

**Australian Support for
Climate Change, Environment and Disaster Risk Management
in the Pacific**

**Findings and Recommendations of an
Independent Review and Needs Assessment
August 2013**

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Abbreviations and Acronyms

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BOM	Bureau of Meteorology, Australia
CADRE	Climate Adaptation, Disaster Risk Reduction, and Education Program
CBDRM	Community Based Disaster Risk Management
CC	Climate Change
CCA	Climate change adaptation
CES-CCC	CROP Executives Subcommittee on Climate Change
CROP	Council of Regional Organisations of the Pacific
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCCEE	Australian Department of Climate Change and Energy Efficiency
DRM	Disaster Risk Management (comprising DRR and DM)
DRR	Disaster Risk Reduction
EDF	European Development Fund
EU	European Union
EWS	Early Warning System
FSM	Federated States of Micronesia
FSPI	Foundation of the Peoples of the South Pacific International
GEF	Global Environment Facility
GFDRR	World Bank Global Facility for Disaster Reduction and Recovery
GIZ	German Agency for International Cooperation
IFRC	International Federation of the Red Cross and Red Crescent Societies
IOM	International Organization for Migration
IWRM	Integrated Water Resources Management
JICA	Japan International Cooperation Assistance
JNAP	Joint National Action Plan for DRM and CCA
LiDAR	Light Detection And Ranging
LWRM	Land and Water Resources Management
MCDEM	New Zealand Ministry of Civil Defence & Emergency Management
MNRE	Samoa's Ministry of Natural Resources and Environment
NAPA	National Adaptation Programme of Action
NDMO	National Disaster Management Offices
NGO	Non-government organisation
NMS	National Meteorological Service
NZAID	New Zealand International Aid & Development Agency
PACC	Pacific Adaptation to Climate Change
PACE SD	Pacific Centre for Environment and Sustainable Development
PCCR	Pacific Climate Change Round Table
PCCSP	Pacific Climate Change Science Program
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PIC	Pacific Island Country
PICT	Pacific Island Countries and Territories

PIFACC	Pacific Islands Framework of Action on Climate Change
PIFS	Pacific Islands Forum Secretariat
PNG	Papua New Guinea
PPCR	Pilot Program for Climate Resilience
PRIF	Pacific Region Infrastructure Facility
RMI	Republic of the Marshall Islands
SEWPAC	Department of Sustainability, Environment, Water , Population and Communities
SIDS	Small Island Developing States
SPC	Secretariat of the Pacific Community
SPSLCMP	South Pacific Sea Level and Climate Monitoring Program
SPREP	Secretariat for the Pacific Regional Environment Programme
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USP	University of the South Pacific
WACC	Working Arm of the CES-CCC
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
WMO	World Meteorological Organisation

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The Review and Needs Assessment Team and Report Authors:

The team comprises Graham Walter (Team Leader, Monitoring and Evaluation Specialist), Peter Hunnam (Monitoring and Evaluation Specialist), Cristelle Pratt and Professor John Hay (Sector Specialists).

Disclaimer:

Please note that the views expressed in this report are those of the authors and do not necessarily represent the views of AusAID or the Australian Government.

EXECUTIVE SUMMARY

Introduction

The Australian Government committed \$150 million over three years (2008-2011) to the International Climate Change Adaptation Initiative (ICCAI) to meet high priority climate change adaptation needs in partner countries. In the 2010 budget, as part of Australia's 'fast-start' commitments, ICCAI was extended by a further two years (2011-2013) and an additional \$178.2 million was allocated, thus totalling \$328 million. Of this amount, about \$164¹ million is being provided to the Pacific.

ICCAI is providing \$47 million through bilateral programs to 15 Pacific countries, \$15 million through multi-country programs run by NGOs, and \$94 million through regional programs. The regional programs include three climate science and adaptation planning programs managed jointly by AusAID and the Department of Climate Change and Energy Efficiency (DCCEE)².

AusAID's Pacific Division is preparing a strategic programming framework, referred to as a Development Agenda, together with a related Delivery Strategy, which will provide the framework for anticipated new funding. This will guide management decisions for climate change investments for the period 1 July 2013 to 30 June 2016.

This report, an independent Review and Needs Assessment, was prepared by a team of individual consultants and will inform the Development Agenda and Delivery strategy. It covers three outputs: (i) an overarching review of all Pacific climate change activities funded under ICCAI; (ii) a review of the three climate science and adaptation planning programs comprising the Pacific Climate Change Science Program (PCCSP), the Pacific Adaptation Strategy Assistance Program (PASAP), and the follow-on Pacific-Australia Climate Change Science and Adaptation Planning Program (PACCSAP); and (iii) country and regional situation analyses and needs assessment reports covering disaster risk management, environment and climate change adaptation activities (referred to in this report as DEC).

Overview of ICCAI Funded Programs in the Pacific

AusAID is directly responsible for managing \$47.4 million (30%) of the ICCAI funds allocated to the Pacific through bilateral programs, and \$90.4 million (58%) overall when multi-country and regional programs are included. The climate science and adaptation planning programs implemented by whole of government – primarily DCCEE, with the Bureau of Meteorology (BoM) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) – total about \$65.6 million, representing 42% of the total. In addition, about \$88 million is being provided by ICCAI to global programs which impact on the Pacific to some degree (assessment is not part of this Review).

ICCAI has four objectives:

- Establish a sound policy, scientific and analytical basis for long-term Australian action to help partner countries adapt to the impacts of climate change;
- Increase partner country understanding of the impacts of climate change on their natural and socio-economic systems;

¹ This review covers activities totalling approximately \$154 million, and does not cover new 2013 initiatives.

² DCCEE has been replaced by the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, (DIICCSRTE), which has taken over most of its functions: however DCCEE is retained in this Review as it is DCCEE's activities that this Review is examining.

- Enhance partner country capacity to assess key climate vulnerabilities and risks, formulate appropriate adaptation strategies and plans, and mainstream adaptation into decision making; and
- Identify and finance priority adaptation measures that can immediately increase the resilience of partner countries to the impacts of climate change.

These objectives are to be achieved through policies and programs that encourage participatory action research, communications and networking, and education and training. ICCAI specifically targets strengthening institutional and human capacities at the national level. Most of the projects and programs were designed to help increase awareness and understanding of, and build resilience to, climate change in key areas of national development plans and priorities, such as poverty reduction and improving food security. They are not isolated climate change adaptation projects. Several projects target improvements in service delivery, particularly water supply. Many bilateral projects have a focus on building community awareness and resilience even where the main project objective is improved economic infrastructure or service delivery. Many also address building capacity of local governments and national governments, helping improve the development resilience and climate change adaptation environment, and linkages between communities and governments.

Several projects target improvements in water supplies and sanitation services (e.g. in Kiribati, Nauru, RMI, Samoa and Tuvalu) while a few focus on economic infrastructure (e.g. roads in Solomon Islands and Vanuatu), but these programs also include elements of community and government awareness building and capacity strengthening. The NGO implemented programs target poverty reduction and food security, improving resilience to climate change, some specifically targeting the poorest and vulnerable. Most Pacific countries are assessed as vulnerable, and in this context it can be said that all projects and programs address the vulnerable.

Three projects provide additional funds for climate adaptation components of infrastructure projects – the road program in Solomon Islands being implemented by the Asian Development Bank (ADB), the climate change adaptation program and a sanitation project in Kiribati which address impacts of climate change on coastal infrastructure and water supplies and sanitation, being implemented by the World Bank (as noted below, this project is broader than just infrastructure), and the AusAID-financed road program in Vanuatu, which includes components to address climate change.

ICCAI is providing \$15 million to two multi-country community targeted small grants programs: (i) support to Australian and International NGOs to work with local organisations to implement community-based adaptation activities, and (ii) a contribution to the Global Environment Facility (GEF) Small Grants Programme, implemented by UNDP for small-scale community-based climate change adaptation in Small Island Developing States (SIDS).

Key ICCAI supported regional programs include the Future Climate Leaders Program implemented by the University of the South Pacific (USP), a valuable training opportunity for Pacific countries. ICCAI has also provided funds to the Pacific Adaptation to Climate Change (PACC) program – a regional program funded by the Special Climate Change Fund with management and oversight by the Secretariat for the Pacific Regional Environment Programme (SPREP) and the United Nations Development Programme (UNDP), to expand adaptation projects covering water resource management, coastal zone management, and food production and food security, and to extend it to more countries.

ICCAI also provides funds to the Secretariat of the Pacific Community (SPC) (\$9 million) and SPREP (\$3 million) for climate change adaptation activities in addition to separate AusAID support for core budget and program financing from its regular program (including a \$17 million December 2011 agreement with SPC for 4 years, and a multi-year \$10.5 million agreement signed with SPREP in May 2013).

ICCAI's regional program includes the three climate science and adaptation planning programs: the Pacific Climate Change Science Program (PCCSP – \$20 million), the Pacific Adaptation Strategy Assistance Program (PASAP – \$13.6 million). These were implemented separately from 2009 to 2011 and then combined and extended as the Pacific-Australian Climate Change and Adaptation Planning (PACCSAP) Program (\$32 million) for a further two years.

PCCSP was designed as a program of climate change scientific research led by Australian scientists, intended to contribute to the priority needs for scientific knowledge and climate change projections for the region. It also had objectives of capacity building at country level, and dissemination of the scientific information. PASAP aims to strengthen partner country capacity to assess key climate vulnerabilities and formulate adaptation strategies to address them. PACCSAP follows on from these programs and has three expected outcomes: (i) improved scientific understanding of climate change in the Pacific; (ii) increased awareness of key climate science, impacts, and adaptation options; and (iii) better adaptation planning to build resilience to climate change impacts.

Review Findings

Overall ICCAI funding for activities in the Pacific has been very relevant to the Pacific, activities being mostly very relevant to country and regional needs. The bilateral projects are grounded in each country's own development strategy and priorities and needs, and are in line with the respective country Partnerships for Development (P4Ds).

Many of the bilateral projects focus on key regional and national needs and priorities of building community awareness and resilience to climate change, and implementing climate change adaptation activities. Many projects also address building capacity of local governments and national governments, helping improve the development resilience and climate change adaptation environment, and building linkages between communities and governments. Some of the projects provide additional funds to existing or planned development projects, enabling inclusion of specific initiatives to build resilience to climate change. The three climate science and adaptation planning programs are very relevant to regional needs and to the ICCAI objective of establishing a sound policy, scientific and analytical basis for long-term Australian action to help partner countries adapt to the impacts of climate change. The focus of these three programs on capacity building in the participating countries has been a crucial factor in enhancing their relevance.

However there are a plethora of different agencies and funding mechanisms in the Pacific addressing climate change, including through the Global Environment Facility (GEF) and the Climate Investment Fund as well as bilateral and multilateral agencies, which has increased complexity and created some confusion in Pacific Island Countries (PICs), and a need for improved donor coordination. The ICCAI funding, with AusAID and DCCEE co-managing fund streams, adds to this complexity.

Effectiveness and efficiency of projects and programs has varied. The "fast-start" nature of the financing, with the need for the additional funds to be allocated and spent within a constrained time period, created pressures to find projects (often "no regrets" activities) rather than allowing time to plan an integrated program. Nevertheless, in general projects and programs have been effective. The PCCSP and PACCSAP science programs were highly effective in generating new scientific information, delivering an impressive amount of complex and broad-ranging scientific research in a short space of time, with publication of the peer-reviewed results. Similarly SPC has produced some notable research work, particularly the fisheries vulnerability study, and in climate change resilient agriculture. Resilience to climate change has been built into infrastructure projects and delivery of services, and national and local awareness capacity strengthened.

Raising climate change awareness, has been successful in several projects, notably in the NGO implemented projects and the climate science and adaptation planning programs. New scientific information and research into impacts of climate change on fisheries and agriculture have been

generated; the fisheries study has been published. Building climate change adaptation activities onto existing AusAID programs has been effective, achieving some immediate impacts.

However, viewed regionally, the bilateral projects funded under ICCAI do not seem to have been selected based on any overall perspective of Australia having a particular comparative advantage, experience or expertise in specific sectors or activities. In addition, potential synergies were seemingly not programmed as a design objective. Future programming could address this. The adaptation planning work under PASAP and PACCSAP did not form a cohesive program in the same way as the science program, being developed and implemented as a series of relatively unconnected projects and activities, without linkages and synergy.

Constraints (barriers) to effective implementation exist, particularly national and local capacity constraints, and inadequate coordination amongst partners and national governments. Program review, monitoring and supervision of ICCAI funded activities by AusAID and DCCEE, while generally adequate, has been hindered due to the lack of an overall program framework specifying the logical linkages across the planned activities, together with inadequate project monitoring systems of implementers and oversight agencies. In addition, individual project designs often did not clearly define expected outcomes with measurable indicators, and lacked adequate monitoring plans and individual project frameworks. These constraints can be addressed by capacity building programs and improved monitoring systems. M&E plays a critical role in managing for results and improvements, and improved systems, are needed.

