. Continue with ad hoc oversight arrangements pending sector focus of adaptation projects.

Recommendation (1)

113. An asset management plan was not in place for the Mangaia wharf nor maintenance and monitoring arrangements for the upkeep of wharf structure.
Alternatives:
14. Include Mangaia wharf in the Infrastructure Cook Islands Business Plan 2015-16
15. Handover all responsibility to Mangaia Island Government.
16. Request Infrastructure Cook Islands draft an asset management plan for Mangaia wharf and encourage allocation for yearly maintenance.

Recommendation (1) and (3)

114. Wave overtopping on the wharf platform and scouring behind the concrete hardstand will persist without remedial measures. Maintenance of the channel depth will be a continuing issue noting continued erosion and use of sand on the standing zone.
Alternatives:
1. Climate proof the wharf platform by raising the platform height and seawalls above projected future mean sea level heights, complete clearance of the standing zone as a natural beach.
2. Extend the platform hardstand until the makatea rock wall, complete clearance of the standing zone. Consider raising seawalls/platform in future while monitoring need.

Recommendation (2)

4.2.2. Vanuatu

115. Infrastructures works need to be completed to ensure impact as initially envisaged: 480m of steep hill road sections and 10 km new road alignment. Additional fencing and surface work required for airstrip and shoreline protection measures incomplete.
Alternatives:
1. Only use gravel for remaining hill sections, complete clearance and grading of new alignment according to the environmental management plan.
2. Use concrete for remaining hill sections, complete new alignment according to the management plan and preferably soft slope stabilization techniques.
3. Complete airstrip fencing and surface, plant palm species for shoreline protection
4. Complete airstrip fencing and surface, study drivers of coastal erosion and identify best coastal protection methods

Recommendation (2) and (4) pending additional funding

116. The practical guide on climate proofing steep rural roads and community planning for road relocation is incomplete and needs to be finalized; planned activities were not completed.
Alternatives:
    1. Complete a practical guide on climate proofing steep rural roads and community planning for road relocation complementary to existing manuals (VRRM, IBC)
    2. Request 104.000$ regional funds to complete planned works and hold project closing workshop
    3. Finalize remaining activities with existing funds and hold project closing workshop
    4. Dedicate national budget to complete remaining works and hold project closing workshop

Recommendation (1) and (2)

4.2.3. Samoa

117. Cross-agency coordination for coastal protection remains weak.
Alternatives:
    1. Clarify roles and responsibilities of MNRE, LTA, MWTI and MWCSD related to coastal protection measures at the national level
    2. Widely distribute PACC LiRaS Manual among responsible agencies
    3. Review Samoa Coastal Infrastructure Management Strategy

Recommendation (2), (1) and (3) for future projects

118. Installed seawalls based on standard drawings with no site-specific analysis /climate risk reduction measures
Alternatives:
    1. Site-specific surveys to identify final sea wall heights relative to design wave-water levels and continued monitoring to evaluate efficacy
    2. All future coastal protection proposals to be subject to robust VA & CBA assessment, site-specific designs, including long term planning options.
    3. Develop performance standard and quality control capacity for coastal protection design, based on review of COEP guidance.

Recommendation (2) or (1) if additional funding available, (3) for future projects

119. The technical guidelines “Climate Resilient Shoreline and River Defence Manual” are incomplete
Alternatives:
    1. Ensure the guideline outlines a consistent process of climate risk assessment, design and implementation for coastal areas, including cost-benefit considerations
    2. Focus on coastal protection methods only
    3. Further examine least-cost options for coastal risk management including eco-system based measures, options for relocation and retro-fitting

Recommendation (1) before project closure, (3) for future projects

120. Communities continue building in coastal hazard areas ; there is a lack of awareness on the hazards of housing on the shoreline
Alternatives:

1. Raise greater awareness of alternative coastal protection methods, risk accommodation and relocation options
2. Strengthen village laws regarding settlement of high-risk areas.

