



COST BENEFIT ANALYSIS WORK PROGRAM

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Prepared by Mr Aaron Buncle

SPREP Environmental Resource Economist

Email: aaronb@sprep.org



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Introduction

At the second PACC Multipartite Review Meeting in August 2011 it was agreed that Cost-Benefit Analysis (CBA) would be incorporated into PACC pilot demonstration projects. The rationale for this was to help inform decisions about:

- pilot project option selection and design; and
- replication and up-scaling (based on CBA evaluations at the end of the PACC pilot projects).

This report documents the planning of the PACC CBA work program, outputs and impacts to date, and next steps for the coming 12 months. The focus of the report is an evaluation of three CBA training workshops which were run between November 2011 and February 2012.

Background Information

The Pacific Adaptation to Climate Change (PACC) project is a US\$13 million, 5-year UNDP/GEF project which began implementation in February 2009. It covers 13 Pacific Island Countries (PICs) and aims to reduce community's climate change and disaster risks in the water, food security (agriculture), and coastal sectors.

The PACC project design comprises of 3 main components. These are 'mainstreaming' of climate change risk into relevant government processes, policies and strategies; piloting and/or demonstration of practical adaptation measures; and communication of climate change risk and lessons learned. More information on the PACC project design can be found at <http://www.sprep.org/pacc-home>.

During the first 3 years of PACC implementation, it was found that some countries were experiencing problems appraising, and setting up monitoring and evaluation frameworks for their pilot demonstration projects. More specifically, it was found that:

- Some countries were experiencing difficulties selecting appropriate measures to implement as their pilot demonstration project.
- For some countries who had selected their project, it was not clear whether the option(s) selected were the most worthwhile ones to reduce the identified climate change risk(s); and
- Some countries had not adequately set up data collection and monitoring frameworks to allow for robust evaluation at the end of the project (needed to inform decisions about project up scaling - the primary rationale for the piloting component of the PACC).

Reasons identified for the above-mentioned appraisal and monitoring and evaluation problems included a lack of guidance and a lack of capacity in country to undertake adequate (economic) assessments of these projects.

To address these problems, a decision was made to introduce a Cost Benefit Analysis (CBA) work program into the PACC. Components of the PACC CBA work program include:

- Training workshops & development of CBA workplans
- Ongoing technical support to implement CBA workplans

- CBA reports
- CBA Guidelines
- Follow-up training and lessons-learned workshop
- Evaluation of the PACC CBA work program and lessons learned.

A program logic for the PACC CBA work program is included at Appendix1.

To date, only the training workshops & development of CBA workplans have been completed. This will be the focus of the remainder of this report.

Workshop Objectives

The specific objectives of the CBA training workshops were to:

- Increase PIC capacity to undertake CBA of climate change adaptation at the pilot demonstration level.
- Develop workplans to complete CBAs of PACC pilot demonstration projects.

The intention of the workshops was to provide participants with a basic understanding of the CBA framework and key concepts. This knowledge will be further developed through ongoing technical backstopping support to complete a CBA of their PACC pilot project as outlined in CBA workplans - a learning-by-doing approach.

The purpose of completing CBA's themselves is as outlined in the Introduction. That is, to help inform decisions about:

- pilot option selection and design (for 7 PACC countries who have not yet decided on their pilot project option(s)); and
- replication and up-scaling (based on CBA evaluations at the end of the PACC pilot projects).

Workshop Activities and Outputs

Three CBA training workshops were delivered. The first CBA workshop was held in Nauru on 1-4 November 2011 and focused on assessments of water sector PACC pilot projects. The second was held in Fiji on 24-27 January 2012 and focused on pilot projects in the food-security (agriculture) sector. And the third was held in Samoa on 6-9 February 2012 and focused on pilot projects in the coastal sector.

Activities to implement the CBA training workshops can be summarised as (i) planning and preparation of CBA training workshops; and (ii) delivery of CBA training workshops - with the preparation of workplans to complete CBAs of PACC pilot demonstration projects being a key deliverable. These are discussed further below:

(i) Planning and preparation of CBA training workshops

SPREP/COMSEC (Aaron Buncle) led co-ordination of the workshops and developed the structure and core materials for the first CBA workshop jointly with UNDP consultants (Prof Robert Mendelsohn and David Keiser). Following the first workshop, workshop structure and materials were revised based on the experience and feedback from this workshop. SPC/GIZ (Marita Manley) contributed to

these revisions; and SPC/SOPAC (Paula Holland, Jonathan Bower, Gillian Cambers), Andrew McGregor (consultant based in Fiji), and Phillip Wiles (SPREP) provided additional materials including a background paper, food-security and coastal case studies, secondary information sources presentation, and climate science information.

A copy of the workshop materials can be found at www.sprep.org/Regional-Workshops/cost-benefit-analysis. The background paper, case-study paper, and workplan guidelines were sent to participants 10 days ahead of the workshop.

Limited research was also undertaken of existing CBA training models and modules but those identified appeared to be too lengthy or complex or not context relevant.

(ii) Delivery of CBA training workshops

Agendas for each of the workshops are provided at Appendix 2.

Presenters/facilitators involved in each session of the workshop are noted in the workshop agendas. The main facilitators were Aaron Buncle (SPREP/COMSEC), Marita Manley (SPC/GIZ), and Paula Holland (SPC).

An introduction to Excel workshop was also run prior to Fiji Food-security and Samoa Coastal CBA workshops. Agam Mishra (SPC) ran the Fiji introduction to Excel workshop and Epeli Tagi (SPREP) ran the Samoa one.

Workshop participants are listed at Appendix 3.