The choice of delivery mechanisms, whether bilateral, multi-country or regional, can all be relevant, but efficiency can be affected by the choice of modality. AusAID needs to select the most appropriate for the objective in mind. Direct national support is the preferred option where it addresses a specific national need. Regional delivery programs should either provide a regional public good, or support activities at national levels, generating efficiencies in delivery of supportive skills. Multi-country modalities can similarly deliver efficiencies. Working through development partners, such as MDBs, can be useful where skills or resources are not available in AusAID which a partner can provide, thereby supporting a sector where AusAID has limited capacity

The Review concludes that while the initial concept of the ICCAI as an integrated program was not followed fully during development of the varied initiatives, a single integrated ICCAI program would probably have been unmanageable. What might have been more appropriate was a better integrated single climate science and adaptation planning program, but implemented within an overall program framework and AusAID management and governance system that ensured linkages to the adaptation initiatives undertaken within bilateral and regional programs.

Australian supervision of bilateral programs has generally been good but varied for other programs, with some concerns being expressed in the countries visited on processes and information flows on the climate change action grants and on the degree of oversight of programs of SPC and SPREP, and UNDP. The management arrangements for the climate science and adaptation programs appear to have enabled the main agencies to meet their individual obligations reasonably efficiently, despite overall coordination and management weaknesses.

Situation Analyses and Needs Assessment

Significant recent initiatives, many Australian funded, have improved the understanding of both current and future natural hazard risks, including the economic consequences. These confirm that, regardless of the sector of interest and the indicator used, Pacific island countries are highly vulnerable to natural hazards. Recent studies suggest that vulnerabilities in the Pacific generally have been increasing, but more as a result of increases in exposure to risks due to human activities rather than increases in hazards.

Vanuatu has the highest score for the World Risk Index, and four other Pacific island countries (out of only seven assessed) are in the top 15 of 173 countries measured. As a whole, the Pacific region is amongst the most vulnerable in the world as it combines high exposure to frequent and damaging natural hazards with low capacity to manage the resulting risks and outcomes.

The total value of infrastructure, buildings and cash crops in the Pacific Islands region that are at risk from tropical cyclones, earthquakes and tsunami is estimated to be over USD 112 billion. The value of assets at risk translates into annual average economic losses suffered by Pacific Island Countries being as high as 7% of gross domestic product (GDP), with natural disaster losses in any single year sometimes exceeding the GDP.

The Economic Vulnerability Index for Pacific island countries declined between 1984 and 2008, but it remains considerably higher than the average of 127 countries for which data are available. The Environmental Vulnerability Index for most of the 14 Pacific island countries is considerably higher than that for all Least Developed Countries. Since 2004, when the Index was last calculated, environmental vulnerability of Small Island Developing States has increased further. The nine Pacific countries for which data is available show little change in their Human Development Index since 2007, in marked contrast to the improvements achieved before that time. Only one Pacific Island country (Palau) is in the high human development group, while six countries (Federated States of Micronesia, Fiji, Kiribati, Samoa, Tonga, Vanuatu) are in the medium human development group. Two countries (Papua New Guinea and Solomon Islands) are in the low human development group.

Looking to the future, any modest development gains already achieved will continue to be at risk from natural hazards such as cyclones and drought, with these risks being exacerbated by climate change. For example, the subsistence lifestyles common in the Pacific region are highly vulnerable to both rapid (e.g. cyclones) and slow (e.g. drought) onset events, as well as to inter-annual and longer-term variations and changes in climate.

Australia is already making substantial investments in the health, education, infrastructure and related sectors of Pacific island countries and given the review findings this investment should continue, but future investments should include more initiatives to increase the resilience of the intended development outcomes. This can be achieved by ensuring the development activities include investments in disaster risk reduction, disaster preparedness and climate change adaptation. These activities should be implemented holistically, and as an integral part of the development activities. This includes improving the resilience of water supplies, food production systems, coastal systems and infrastructure, and also the health and education sectors. Appropriate levels of investment should also be made in strengthening the enabling environment for disaster risk reduction and climate change adaptation, to ensure the timely, efficient and effective delivery of resilient development outcomes.

The analysis has demonstrated the continued high vulnerability of Pacific nations to natural hazards and thus the continued importance of addressing climate change, disaster risk and environmental quality and services by building and sustaining resilience, thereby underpinning sustainable development. It has also identified the most critical needs that should be addressed if development outcomes are to be more resilient, and recommends investments that incorporate DEC directly into program strategies and initiatives that address development priorities. The proposed investment priorities take into account factors such as the critical disaster-, environmental- and climate- risk considerations and development needs, building on, rather than duplicating, the work of other partners that are addressing the identified critical needs. Australia should focus on where it has a comparative advantage in delivering assistance, and where it has specific experience and skills.

Recommendations from the ICCAI Review and Needs Assessment

Recommendations have been drawn from the full Review and the Situation Analyses and Needs Assessments. They cover the following **six focal areas**:

- Focus on sustainable resilient development
- Priority areas for climate change adaptation funding in the Pacific
- Modalities
- Partnerships for development and project screening
- Capacity strengthening and institutional support
- Improved program and project design, monitoring, and evaluation.

Priority recommendations include:

- Ensure that Australia's disaster, environmental and climate change interventions make a direct contribution to enhancing the resilience of development, given that the fundamental purpose of Australian aid is to help people overcome poverty. Effective use of AusAID's Environment Screening process would facilitate this process. Climate change adaptation should not be treated as a separate issue and stand alone DEC interventions should only be undertaken when related to resilient development and within a sound program framework.
- A regional strategy and program framework should be developed that clearly establishes an overall framework within which DEC initiatives can be clearly based, and assessed. This should clearly specify program objectives, and establish linkages between component parts, helping ensure mutual support and synergies. The strategy should be harmonised with activities of other donors and show clearly where Australia has comparative advantage, skills or experience as the basis for selection of initiatives and implementation strategies. Donor coordination needs to be improved.
- In light of the high exposure of natural and human systems in the Pacific to natural hazards, and the vulnerability of these systems to climate change, Australian-funded development initiatives should include, where appropriate, investments in disaster risk reduction, disaster preparedness and climate change adaptation. Key areas for funding are listed below; the separate country Annexes on situational analysis and needs assessments provide more specific recommendations per country.
- Appropriate levels of investment should also be made in strengthening the enabling environment for disaster risk reduction and climate change adaptation, in order that development outcomes will be more resilient to disasters and climate extremes, variability and change.
- Ensure the modality used in a specific instance aligns with the need(s) being addressed, and with the absorptive capacity of countries and the region, including at national, local government and community levels. Some needs are best addressed through direct bi-lateral support initiatives, while other national needs are best addressed through regional, sub-regional, or multi-country initiatives. Needs related to regional public goods, and provision of regionally relevant technical and related services, are most appropriately addressed using regional modalities.
- Partnerships for Development (P4Ds), or their equivalents, are very effective instruments at national levels for integrating DEC and development and should be used as the basis for future programming of DEC initiatives.
- Capacity building should be a core purpose of project activities for climate change adaptation and resilient development to help development of national and local capacity for planning and implementation. The strategy should encourage local ownership and use participatory actions and learning.

- Project design and monitoring, evaluation and reporting systems (M&E) should be improved and include clear statements of objectives linked to the regional strategy and program framework, showing how these will be achieved, with measurable indicators.
- Monitoring and reporting systems for DEC and development investments need to be aligned with international reporting obligations for CCA and must include metrics that separate out any climate change investment, thereby ensuring that climate change related ODA is documented (a requirement of some donors for climate change adaptation activities).
- Further analysis of the costs and benefits of climate change adaptation initiatives should be conducted, including analysis of impact at community levels, and lessons learned, to help determine where replication and scaling up is appropriate. There is a need to simplify designs of community targeted projects, with a more focused approach.

Key areas for future climate change funding in the Pacific include:

- Improve the immediate and longer-term resilience of food production systems (agriculture and fisheries), especially at community levels, covering both resilient technologies and community resilience building.
- Improve the resilience of key economic infrastructure (such as roads, bridges and wharves), and coastal zone management, working with other partners such as MDBs where AusAID lacks the technical skills or resources;
- Improve the resilience of key services such as water supplies (including provision of household water tanks for rainwater harvesting), and health and education;
- Provide capacity building at local, Provincial and national government levels to improve planning and implementation in a coordinated integrated manner;
- Support regional public goods and services - many regional public goods (e.g. ocean fish stocks) require concerted action to enhance their resilience to natural hazards and climate change; regional public services (e.g. multi-country and regional multi-hazard and climate early warning systems) can also enhance the resilience of development in ways that could not be achieved if Pacific island countries act alone.
- Support regional agencies such as SPC and SPREP in providing (a) technical skills and experience to support national-level initiatives as above, and (b) regional public goods, including knowledge; and
- Continue to support further adaptive climate science research where meeting specific regional needs (see separate Annex for details).

I. INTRODUCTION

A. Background

1. The Australian Government committed \$150 million over three years (2008-2011) to the International Climate Change Adaptation Initiative (ICCAI) to meet high priority climate change adaptation needs in partner countries. In the 2010 budget, as part of Australia's 'fast-start' commitments, ICCAI was extended by a further two years (2011-2013) and an additional \$178.2 million was allocated, the initiative thus totalling \$328 million. Of this amount, about \$164³ million is being provided to the Pacific, the focus of this review.

2. The ICCAI comprises four interrelated components, which in combination were to deliver a coordinated package of development assistance: (i) improved scientific information and understanding; (ii) strategic planning and vulnerability assessments; (iii) implementing, financing and coordinating adaptation measures; and (iv) multilateral support for climate change adaptation.

3. The four objectives of the ICCAI are:

- Establish a sound policy, scientific and analytical basis for long-term Australian action to help partner countries adapt to the impacts of climate change;
- Increase partner country understanding of the impacts of climate change on their natural and socio-economic systems;
- Enhance partner country capacity to assess key climate vulnerabilities and risks, formulate appropriate adaptation strategies and plans, and mainstream adaptation into decision making; and
- Identify and finance priority adaptation measures that can immediately increase the resilience of partner countries to the impacts of climate change.

4. ICCAI's objectives were to be achieved through policies and programs that encourage participatory action research, communications and networking, and education and training. ICCAI specifically targets strengthening institutional and human capacities at the national level.

5. In the Pacific, ICCAI is being implemented in close cooperation and consultation with major donors and regional/multilateral agencies and provides funding for activities. AusAID and Australian whole-of-government partner agencies work with Pacific partner governments, regional and multilateral organisations, and non-government organisations (NGO) and community based organisations (CBO) to implement disaster risk management, environment and climate change adaptation activities (referred to in this report as DEC for purposes of brevity) nationally, regionally and in a range of sectors, including infrastructure, coastal management, water resource management, sanitation, waste management, education, fisheries, agriculture, biodiversity and natural resources management. AusAID Posts in the Pacific, with support from Canberra, have undertaken a range of related activities based on development partner priorities and capacities.

6. As part of these wider initiatives. Over \$47 million of ICCAI funding is provided directly through bilateral programs in 15 countries, \$15 million through multi-country programs run by NGOs, and about \$94 million through regional programs. Looking forward, the AusAID budget for 2013/14, handed down on 14 May 2013, states that "Australia is also making a significant long-term investment to help Pacific countries adapt to climate change. With many low-lying islands and atolls, the Pacific region is particularly vulnerable to extreme weather events. Australia is investing \$104 million over three years (2013-16) to help protect water supplies, climate-proof essential infrastructure, boost food security and enhance disaster preparedness."

³ This review covers activities totalling approximately \$154 million, and does not cover new 2013 initiatives.

7. Management arrangements of these programs have developed over time. AusAID administers some ICCAI programs directly, and others jointly with the Department of Climate Change and Energy Efficiency (DCCEE)⁴. These latter programs cover: (i) the development of climate change science – including national-level climate change projections, communication and capacity building; and (ii) the integration of climate change adaptation into Pacific country policies and plans, addressing vulnerability in food and water security, the coastal zone and infrastructure. For brevity, the report refers to these as the climate science and adaptation planning programs. DCCEE manages these programs in partnership with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology (BoM).

8. AusAID's Pacific Division is currently preparing a strategic programming framework, referred to as a Development Agenda, together with a related Delivery Strategy. The former will provide the framework for anticipated new funding and will guide management decisions for climate change investments for the period 1 July 2013 to 30 June 2016.

B. Review Purpose, Scope and Methodology

9. This report, an independent Review and Needs Assessment, was prepared by a team⁵ of individual consultants and will inform the Development Agenda and Delivery strategy. Its focus is on the ICCAI funded program in the Pacific and not on ICCAI as a whole. The purpose of the Review is to: (i) draw and analyse lessons learned from Australian-funded climate change activities implemented to date in the Pacific; (ii) identify environmental, disaster risk management and climate change needs across the region and in each country, in relation to development and poverty reduction; and (iii) make practical recommendations on programming options for future Australian climate change assistance to countries and the region.

10. The review has three outputs:

- An independent review of the Australian Government funded Pacific climate change activities (2008-2012) funded under ICCAI to include:
 - Output 1: overarching review of all Pacific climate change activities, and
 - Output 2: a review of the Pacific Climate Change Science Program (PCCSP), the Pacific Adaptation Strategy Assistance Program (PASAP), and the follow-on Pacific-Australia Climate Change Science and Adaptation Planning Program (PACCSAP); and
- Output 3: country and regional environmental, disaster risk management and climate change needs assessment, including an assessment of where Australia's efforts are best placed to increase resilience and sustainable economic development.

11. This report covers the key findings of all three outputs. The report integrates the first two of these outputs as they are part of the same program and provides: (i) an overarching review of all Pacific climate change activities funded under ICCAI (Output 1), and (ii) summary findings of the review of the climate science and adaptation planning programs (Output 2); a separate free-standing Annex provides full details of the assessment of these DCCEE managed programs.