Recommendation (1)

121. Technical capacity of implementing agencies insufficient for adequate quality control
Alternatives:

1. Technical support and training for engineers and planners for QA & oversight of construction works according to new climate resilient standards
2. Hire external technical expertise (capacity substitution)

Recommendation (1)

4.2.4. Federated States of Micronesia

122. Demonstration and operational guidelines for KIRMA to integrate CCA/DRR into EIAs and future road developments are incomplete.
Alternatives:
1. An external consultant must be hired to review existing EIA practices and most appropriate process for integrating CCA/DRR into project planning
2. Complete demonstration guidelines in order to ensure that appropriate CCA design considerations are taken into account for future road projects, including slope stabilisation and incremental costs.

Recommendation (2), (1) for future projects

123. There is no asset maintenance or management plan and sea-level and rainfall monitoring equipment should be maintained
Alternatives:

1. Establish regular road clearance plan with clear responsibilities for maintenance, monitoring and budget
2. Designate officer within KIRMA to maintain and monitor equipment, establish agreements with NIWA/NOAA for data sharing and storage
3. Seek funding from NOAA/national budget for asset maintenance

Recommendation (1) and (2)

124. The technical capacity of KIRMA and DT&I to assess CCA/DRR risks remains limited
Alternatives:

1. Additional on-the-job training on applying climate risk assessment for development approvals and infrastructure design/construction as per state law
2. Hire external expertise for quality assurance of development approval

Recommendation (1)

4.2.5. Fiji issues

125. Drainage of project area is incomplete because Government is waiting for drainage guidelines (whether to use mechanical or chemical means); farmers are poorly organised into committees to clean up in an orderly manner the secondary canals (some groups are willing to clean up and others not), requiring the revision of the Drainage Act. There is not enough planting material (adapted to waterlogging conditions) for distribution to farmers.
Alternatives:
    1. PACC must follow up the contracting of an expert to finalise the drainage guidelines. In the meantime, the project team should mobilise farmers to reactivate drainage committees. Once the committees and guidelines are in place, farmers and Government should work together to clean up on canals on a regular basis.
    2. PACC does the same and wait for a revision of the Drainage Act before implementing a programme of annual clean-ups.
    3. The project team organises villages' discussions so as to consider opening (periodically/partially/permanently) the floodgates for elimination of canal's vegetation and farming of see products.

Recommendation (1)

126. On a more long term basis, there is a need to consider with Forestry Department the reinforcement of secondary creek banks (e.g. tree planting) to avoid large scale erosion (and resulting creek siltation); the seed policy should be reviewed as farmers are dependent on Government support (lack of capacity to produce planting material) for the provision of food crop basic seeds while multiplication could be done by specialised farmers.

4.2.6. Solomon issues

127. Because of the remoteness of atolls, it is difficult to train and follow-up community members for backyard farming, resulting in low level of adoption; atoll communities still have no way to store food in case of emergency; PACC promoted the use of (high productivity) hybrid seeds which can make communities dependent on main islands seed supply.
Alternatives:
    1. Government should make an agreement with local NGOs to follow-up on-site atoll communities with backyard gardening and solar dryers (including use of guidelines)
    2. Hybrid seed distribution should be encouraged on the condition that an effective supply system is set up between atoll communities and the main islands
    3. Atoll communities should select contact farmers for NGO training on main islands before returning to their atoll for backyard gardening implementation and follow-up
    4. Hybrid seed use should be abandoned so that atoll communities do not become dependent on external seed

Recommendation (3) and (4)

On a more long term basis, atoll 'community extension residents' could be integrated into Government extension system, if government is committed to fund support to atoll communities; an official quarantine system supervised by Government should be established for moving planting material between islands.

4.2.7. Palau issues

128. Upland agriculture through mixed cropping is still facing issues of acceptance by farmers due to negative perception and/or insufficient knowledge of farmers regarding the use of chemical input.
Alternatives:
1. The Bureau of Agriculture should invest in model farms instead of applied demonstration as a first step to demonstrate the safety of chemical input if used rationally
2. Organic fertilisation should be given priority with additional use of chemical fertilisation (e.g. missing elements from biological fertilisation)

Recommendation (2)

129. Crab productivity remains weak; this is essentially due to a lack of technical expertise (analyse most relevant tank configurations, crab densities, ecological parameters…).
Alternatives:
3. Exchange of information should take place between producers so as to crosscheck what measures / techniques are most appropriate to enhance crab productivity
4. Remaining PACC funds should be allocated to identifying relevant expertise in crab production and at least get remote orientation if funds lack for bringing an expert

Recommendation (2)

130. On a long term basis, the Government should invest in model farms as a strategy to divulge enhanced fertilisation (alternative 1), requiring fund raising efforts.