Preparation of CBA Workplans for PACC pilot demonstration projects

Approximately half of the 4-day CBA workshops were allocated to developing CBA workplans for PACC pilot demonstration projects. The approach to these work-planning sessions is described in the relevant presentation, which can be found at www.sprep.org/Regional-Workshops/cost-benefit-analysis. Finalised CBA Workplans for participating PACC countries are at www.sprep.org/Regional-Workshops/cost-benefit-analysis or www.sprep.org/Climate-Change/PACC_CBA_Workplans.pdf.

To facilitate planning sessions, PACC co-ordinators were asked to give brief 10 minute introductory presentations on their pilot demonstration projects. PACC co-ordinators were asked to outline (i) the problem that their pilot project is trying to address and cause(s) of this problem, (ii) what would happen if their PACC pilot project was not implemented (i.e. the without-project scenario), and (iii) project options identified.

In summary the outputs to date are:

- 3 workshops delivered
- 8 CBA workplans finalised.

Workshop Evaluation

Workshop evaluation consisted of (main) facilitators' assessment and information drawn from participant feedback. Each of these is discussed further below.

Facilitators' Reflections

Reflections below are those of the main workshop facilitators - Aaron Buncle (SPREP/COMSEC), Marita Manley (SPC/GIZ), and Paula Holland (SPC).

Enablers

Factors that contributed positively to the PACC CBA workshops included professional conversations and knowledge exchange between regional economists and UNDP consultants. Most significantly was support from CROP¹ economists, which was mostly provided out of their own budgets. Indeed, regional experience and networks provided by CROP economists was instrumental to the improvements achieved in the second and third workshops.

Another factor that contributed positively to the PACC CBA workshops was the time gap (2 1/2 months) between the first and second workshop. This allowed for meaningful improvements to be made to course structure and materials according to participant feedback and facilitator impressions.

Barriers and Difficulties

Perhaps the most significant constraint to the CBA workshops was the difficulty attracting suitably qualified people to participate in the workshop. less than one-third of participants (13 of 45) had any background in economics - which was the initial target audience for the workshops. Further, of the 13 participating economists, 8 will not be part of PACC CBA teams to implement PACC CBA workplans (these were self-funded or their country is not progressing a CBA). In accordance with CROP/SPREP protocols, participants were formally invited through a circular sent to SPREP focal points as well as the Secretary of Treasury and relevant line Ministries for each participating country.

Related to the above point is the lack of familiarity many participants had with Excel. This affected learning of the economic logic underpinning CBA Excel exercises and reduced time available for other sessions. To address this, an additional 1/2 day introductory training workshop on excel was run prior to the second and third workshops. While the additional training did help, low skills in excel still constrained the learning and progress of the CBA workshops.

Another key challenge of the workshop was the lack of quality background work to plan and design the pilot project measures. This meant that a large portion of the work-planning sessions were spent working through the preliminary steps of problem analysis (problem, cause of problem, objective) and options analysis, rather than focusing on the core elements of CBA work-planning which are identifying and valuating costs and benefits. For a number of the countries, this meant that CBA Workplans had to be completed outside of the CBA workshop or will firstly have to do further problem analysis to make sure the project objective is clear and identified options are appropriate

¹ Including SPC/GIZ

(before proceeding with their CBA). On the other hand, it is probable that the analysis of project problems, causes and links with objectives would not have been analysed to the degree that they were had it not been for the CBA training activity. Most participants appeared to benefit from the opportunity to scrutinise project objectives from an economic perspective and critique the focus and benefits of the plans so far. This underscores that value of conducting future CBA-familiarisation exercises at inception of projects to support project planning and design.

For some projects, the CBA workshop was too late to inform selection of the project option(s) as this had already been decided and implementation underway. This meant that the CBAs (and the pilot demonstration projects) will not be as useful as they potentially could have been. For these projects, exposure to CBA training should inform the design of future projects and may at least enable participants to better understand how the design of their projects is impacting potential benefits. CBAs conducted for these projects will be ex-post in nature and will inform decisions about up-scaling with immediate efforts directed at collecting baseline information and establishing ongoing data collection strategies.

The location of the water CBA workshop at Nauru created a few logistical challenges. During the period of the workshop the Our Airline flight between Fiji and Nauru was not operating and there were also strikes at Qantas Airlines. This caused one of the planned workshop facilitators (David Keiser, UNDP consultant) to miss the workshop which in turn meant that only one facilitator (Aaron Buncle, SPREP) was left to present/facilitate all main sessions of the 4 day workshop and was not fully prepared for some of those. It also meant that workshop participants were required to stay in-country longer than needed for the workshop. Future training exercises overseas will be designed so that two officers will travel together to minimise impact of workshop delivery.

Lastly, PACC co-ordinators were called away on several occasions during the workshop by SPREP PACC management and UNDP to complete non-CBA related tasks. They were also required to work after hours during the workshop period on these non-CBA related tasks. While this may have been urgent work, it was disruptive to the workshop and compromised learning outcomes.

Participant feedback

44 evaluations were handed in out of a possible 46 (17 from the Nauru workshop, 7 from Fiji, and 20 from Samoa). The information received provides a range of valuable feedback in relation to the quality of the workshops and the benefits for participants.

Please note that the evaluation questionnaire was significantly enhanced for the second workshop in Fiji and further minor modifications made for the final workshop in Samoa.

Four key themes were identified in the analysis of participant feedback. Supporting data is included as Appendix 4.

Participant readiness

As already indicated, the relatively low skill base of participants to understand and utilise Excel and CBA was a feature of all workshops. Table 1 of Appendix 4 provides summary statistics on participant experience in economics, Excel, and CBA going into the workshop.

It was a characteristic of each workshop that some participants had limited or no Excel skills, and this limited the value they were able to gain from the various workshop sessions. Early identification of

this at the first workshop gave an opportunity to set up an optional up-front Excel workshop for the second CBA workshop, with this being made compulsory for the third CBA workshop held in Samoa. Feedback from participants was that these pre-workshop Introductions to Excel workshops were useful.