12. Separate Annexes provides details of the Situation Analysis and Needs Assessment for DEC Resilient Development in the Pacific (Output 3). These Situation Analysis and Needs Assessment Reports are listed in Appendix 1 and include a regional assessment and 15 country reports; key findings have been incorporated into this report in Section III below.

⁴ DCCEE has been replaced by the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, (DIICCSRTE), which has taken over most of its functions: however DCCEE is retained in this Review as it is DCCEE's activities that this Review is examining.

⁵ The team comprises Graham Walter (Team Leader, Monitoring and Evaluation (M&E) Specialist), Peter Hunnam (M&E Specialist), Cristelle Pratt and Professor John Hay (Sector Specialists).

13. A Scope and Methodology Report was prepared in January 2013 following an Inception Mission in Canberra and Melbourne, and an Inception Report in March 2013 following further desk review. Terms of Reference (ToRs) for the Team are included as Annex 1 of the Scope and Methodology report and discussed in Section II of the same report. These are not repeated here. The methodology and approach adopted can be summarised as:

- identification, review and analysis of relevant documentation, some provided by Australian government agencies and some collected in the field and through internet;
- Semi-structured interviews with key stakeholders – some of these interviews were face-to-face, others were conducted electronically (internet, Skype and teleconferences). The interview approach differed depending on the interview environment. In some field interviews, this was hindered by the fact that the team had to cover the three outputs of the review process during a single interview. These stakeholder interviews covered: (i) staff of AusAID in Canberra and those posted in Fiji, Samoa, Solomon Islands and Kiribati; (ii) staff of DCCEE, BoM and CSIRO in Canberra, Melbourne, Hobart, Brisbane and Samoa; (iii) Government officials, regional organisations, NGOs and other development agencies in Fiji, Samoa, Solomon Islands and Kiribati (electronically other countries), and (iv) where possible, consultations with other stakeholders in these countries. Annex 2 provides a list of persons met;
- consultation visits to Fiji, Kiribati, Samoa, and Solomon Islands (including participation in a PACCSAP Symposium in which many key Pacific stakeholders and DCCEE, CSIRO and BoM staff participated); the country visits included some project site visits; and
- validation of report analysis and findings through discussions and information exchanges with key stakeholders and Posts.

14. Country visits took part in two separate phases in March and April, due partly to suitable timing of the visits to the countries concerned, but also to availability of team members. The choice of countries was initially based on what was required for the situation analysis and needs assessment (the criteria were presented in the Scope and Methodology Report) but are representative of the region, covering different country sizes and scale of country program, suitable for the Review as a whole. An Aide Memoire was presented at a de-briefing in Canberra following the country visits; this was invaluable in enabling the Team to meet and discuss the initial review findings and seek feedback from AusAID, DCCEE and other whole-of-government partners.

C. Constraints and Limitations the Review faced

15. The greatest challenge faced by the Review was the number of activities being implemented by AusAID and its partners in climate change science and adaptation, many overlapping, and the multitude of institutions and stakeholders involved. The Team faced significant challenges in addressing this and had to be selective⁶ the need for selectivity and consequent trade offs were discussed with AusAID, which had identified many of these during the review design process. The volume of documentation and information acquired by the Team was very large, but a significant constraint has been the lack of detail and quantification in the specific objectives and activities, and in the monitoring and reporting systems, for many of the ICCAI funded programs and projects including the three climate science and adaptation planning programs. The stakeholder interview process during the field visits also presented some problems, the team having to cover the three outputs of the review process during a single interview. Other constraints have included the inherent

⁶ Resource and time constraints led to lesser coverage and analysis of some activities. For some small projects no information was provided on progress and decisions had to be taken on how much time should be taken on searching the web and following up with AusAID for projects (e.g. the projects in Cook Islands, Niue and Tokelau).

difficulties of attribution; the lack of historical information and design data for many of the programs⁷, and shortcomings in baseline data; and logistical constraints. Another constraint concerns the lack of an overall program framework which could have linked activities together and with the overall ICCAI objectives; without such a framework, and given the limitations in the reporting and M&E systems, the Review cannot adequately assess the effectiveness of ICCAI funded activities in the Pacific as a whole and thus has focused on its constituent parts; however due to lack of data and information, assessment of the effectiveness and efficiency of many activities would be speculative. The Review is based on the information collected, interviews conducted, and the time available to assimilate, analyse and draw conclusions from it.

II. REVIEW OF ICCAI IN THE PACIFIC

A. Overview of ICCAI Pacific Programs

16. Projects and programs assisted with ICCAI funding are described briefly below – Appendix 3 provides more details including a list⁸, covering all the bilateral, multi-country and regional programs, indicating the amount financed. The listing also provides a summary of project objectives and expected results.

17. AusAID is directly responsible for managing \$47.4 million (30%) of the current Pacific ICCAI financed program (para.6) through bilateral programs, and \$90.4 million (58%) overall when multi-country and regional programs are included; the multi-country programs reviewed are implemented by NGOs and are part of an AusAID global program. The climate science and adaptation planning programs implemented by ‘whole of government’ – primarily by DCCEE, with BoM and CSIRO – total about \$65.6 million, representing about 42% of the total. This is illustrated in the Table below. In addition, about \$88 million is being provided to global programs which impact on the Pacific to some degree (assessment is not part of this review).

Table 1: ICCAI Program Responsibilities

Responsibility	Program	Amount	%
AusAID	Total	90.4	58.0
	Bilateral Program	47.4	30.0
	Multi-Country (NGO delivered) Total	15.0	9.6
	Action Grants	12.7	8.1
	Small island Developing States (SIDS) program	2.3	1.5
	Regional (excluding PCCSP, PASAP and PACCSAP)	28.0	18.0
	PACC Plus	7.35	4.7
	SPC	9.0	5.8
	SPREP	3.00	1.9
	Future Climate Leaders Program (USP)	2.94	1.9
	Others	5.71	3.7
DCCEE (with CSIRO and BoM)	Total	65.6	42.0
	PCCSP	20.0	12.8
	PACSAP	13.6	8.7
	PACCSAP	32.0	20.5
Total		156.0	

Source: AusAID Pacific Division

⁷ Design and reporting requirements for projects under A\$3 million are not as rigorous as for large projects.

⁸ The list excludes some projects just recently approved for: Fiji (AQEP, health sector support, and community development), PNG (Agriculture Research Institute), RMI (drought relief) and Tuvalu (Funafuti resilience to water shortages).

18. The original full ICCAI program commitment (not just the Pacific) was \$150 million over three years (2008-09 to 2010-11), which was extended in 2010 with a further \$178.2 million for 2011-12 and 2012-13, totalling \$328 million for all countries and regions. When established in 2008, ICCAI had four inter-linked components: (i) improved science and understanding; (ii) strategic planning and vulnerability assessments; (iii) implementing, financing and coordinating adaptation measures; and (iv) multilateral support.

19. The ICCAI 1st phase budget of \$150 million was allocated to approximately 25 programs under these four components (as summarised in table 1 of Appendix 3), the first two of which were developed into PCCSP, the Pacific Climate Change Science Program, and PASAP, the Pacific Adaptation Strategy Assistance Program, with budgets of \$20 million and \$12 m respectively. The third component was developed into a portfolio of projects implemented and overseen by AusAID directly, including the Pacific bilateral and regional programs; and the fourth component channelled funding to a number of multilateral Climate Change initiatives.

20. Sections B and C below briefly describe the country bilateral projects⁹, the two multi-country programs covering the community-based climate change action grants program and the SIDS program (both implemented by NGOs), and the regional program, including the PACC Plus program¹⁰, a Future Climate Leaders Program run by the University of the South Pacific (USP), and ICCAI support to SPC and SPREP. Section D briefly describes the three the climate science and adaptation planning programs, also part of the regional program. Appendix 3 provides details.

B. Bilateral and Multi-country Projects and Programs

21. Most bilateral projects and programs include a focus on building community awareness and resilience to climate change and include some climate change adaptation activities, even where the main objective is improved economic infrastructure or service delivery, or poverty reduction. Many of these projects also address building capacity of local governments and national governments, helping improve the development resilience and climate change adaptation environment, and improving linkages between communities and governments.

22. Several programs target improvements in service delivery, particularly water supplies and sanitation services (e.g. in Kiribati, Nauru, RMI, Samoa and Tuvalu) while a few focus on economic infrastructure (e.g. roads in Solomon Islands and Vanuatu), but these programs also include elements of community and government awareness building and capacity strengthening. Livelihoods, poverty reduction and food security feature strongly in the NGO implemented programs, which specifically targeted the poorest and most vulnerable. Most of the programs did not specifically target the poor or vulnerable although project benefits often extended to them. However, most countries in the Pacific are assessed as vulnerable, so in this context all projects and programs can be said to be targeting the vulnerable. This is elaborated on in Appendix 3, which includes an attachment indicating sector focus and targets of all projects.

23. Three projects provide additional funds for climate adaptation components of infrastructure projects – the road program in Solomon Islands being implemented by the Asian Development Bank (ADB), and a climate change adaptation program and a sanitation project in Kiribati which address impacts of climate change on coastal infrastructure and water supplies and sanitation, being implemented by the World Bank (as noted in Appendix 3, this project has other components in addition to infrastructure), and the AusAID-financed road program in Vanuatu, which includes components to address climate change.

⁹ This excludes some projects just recently approved for: Fiji (AQEP, health sector support, and community development), PNG (Agriculture Research Institute), RMI (drought relief) and Tuvalu (Funafuti resilience to water shortages).

¹⁰ PACC and PACC Plus could be considered a multi-country program delivered through a regional organisation rather than a regional program, but this report has followed the AusAID program listing as a regional program.

24. The breakdown of activities by primary sector is shown in the table below. Several projects and programs, however, address several sectors and cannot be readily classified, which may distort this breakdown.

Table 2: ICCAI Pacific Activities Sector Breakdown

Primary Sector	Amount (A\$ million)
Policy and Planning	48.9
Science	24.3
Transport Infrastructure	10.0
Water Resource Management	7.7
Coastal Protection	6.8
Education and Awareness-raising	5.2
Sanitation	3.9
Water Tanks	3.7
Agriculture and Food Security	3.1
Fisheries	0.8
Health	0.1
Multi-sector	39.0

Source: AusAID Pacific Division

25. The biggest ICCAI bilateral program contribution is Kiribati (\$9.4 million,) then Solomon Islands (\$6.0 million), PNG (\$4.65 m; some of these projects are new and not examined by the Review), Samoa (\$4.4 million), Vanuatu (\$4.0 million), and Tuvalu (\$3.6 million). All the other programs are small, \$1.5 million or less. ICCAI contributions to country programs in the North Pacific (FSM, RMI and Palau), and in Nauru and Tonga are all very small. Palau has one project (\$0.02 million). Small allocations have recently been made to the Cook Islands, Tokelau and Niue through the regional PACC Plus program and the donor harmonised program implemented by the New Zealand Ministry of Foreign Affairs and Trade (NZMFAT).

26. ICCAI has provided funding totalling \$12.7 million to support Australian and International NGOs to work with local organisations to implement community-based adaptation activities. This includes funding of almost \$10 million provided to five NGOs for work in the Pacific which were examined by the review. Programs include Live and Learn with projects in PNG, Solomon Islands and Vanuatu supporting protection of food security through adaptation to climate change. The Nature Conservancy (TNC) is using ICAI funds in PNG, RMI and Solomon Islands to build the resilience of communities and their ecosystems to the impacts of climate change. Oxfam Australia has a program in Vanuatu (*yumi stap redi* for climate change) and CARE Australia in PNG (*strongem komunities tingim* climate change) both of which focus on climate change adaptation. This PNG project in particular targets the most vulnerable. Act for Peace has ICCAI funding for programs in Tonga and Vanuatu on community climate change risk reduction.

27. ICCAI has provided A\$2.3 million for small-scale community-based climate change adaptation projects for 15 Pacific Island Countries (PICs – a term commonly used in the Pacific and used in this report for brevity), including Tokelau, to be implemented through the Global Environment Facility Small Grants Programme. The program is implemented by UNDP as part of a 42 country program¹¹ for Small Island Developing States (SIDS) and focuses on practical adaptation activities such as coastal strengthening, relocation of vulnerable households and infrastructure, restoration of coral, and replanting of mangroves.

¹¹ AusAID is providing \$12 million over five years (2008-2013) for the program, which includes Mekong countries and Sri Lanka.

C. ICCAI funded Pacific Regional Programs

28. Key ICCAI supported regional programs include the Future Climate Leaders Program (FCLP) implemented by the University of the South Pacific's (USP) Pacific Centre for Environment and Sustainable Development (PACE-SD) for which ICCAI has provided \$ 2.94 million. The program has developed curriculum for courses in climate change adaptation and climate science which are key modules of post graduate courses provided by USP (Post Graduate Diploma and a Masters Degree in Climate Change). Modules in disaster risk management are also provided.

29. The Pacific Adaptation to Climate Change (PACC) is a regional program funded by the Special Climate Change Fund (SCCF), with management and oversight by SPREP and UNDP. ICCAI is providing an additional A\$7.35 million under a second phase, called PACC Plus, to expand adaptation projects (water resource management, coastal zone management, and food production and food security) in the 13 countries covered by PACC (Kiribati was not a beneficiary), and extend it to Tokelau. An MTR of PACC, commissioned by UNDP as the GEF implementing agency, was conducted in 2012.