4.2.8. Marshall Islands

131. The demonstration measure has been achieved but more can be done to conserve water in Majuro. Demand-side water conservation measures that reduce non-revenue water have not been implemented. A comprehensive metering system is not in place. The MWSC does not have the authority to enforce a tariff system, which is required to fund a well-functioning water delivery system.
Alternatives:

1. The PACC team can provide capital funds to the MWSC to install a metering system, strengthen the institutional capacity, and help identify major sources of non-revenue water in the system.
2. The PACC team can coordinate with the government of the RMI to develop policy that would increase the MWSC's institutional authority.
3. To better conserve water in Majuro, future projects should focus on increasing MWSC's capacity to reduce non-revenue water. Activities that would contribute to this goal include strengthening the institutional authority of the MWSC through policy (if necessary) and capacity building measures, installation of a comprehensive metering system, and development of an enforceable tariff system.
4. Increasing access to alternative water sources through solar water purifiers represents a good first step in assisting the outer island communities in water resource management and climate change adaptation. This program could be expanded and strengthened by a series of actions. First, expansion of the solar water purification program to the household level could do much to expand community access to clean water. Additionally, in order for modular technical solutions such as these to be sustainable, communities require access to expertise

and materials for system maintenance and replacement. This requires access to goods and services that could be provided through the expansion of appropriate local institutions, encouragement of a local private vendor system, or similar community organization. Any of these options would require activities such as technician training, possible microfinance for small businesses, and coordination with the existing market system to ensure access to possible proprietary materials.

Recommendations (1), (2), (3) and (4)

4.2.9. Nauru

132. The Solar Water Purifier (SWP) systems implemented as part of Nauru's demonstration project are not functioning and faced a number of challenges. Installation of the solar water purifiers was contracted to a single individual with no proper monitoring, quality control, or oversight by responsible parties. The installations consisted of low-grade materials, structures and poor infrastructure placement. Most of the structure was broken due to rusted stands. As a result, the recipient communities are not using the systems and are not happy with the results. The salt-water reticulation system was not installed due to lack of co-finance.
Alternatives:

1. The PACC team could hire an outside contractor to review the systems, train the original contractor to re-install and repair the systems, and to perform inspections of each system before finalization. At the same time a team could be trained to conduct the activities (e.g. Marshall Island is a good example).
2. The PACC team could remove the household SWP systems and install one or two demonstration systems at a hospital or church, with the appropriate installation oversight and inspections in place.
3. The PACC team could meet with community leaders to identify alternatives that would best serve the community.
4. PIFS and other development partners are currently finalizing the Climate Change financing study on Nauru. This study is intended to guide increased funding in climate change into more tangible projects, including the duplication of existing projects that have proved to be successful.
5. Seawater has always been used as a non-potable water supply source for Nauru. A seawater reticulation system could be more effective than the solar water purifiers and would be more efficient during drought conditions. The salt-water reticulation system should be in place as a phase manner so that PACC contributes phase 1 while other donor or Government contribute phase 2.

Recommendation: (1), (2) and (5)

4.2.10. Niue

133. The Niue demonstration project has made progress but was not finalized at the time of project completion. Some of the project goals will be met through the GCCA, PSIS project. Time constraints, operational setbacks, and closure deadlines have resulted in a very low installation rate of household gutters.
Alternatives:

1. The PACC project team could continue to oversee the finalization of the rainwater catchment installation process.
2. If necessary, the PACC project team could request additional PACC+ funding to finalize the project construction.

Recommendations: (1)

4.2.11. Tokelau

134. The village water and sanitation plan, climate change strategy, disaster risk reduction plan and gender and WASH guideline have not yet been mainstreamed. Additionally, while the project has provided training to local plumbers, there are too few local plumbing experts in the country. Thus, the community capacity to manage water and sanitation issues in the community is low.
Alternatives:

    1. The PACC could use the school system to train villagers about the water and sanitation plan, the climate change strategy, disaster risk reduction plan, and the gender and WASH guidelines.
    2. The PACC could train new plumbers in the village and provide those people with training on the various plans and strategies that exist, allowing them to educate the households within their community. The local admiration could use this expertise.