Practical sessions most highly valued

Comments in evaluation forms suggests the more practical sessions, particularly the ones focusing on development of the Workplans and Excel Exercises for CBA, were the most highly valued:

"Final planning sessions were the most useful and nicely rounded up the whole workshop" Fiji participant

"More excel training and practical training time [would improve this training]" Nauru participant

Further, comments relating to work-planning sessions indicated that participants had thought critically about planning, data collection, and assessment of project achievements and that this had helped them to more rigorously think through their pilot project design.

"Identifying costs and benefits and how to measure them [was a useful outcome of the Work-planning sessions]. Also, finding the sources of this information and what to include and what to disregard" Samoa workshop participant.

"Working together with other participants on doing a planning proposal was very interesting in a way that we were able to understand each other's ideas and how, we from different Ministries here in Samoa, are able to relate in" Samoa workshop participant

"[the CBA work-planning process has helped us to] refine the approach already taken for the sites for the new sites" Samoa workshop participant

"Our submission of the PNG CBA workplan is an indication of how much we have gained in this workshop" Fiji workshop participant

An increased understanding of and capacity to apply CBA

It is evident from participant responses that participation in the workshops did increase capacity and confidence to apply CBA to the pilot projects - see Tables 2-4 of Appendix 4. For the latter 2 workshops where questions were asked to measure change, all participants except 2 indicated a positive change in their level of understanding and confidence to undertake CBA.

It also appears that the improvements in workshop structure and materials contributed to better learning outcomes. This has built a strong basis to build on and provide an appropriate level of assistance to each country (where desired) to ensure that this initial learning is consolidated and CBA is effectively applied.

Whilst this outcome is encouraging, numerous comments indicated PACC countries will require considerable assistance to utilize CBA effectively.

The need and desire for ongoing technical backstopping support, and further training and resources

Many participants indicated that they experienced difficulty in understanding aspects of each of the Key Concepts presentations. Discounting (particularly from Nauru Workshop) and Measuring Costs and Benefits received the most comments.

As mentioned above, participants from all three workshops highlighted their need and enthusiasm for ongoing technical backstopping support and training:

"To improve the development of the CBA in country, technical support is still much required" Samoa workshop participant

"Further training in CBA would be great and also looking at other sectors. Online short-course would be ideal plus CBA Guidelines" Fiji workshop participant

In terms of further training and resources, a follow-up regional workshop was the most consistent request². The next highest requests were provision of CBA Guidelines and then on-line short course.

In addition, the PACC CBA workshops generated interest in CBA outside of the PACC. For example, the Fiji workshop generated interest from the Fiji Ministry of Primary Industries who formally requested SPC/GIZ and SPC LRD to conduct a CBA training (in April) financed by the Ministry. Also while supporting the CBA process in Tuvalu, the Ministry of Finance requested a half-day introduction followed up by another half-day workshop on CBA tools based on the PACC example in Tuvalu. The ability of regional economists to conduct these trainings was made easier by the availability of PACC CBA materials.

Overall, participant feedback indicated the workshops were of high quality. No 'low ratings' were received. See Tables 5-7 of Appendix 4.

Lessons Learned from Delivering the Workshops

At a technical level, perhaps the key lesson learned from the workshops was that the process of systematically working through the CBA framework (i.e. through the CBA work-planning sessions) is a useful exercise in its own right - even if countries don't go on to undertake detailed quantitative Cost-Benefit Analyses. More specifically, for the PACC pilot projects, developing CBA workplans was useful for:

- clarifying the problem that the project is seeking to address, and checking this problem is substantial;
- checking the cause(s) of the problem are understood;
- clarifying the objective is clear and linked to problem causes;
- checking project options are appropriate;
- identifying costs and benefits of each project option and gauging relative importance of each of these; and

²12 out of 20 Samoa participants, 4 out of 7 for Fiji.

- considering how costs and benefits will be distributed across community groups and how this may affect successful project implementation.

This helped to improve project design and implementation - refinement of Palau pilot project is evidence of this. It also provides an important 'gate-keeping' function for PIC Governments, donors, and Project Implementing/Executing agencies.

A further lesson learned is that a substantial effort is required to attract suitable participants. Additional actions that could have been taken include identifying individuals through networks and including their name in formal invitation letters. Also, a joint CROP agency approach in issuing invitations may also assist in future workshops as SPREP do not necessarily have established relationships with finance ministries (PIFS), agriculture (SPC) and water departments (SPC). However, even with more intensive recruiting efforts, it is likely that problems attracting suitable participants (ideally with an economics background) would persist. This has also been the experience for similar economics training exercises conducted in the region.

A lesson learned for minimising potentially significant logistical issues of sub-regional workshops is to hold them in more accessible locations such as Fiji and Samoa. This will also reduce cost of workshop delivery. A similarly obvious lesson learned, but a lesson worth stating again, is to avoid requiring participants to do other tasks during the workshop period. If other tasks are to be done, extra time should be allocated before or after the workshop for this.

Future training exercises in CBA should retain the Excel familiarisation feature.

A PACC-specific lesson is that assessments undertaken as part of PACC project planning (e.g. V&A assessments and Socio-Economic Assessments) do not appear to be adequate for the needs of climate change adaptation project development. More specifically, they do not adequately assess climate risk in scientific terms, do not adequately assess non-climate causes of a problem, miss some key information³, and in some cases duplicate information collection. These project planning issues will be assessed as part of the PACC Mid-Term Review and modifications to the project design will be made accordingly. Part of this will likely include a more structured project cycle with CBA integrated into the appropriate stages (i.e. Appraisal and Evaluation), and a more targeted Situation Analysis assessments. The PACC Mainstreaming Guidelines and the CBA Guidelines (discussed further below) will also contribute to strengthening/refinement of PACC project design processes and tools.