Secretariat of the Pacific Community (SPC) and Secretariat of the Pacific Regional Environment Programme (SPREP)

30. AusAID is providing funds from ICCAI to SPC (\$ 9.00 million) and SPREP (\$3.00 million)¹². The regionally mandated responsibilities for DEC are shared between SPC for disaster risk management and SPREP for protecting and managing the environment and climate change. At the 2012 Pacific Islands Forum Leaders meeting in Cook Islands, Leaders acknowledged the important and collaborative work of SPREP and SPC in the area of climate change. SPC is recognised as the lead technical regional organisation in the Pacific, and has conducted significant work in several sectors, including agriculture and food security and in fisheries, in adapting to climate change. SPREP's role focuses more on policy advice and program development. SPC and SPREP are currently developing a road map towards a Pacific regional joint climate change adaptation and disaster risk management framework. This process encourages better coordination between the two organisations and the two fields of work which are closely linked.

31. The four year SPC program (two phases) supports SPC's climate change adaptation work in fisheries and food security, and activities that strengthen the organisation's capacity to respond to the challenges of climate change. This includes: (i) monitoring potential impacts of climate change on Pacific fisheries; (ii) conserving and promoting crop diversity to enhance food security; and (iii) establishing SPCs climate change mainstreaming program to develop a strategic and integrated approach to planning across all its programs.

32. As discussed further in Appendix 3, SPREP has received both core funding and ICCAI funds from AusAID. Funding to SPREP is not specifically tagged by AusAID to any activity. SPREP indicated to the review that the bulk of the funding supported the climate change division and its activities including support for development of the Joint National Action Plan (JNAP - for DRM and CCA) in Nauru and Tuvalu, and support for development of several new project and programme proposals, including the regional Pilot Program for Climate resilience (PPCR), technical backstopping for PACC Plus and the Asia Pacific Adaptation Network (on adaptation and financing), and providing technical advice and support for PICs in the United Nations Framework Convention on Climate Change (UNFCCC) process.

D. Climate Science and Adaptation Planning: PCCSP, PASAP and PACCSAP

33. ICCAI has provided funding for three climate science and adaptation planning programs, the Pacific Climate Change Science Program (PCCSP – \$20 million), the Pacific Adaptation Strategy

¹² These amounts are in addition to separate AusAID support for core budget and program financing from its regular program (including a \$17 million December 2011 agreement with SPC for 4 years, and a May 2013 multi-year \$10.5 million agreement just signed with SPREP).

Assistance Program (PASAP – \$13.6 million), which were implemented separately from 2009 to 2011 and then combined and extended as the Pacific-Australian Climate Change and Adaptation Planning (PACCSAP) Program (\$32 million) for a further two years from 2011. The programs are briefly summarised below, with further details provided in Appendix 3, and in a separate Annex.

34. The PCCSP was designed as a program of climate change scientific research led by Australian scientists, aiming to benefit primarily the PICs and Timor Leste. PCCSP also had objectives of capacity building, aimed at enabling partner country scientific organisations to participate in the scientific research and contribute to the production of climate science information, and dissemination of the scientific information. The PCCSP science program has four components covering: (i) current and recent climate data; (ii) regional drivers of climate variability; (iii) climate projections; and (iv) oceans and sea level rise.

35. PASAP's stated aim is 'to enhance partner country capacity to assess key climate vulnerabilities and formulate adaptation strategies to address them.' The planned outputs were aligned to the expected outcomes of the overarching regional Framework of Action on Climate Change, PIFACC (2006-15). It has two components, with objectives to: (i) build regional capacities to support adaptive planning and action; and (ii) build country capacities to conduct vulnerability assessments and implement adaptive strategies. PACCSAP combines the climate science and adaptation planning programs and had three expected outcomes: (i) improved scientific understanding of climate change in the Pacific; (ii) increased awareness of key climate science, impacts, and adaptation options; and (iii) better adaptation planning to build resilience to climate change impacts.

36. PCCSP, led by the CSIRO-BoM partnership, was completed by mid-2012 with virtually all funds acquitted. PASAP, led by DCCEE had a slower inception and delivery. Implementation started in October 2009, but few activities were completed by the initial deadline and a number of projects are still active. Additional budget allocations were given from mid-2011 following the ICCAI mid-term review, and PACCSAP was designed as a combined extension of PCCSP and PASAP for the additional two years, with a budget of \$32m. At the time of this Review, the majority of the PACCSAP 'Science Program' activities appeared to be on track for completion in 2013; while the majority of the PACCSAP 'Awareness' and 'Adaptation Planning' activities are only recently underway. The Review has been advised that PACCSAP has been extended on a no-cost basis to June 2014.

E. Overall Review Assessment

37. The Review assesses the ICCAI funded activities in the Pacific against the OECD DAC criteria of relevance, effectiveness and efficiency.

Relevance

38. The relevance assessment reviews all activities against both the country's own needs and priorities, as set out in varied national documents, and against AusAID's country Partnerships for Development (P4D). Alignment with the ICCAI objectives is also examined. The analysis shows that all the bilateral programs are relevant to country needs, the bilateral projects being grounded in each country's own development strategy and priorities. Many of the projects, and particularly the NGO implemented projects, are focused on building community awareness and resilience, and include some climate change adaptation activities such as food production resilience. Many of these projects also address building capacity of local governments and national governments, helping improve the development resilience and climate change adaptation environment, and linkages between communities and governments.

39. The bilateral programs are also relevant to and/or in line with the respective country P4Ds, although the P4Ds were mostly prepared in 2008-2009 and did not generally include any priority outcomes on climate change resilience building or adaptation – Samoa and Tuvalu are exceptions in

having a specific climate change outcome. However, most P4Ds include sustainable environment concerns, which are greatly vulnerable to climate change. The P4Ds do not cite delivery mechanisms such as through NGOs, but the program includes several NGO implemented programs focused on community based adaptation. While targeting resilience to climate change at community levels, these programs specifically target poverty reduction (and food security), the main objective of AusAID's development program.

40. The bilateral and multi-country programs (including the NGO program) are relevant to and in line with the three country level ICCAI objectives, particularly activities related to raising awareness and capacity building, but also identifying and financing priority adaptation measures that can immediately increase the resilience of partner countries to the impacts of climate change. The actual identification process is very dependent on existing country-level national strategic planning processes, which vary in their capacity to seek out and develop priority measures. As discussed below, an improved planning process and development of P4Ds into Partnerships for 'Resilient' Development (P4RD) could help this process. Greater involvement of SPREP and SPC in this planning process could also contribute in identifying and developing a pipeline of priority programs.

41. Most of these projects are not isolated climate change adaptation projects, but address specific concerns in national development plans such as poverty reduction and improving food security, while several programs target improvements in service delivery, particularly water supplies and sanitation services. This has helped ensure that the adaptation projects are seen as priority activities by government even where climate change adaptation is not high on the regular development agenda. Provision of improved water supplies is of high priority in several countries, and particularly the atoll countries. A few projects focus on economic infrastructure, such as roads, which are largely being financed by regular bilateral programs or by the multilateral banks, but ICCAI funding is helping improve climate resilience of these, both for the physical infrastructure itself and also by strengthening awareness and capacity in climate change adaptation in government departments and communities involved. Livelihoods, poverty reduction and food security featured strongly in the NGO implemented programs, some of which also specifically targeted the poor and vulnerable. Most of the bilateral programs did not specifically target the poor or vulnerable although project benefits often extend to them. However, most Pacific countries are assessed as vulnerable, and in this context it can be said that all projects and programs address the vulnerable.

42. The ICCAI supported programs of SPC and SPREP have supported both regional and national activities, and are very relevant. The Pacific Islands Forum Leaders meeting in Cook Islands acknowledged the important and collaborative work of SPREP and SPC in the area of climate change. An independent external review of SPC noted the continued relevance of SPC core services, highlighting the high vulnerability of the countries in the region to natural disasters as part of the specific challenges to the Pacific and the impact of climate change in exacerbating these issues. Agriculture and fisheries underpin the livelihoods of a large proportion of the Pacific islands population, especially for subsistence and low income rural and coastal communities. They also account for a majority of export income for most countries in the region. Both agriculture and fisheries are highly vulnerable to the impacts of climate change and could compromise the region's future food security. PACC and PACC Plus, with its emphasis on water resource management, coastal zone management, and food production and food security, is similarly very relevant. The Future Climate Leaders program at USP provides a valuable training opportunity for the region.

43. The Science Program selected topics for investigation that were highly relevant to the needs of all countries in the broad region of Oceania, including Australia, to improve knowledge and understanding of the atmospheric and ocean climate, variability and change.

44. Under PASAP and PACCSAP, the assessment and adaptation planning projects were focused on topics that were relevant to the PICs, as determined through assessments carried out in recent years at country and regional levels. However, a fundamental issue for PASAP and PACCSAP was that

vulnerability assessment and adaptation planning were not considered by the PICs (government, community and agency leaders) as a particular priority for ODA support. By targeting only assessment and planning functions, the two Programs were less relevant and more difficult to get 'buy in' and traction, not responding to the PICs' perennial demand for action on actual adaptation and resilience-building measures. In the 2nd phase, several of the PACCSAP projects appeared to be additions to existing major infrastructure development programs, which while effective and supported by governments, is not necessarily an appropriate model for ensuring that climate change adaptation is fully integrated with each mainstream development sector.

45. The focus of the three Programs on capacity building in the participating countries is very relevant, making the research findings available and accessible to the partner agencies and the public in the Pacific generally. However, while activities were assessed as relevant in addressing a significant or urgent issue or priority need, some activities had been determined by the Program designers or managers based largely on broad assessments made in the Pacific in recent years of climate vulnerabilities and adaptation needs, priorities and options, and on discussions with PIC government agencies (often through the national climate change focal points) but without adequate consultation with local participants or beneficiaries.

46. The climate science and adaptation planning programs are very relevant to ICCAI objective one of establishing a sound policy, scientific and analytical basis for long-term Australian action to help partner countries adapt to the impacts of climate change, and contribute to objective two (increasing partner country understanding of the impacts of climate change on their natural and socio-economic systems) and to a lesser extent objective three (enhancing partner country capacity to assess key climate vulnerabilities and risks, formulate appropriate adaptation strategies and plans, and mainstream adaptation into decision making).

47. Taken overall the programs financed under ICCAI in the Pacific are relevant to the region and to individual countries and, as each is in line with the four stated ICCAI objectives, the ICCAI objectives by inference are thus also relevant to Pacific needs. The review also notes that ICCAI objectives are relevant to the PICs based on assessments carried out in recent years at country-level (including the National Adaptation Programs of Actions (NAPA) prepared by five PICs), at broader-focused National Capacity Self-Assessments (NCSA) prepared by all the PICs, and at regional level through the Pacific Climate Change Round Table (PCCR), the Pacific Island Framework for Action on Climate Change (PIFACC), and the Pacific Plan. However, ICCAI has not been delivered as a coherent program of integrated climate science, vulnerability assessment, adaptation planning and adaptation initiatives, and to some extent this has limited its overall relevance and effectiveness for the Pacific region and countries, and the efficiency of its delivery.

48. The separate ICCAI funded bilateral programs are not linked by any strong sector or thematic focus, and viewed regionally the bilateral projects included under ICCAI look an ad-hoc selection, as with the PASAP program, appearing as a series of individual country projects with no linkages. They do not seem to have been selected based on any overall perspective of AusAID having a particular comparative advantage, current experience or expertise in any one sector, or because of any potential synergies. This is undoubtedly the result of basing the selection clearly in the existing country programs and priorities, which is appropriate, but future programming could look for comparative advantage, special expertise and experience and synergies when selecting activities.

Effectiveness

49. Projects have been effective to varying degrees, some with significant achievements, although implementation of some has been very slow and they have not achieved very much to date. However for several projects and programs, there is very little documentation¹³ to assess

¹³ This is partly because projects/activities below \$3 million generally do not have the same design and M&E and reporting systems as larger projects.

effectiveness and efficiency and specific project missions would be needed to address this, which is beyond the resources of this Review. Many of the projects have not been planned nor retro-fitted during implementation, with substantive measurable objectives and outcomes. Thus, monitoring reports are not clear on achievements, often reporting activities and inputs and not outcomes.

50. Infrastructure projects have recorded noted successes in building resilience to climate change, such as the climate proofing of roads in Solomon Islands and Vanuatu and improvements in water supplies in RMI and Tuvalu (with similar rainwater harvesting projects under way in several countries). The Asset Management Programs included within these infrastructure projects are essential for future sustainability and were welcomed by the governments. Not all infrastructure projects however have been fully successful with some of the sea walls providing coastal protection presenting problems where inappropriately designed or sited (e.g. in Kiribati and Samoa, seeming to cause erosion along adjacent areas). Climate change awareness building has been successful in several countries, with even very small projects having an impact, such as in Palau where national political support for climate change as a priority has been secured following the program. Laws have been improved in FSM, while a climate change adaptation strategy for tourism has been prepared in Samoa. An early warning system has been established in Samoa. Several of the NGO programs have been successful in raising awareness, building capacity, and improving planning for climate change adaptation at community levels, and improving food security, such as the Live and Learn and TNC programs in Kiribati and the Solomon Islands.