    Recommendation: (1) and (2)

4.2.12. Tonga

135. The VWC does not have the authority to enforce and collect water tariffs. Water resources management is carried out by several government institutions and agencies whose roles and responsibilities are driven by individual mandates. The challenges faced by the VWC are largely due to operational problems associated with the current water supply system. The community criticized the vulnerability and adaptation (V&A) assessment and the Cost Benefit Analysis (CBA). A thorough and well-structured V&A assessment should be adopted at the project inception.
Alternatives:

    1. The PACC team should coordinate with the Tonga Water Board, the Ministry of Environment, Energy and Climate Change, and the Ministry of Health to work together to provide an institutional mechanism for the VWC.
    2. There is no functioning information or data exchange systems on water resources or 'National Hydrological Network' for water resources assessment and monitoring. Water resources are currently managed by a number of institutions, some of which have specific or general monitoring. There is a need for a collaborative approach to management including integrated planning, the introduction of buffer zones, demand management strategies, and comprehensive education to demonstrate the links between poor sanitation and waterborne disease and environmental degradation. A regular monitoring and observation system is essential for the freshwater lenses and recharges to set up ground rules for abstraction water from wells and enhance community to use alternative water sources.
    3. There is no centralized reticulated sewerage system in Tonga. All wastewater is managed by on-site systems, with supervision by the Ministry of Health (MOH) when resources permit. In this respect wastewater management is in the hands of the community. Poorly constructed or inappropriate sanitation systems are common, resulting in the potential for pathogens and nutrients being introduced into the surrounding environment, including ingress to groundwater. Communities need support on proper care of wastewater.

    Recommendations: (1), (2), and (3)

4.2.13. Tuvalu

136. Issue: While the demonstration project is partially completed, a number of construction tasks are not finished yet including finalization of the Lofeagai community centre rainwater catchment system and the installation of solar water pumps for Lofeagai and Tekavatoetoe. Additionally, a number of communications activities have not been finalized including 50% of the national communication plan and conducting a survey to determine impacts of trainings on community climate change resilience.
Alternative:
    1. The PACC project management team should continue toward completion of construction activities and conduct the necessary post-trainings surveys as funds are available. If additional funds are required, the PACC team should estimate required funds for completion and, if necessary, request additional PACC+ funding.

Recommendation: (1)

4.3. Overall recommendations:

4.3.1. Technical

137. Robust V&A and CBA assessments are essential before design, prioritization and selection of adaptation measures; previous studies are not enough for obtaining relevant information adequate for implementation (e.g. PNG, Palau [some components], Samoa, Nauru, Marshall Island, FSM and Vanuatu).

138. Project design must allow for exchange of experiences between beneficiaries as a way to increase impact and foster replication; proactive communities not supported by the project but willing to engage into similar activities (e.g. Palau).

139. There is a need to look beyond the specific adaptation measure / climate impact and consider the non-climate drivers behind exposure, vulnerability and risk.
    - In FSM and Samoa – inappropriate coastal development /protection / drainage can increase vulnerability to inland flooding and exacerbate coastal erosion
    - In Fiji, increasing and more intense inundation events were approached with drainage solution and there was no analysis upstream
    - In Cook Islands and Vanuatu, wharf designs need to take into consideration local currents, user needs and conditions or else they can increase risks

140. The documentation of technical design modifications, farming methods and guidelines are to be improved to inform sector planning and implementation; adequate documentation should be completed for each country.

141. Local on-the-job training and employment should be prioritized where appropriate – increasing community involvement and ownership (water resources and coastal management).

142. Communities need some time and focus to incorporate and absorb the benefits of the new and innovative technologies introduced by the projects. Upkeep of technologies require continuous support through institutions or access to a pool of trained experts. For example, training maintenance personnel for Solar Water Purifiers (SWP) enables users' access to maintenance support whenever required. In Nauru most SWP are not operational because of the lack of in-

country expertise. Differences in success of the SWP in Nauru and in the Marshall Islands indicate the importance of targeted technical capacity building for installation and maintenance professionals and of a strong implementation oversight process.