Next Steps for the PACC CBA work program

The next steps for the PACC CBA work program are primarily to implement country CBA workplans. The matrix below summarises which countries are progressing a CBA for their PACC pilot project, whether the CBA will be an ex-ante analysis (a pre-implementation appraisal to inform option selection and design) or an ex-post analysis (a post-implementation evaluation of the project to inform decisions about replication and up-scaling), and who will be responsible for providing primary technical backstopping support.

³ In Tuvalu, despite an extensive socio-economic survey they had missed key information and data necessary to conduct the CBA – e.g current household expenditure on water (even though they had included expenditure on electricity and a whole host of other issues).

Table 10: Matrix of technical backstopping arrangements to support CBA workplan implementation

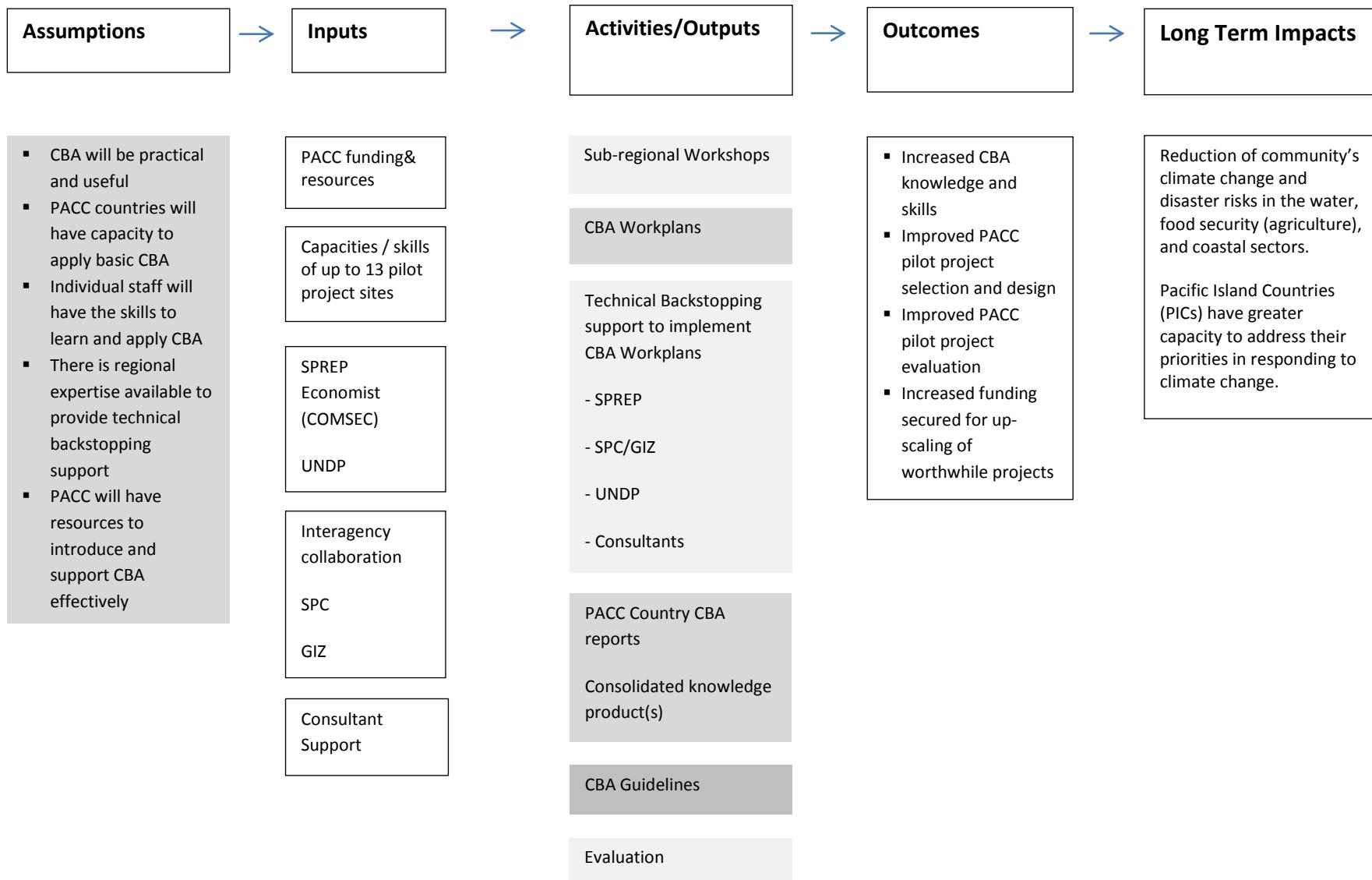
Country	Sector	Ex-ante, Ex-post, or not progressing	Primary implementation support person	Scheduled completion date
Cook Islands	Coastal	Ex-ante	Aaron Buncle (SPREP)	End July 2012
Federated States of Micronesia	Coastal	Ex-ante	N/A - ADB already completed	N/A
Fiji	Food security	Ex-ante	N/A - Fiji National University	N/A
Nauru	Water	Not-progressing	N/A	N/A
Niue	Water	Ex-ante	Aaron Buncle (SPREP)	End July 2012
Palau	Food security	Ex-post	Consultant	End October 2012 (for baseline assessment and data collection strategy)
Papua New Guinea	Food security	Not progressing	N/A	N/A
Republic of the Marshall Islands	Water	Ex-post	Consultant	End July 2012 (for baseline assessment and data collection strategy)
Samoa	Coastal	Ex-post	Marco Arena (UNDP)	End July 2012
Solomon Islands	Food security	Ex-ante	Consultant	End July 2012
Tonga	Water	Not-progressing	N/A	N/A
Tuvalu	Water	Ex-ante	Marita Manley (SPC/GIZ)	End June 2012
Vanuatu	Coastal	Ex-ante	UNDP consultant	End October 2012

*Note the reason why PNG is not progressing its CBA is because it is uncertain whether the (entire) PNG PACC project will proceed.