51. The analysis has shown that building on programs that are already in the country program and articulated in the P4D, can be effective, and indeed adding climate change resilience measures to existing programs can help achieve immediate impacts and can be cost effective. For example the ICCAI contributions to the roads programs in Solomon Islands and Vanuatu have helped in the immediate climate proofing of these roads, while in Kiribati the additional funding has helped ensure that the design includes resilience measures for climate change. The NGO programs being delivered by Live and Learn and TNC are phase 2 projects, building on experiences and lessons of the first phase, as is the SPC phase two program.

52. The PCCSP and PACCSAP Science projects were highly effective in generating a useful volume and scope of new scientific information in a short space of time, and publication of the peer-reviewed results (Appendix 3 provides more details). However, the strategy adopted by the Science Program was to work closely with the staff of the national meteorological services (NMS) in each of the 15 countries, but not with the systems of end-users, such as the extension services in natural resource sectors, to address their needs for capacity building in accessing and applying the climate science. The Science Program could have aimed higher and could have built greater capacity and achieved greater dissemination of information with a wider range of stakeholders.

53. The adaptation planning work under PASAP and PACCSAP did not form a cohesive program in the same way as the Science Program, being developed and implemented as a series of relatively unconnected projects and activities. A critical issue for PASAP was the management decision at the outset for the program to be established as a relatively independent (stand-alone) mechanism for providing guidance, tools and systems to the Pacific islands region on how countries, sectors and communities should be organised, to understand the risks and adapt to the impacts of climate change. This was an unrealistic and unnecessary ambition. The Review concludes that the Program would have been more effective if the original modest plan of a preparatory analysis had been followed; and then used to guide PASAP as a set of linked modest pilot exercises, to identify, test, demonstrate and subsequently promote for adoption and replication, best practice in vulnerability assessment, adaptation planning and action leading to climate resilience.

54. SPC has some significant achievements, and notably a substantial report entitled *“Assessment Report on the vulnerability of Pacific fisheries to climate change”*, which was peer reviewed and which provides valuable information on the projected future impacts of climate change

on Pacific fisheries. The report provides a detailed scientific assessment of the projected impacts on oceanic, coastal and freshwater fisheries, and aquaculture/mariculture. The report also identifies a range of potential adaptation responses that countries could potentially employ to address these impacts. The findings of this work were published in November 2011 and have been widely disseminated and have attracted considerable international recognition.

55. Other notable achievements by SPC using ICCAI funds include: (i) establishment of the 'Climate Ready Collection' (CRC), and the successful development of a world class laboratory and virus testing capability for crops, (ii) formation of a network of coastal fisheries experts and development of a database, guidelines and tools for coastal fisheries surveys; and (iii) establishment of monitoring sites in five countries (PNG, FSM, RMI, Kiribati and Tuvalu) that will form the basis of a regional monitoring network. SPC, together with other agencies including SPREP, was also instrumental in the formation of the CROP CEOs Subcommittee on Climate Change and the establishment of the CROP Working Arm on Climate Change (WACC).

56. SPREP has supported Pacific countries to better manage and protect their environments and address key climate change challenges. SPREP works with DCCEE in strengthening the science base of climate change support and awareness to members through PACCSAP where SPREP is involved in two initiatives to communicate community climate science to users. SPREP has supported development of national climate change policies and action strategies on climate change and disaster risk management strategies (RMI, Niue, Cook Islands, Tuvalu and Nauru, financed under PASAP). These national policies and action strategies prioritize actions for support and implementation and provide the framework for donors and regional organisations for national climate change activities. PACC (now PACC Plus) is an important program implemented by SPREP, for which it also provides technical backstopping.

57. For some bilateral programs, AusAID has worked through development partners. This can have both positive and negative benefits. It can be most useful where AusAID Posts have limited resources and skills which a partner can provide. Contributing to MDB projects may enable AusAID to support a sector where it has limited capacity, and also help disburse funds, but the administrative burden on Posts this might entail also needs to be considered. In Kiribati working through ADB and the World Bank on two projects has added a significant burden to the Post¹⁴, but it can be effective and efficient, as in the road program in the Solomon Islands, led by ADB. The design of the road program in Solomon Islands benefited from work conducted by ADB on climate proofing infrastructure.

58. While some of the NGO implemented programs have had significant achievements, particularly in strengthening awareness and capacity at community levels and involving the poor and vulnerable, objectives and outcomes are often too numerous, inhibiting effectiveness and imposing management and implementation problems. There is a need to simplify designs and have a more focused approach. For the NGO programs examined, it is unclear whether regional benefits (lessons and knowledge sharing) are being actively sought in all, again missing possible regional synergies. While NGOs are by definition not part of government, some programs have not engaged or informed governments (nor AusAID) sufficiently of what they are doing, which can affect support and cooperation. This is perhaps because the NGO programs are an AusAID Global initiative rather than a regional activity, and not overseen by the Pacific Division, with consequent weaker linkages to country programs.

59. Multi-country approaches provide opportunities for sharing lessons and exchanging ideas and for creating efficiencies in skill usage, but it is not clear whether full advantage has been taken of this. The regional programs cited above, including the support to USP for the FCLP, and to SPC and

¹⁴ But this arrangement allowed AusAID to support these activities which otherwise it might not have been able to.

SPREP, have yielded substantial benefits, particularly in provision of public goods, but also in technical support of country level activities.

60. **Constraints and Barriers:** the biggest constraint, or barrier, to project effectiveness is one of national capacity, not just technical (which can be provided externally) but administrative and managerial capacity for planning, implementation and supervision. Managerial oversight is generally weak at departmental and local and national government levels. National funding is also a major constraint; the inability to generate sufficient revenue to even cover operational and day-to-day maintenance costs is a key constraint for maintaining service delivery in many countries, and assets quickly deteriorate, not helped by the hot humid environment. The plethora of donors and other actors also adds to already weak coordination capacity constraints in the PICs. Overall, institutional capacity and funding constraints impede project implementation and coordination, and mainstreaming of climate change into plans and programs.

Efficiency

61. Many of the bilateral projects had a slow start, mostly due to delays in procurement and recruitment, which has affected both efficiency and effectiveness (e.g. KAP program in Kiribati, NAPA program in Samoa, water tanks in Nauru). Much of this was due to capacity constraints within governments and their lack of familiarity with the procurement procedures of external agencies, including those of AusAID; the procurement procedures of the MDBs in particular are not always appropriate for small island countries – in Kiribati the AusAID Post had to help liaison with the MDBs over procurement concerns. But using national systems does not always overcome this as shown by delays in the process in Samoa, a country with better planning, coordination and implementation systems than most other countries in the Pacific. Program designs need to take national government capacity and familiarity with procedures into account. Designs also need to take into account the skills, experience and capacity of AusAID Posts where they are expected to play a significant role in project implementation or supervision. Apart from general capacity constraints, Posts do not have experience or skills in DEC and indicated during the review mission that they would like on-going support to assist the DEC integration process, and greater clarity about best practices and options for integration.

62. Existing NGO networks and partnerships have enabled several NGO projects to be effective and through this provide value for money. Efficiencies are also being gained through working with others undertaking similar activities in the same location. However, for NGO programs, a high proportion of project costs relate to staff costs, although this seemingly is an unavoidable cost of engaging at community levels, building awareness and capacity.

63. PCCSP, PASAP and PACCSAP were large programs, especially in the context of the Pacific island countries, and especially for exploring solutions in the relatively new and untested field of climate change adaptation. PCCSP, PASAP and PACCSAP were given far too little time to be designed, developed and delivered. The essential problem for these programs was that there was insufficient time to use the large amounts of money efficiently, with management emphasis seemingly on expenditure to meet fast start commitments rather than efficiency. None of the projects or individual activities have been monitored or evaluated for their efficiency in organising the inputs.

64. Under-estimation of time required for planning and implementation was an issue for all the process-intensive projects and activities of PASAP and PACCSAP, one consequence being insufficient time to analyse, reflect and learn from the work that was done. The projects that worked best were those that ignored the time, such as SPREP's support for PICs' national adaptation planning (PASAP 3), which despite being given only \$200,000 of PASAP funds has so far been extended over four years. Several PASAP projects were extended several times, and final completion dates have been reset.

65. An analysis of program planning and design for these three programs has highlighted the inadequacy of design documents and planning and M&E frameworks, a critical issue for their development, implementation, monitoring, communications and reporting. A common weakness of the designs was the lack of definition of a clear strategic program of activities contributing to substantive objectives. There was no overall program framework specifying the logical linkages across the planned activities, nor specifications in individual project designs of how components, projects or activities would be subsequently developed, managed and monitored.

66. The lack of a clear statement of objectives in design documents extends to many of the bilateral programs reviewed, particularly the small projects where AusAID design and reporting requirements are not as rigorous as for large projects. It might also be noted that ongoing reporting for even the large projects managed by the MDBs often focuses on inputs and outputs with limited reporting of achievement of outcomes.

67. The review faced constraints in assessing value for money; for most projects and programs information, data and progress reports were limited and any assessment would be speculative. The project reports examined did not include cost benefit or cost effectiveness analyses and with the resources and time available, the review team could not address this weakness. Projects did not generally include clear statements of quantifiable expected outcomes, and hence did not report on this, which would have facilitated such analysis. Detailed in-country missions would be needed to do this, project by project. Some cost-benefit analysis has been conducted by ADB on the costs of climate proofing infrastructure, which fed into the design of the road program in Solomon Islands. However no conclusion can be drawn from this one-off example as staff estimated that the climate change adaptation component added 6% to the Guadalcanal Province road costs, whereas in Malaita Province over 90% of the road rehabilitation cost is attributable to climate change adaptation – but one is a road rehabilitation project, the other more of a road re-build project. NGO projects are effective at reaching community levels, but the proportion of staff costs spent on a project to achieve this is high, often being about 50%. Project reports show that there is a high cost of reaching the most vulnerable. Analysis of the costs and impacts of the varied climate change initiatives would be very useful for determining which projects should be replicated and/or scaled up.

68. AusAID supervision of bilateral programs has generally been good, but for other programs varied, with some concerns being expressed in the countries visited on processes and information flows on the climate change action grants (NGOs), and on the degree of oversight of programs of SPC and SPREP, and UNDP. For SPC and SPREP, AusAID sits on the supervisory governing bodies, while the Posts in Suva, Samoa and Solomon Islands have good and regular working relationships with them on specific project activities. AusAID Pacific Division in Canberra has its own capacity constraints which limit the amount of effective supervision they can carry out. As noted above, the NGO program is a global AusAID program supervised by another Division which has less knowledge of the Pacific and less opportunity to travel to supervise projects. While recent monitoring reports from the NGOs indicate relatively effective NGO self-monitoring, there is little outcome reporting, nor outcome supervision, by AusAID. AusAID's project preparation approach includes risk management assessments and risk management plans (and the NGO project design documents are reasonable in this regard), increasing the likelihood of success, but this is not followed for all projects, notably small projects.

69. Several NGOs welcomed AusAID's flexibility and responsiveness to requests for adjustments; several reports emphasise the importance of flexibility in terms of project site selection (operating where communities request assistance), time frames and types of activities undertaken. This needs to be incorporated into project design, while keeping a robust project framework and delivery. They indicated that AusAID financing has allowed more participatory approaches and engagement with NGOs at local levels and with local government

70. However there are a plethora of different agencies and funding mechanisms in the Pacific addressing climate change, including through the Global Environment Facility (GEF) and the Climate Investment Fund as well as bilateral and multilateral agencies, which has increased complexity and created some confusion in Pacific Island Countries (PICs), and a need for improved donor coordination. The ICCAI funding, with AusAID and DCCEE co-managing fund streams, adds to this complexity. There is a need for improved coordination amongst donors, with each (including AusAID) having a clear view of what other agencies are doing, and of their own comparative advantage and what their most appropriate role should be.

Governance and Management of ICCAI

71. If viewed as a Climate Change Adaptation Program, the ICCAI funded program in the Pacific has suffered from lack of integration and linkages, and weak coordination between the responsible Australian government agencies. This has seemingly occurred because the ICCAI had been split into four components which were developed into separate programs under different governance arrangements. As the MTR for ICCAI noted, there was no overall program framework to link individual activities to ICCAI program goals and objectives, and no effective monitoring and reporting system at that level to ensure individual activities were indeed linked to this. In addition the originally proposed “platform” management structure within AusAID that might have helped this integration was not pursued in full.

72. For the climate science and adaptation planning programs, the management arrangements appear to have enabled the main agencies to meet their individual obligations reasonably efficiently. However, there has been awkwardness over leadership and governance roles between AusAID and DCCEE and between DCCEE and CSIRO-BoM. Management has not been as strategically effective as expected. The Review concludes that the ICCAI climate science and adaptation planning programs could have been more relevant and effective, and more cost-efficient, if they had been implemented as a whole-of-government ODA initiative, with AusAID providing the lead and providing delivery and management capacity, and DCCEE (and other central policy agencies as required, such as the Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) providing policy guidance.