143. Projects related to water resources should be viewed more holistically to achieve integrated solutions. Alternative water sources and efficient water management is essential for all these islands. The 'Ridge-to-Reef' concept is an integrated approach for coastal, water and food security management and was missing in the project. It should be considered in future project design. Future projects need to look beyond the specific adaptation measure or climate impacts and consider the non-climate drivers behind exposure, vulnerability, and risk. For example, in Tonga, the second phase of the project protected the coastal areas by constructing 1-meter high dykes. These dykes have insufficient drainage facilities and could lead to flooding in the community due to heavy rainfall.

4.3.2. Mainstreaming / management

144. Analysis of the local policy and institutional environment must be conducted prior to implementation to identify opportunities and build high-level support for policy mainstreaming.

145. Institutional coordination should be supported for integrated adaptation actions and ensure active cross-agency oversight of implementation both locally and at national level.

146. The rationale behind the selection of 3 highly relevant priority sectors was to keep demonstration projects as simple as possible and to avoid supporting numerous institutions. This is still valid although new multi-country interventions might consider at least secondary support to other sectors that influence those 3 main sectors.

4.3.3. Partnership arrangements

147. Comparative advantages of regional organizations and technical capacity gaps should be identified at the outset of the project so as to enhance partnerships for (regional/national) delivery.

148. National accountability of regional projects needs to be improved and the financial processes need to be more simple and aligned with national systems. More attention should be paid to detailed project planning, tracking and monitoring from the outset – to allow for more timely and responsive changes to delivery arrangements.

149. Communications/knowledge management should be adequately resourced at regional and national levels to ensure effective delivery of communications strategies.

150. The SPREP should focus on improving the timeliness of delivery and adequate sourcing of technical expertise to provide continuous support of technical guidelines, should prioritize activities, and sensitize the government to the importance of climate change adaptation.

4.4. Best Practices

151. Policy

- Close engagement with state and national policy processes and local municipal council leading to legislative changes to incorporate CCA+DRR in development planning – high support from all stakeholders (FSM)

152. Demonstration

- Designs based on CBA and future climate projections – integrated into adaptation measures (FSM)
- Combination of different demonstration measures for added impact (Fiji, Palau and Solomon Islands)

153. Communications

- The close engagement of community through P3DM in design and prioritization of adaptation measures greatly increased local cooperation, knowledge and ownership for sustainable resource management and adaptation (Vanuatu)

4.5. Conclusion

154. PACC should be considered as a first experience of multi-country support for climate change adaptation in the Pacific region. The project adopted an innovative approach with CC demonstration and mainstreaming. The project startup phase was very long because it was a complex intervention that required an effective management and M&E system which was improved incrementally (trial and error process).

155. The demonstration measures were effective and widely communicated both at national level and regional wide. CC mainstreaming into policies was viewed as a stepping stone to support governments to create a framework so that Governments can implement CC measures on a more systematic basis.

156. The main benefit of PACC was not just to bring together Pacific island nations working on a common issue but to effectively support nations into finding innovative adaptation solutions to climate change.

5. Tables

6. List of annexes

Annex 1: Terms of Reference

INTRODUCTION

In accordance with the United Nations Development Programme (UNDP) and the Global Environment Fund's (GEF) monitoring and evaluation policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference set out the expectations for a Terminal Evaluation (TE) of the *Pacific Adaptation to Climate Change Project (PACC)* (PIMS *2162)*

The essentials of the project to be evaluated are as follows:

PROJECT SUMMARY TABLE

Project Title:	Pacific Adaptation to Climate Change Project (PACC)			
GEF Project ID:	PIMS 2162		*at endorsement (Million US$)*	*at completion (Million US$)*
UNDP Project ID:	PACC: 00063283 PACC+: 00079996	GEF financing:	US$13.125million	US$13.125million
Country:	Regional	IA/EA own:	US$100,000	US$75,000
Region:	Pacific	Governments and SPREP:	US$ 500,000	US$ 375,000
Focal Area:	Climate change adaptation	Other (Government of Australia):	US$ 7.859 million	US$ 7.859 million
FA Objectives, (OP/SP):		Total co-financing:	US$ 44.284 (as per project document)	US$ 16.253million
Executing Agency:	SPREP	Total Project Cost:	US$ 65.868	US$ 37.687 million
Other Partners involved:	National governments	ProDoc Signature (date project began):		January 23, 2009
		(Operational) Closing Date:	Proposed: 31.12.2012	Actual: 31.12.2014