A number of additional capacity development actions/activities seem warranted to optimise the successful implementation of CBA for the PACC and beyond. These are:

- Increase communication with Country PACC CBA team members to encourage and support CBA implementation – monthly phone contact and website.
- Develop and distribute a CBA Report template - by May 2012.
- Develop CBA Guidelines. These Guidelines will be developed collaboratively with CROP economists and will not be an exclusive PACC product. Given the low number of economists in PIC Governments, the Guidelines will be non-technical and target a broad audience including project managers, policy officers, and engineers. This is scheduled to be complete by December 2012.
- Follow-up Regional PACC CBA Workshop. This will be conducted in February 2013 and will aim to:
 - further develop participant CBA capacity;
 - share lessons learned from the PACC CBA work program;
 - provide inputs to the PACC CBA work program evaluation; and
 - provide inputs to a Capacity Needs Assessment in CBA and related skills.

APPENDIX 1: Program Logic of PACC CBA work program



The key evaluation questions are:

1. Has CBA been a useful tool to assist PACC Governments to better plan and evaluate their selected pilot demonstration projects?
2. How has CBA been used and with what results?
3. Were the PACC Countries able to use CBA effectively? If not, why not?

APPENDIX 2: Workshop Agendas

PACC COST BENEFIT ANALYSIS WORKSHOP: WATER-SECTOR DEMONSTRATION PROJECTS

Nauru 1-4 NOVEMBER 2011

DAY 1 Tuesday 1 November		Activity	Facilitator
Morning	8:30 – 9:00	Registration	
	9:00 – 9:15	Opening prayer and address	Peniamina Leavai Gabor Vereczi Nauru Minister for Commerce, Industry, and Environment
	9:15 – 9:30	Introduction to objectives and structure of workshop	Aaron Buncle
	9:30 – 10:30	Introduction to Cost-Benefit Analysis	Aaron Buncle
	10:30 – 11:00	Morning tea break	
	11:00 – 12:30	Introduction to Cost-Benefit Analysis cont	Aaron Buncle
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 2:30	Excel Examples	Aaron Buncle
	2:30 – 3:00	Question and Answer	Aaron Buncle
	3:00 – 3:30	Afternoon tea break	
	3:30 – 4:30	Pacific Case Study Part A: Review of study	Aaron Buncle

DAY 2 Wednesday 2 November		Activity	Facilitator
Morning	9:00 – 9:30	Recap of day 1	Aaron Buncle
	9:30 – 10:30	Pacific Case Study PART B: Excel exercises - replicate analysis	Aaron Buncle
	10:30 – 11:00	Morning tea break	
	11:00 – 12:30	Pacific Case Study – PART B: excel exercises – sensitivity analysis	Aaron Buncle
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 3:00	Pacific Case Study – PART C: Extending the analysis for PACC demonstration projects	Aaron Buncle
	3:00 – 3:30	Afternoon tea break	
	3:30 – 4:30	Group exercise: CBA workplan for Niue PACC demonstration project	Aaron Buncle Niue PACC Co-ordinator (Haden Talagi)

DAY 3 Thursday 3 November	Activity	Facilitator

Morning	9:00 – 9:30	Recap of day 2	Aaron Buncle
	9:30 – 10:30	Group exercise: CBA workplan for Tuvalu PACC demonstration project	Aaron Buncle Tuvalu PACC Co-ordinator (Loia Tausi)
	10:30 – 11:00	Morning tea break	
	11:00 – 12:00	Group exercise: CBA workplan for Tuvalu PACC demonstration project	Aaron Buncle Tuvalu PACC Co-ordinator (Loia Tausi)
	12:00 – 12:30	Group exercise: CBA workplan for Nauru PACC demonstration project	Aaron Buncle Nauru PACC Co-ord (Mavis Depaune)
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 3:00	Group exercise: CBA workplan for Nauru	Aaron Buncle Nauru PACC Co-ord (Mavis Depaune)
	3:00 – 3:30	Afternoon tea break	
	3:30 – 5:00	Group exercise: CBA workplan for Tonga	Aaron Buncle Tonga PACC Co-ordinator (Paula Taufa)

DAY 4 Friday 4 November		Activity	Facilitator
Morning	8:30 – 9:00	Recap of day 3	Aaron Buncle
	9:30 – 10:00	Group exercise: CBA workplan for Tonga	Aaron Buncle Tonga PACC Co-ordinator (Paula Taufa)
	10:00 – 10:30	Group exercise: Question and Answer for Workplans	Aaron Buncle
	10:30 – 11:00	Morning tea break	
	11:00 – 12:30	Group exercise: Question and Answer for Workplans	Aaron Buncle
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 3:00	Group exercise: Question and Answer for Workplans	Aaron Buncle
	3:00 – 3:30	Afternoon tea break	
	3:30 – 4:30	Group exercise: Question	Aaron Buncle

		and Answer for Workplans	
	4:30 – 5:00	Closing	Peniamina Leavai Gabor Vereczi

PACC COST BENEFIT ANALYSIS WORKSHOP: FOOD SECURITY PILOT DEMONSTRATION PROJECTS

Peninsula Hotel, Suva 24-7 JANUARY 2012

DAY 1 Tuesday 24 January		Activity	Facilitator
Morning	8:30 – 9:00	Registration	
	9:00 – 9:15	Opening prayer and address	Taito Nakalevu (SPREP) Gabor Vereczi (UNDP) PS Fiji Department of Agriculture
	9:15 – 9:30	Outline of workshop: objectives and structure	Aaron Buncle (SPREP)
	9:30 – 10:45	Introduction to Cost-Benefit Analysis: Usefulness, CBA Framework &Key Considerations for the Pacific context	Paula Holland (SOPAC)
	10:45 – 11:15	Morning tea break	
	11:15 – 12:00	Key concepts: Measuring costs and benefits	Aaron Buncle
	12:00 - 12:30	Key concepts: Discounting	Marita Manley (GIZ)
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 2:00	Key concepts: Uncertainty	Marita Manley
	2:30 – 3:00	Excel Examples	Aaron Buncle Marita Manley Anja Grujovic (SOPAC)
	3:00 – 3:30	Afternoon tea break	
	3:30 – 4:30	Excel Examples	Aaron Buncle Marita Manley Anja Grujovic
	4:30 - 5:00	Question and Answer	Aaron Buncle Marita Manley