73. Posts supervise bilateral programs which are generally well monitored. However, as with the climate science and adaptation planning programs, most project documents do not include adequate M&E frameworks, nor clear linkages of activities to expected outcome achievements; monitoring largely has thus not reported on outcome achievements. The oversight of the NGO program is not conducted by the Pacific Division, thus losing some synergies and country expertise, but the Review was informed there are plans to improve oversight and analysis of results and help disseminate this across programs. Canberra and the Posts in Fiji, Solomon Islands and Samoa have good links and cooperation with SPREP and SPC, but these agencies largely run their own regional and national programs. It is unclear to the Review, however, why a regular AusAID contribution plus an ICCAI contribution is needed if funds are pooled and projects are not specifically targeted at climate change adaptation. On the other hand, this might not be considered a concern if sharing costs of the contribution to a program and project budget helps ensure climate change adaptation is actually carried out by agencies.

74. Some concerns are noted in the PACC and PACC Plus assessment in Appendix 3 (c.f. paras. 320-324) about the value of routing funds via UNDP to SPREP, rather than directly to SPREP. It is unclear what technical or administrative value is added by the involvement of UNDP, while there are some clear implementation disadvantages and disbursement inefficiencies.

Integration of Science, Planning and Adaptation Initiatives within ICCAI

75. The initial concept of the ICCAI as an integrated program was not followed fully during development of the varied initiatives. Instead, the emphasis was placed on developing and delivering

separate programs under different agencies and modalities, with virtually no linkages or collaborative, combined actions. As a consequence, ICCAI has not been delivered as a coherent program of integrated climate science, vulnerability assessment, adaptation planning and adaptation initiative implementation, and this has limited its overall relevance and effectiveness for the Pacific region and countries, and the efficiency of its delivery.

76. The Australian Government's Fast Start financing was shared among a significant number of different initiatives, within each of which the support was further divided among numerous actions, several of which appear to be closely related and liable to overlap. If ICCAI was meant to be seen as an integrated program of initiatives, then relevance and effectiveness of this dispersed approach across such a range of delivery mechanisms, partners and activities is doubtful, particularly as activities were all pointed ultimately at the same target of building climate resilience. It may have been a fast way of meeting international commitments and disbursing funds, but it appears that it was not guided by a realistic strategy, program framework and management system to be an integrated program, and was highly unlikely to be effective as such, especially in the short time frame allocated. For some programs, the Fast-Start funding seems to have been construed as fast track and short-term or one-off support from the Australian Government, which has reduced its relevance, value and impacts.

77. Although the PCCSP, PASAP and subsequent PACCSAP had been intended to be an integral part of the ICCAI, this was not achieved adequately at the Program design stage: the various ICCAI component programs were planned, managed and subsequently implemented separately, and followed different modalities, even though there was considerable overlap in their fundamental objectives. The intended linkages and synergies between the component programs were largely inhibited by the separate management arrangements for each. Design and delivery of the ICCAI as separate programs meant that inadequate attention would be given to connecting and integrating the science, planning and adaptation initiatives. They also did not connect adequately with the array of other Australian-supported but non-ICCAI climate programs¹⁵ that were current, thus missing potential synergies.

Other Key Lessons from ICCAI as a Funding Initiative/Program

78. ICCAI as a funding initiative could have been planned and implemented consistently as a single, integrated program with greater coherence and unified structure, management and governance, communications, and monitoring, with better external links. But for this to have occurred, the four designated components would need to have been planned and implemented as a single strategy, with an emphasis on the linked process of scientific research, assessment, planning and action, rather than organising them as discrete areas of activity.

79. This would have required an overall program framework and matching implementation plan and management system, but without this, these interactions and information flows could not readily or adequately occur across the ICCAI programs; information did not flow from scientists to planners to managers and stakeholders, thus reducing the effectiveness and efficiency of the overall initiative and of its component parts. This might not have occurred if the ICCAI 2008 proposal for a "platform" had gone ahead whereby AusAID would have had the resources to play a critical role in coordinating Australia's ICCAI inputs to the Pacific region, contributing to regional coordination, providing services to partner countries in the areas of project identification, design and financing, assisting in the flow of climate science knowledge and expertise, and in training and capacity building. However a single integrated ICCAI program might have proven to be unmanageable given the breadth of the program coverage (see para.81 below).

¹⁵ e.g. South Pacific Sea Level and Climate Monitoring (SPSLCM), Pacific Islands Climate Prediction Program (PICPP); COSPPac; International Forest Carbon Initiative (IFCI), PNG-Australia Forest Carbon Partnership, Pacific Region Infrastructure Facility (PRIF); and the Renewable Energy and Energy Efficiency Partnership (REEEP).

80. In the case of the climate science and adaptation planning programs, the lesson apparent from the first phase was that an adaptation or resilience-building project is more likely to be effective and efficient if it is organised as a staged management process of research, planning and action within an integrating framework, with a single overall objective and common purpose; rather than as discrete components undertaken separately under several management structures. The response to combine PCCSP and PASAP into PACCSAP failed to resolve the issue; PACCSAP continued to operate separately and without adequate links to the other parts of ICCAI.

81. What might have been a more appropriate approach for the ICCAI Pacific “program” was for the climate science and adaptation planning program to have been integrated as a single program, but implemented within an overall Pacific ICCAI program framework and AusAID management and governance system that ensured linkages to the separate bilateral and regional programs.

Some Key Lessons and Successes from the Bilateral and Regional Program Activities

82. Bilateral climate change adaptation programs being firmly founded in national priorities and being based on key development objectives such as improved service delivery, improved economic infrastructure, or poverty alleviation, has helped create government buy-in for the adaptation components, even when climate change adaptation is not seen as a priority by government. This may not be the best model for mainstreaming climate adaptation into sectors and the development agenda, but it is very effective.

83. Building DEC into existing AusAID programs can be effective, and indeed adding climate change resilience measures to existing programs can help achieve immediate impacts and can be cost effective. For example, the additional funds provided to the road programs in Solomon Islands and Vanuatu for climate change adaptation enabled climate proofing of the infrastructure and helps strengthen the capacity of public works staff in designing and implementing more resilient infrastructure. In Kiribati it is providing the opportunity for designs to include such elements. Phase 2 of the SPC and NGO programs build on lessons learned from phase 1 in integrating resilience measures.

84. Efficiencies can be gained by working with partners (MDBs, NGOs, regional organisations) who have established track records and working relationships, although care is needed not to duplicate efforts.

85. Combining local knowledge with new science improves the likelihood of acceptability and leads to improved effectiveness and efficiency, as illustrated in the NGO programs in Solomon islands.

86. Multi-country approaches provide opportunities for sharing lessons learned and exchanging ideas. Efficiencies can be gained by shared technical skills and experience from other activities and implementation institutions, such as regional organisations and NGOs.

87. Sustainability is greatly helped by building capacity at community and local government levels, such as the NGO programs in PNG, Solomon Islands and Vanuatu.

88. AusAID funding for NGOs has allowed longer term engagement, essential for building trust and relationships, and building capacity. Longer term engagement in traditional sectors, such as in transport in Solomon Islands has similar potential.

89. AusAID financing for NGOs has allowed more effective participatory approaches and engagement at local community levels and with local governments.

90. Effective project supervision requires improved M&E systems based on sound logical frameworks (and theory of change where understanding and capacity is sufficient) to help create results based management and supervision systems.

91. Paras.50–59 above provide some summary information of activities that have been effective and successful: these are detailed in Appendix 3. These include infrastructure projects where building resilience to climate change has been successful on some road projects, and rainwater harvesting through provision of water tanks in several countries; but care needs to be taken in other infrastructure projects such as building seawalls. Some projects targeting improvements in service delivery such as water supplies and sanitation have also helped build community awareness and capacity, thereby increasing likelihood of sustainability.

92. Evidence from the Review suggests capacity building needs to be targeted to be successful. Projects provide opportunities for specific targeted capacity building, whereas achievements of more general capacity building programs are less visible. Using civil society organisations to target communities has been successful in several countries. Building climate change awareness and capacity has been successful at community levels through NGO programs in several countries (see para.50). Livelihoods, poverty reduction and food security featured strongly in these NGO implemented programs, which have helped build resilience to climate change in these critical areas at the targeted community levels. Similarly the USP, SPC and WWF programs in rural and coastal communities in Fiji have built awareness and capacity at the targeted communities. These programs also target improved water resource management, but results can only be measured in the longer term. The Climate and Disaster Risk Education Program (CADRE) implemented by International Organisation for Migration (IOM) is raising awareness and building resilience in the North Pacific, directly targeting schools and their surrounding communities. The USP-delivered future climate leaders program (FCLP) has developed curriculum for courses in climate change adaptation and climate science which are key modules of post graduate courses provided by USP; graduates from these programs are using these skills in the own countries, improving national effectiveness. The FCLP has also provided in-country and non-credit workshops, targeting specific communities and/or needs. Specific inputs on legislation in RMI and Samoa have been successful.

93. Evidence of successful awareness and capacity building is less obvious in the broader science and adaptation planning programs. The PCCSP and PACCSAP science programs have been very effective in generating new scientific information, but the outreach of this to end-users has not been so effective. The SPC fisheries vulnerability to climate change assessment has been well received and published, while SPC and SPREP have also disseminated practical adaptive agriculture research findings and resilient crop varieties directly to end-users. These have been successfully used in the PACC projects. Improved planning, ranging from national level assistance in policy and planning in Nauru, Tonga and Tuvalu, to specific planning activities such as how to handle surface water flooding, monitoring ground water, and setting up early warning systems in Samoa seemingly have been successful, particularly when specifically targeted at a group, or when focusing on a specific activity. Regional advice and assistance provided by SPC and SPREP has helped countries in project formulation and implementation, providing key technical support not readily available nationally.

F. Conclusions

Conclusions

94. Overall the ICCAI Pacific initiative has been very relevant and quite effective and worth continuing, but with improvements as discussed below in the recommendations. While effectiveness and efficiency have varied, almost all activities have been very relevant to country and regional needs. The analysis above shows that all the programs are relevant to country needs, the bilateral projects being grounded in each country's own development strategy and priorities and are in line with the respective country P4Ds. As discussed further below, the P4D is a very effective instrument for integrating DEC and development at national levels.

95. Many of the projects focus on key regional and national needs and priorities and ICCAI objectives of building community awareness and resilience, and implementing climate change adaptation activities. Many address building capacity of local governments and national governments, helping improve the development resilience and climate change adaptation environment, and linkages between communities and governments. The climate science and adaptation planning programs are very relevant to regional needs and to the ICCAI objective of establishing a sound policy, scientific and analytical basis for long-term Australian action to help partner countries adapt to the impacts of climate change. The focus of the three programs on capacity building in the participating countries was a crucial factor in enhancing their relevance.

96. Effectiveness and efficiency of projects has varied, but project documentation constrained analysis, many projects not having substantive measurable objectives, thus reports are not clear on achievements, often reporting activities and inputs and not outcomes. The PCCSP and PACCSAP science projects were highly effective in generating new scientific information; the program's outstanding achievement was the delivery of the impressive amount of complex and broad-ranging scientific research in a short space of time, and publication of the peer-reviewed results. Similarly SPC has produced some notable research work, particularly the fisheries vulnerability study and in climate change resilient agriculture.

97. Most of the projects are founded in national strategies and priorities (included in P4Ds) and are not focused solely on climate change adaptation; they address specific concerns in national development plans such as poverty reduction and improving food security, enhancing their acceptability to governments and their effectiveness. Several programs target improvements in service delivery, particularly water supplies and sanitation services and infrastructure. Some of the projects provide additional funds to existing or planned development projects addressing these development concerns, enabling resilience to climate change to be specifically included.

98. However, as shown above, viewed regionally the bilateral projects funded under ICCAI appear as a series of individual country projects without any framework or strategy holding them together. They do not seem to have been selected based on any overall perspective of Australia having a particular comparative advantage, current experience or expertise in any one sector. Potential synergies were not programmed. Future programming could look to address this. The adaptation planning work under PASAP and PACCSAP did not form a cohesive program in the same way as the science program, but was developed and implemented as a series of relatively disconnected projects and activities.

99. On the positive side, climate change awareness building has been successful in several projects, notably in the NGO implemented projects and the climate science and adaptation planning programs. New scientific knowledge generated by BoM and CSIRO has been widely disseminated through a range of communication products and methods (e.g. reports, journal papers, brochures, web-tools, workshops, in-country training, scientist exchanges). New scientific information and research into impacts of climate change on fisheries and agriculture have been generated and published. Building climate change adaptation activities onto existing programs has been effective, achieving some immediate impacts.

100. Constraints (barriers) to effective implementation exist, particularly national and local capacity constraints, and inadequate coordination amongst partners and national governments. Program review, monitoring and supervision of ICCAI funded activities by AusAID and DCCEE, while generally adequate, has been hindered due to the lack of an overall program framework specifying the logical linkages across the planned activities, together with inadequate project monitoring systems by implementers and oversight agencies. In addition, individual project designs often did not clearly define expected outcomes with measurable indicators, and lacked adequate monitoring plans and individual project frameworks. These constraints can be addressed by capacity building programs

and improved monitoring systems. M&E plays a critical role in managing for results and improvements and improved systems are needed.