OBJECTIVE AND SCOPE

This Terms of Reference is for the conduct of a Terminal Evaluation of two UNDP support projects-- the Pacific Adaptation to Climate Change Project (PACC), a multi-country project funded by the Special Climate Change Fund (SCCF) under the Global Environment Facility (GEF), with a grant of US$13.125 million, and another related project, PACC+, financed with an AusAid grant of US$7.86 million. The SCCF financed project began implementation in February 2009. UNDP is the GEF implementing agency for the PACC project, and the Secretariat of the Regional Pacific Environment Programme (SPREP) the implementing partner of UNDP. The project has activities in 14 Pacific Island countries. Mid-way through its implementation phase, an AusAid grant of US$7.86 million was provided to compliment the PACC objectives with an additional set of activities (referred to as the PACC+ project). Australia's contribution came in 2011, and builds on existing project delivery mechanisms in order to facilitate the replication and scaling up of practical adaptation measures and strengthen overall implementation of the project through increased program support and knowledge management activities.

The overall goal of the PACC and PACC+ projects is to reduce vulnerability and/or to increase adaptive capacity to the adverse effects of climate change in the key development issues identified by participating countries, namely coastal zone management, food security and food production, and water resources management. The project has aimed to significantly improve the effectiveness of the response of Governments and beneficiaries in the targeted countries to climate change risks in the Pacific. The projects were also seen as means to contribute to the Pacific Island Countries United Nations Development Assistance Framework (UNDAF) 2013 - 2017 outcome: Improved resilience of Pacific Island Countries, with particular focus on communities, through integrated implementation of sustainable environment management, climate change adaptation/mitigation and disaster risk management. The projects supported participating countries through three closely interrelated outcomes including (1) integrating climate change into national and sector strategies, (2) implementing on-the-ground demonstration measures in pilot communities to reduce vulnerability in the context of climate changes in coastal areas (Cooks Islands, Federated States of Micronesia, Samoa and Vanuatu); food production (Fiji, Papua New Guinea, Palau and Solomon Islands); and water management (in Marshall Islands, Nauru, Niue, Tonga, Tokelau and Tuvalu) (3) raising awareness on climate change matters and capturing and communicating project experiences and lessons learnt.

The PACC project was originally designed to close in 2012. For a number of reasons, the project has been extended until December 2014. The activities funded from the replenishment from AusAid are due to be completed by December 2014.

This evaluation will review achievements of the PACC and PACC+ Project, financed with SCCF funds, from February 2009 until Q42014. The terminal evaluation will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects. As outlined in the next section, the evaluation will also assess the strengths and weaknesses of the project design (relative to results achieved or not), implementation arrangements, monitoring and adaptive management and sustainability of project outcomes, including the project exit strategy. The findings of the evaluation will aid in the overall enhancement of future UNDP programming on climate change adaptation.

EVALUATION APPROACH AND METHOD

An overall approach and method for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluators are expected to use the criteria of **relevance, effectiveness, efficiency, sustainability, and impact** in the evaluation**,** as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed projects. A suggestive set of questions covering each of these criteria have been drafted and are included in Annex D, however the evaluators are expected to amend, complete, discuss, validate, justify and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, UNDP Country Office, SPREP, project country teams, UNDP GEF staff (both in the region and at HQ) and other key stakeholders. The evaluator is expected to conduct field missions to the selected project countries - identified in Annex A. Interviews will be held with the key organizations and individuals, a list of stakeholders to consult will be provided for the evaluators, and consultations will be held with key stakeholders on the ground. If

possible, the consultants will liaise with M&E consultants that are assisting the PACC and PACC+ country project management units. The evaluator will review all relevant sources of information, such as the project document, log frames, project reports – including project implementation reviews (PIR), project budget revisions, midterm review and associated management response, progress reports, GEF focal area tracking tools, project files and any other materials that the evaluator considers useful for the conduct of an evidence-based Terminal Evaluation. A list of documents that the project team will provide to the evaluator for review is included in Annex C of this Terms of Reference. Any additional documentation that the evaluator seeks will be made available by UNDP and its partners where available. If any are not available, the evaluator will be provided an explanation as to why the requested documentation is not available and this will also be taken into account in the final terminal evaluation including rating for overall performance of the project.