DAY 2 Wednesday 25 January		Activity	Facilitator
Morning	9:00 – 9:30	Recap of day 1: Quiz break	Marita Manley
	9:30 – 10:45	Pacific Case Study PART A: Overview of germplasm and crop improvement as a climate change adaptation strategy in Samoa and Vanuatu	Andrew McGregor (consultant)
	10:45 – 11:15	Morning tea break	
	11:15 – 12:45	Pacific Case Study – PART A cont.	Andrew McGregor
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 3:00	Pacific Case Study – PART B: excel exercises	Andrew McGregor Aaron Buncle Marita Manley Anja Grujovic
	3:00 – 3:30	Afternoon tea break	
	3:30 – 5:00	Incorporating climate change science in CBA	Aaron Buncle Gillian Cambers (SPC)

DAY 3 Thursday 26 November	Activity	Facilitator
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Morning	9:00 – 9:30	Recap of day 2	Anja Grujovic
	9:30 – 9:50	Approach to developing CBA workplans for PACC pilot demonstration projects	Aaron Buncle
	9:50 - 10:30	Introductory presentation on PACC food security pilot demonstration projects: Problem, Baseline scenario, Project options	Casper Supa (Solomon Islands PACC Co-ordinator) Mika Andrews (PNGPACC official)
	10:30 – 11:00	Morning tea break	
	11:00 – 11:40	Introductory presentation on PACC food security pilot demonstration projects: Problem, Baseline scenario, Project options	Jerome Temenjil (Palau PACC Co-ordinator) Vinesh Kumar (Fiji PACC Co-ordinator)
	11:40 – 12:30	Break-out CBA work-planning sessions: Problem analysis and objective	Aaron Buncle Marita Manley Paula Holland Andrew McGregor
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 2:30	Break-out CBA work-planning sessions: Project options + With and Without Analysis	Aaron Buncle Marita Manley Paula Holland Andrew McGregor
	2:30 - 3:00	Guidance on where to source information	Jonathan Bower (SPC)
	3:00 – 3:30	Afternoon tea break	
	3:30 – 5:00	Break-out CBA work-planning sessions: Generate data, valuate costs and benefits	Aaron Buncle Marita Manley Paula Holland Andrew McGregor

DAY 4 Friday 27 November		Activity	Facilitator
Morning	9:00 – 9:30	Recap of day 3	Andrew McGregor

	9:30 – 10:30	Presentation on draft CBA workplans: key issues	Fiji Palau PNG Solomon Islands
	10:30 – 11:00	Morning tea break	
	11:00 – 12:30	Break-out CBA work-planning sessions: Aggregating costs and benefits + sensitivity analysis	Aaron Buncle Marita Manley Paula Holland Andrew McGregor
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 3:00	Ad hoc tasks	Aaron Buncle Marita Manley Anja Grujovic Paula Holland Andrew McGregor
	3:00 – 3:30	Afternoon tea break	
	3:30 – 4:30	Ad hoc tasks	Aaron Buncle Marita Manley Anja Grujovic Paula Holland Andrew McGregor
	4:30 – 5:00	Closing	Taito Nakalevu Gabor Vereczi

PACC COST BENEFIT ANALYSIS WORKSHOP: COASTAL SECTOR PILOT DEMONSTRATION PROJECTS

Apia, 6-9 FEBRUARY 2012

SPREP Training Centre, SPREP, Vailima

DAY 1 Monday 6 February		Activity	Facilitator
Morning	8:30 – 9:00	Registration	Joyce Tulua
	9:00 – 10:30	Excel training	Epeli Tagi (SPREP)
	10:30 – 11:00	Morning tea break	
	11:00 – 12:00	Excel training	Epeli Tagi
	12:00 – 1:00	Lunch Break	
Afternoon	1:00 – 1:30	Opening prayer and address	Taito Nakalevu (SPREP) Gabor Vereczi (UNDP)
	1:30 - 2:00	Outline of workshop: objectives and structure	Aaron Buncle (SPREP)
	2:00 – 2:15	Introductions	Marita Manley (GIZ)
	2:15 – 3:00	Cost-Benefit Analysis: What and why	Paula Holland (SOPAC, SPC)
	3:00 – 3:30	Afternoon tea break	
	3:30 – 4:20	CBA Workplans	Aaron Buncle
	4:20 - 5:00	PACC project presentations - Samoa & Vanuatu	Moira Faletutulu (Samoa PACC project Co-

			ordinator) Willie Watson (Vanuatu PACC project Co- ordinator)
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DAY 2 Tuesday 7 February		Activity	Facilitator
Morning	8:30 – 9:00	Recap of day 1	Marita Manley
	9:00 – 9:45	Key concepts: Measuring costs and benefits	Aaron Buncle
	9:45 - 10:30	Key concepts: Discounting	Marita Manley
	10:30 – 11:00	Morning tea break	
	11:00 – 11:40	PACC project presentations - FSM & Cook Islands	Simpson Abraham (FSM PACC project co-ordinator) Vaipo Mataora (Cook Islands PACC Project co-ordinator)
	11:40 - 12:30	Key concepts: Uncertainty	Marita Manley
	12:30 – 1:30	Lunch Break	
	1:30 – 3:00	Excel exercises	Aaron Buncle
	3:00 – 3:30	Afternoon tea break	
Afternoon	3:30 – 5:00	Pacific Case Study – PART A Overview of Flood Risk Reduction Measures in Fiji	Paula Holland