101. The choice of delivery mechanisms, whether bilateral, multi-country or regional, can all be relevant, but efficiency can be affected by the choice of modality. AusAID needs to select the most appropriate for the objective in mind. Direct national support is the preferred option where it addresses a specific national need. Regional delivery programs should either provide a regional public good, or support activities at national levels, generating efficiencies in delivery of supportive skills. Multi-country modalities can similarly deliver efficiencies. Working through development partners, such as MDBs, can be useful where skills or resources are not available in AusAID which a partner can provide, thereby supporting a sector where AusAID has limited capacity

102. The Review concludes that while the initial concept of the ICCAI as an integrated program was not followed fully during development of the varied initiatives, a single integrated ICCAI program would probably have been unmanageable. What might have been more appropriate was a better integrated single climate science and adaptation planning program, but with an overall program framework and AusAID management and governance system that ensured linkages to the bilateral and regional programs.

103. Australian supervision of bilateral programs has generally been good but varied for other programs, with some concerns being expressed in the countries visited on processes and information flows on the climate change action grants and on the degree of oversight of programs of SPC and SPREP, and UNDP. However, for the climate science and adaptation programs, the management arrangements appear to have enabled the main agencies to meet their individual obligations reasonably efficiently, despite overall coordination and management weaknesses.

III. SITUATION ANALYSIS AND NEEDS ASSESSMENT

A. Introduction

104. Regional and national situation analyses and needs assessments have been undertaken concurrent to the Review. These assessments analysed the natural hazards and the risks and vulnerabilities, and the resulting needs related to disaster risk management (focused on risk reduction), environment, and climate change (focused on adaptation). A particular focus of the analysis was to identify the future DEC needs that should be addressed in order to increase the resilience of development outcomes. The methodology for these assessments, together with a synthesis of the information presented in the separate Annexes, is set out in Appendix 4. The separate Annexes cover 15 countries and territories, together with a regional assessment.

105. Collectively, these assessments will assist in moving DEC and development related investments from being “supply driven” to becoming “needs driven”, contributing to increased certainty and effectiveness in development assistance provided by Australia and others to the region, helping to increase the resilience and sustainability of regional and national developments.

B. Natural Hazards, Risks and Vulnerabilities

106. PICs show high vulnerability to natural hazards in all sectors. Significant recent investments, such as PCCSP and the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), have improved the characterisation of both current and future hazard risks, including the economic consequences. Recent studies suggest that vulnerabilities in the Pacific are generally increasing, but more as a result of increases in exposure to risks due to human activities rather than to increases in hazards.

a. Natural Hazards

107. **Meteorological and Climatological Hazards** occurring in the region include tropical cyclones and other intense storms, landslides, river and coastal erosion and flooding including storm surges and other high wave incidents, droughts and heat waves. The region experiences a relatively high frequency of tropical cyclones. This is especially the case for countries to the west of the dateline, though areas to the east experience a higher frequency of cyclones during El Niño conditions.

108. The position of the South Pacific Convergence Zone (SPCZ) also has considerable influence on rainfall extremes (heavy rainfall, drought), especially for the Cook Islands, Fiji, Kiribati, Nauru, Niue, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. Studies show that over the period covering 1980–2000, locations to the north-east of the SPCZ, and especially those in the eastern Pacific, experienced more frequent heavy rainfall events as a result of the SPCZ making a rapid shift to the north-east of its long-term mean location, while locations to the south-west of the SPCZ became drier. Since the late 1980s, the position of the SPCZ has oscillated around its long-term mean position.

109. Increased concentrations of greenhouse gases (GHG) in the atmosphere, as a result of human activities, are expected to result in significant changes in the region's climate. Recent work has reduced uncertainties in the climate projections while increasing the relevance of the available information. It is expected that:

- By 2030, regional warming will be around +0.5 to 1.0°C, regardless of the GHG emissions scenario; by 2055 warming will be +1.0 to 1.5°C, with regional differences depending on the emissions scenario; and by 2090 it will be around +1.5 to 2.0°C for a low emissions scenario and +2.5 to 3.0°C for a high emissions scenario.
- There will be large increases in the occurrence of extremely hot days and warm nights.
- Increases in annual mean rainfall will occur near the SPCZ and the Inter Tropical Convergence Zone (ITCZ), with little change elsewhere in the region.
- In the wet season (November–April), the SPCZ is not expected to shift position, but there is some evidence for a projected equator ward shift in the dry season (May–October); increased rainfall is projected within the SPCZ in the wet season in particular; there is also evidence that islands located near the eastern edge of the SPCZ will become drier in the wet season, due to a strengthening of the trade winds in the south-east Pacific.
- While year-to-year climate variability in the region will continue to be strongly affected by the El Niño Southern Oscillation, climate models do not provide consistent projections of changes in the frequency, intensity and patterns of future El Niño and La Niña events.
- The annual numbers of rain days (over 1 mm), light rain days (10–10 mm) and moderate rain days (10–20 mm) will increase near the equator, with little change elsewhere in the region.
- There is a widespread increase in the number of heavy rain days (20–50 mm), such that extreme rainfall events which currently occur once every 20 years on average will occur four times per 20 years, on average, by 2055 and seven times per 20 years, on average, by 2090 under a high emissions scenario.
- Droughts are projected to occur less often.
- While not uniform across the region, sea-level rise will generally be similar to the global average, namely 0.18 to 0.59 m by 2080–2099, relative to 1980–1999, with an additional potential contribution from ice sheets which could result in an additional 0.1 to 0.2 m.
- Due to further ocean acidification, aragonite saturation values below 3.5 will become more widespread and have the potential to disrupt the health and productivity of

reef ecosystems; lowest values of aragonite saturation in the region are projected to occur in the eastern equatorial Pacific, affecting the easternmost islands of Kiribati.

- In the south Pacific sub-basins there will be a decrease in the frequency of tropical cyclones by the late 21st century, but an increase in the proportion of more intense storms; in the North Pacific sub-basin a decrease in both the frequency of tropical cyclones and the proportion of more intense storms is expected¹⁶.

110. **Geological Hazards** include volcanic eruptions, earthquakes, landslides and tsunami. The frequency of such events is comparatively high as many countries in the west of the region lie on the Pacific “ring of fire”. Some PICs, such as Papua New Guinea, Tonga, the Solomon Islands and Vanuatu, are located on top of or close to the sources of large earthquakes that occur on the “ring of fire”. Others, such as the Cook Islands, Marshall Islands and Kiribati, are more distant. However, no PIC is completely immune to the far reaching effects of earthquake induced tsunamis.

b. Cost of Natural Disasters

111. The majority of disasters occurring in the region are associated with severe storms, including tropical cyclones. The total value of the infrastructure, buildings and cash crops in the Pacific islands region that are at risk from tropical cyclones, earthquakes and tsunami is estimated to be over USD 112 billion. This high value of assets at risk translates into annual average economic losses suffered by PICs being as high as 7% of gross domestic product (GDP), with natural disaster losses in any single year sometimes exceeding the GDP.

112. Since 1950, natural disasters have cost PICs around US\$3.2 billion, in nominal terms, in associated damage. The cost of restoring infrastructure, maintaining access to basic social services, providing social safety nets to the affected population, and investing in disaster risk reduction, is expected to be around US\$120 million, which equates to 22 per cent of GDP over the next three to four years. For PNG’s water resources alone, a projected 2 to 4°C rise in temperature has been estimated to cause economic losses of US\$1 billion per year. Comprehensive interventions addressing Samoa’s urgent and immediate needs are estimated to cost US\$2 billion.

c. Development Related Vulnerabilities

113. Vanuatu has the highest score for the World Risk Index, and four other PICs (out of only seven assessed) are in the top 15 of 173 countries measured. As a whole, the Pacific islands region is amongst the most vulnerable in the world as it combines high exposure to frequent and damaging natural hazards with low capacity to manage the resulting risks and outcomes. Looking to the future, this situation will be exacerbated by climate change. For example, the subsistence lifestyles common in the Pacific region are highly vulnerable to the impact of inter-annual and longer-term variations in climate.

114. The economic vulnerability of PICs declined between 1984 and 2008, but it remains considerably higher than the average of 127 countries for which data are available. The Environmental Vulnerability Index for most of the 14 PICs is considerably higher even than for all Least Developed Countries. Since 2004, when the Index was last calculated, environmental vulnerability of Small Island Developing States has increased further.

115. The 2013 Human Development Report assesses progress as a result of investing in people’s capabilities – especially health, education, and nutrition – and in building resilience to economic, environmental and other threats and shocks, recognizing that this is key to advancing human development. The nine PICs for which data is available show little change in their Human Development Index since 2007, in marked contrast to the improvements achieved before that time. Only one Pacific Island country (Palau) is in the high human development group, while six countries

¹⁶This is from PACCSAP work which indicates these results are uncertain due to inconsistencies in models examined.

(Federated States of Micronesia, Fiji, Kiribati, Samoa, Tonga, Vanuatu) are in the medium human development group. Two countries (Papua New Guinea and Solomon Islands) are in the low human development group.

116. Of all the Millennium Development Goals (MDGs), progress for PICs is poorest for MDG 1 (to eradicate extreme poverty and hunger), the MDG judged to be the most adversely affected by climate change and disasters.

C. Situation Analysis

117. Regional approaches for integration and cooperation, and for improved donor coordination, harmonisation and alignment, play an important role in supporting PIC governments in meeting their sustainable development challenges and priority needs. They are particularly pertinent, given PICs increasing vulnerabilities to natural and human-induced hazards and risks, their geographic isolation and, their comparatively small populations and markets, as these factors limit economies of scale and place human and institutional capacity constraints on PICs to effectively meet their responsibilities and functions.

a. DEC Policy, Planning and Multi-lateral Agreements

118. Several regional policy and planning instruments for DEC are in place including the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015 (RFA), Pacific Regional Environment Programme Strategic Plan 2011 – 2015 and Pacific Islands Framework for Action on Climate Change 2006 – 2015 (PIFACC) and an array of regional environmental strategies, frameworks and action plans including the Action Strategy for Nature Conservation and Protected Areas in the Pacific Islands Region 2008-2012. They clearly reflect regional and national commitments to relevant international agreements such as the Hyogo Framework for Action and, the three Rio Conventions on climate (UNFCCC), biodiversity (UNCBD) and desertification (UNCCD), which have also spawned national action plans including NAPAs and NEMS which provide links to development as well as links and synergies with each other.

119. The region struggles to effectively implement the plethora of DEC and sector policies and plans, given the constraints of existing capacity and a development agenda that is already crowded, complex and competitive. Therefore, the recognition of DEC issues and implications in relevant sector policies and plans provide ready entry points to integrate DEC rather than continue to treat and deliver DEC as stand-alone, separate issues. This would require allocating additional resources to address the underlying drivers of disaster risk to ensure existing sector priorities are augmented and not compromised and, DEC initiatives are not viewed as an elective add-on or overlooked.

b. Capacity, Institutional Arrangements and Coordination

120. The situation analyses examined capacity constraints at national and regional levels that affect implementation of DEC activities, including both technical and administrative/managerial constraints. For some countries, such as Solomon Islands and Kiribati, there is evidence of limited capacity yet increased DEC capability, but this is not always used effectively or productively. They are also likely to be constrained by the relatively weak influence of DEC agencies on government priorities and processes.

121. A recent paper¹⁷ addressing PIC capacity development needs for DEC notes that “SIDS continue to be deficient in a critical mass of intellectual capital, policy coherence, financial resources, and qualified personnel that are needed to develop and implement sustainable development policies and projects” and identifies the following four key areas as critical for the success of capacity

17 Gero, A., Fletcher, S., Rumsey, M., Thiessen, J., Kuruppu, N., Buchan, J., Daly, J. and J. Willetts, 2013 Disaster response and climate change in the Pacific, National Climate Change Adaptation Research Facility, Gold Coast, 202pp.

development in the Pacific: leadership; human resources development; institutional strengthening; and, local level support. Some of this may be addressed in part by the Regional Technical Support Mechanism being developed as part of the Pacific regional CIF-SPCR. The initiative seeks to provide specialised technical skills to PICs, on request, in order to address capacity constraints and gaps in their response efforts to climate change.

122. Countries use a variety of structures to manage DEC¹⁸, however, even having the ‘ideal institutional arrangement’ does not necessarily translate into success as evidenced by the need for greater coordination and communication between different offices in both Kiribati and Solomon Islands. Institutional arrangements often do not address disconnects between sectors at national level, between national and sub-national levels and between sub-national and community levels.

123. Regionally, mandated responsibilities for DEC are shared between SPC for disaster risk management and SPREP for protecting and managing the environment and climate change. The Pacific Islands Forum (PIF) also has an important role in providing political leadership for strengthened regional cooperation and integration and, around key emerging regional DEC-related issues such as climate change response and, improved energy, water and food security. However, the development-wide implications of DEC issues create frequent confusion and a level of competitiveness between institutions, resulting in considerable inefficiencies in the use of financial and other resources.

124. The CROP Executives sub-Committee on Climate Change (CES-CCC) and its Working Arm on Climate Change (WACC) were established in 2010, to strengthen coordination, collaboration and alignment between the regional institutions to support effective responses to climate change as well as resolve issues and overlap that may arise. Expanding this CROP mechanism to include disaster risk and environment would serve to focus CROP efforts to integrate and mainstream these in development planning and processes. This would encourage efficiencies and enable regional institutions to respond to their mandates, capacity and comparative technical advantages to deliver quality regional public goods and services.

125. Sub-regional groupings such as the Small Islands States (issues common to micro-States), the Micronesian Challenge (environmental conservation), the Partners to the Nauru Agreement (oceanic fisheries) and the Melanesian Spearhead Group (trade and investment and, social and economic development) are not prominent DEC actors now, but might play a greater role given the implications of DEC risk to resilient development.