The project evaluation will be undertaken in accordance with UN evaluation norms and policies and should maintain a clear focus on results. The evaluation team is responsible for revising the approach as necessary and present its methodological proposal as part of their inception report to UNDP on the progress of the terminal evaluation. Evaluation methods should be selected for their rigor in producing conclusions based on evidence against the evaluation criteria. The evaluation team will also respond to the questions and comments raised on the evaluation by internal and external reviewers of the results ascertained.

EVALUATION CRITERIA & RATINGS

An assessment of project performance will be carried out, based on the Project Logical Framework/Results Framework (see Annex B, reviewed by the Scientific and Technical Advisory Panel (STAP) and subsequently reviewed by GEF Secretariat and approved by SCCF Council) which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: **relevance, effectiveness, efficiency, sustainability and impact.** Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in Annex E.

Evaluation Ratings:			
1. Monitoring and Evaluation	***rating***	**2. IA& EA Execution**	***rating***
M&E design at entry		Quality of UNDP Implementation	
M&E Plan Implementation		Quality of Execution - Executing Agency (SPREP)	
Overall quality of M&E		Overall quality of Implementation / Execution	
3. Assessment of Outcomes	**rating**	**4. Sustainability**	**rating**
Relevance		Financial resources:	
Effectiveness		Socio-political:	
Efficiency		Institutional framework and governance:	
Overall Project Outcome Rating		Environmental :	
		Overall likelihood of sustainability:	

PROJECT FINANCE / COFINANCE

The evaluation will assess the key financial aspects of the project, including the extent of co-financing realized against the achievements outlined in the project document (at the point of the end of the design phase) and aspirations during the project implementation phase. Project expenditure and funding data will be made available. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluators will receive assistance from the Samoa multi-country office (MCO) and the SPREP project team to obtain financial data in order to validate and evaluate the co-financing secured below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill. US$)		Government (mill. US$)		Partner Agency (mill. US$)		Total (mill. US$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants								
Loans/Concessions								
1. In-kind support	0.1m	0.075m	0.4m	0.3m	0.1m	0.075m	0.6m	0.45m
2. Other			38.604m	16.186m	0.330m	0.0672m	44.284	16.253m
Totals	0.1m	0.075m	39.004m	16.486	0.430m	0.1422m	44.884m	16.703m

MAINSTREAMING

UNDP supported GEF financed projects are vehicles through which UNDP meets its obligations to specific Governments as agreed in UNDP country programming as well as regional and global programs. The evaluation will assess the extent to which the project results were successfully mainstreamed with priorities agreed between the various Governments of the Pacific island countries participating in this project and UNDP including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

IMPACT

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts that were sought as per the SCCF Council approved project document. Key findings that should be brought out in the evaluations include whether the project has demonstrated: *a) Verifiable improvements in policy for vulnerability-reduction related to emerging climate risks b) Verifiable demonstration measures in pilot communities to reduce vulnerability in coastal areas, crop production and water management c) Verifiable improvements in capacity to plan for and respond to changes in climate.*[9]

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report must include a chapter providing a set of **conclusions**, **recommendations** and **lessons for future multi-country programmes on adaptation in the Pacific**. To the extent that recommendations and lessons can be applied in other similar political, geographic, socio-economic contexts, these should also be highlighted.

IMPLEMENTATION ARRANGEMENTS

The principal responsibility for managing this evaluation resides with the UNDP MCO in Samoa. The UNDP MCO will contract the evaluators. The evaluators are expected to organize their own travel arrangements to the countries they will evaluate, with the support of the UNDP Samoa MCO's operations unit. The SPREP project team will be responsible

[9] A useful tool for gauging progress to impact is the Review of Outcomes to Impacts (ROtI) method developed by the GEF Evaluation Office: ROTI Handbook 2009

for liaising between country coordinators and the evaluators team to set up stakeholder interviews, arrange field visits, and coordinate between the government and national coordinators. UNDP-GEF staff will provide support to the Samoa MCO throughout the conduct of the terminal evaluation.