DAY 3 Wednesday 8 February		Activity	Facilitator
Morning	8:30 – 9:00	Recap of day 2	Marita Manley
	9:00 – 10:30	Pacific Case Study – PART B Excel Exercises	Aaron Buncle Marita Manley Paula Holland
	10:30 – 11:00	Morning tea break	
	11:00 – 12:00	Incorporating Climate Change Science	Philip Wiles (SPREP)
	12:00 – 1:00	PACC project presentations over Lunch Break Solomon Islands Marshall Islands	Casper Supa (Solomon Islands PACC project co-ordinator) Joseph Cain (Marshall Islands PACC project co-ordinator)

Afternoon	1:00 – 2:30	Break-out CBA work-planning sessions: Problem analysis and objective	Aaron Buncle Marita Manley Paula Holland
	3:00 – 3:30	Afternoon tea break	
	3:30 – 5:00	Break-out CBA work-planning sessions: Project options + With and Without Analysis	Aaron Buncle Marita Manley Paula Holland

DAY 4 Thursday 9 February	Activity	Facilitator	
Morning	9:00 – 9:30	Recap of day 3	Marita Manley
	9:30 – 10:00	Guidance on where to source secondary data and information	Aaron Buncle
	10:00 – 10:30	Morning tea break	
	10:30 – 12:30	Break-out CBA work-planning sessions: Measuring costs and benefits	Aaron Buncle Marita Manley Paula Holland
	12:30 – 1:30	Lunch Break	
Afternoon	1:30 – 3:00	Break-out CBA work-planning sessions: Measuring Costs and benefits	Aaron Buncle Marita Manley Paula Holland
	3:00 – 3:30	Afternoon tea break	
	3:30 – 4:30	Break-out CBA work-planning sessions: Finalise draft CBA workplans	Aaron Buncle Marita Manley Paula Holland
	4:30 – 5:00	Closing	Taito Nakalevu (SPREP) Gabor Vereczi (UNDP)

APPENDIX 3: Workshop participants

Nauru workshop		
Name	Position	Email
Benedict Abourke	Project Engineer, Nauru Rehab	elijah_07@yahoo.com
Haden Talagi	PACC Co-ordinator, Niue Department of Environment	h_talagie@mail.nu
Malia Hola	Economist, Tonga Ministry of Finance	mhola@finance.gov.to
Paula Taufa	PACC Co-ordinator, Tonga Ministry of Environment	taufapaula@yahoo.co.nz
Louis Bouchet	PACC consultant, Nauru CIE	pm.bouchet@gmail.com
Bryan Star	Environmental officer, Nauru CIE	bryan.star@naurugov.nr
Ipia Gadabu	Director Statistics, Nauru Department of Statistics	ipia.gadabu@naurugov.nr
Geoffrey Thoma	Senior Supervisor, Nauru Utilities Corporation	geoffreythoma@gmail.com
Isireli Vuanivono	EHO, Nauru Department of Health	isirelivuanivono@naurugov.nr
Seini Puamau	Finance Controller, Nauru Utilities Corporation	finance.manager@naurugov.nr
Roy Harris	Officer, Nauru DRM	roy.harris@naurugov.nr
Simalua Enele	Economic Adviser, Government of Tuvalu	senele@gov.tu
Vincent Scotty	Food Inspector, Nauru Department of Health	vincent.scotty@naurugov.nr
Creiden Fritz	Director, Nauru CIE	creiden.fritz@naurugov.nr
Ivan Bitark	Environment project officer, Nauru CIE	ivan.bitark@naurugov.nr
Loia Tausi	PACC Co-ordinator, Government of Tuvalu	loia_tausi@yahoo.com
Haseldon Burama	IWRM Co-ordinator, Nauru CIE	haseldon.burama@naurugov.nr
Fiji workshop		
Name	Position	Email
Maria Ledua	Economic Planning Officer, Fiji Ministry of Agriculture	mledua@govnet.gov.fj
Jone Waqanidrola	PACC Co-ordinator, Fiji Ministry of Agriculture	jaywaqa@ymail.com
Jerome Temengil	PACC Co-ordinator, Palau Office of the President	jerome.temengil60@gmail.com
Muriell Sinsak	Planning Analyst, Palau Ministry of Finance	msinsak@palaugov.net
Andrew Mika	PACC Co-ordinator, PNG Department of Agriculture	maidallus57@gmail.com
Paul Kumpio	PNG	c/ maidallus57@gmail.com
Emmajil Bogari-Ahai	Policy Analyst, PNG Office of Climate Change and Development	emmajil.rowanna@gmail.com
Luanne Losi Yawingu	Policy Analyst, PNG Office of Climate Change and Development	lulan2431@hotmail.com
Jacob Zikuli	Project Coordinator, UNDP/MECDM AF Project	jacob.zikuli@undp.org
Tevita Fakaosi	Project Coordinator, Tonga MAFF	forestry@kalianet.to