EVALUATION TIMEFRAME

The consultants should propose a time schedule in line with the suggested time frame below, where total duration of the evaluation is estimated to be 74days, divided as follows: Coastal management 24 days, water management 25 days, agriculture 16 days. An extra 9 days will be added to the contract of the evaluator assuming the team leader role. The days are days/person, travel time to Samoa and all project countries inclusive:

Activity	Timing	Indicative time frame[1]
Arrival Samoa, country mission and start-up + preparation and submission of inception report	9 days (Team leader*5 days) (1 person*2 day) (1 person*2 day)	*1-10 October 2014*
Project country missions	42 days (Agriculture consultant*8 days) (Coastal consultant 17 days team leader*16 days) (Water consultant*17 days)	*15 October-05 Nov2014*
Debrief after missions, presentations of 1st draft evaluation report (Samoa), incorporation of feedback	9 days (3 persons*3 days)	*5-10 November 2014*
Collection of final data for 2nd draft Evaluation Report	10 days (Team leader*4 days) (1 person*3days) (1 person*3 days)	*10 – 20 November2014*
Submission final Report	5 days (1 person, team leader)	*20-25 November 2014*
Deadline submission		*10 December 2014*
Total	74 days (total for 3 people)	

[1]

EVALUATION DELIVERABLES

The evaluation team is expected to deliver the following:

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 15 days after the Multipartite Review (MPR)	Evaluator submits to UNDP Multi-country Office
Presentation	Presentation of first draft evaluation report	End of evaluation missions to each country in the PACC project	To project management, UNDP Multi-country Office
Second draft	Full report, (per annexed template) with annexes	Second draft submitted to UNDP no later than 15 calendar days after the final country mission (Samoa)	Sent to UNDP multi-country office, reviewed by regional technical advisor and climate change/energy analyst, SPREP and national counterparts
Final Report*	Revised report	Within 1 week of receiving UNDP comments on draft	Sent to UNDP multi-country office for uploading to UNDP Evaluation Resource Centre.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report.

TEAM COMPOSITION

The evaluation team will be composed of 3 international evaluators with expertise in each of the key areas of PACC: a) water management b) food security and c) costal zones). The consultants shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. One senior consultant (more than 8 years of experience) will be the team leader; the two other consultants may be junior consultants (less than 8 years working experience). The team leader will be responsible for the editing and submission of the final evaluation report. The evaluators selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

The Team members must present the following qualifications:

3. Master's degree or equivalent in environmental, political or natural sciences, agriculture, engineering, or other closely related field
    a. The consultant on coastal zones should have experience with technical planning and policies on coastal management and climate proofing of infrastructure in coastal zones (roads, harbors, sea walls), as well as knowledge of the ridge to reef approach, and the adaptation linkages between mountains and sea
    b. The consultant on agriculture should have experience in the consequences of climate change for agriculture (flooding, drought, extreme weather) and measures of adaptation (crop management, irrigation, alternative cultivation techniques), in particular related to the Pacific region. Experience with climate change strategies and community development plans for agricultural adaptation to climate change is considered a strong asset.
    c. The consultant on water management should have experience in the consequences of climate change for water management, use of water purifiers, water storage, conservation and catchment systems, policies for drought management and planning and extreme weather events

4. Team leader: Minimum 8 years of relevant professional experience, of which minimum 4 years experience with project evaluation
5. Other team members: Minimum 4 years of relevant professional experience, of which minimum 2 years of experience with project evaluation
6. All team members should have extensive experience project evaluations. The team leader should also have experience in evaluation of GEF projects
7. The team leader must have experience from the Pacific region. For the 2 other evaluators, experience from the Pacific is a strong asset
8. Fluency in English (oral and written) is a requirement
9. Excellent communication, analysis and writing skills
10. Good interpersonal skills (the consultants will contact various actors and stakeholders of the project)

EVALUATOR ETHICS

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex F) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluations'

PAYMENT MODALITIES AND SPECIFICATIONS

%	Milestone
10%	At contract signing
40%	Following submission and approval of the 1ST draft terminal evaluation report
50%	Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report

APPLICATION PROCESS

Applicants are requested to apply online at jobs.undp.org. Interested candidates are invited to submit applications including a price offer indicating the total cost of the assignment (including daily fee, per diem and travel costs). The application should contain a current and complete CV in English with indication of the e-mail and phone contact.

UNDP applies a fair and transparent selection process that will take into account the competencies/skills of the applicants as well as their financial proposals. Qualified women and members of social minorities are encouraged to apply.