Christopher Bartlett	Technical Adviser, Vanuatu GIZ/SPC	christopher.bartlett@giz.de
Samoa workshop		
Name	Position	Email
Vaipo Mataora	PACC Co-ordinator/GIS Manager, Cook Islands Ministry of Infrastructure and Planning	v.tataora@moip.gov.ck
Solomona Solomona	Administrator, Cook Islands Ministry of Infrastructure and Planning	s.solomona@moip.gov.ck
Paul Joseph	Civil Engineer, Cook Islands Ministry of Infrastructure and Planning	p.maoate@moip.gov.ck
Simpson Abraham	PACC Co-ordinator, Kosrae Island Resource Management Authority	fsmpacc@mail.fm
Switson Robert	Chief Accountant, FSM Department of Administration and Finance	switsonrobert@yahoo.com
Joseph Cain	PACC Co-ordinator, Marshall Islands Office of Environmental Planning and Coordination	jsphcain4@gmail.com
Alington Robert	Admin Manager, Majuro Water and Sewer Company	la_lington@hotmail.com
Moira Faletutulu	PACC Co-ordinator, Samoa Ministry of Natural Resources & Environment	moirafaletutulu@mnre.gov.ws
Renolla Luafau Matatia	Sustainable Development Officer, Samoa Ministry of Natural Resources & Environment	renolla.matatia@mnre.gov.ws
Robert Seugagogo Bartley	Road Safety and Policy Officer, Samoa Ministry of Works, Transport and Infrastructure	robert@mwti.gov.ws
Petone Toia Vatau Taalo	Research Officer, Samoa Ministry of Finance	peteone.tofia@mof.gov.ws
Funefeai Tupufia	Research Officer, Samoa Ministry of Finance	funefeai.tupufiea@mof.gov.ws
Casper Supa	PACC Co-ordinator, Solomon Islands Ministry of Agriculture & Livestock	ckasie@gmail.com
Mathew Walekoro	Principal Planning Officer, Solomon Islands Ministry of Development, Planning, and Aid Coordination	mwalekoro@planning.gov.sb
Jules Damatalau	Senior Research Officer, Solomon Islands Ministry of Agriculture and Livestock	de.julz@gmail.com
Willie Watson	PACC Co-ordinator, Vanuatu Public Works Department	wwatson@vanuatu.gov.vu
Jerryson Lapi	Policy Analyst (Infrastructure Sector), Vanuatu Office of the Prime Minister	jlapi@vanuatu.gov.vu

*Note some participants in the Fiji and Samoa workshops did not register and thus have not been captured in the above list. Some of these unregistered participants completed evaluation forms.

APPENDIX 4: Participant Evaluation Data

Table 1: Participant experience in economics, Excel, and CBA before workshop

	Nauru	Fiji	Samoa	Total
Economics background	Yes 2 No 12 No response 3	Yes 3 No 4 No response 0	Yes 8 No 12 No response 0	Yes 13 No 28 No response 3
Excel Skills		0 3 3 1	2 12 5 1	
Yes /no question only for Nauru Workshop	Yes 10 No 3 No response 4			
CBA Skills	Not asked at Nauru workshop	3 4 0 0	13 7 0 0	

Table 2: Rating of capacity in CBA after Nauru Water CBA workshop

	Strongly Agree	Agree	Disagree	No response
After the workshop, do you feel you have a basic understanding of the key concepts of CBA	12	5	0	0
After the workshop, do you have a basic understanding of how to undertake a simple CBA	13	4	0	0
Do you feel confident you are now able to progress (oversee and/or conduct) a CBA for your country's PACC pilot demonstration project	6	8	0	2

Please note, the evaluation form for the Nauru water CBA did not explicitly ask about participant capacity in CBA before workshop or the increase in capacity achieved as a result of the workshop. As such the above ratings are an imperfect assessment of the first key workshop objective.

Table 3: Rating of increase in CBA knowledge: Fiji Food-security CBA workshop

	<i>I still have difficulty understanding CBA</i>	<i>I (now) have a basic understanding</i>	<i>My understanding of CBA has increased significantly</i>	No response
Understanding of CBA key concepts	1	1	3	2
	<i>I am still not confident to use CBA</i>	<i>I am more confident to use CBA</i>	<i>I am significantly more confident to use CBA</i>	No response
Confidence in using CBA	1	3	1	2

Table 4: Rating of increase in CBA knowledge: Samoa Coastal CBA workshop

	<i>I still have difficulty understanding CBA</i>	<i>I (now) have a basic understanding</i>	<i>My understanding of CBA has increased significantly</i>	No response
Understanding of CBA key concepts	3	7	8	2
	<i>Yes</i>	<i>No</i>	<i>Not applicable</i>	No response
Understanding of how CBA can be useful to PACC pilot project	18	0	0	2
	<i>I am still not confident to use CBA</i>	<i>I am more confident to use CBA</i>	<i>I am significantly more confident to use CBA</i>	No response
Confidence in using CBA	2	14	1	1

Tables 5-7 give a **summary rating of participant feedback on content and delivery**. Ratings were based on a Likert scale of 1 Strongly Disagree to 5 Strongly Agree. To simplify reporting, ratings were aggregated as follows:

- High level of satisfaction –ratings predominantly in 4-5 range
- Medium level of satisfaction –ratings predominantly around mid-range or scattered from 2-4
- Low level of satisfaction –ratings predominantly in 1-2 range.

Table 5: Rating of workshop components for Nauru Water CBA workshop
(17 evaluation forms completed)

Component	High	Medium	Low	No response
Preparation and facility	13	3	0	1
Facilitator(s)	13	3	0	1
Content	14	2		
Totals	40 (78%)	8	0	2

Table 6: Rating of workshop components for Fiji Food-security CBA workshop
(7 evaluation forms completed)

Component	High	Medium	Low	No response
Preparation and Objectives overview	5	2	0	0
CBA Intro	6	1	0	0
Excel	7	0	0	0
Case Study	6	0	0	1
Incorporating climate change science into CBA	2	5	0	0
Developing the CBA Workplan	7	0	0	0
Totals	33 (79%)			

Table 7: Rating of workshop components for Samoa Coastal CBA workshop
(20 evaluation forms completed)

Component	High	Medium	Low	Insufficient / no response
Preparation and Objectives overview	10	10	0	0
Approach to developing CBA Workplans	17	3	0	0
CBA key concepts	17	3	0	0
Excel exercises for CBA	20	0	0	0
Case Study	19	1	0	0
Incorporating Climate change science into CBA	16	4	0	0
Developing the CBA Workplan	20	0	0	0
Professional networking/information sharing	19	0	0	1
Totals	138 (86%)			