126. The regional landscape is filled with DEC and Development actors at various levels who provide DEC assistance and support to the region as well as directly to PICs. Bi-lateral and multi-lateral donors¹⁹ provide financial resources for DEC initiatives regionally as well as directly to PICs through their bilateral agreements. All of these actors have multiple roles, responsibilities and comparative advantages and coordination is essential, but challenging and often unsuccessful. Donor round tables, aid coordination divisions in central agencies, and civil society support programmes can help at national levels. Regional organisations have taken the initiative to establish mechanisms to facilitate regional coordination, collaboration and coherence between PICs in the implementation of disaster risk, climate change and environment priorities, as elaborated on in Appendix 4. Coordination and cooperation is still challenging, but there are some successful examples such as joint team work between SPC and SPREP, and development partner coordination and collaboration in Solomon Islands to support the development of Choiseul Province.

¹⁸ e.g. Kiribati – Office of the President and Ministry of Environment (MoE); Solomon Islands – Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) and the Ministry of Development Planning and Aid Coordination (MDPAC); Samoa – Ministry of Finance and Ministry of Natural Resources and Environment; and the Cook Islands – Office of the Prime Minister.

¹⁹ ADB, AFD, AusAID, EU, GEF, GIZ, JICA, Korea, NZAID, PRC, ROC, USAID and the World Bank)

c. Modalities, Partners, and Financing of DEC Initiatives

127. Currently, DEC implementation is largely donor funded and donor driven through a proliferation of discrete projects with short timeframes, which fragments efforts, and dampens the will to cooperate, partner or jointly programme. Together these impede the holistic approach required to achieve resilient development. PICs are faced with a diversity and complexity of climate funding and sources through bilateral, multilateral and regional arrangements, and global funds. There is a need to align funding sources for DEC and development and encourage stronger coordination and cooperation within and between donors.

128. Australia and other donors use regional modalities to deliver both regional and bilateral programs. Regional programs are valuable where they: (i) provide regional public goods and services such as the provision of specialised technical skills and services (e.g. public health and education, and DEC related science and technology reducing uncertainty of disaster and climate risk projections), (ii) manage shared natural resources, such as for fisheries, and (iii) share best practice and lessons and, promoting region-wide standards and norms. The bilateral Joint Country Strategy (JCS) agreements between SPC and PIC members guide the provision of SPC's delivery of regional public goods and services and specialised technical assistance, based on PIC national development priorities and SPC's capacity and comparative technical advantage. They offer opportunities to integrate disaster and climate risk considerations for more resilient results and outcomes. There are cases where sub-regional and multi-country initiatives may benefit from delivery by regional or multilateral modalities depending on their relevant capacity, capability and comparative technical advantage. Multi-country modalities enable PICs with limited absorptive capacity to address a particular, common issue, such as establishing an early warning system, to pool national and bilateral resources, and sharing expertise to deliver national public goods.

D. Management of DEC Risks to Development

129. Recent international and regional analytical studies provide policy, institutional and practical analysis as well as strategic guidance and recommendations to PICs, regional organisations and donors and development partners on the integration of disaster risk reduction and climate change adaptation to advance sustainable, resilient development, reduce poverty and promote human security. As well, SPREP and SPC have recently published the Pacific Environment and Climate Change Outlook and the Implementation of the Hyogo Framework for Action and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005-2015 – Regional Synthesis Progress Report from 2009 to 2013. These review and analyse progress by countries and as a region, against agreed priorities under regional and national DEC policies and plans and within the wider context of sustainable development.

130. As most regional and national DEC priorities and needs are largely addressed using overseas development assistance, or targeted environment and climate funds, they tend to be project-based and remain by and large supply-driven. The growing proliferation of DEC projects, continue to cause difficulties with coordination, cooperation and coherence and have prompted several initiatives that seek to improve information exchange (e.g. the DRR Project Portal for Asia Pacific, the Pacific Climate Change Projects Database, and the Pacific Environment Information Network). In addition, regional agencies such as SPC and SPREP have developed a summary matrix of their DRM and Climate Change support activities.

131. Several recent initiatives offer important contributions to how the management of DEC risks to development might be approached in the future. For example, the SPC study of the vulnerability of tropical Pacific fisheries and aquaculture to climate change have improved PICs and regional understanding of future impacts and opportunities of climate change on their food and economic security and, the livelihoods and health of their peoples. This illustrated the value and crucial importance of: (i) using decision support tools such as demographic, disaster risk and climate risk projections to inform and shape future regional and national sector and the development-wide

policies and plans; (ii) having access to sound science-based evidence to inform downstream practice decisions; (iii) integrating DEC risk resilient considerations as an underpinning imperative of development and sector-wide policies, plans and practices; and (iv) examining the potential implications of DEC risks on other key sectors including water resources and coastal systems. A similar climate change impact study on the agriculture and agro-forestry sectors is underway.

132. The Choiseul Integrated Climate Change Adaptation Programme (CICCAP) is being jointly programmed by several donors) and development partners²⁰ and has the support of both National and Choiseul Provincial Governments. It is developing an integrated 'ridge-to-reef' ecosystem-based adaptive management approach for future climate and disaster resilient development of Choiseul Province. Careful examination of the capacity and commitment of National and Choiseul Provincial Governments to integrate CICCAP into their planning and budget processes at the end of project funding and, to replicate the CICCAP approach in other provinces of Solomon Islands will be needed. – applicability for other PICs needs careful consideration. At the local level there are many organisations, including international NGOs, who are supporting selected communities across the region to carry out vulnerability and adaption assessments (VAs) and develop community-based adaptive management (CBAM) plans to manage and adapt to climate change.

133. Even though assessments undertaken in the Pacific Islands region tend to share the common objective of reducing vulnerabilities and risks, practitioners in the Pacific are using numerous approaches, methods and tools to assess vulnerabilities and identify possible adaptation interventions. While no one approach will address all needs and accommodate all capacities, several successful approaches, methods and tools can be identified. Lessons learned as well as success stories and success factors can be used in developing principles designed to assist harmonisation of vulnerability, risk and adaptation assessments. These principles have in turn informed preparation of a higher-level framework and approach for such assessments. These accommodate the various approaches, methods and tools commonly used with success in the Pacific.²¹

134. Applied science-based initiatives have also made important contributions to improving understanding and approaches to managing and mitigating DEC risks to development as PCRAFI, PCCSP, PACCSAP, South Pacific Sea Level and Climate Monitoring Program (SPSLCMP), and capacity assessments of SOPAC member countries to respond to tsunamis warnings have been able to demonstrate. The important next steps will be to develop various user-specific and user friendly applications from the data and information products and services that have already been generated.

135. In the Pacific region the most important determinants of abilities to manage DEC risks to development are communication and relationships, with both informal and formal mechanisms being essential. Capacity (including human, financial and technical), leadership, management and governance structures, and risk perceptions are also highly influential. As Pacific island bureaucracies are generally small in size and numbers, responsibility and capacity will often rest with individuals rather than organisations. As a result, leadership, trust, informal networks and relationships have a strong influence on the effectiveness of organisations and the broader management system.

a. Modalities, Partners, and Comparative Advantage

136. There are a number of modalities for delivering assistance, with each having its place and comparative advantage. A key requirement is to ensure the modality used in a specific instance aligns with the need(s) being addressed and with the absorptive capacity of the beneficiary, be it a community, country, multiple countries or the region as a whole. Some needs are best addressed through direct bi-lateral support initiatives to manage DEC risks to development, while other national

²⁰ SPC/GIZ CCC PIR, USAID, ICCAI (AusAID and DCCEE) and TNC.

²¹ Hay, J.E. and N. Mimura, 2013: Vulnerability, Risk and Adaptation Assessment Methods in the Pacific Islands Region: Past Approaches, and Considerations for the Future. *Sustainability Science*, 8(3), 391-405.

needs are best addressed through regional and sub-regional initiatives. In addition, needs related to the management of DEC risks to regional public goods, and provision of regionally relevant technical and related services, are most appropriately addressed using regional modalities. Regional and multi-country modalities can be used to support national delivery, but only when they have a comparative advantage – managing a regional public good, and providing economies of scale, respectively (Table 3 below).

Table 3: Comparative Advantages of Modalities

Modality	Comparative Advantages	Examples
Bi-lateral Assistance	<ul style="list-style-type: none"> • Direct relationship with recipient country, including to work sub-nationally; • Strong alignment with national and sub-national priorities and systems • Ability to deliver sub-nationally, using a variety of partners • High programme coherence • Opportunities for more effective engagement in the future 	<ul style="list-style-type: none"> • Partnership for Development • Sector wide approach • Direct budget support • Tied/Sector budget support
Multi-country Assistance	<ul style="list-style-type: none"> • Financial efficiencies • Administrative efficiencies • Pooling/sharing specialised technical expertise and assistance • Facilitates identification and sharing of lessons and good practices • South-South cooperation 	<ul style="list-style-type: none"> • Research for Development Alliance • Multi-country Climate Change Support Program • Australia–Pacific Technical College • EU multi-country programmes (North REP and EDF9 B-envelope DRR)
Regional Assistance	<ul style="list-style-type: none"> • Management of regional public good • Specialised scientific and technical expertise • All parties have equitable access to benefits • Comprehensive source of lessons and good practices • Continuity and sustainability of results and outcomes 	<ul style="list-style-type: none"> • Support for the operation and activities of Pacific regional organisations • Regional Infrastructure Facility (PRIF)
Global Assistance	<ul style="list-style-type: none"> • Management of global public good • Far-reaching source of lessons and good practices 	<ul style="list-style-type: none"> • Climate Investment Funds (CIF) • Global Environment Facility • (GFDRR)

137. Australia works with a variety of partners to deliver its assistance to the Pacific region, including whole of government partners such as CSIRO and BOM, national and local governments, multilateral development banks such as the Asian Development Bank and the World Bank, regional and international intergovernmental organisations, non-governmental and civil society organisations, and the private sector. Again, all have their comparative advantages.

138. Paras.61 and 84 above refer to the potential gains of working with Partners, such as the MDBs, UNDP, SPC and SPREP on specific programs. It is not the role of this Review to assess the effectiveness of the individual agencies in determining which Partners AusAID should work with – AusAID conducted a multilateral assessment of many agencies in March 2012 which placed the World Bank, ADB and GEF amongst the best performers, with UNDP rated only a little lower. An independent review has already been conducted of SPC which was very positive, while an independent review of SPREP is planned for 2014. All these agencies make good partners and Australia should work with them in areas where they have a comparative advantage and specialisation.

b. Bilateral, Multi-country and Regional

139. Based on this and other key findings, the situation analyses and needs assessments identified: (i) needs to be addressed through bilateral country support, multi-country programs, and regional and sub-regional initiatives to improve the efficiency and effectiveness of national and sub-national initiatives to manage DEC risks; and(ii) needs best delivered as regional public goods and (technical and related) services. These are summarised below and presented in more detail in Appendix 4.

140. **Needs best addressed through bilateral and multi-country support to countries.** These include the need for :

- A stronger enabling environment;
- Policies and plans focused on sustainable development;
- Institutional strengthening, to address poor coordination and weak capacity;
- Improved decision making tools, including managing in the face of uncertainty;
- Use of indigenous knowledge;
- Mainstreaming of climate change considerations;
- Improved monitoring and evaluation.

141. **Needs Best Addressed through Regional and Sub-regional Interventions or as Regional Public Goods.** Neighbouring countries in the Pacific often have much in common, including environmental, social and economic circumstances, and systems of governance. This is formally recognized in such alliances as the Melanesian Spearhead Group, the Micronesia Challenge, the “Pacific micro-states” of Nauru, Tuvalu and Kiribati and the Polynesian Leaders Group. Even though most DRR and CCA initiatives must be tailored to local conditions, sub-regional delivery modalities can provide significant opportunities for economies of scale and increased effectiveness for capacity building, programme and project implementation and other assistance. This includes documenting and sharing best practices and lessons. Moreover, often the more technical interventions cannot be delivered feasibly and effectively at national scale given the knowledge, skills and other capacities that exist or can developed within reasonable time frames.

142. **A regional public good** is one which can be provided and shared by the countries of a region, and which provides benefits to individual countries and to the region as a whole. In principle, collective action by governments in the region should deliver benefits across the region which is greater than those which could be generated if the same governments acted alone. Most regional public goods fall into one or more of the following categories, all of which have relevance in the context of climate and disaster resilient development:

- Knowledge, including the provision of information, scientific research and development, and education and training;
- Infrastructure, which is not in itself a public good but they do provide services which have elements of a public good. For example, harbours, airports and telecommunications systems;
- Environment and natural resources, including pollution management and migratory fish stocks;
- Health, including preventing or eradicating disease, and stopping the spread of epidemics;

- Peace and security, including shared responsibility for providing security in areas of common security concern; and
- Governance, including establishing and implementing shared standards, best practices and policy regimes.

143. One of the key difficulties in the field of public goods that transcend national boundaries is deciding the level of governance, and hence often the size of region, most suited to providing or managing the good. The Pacific Plan provides three tests that can be used to determine whether a multi-country intervention can add value to a national initiative, namely:

- Market test: if the market is providing a service well, it is unlikely to be a public good, hence intervention at the multi-country level should be minimal;
- Sovereignty test: if the proposed multi-country initiative compromises the degree of effective sovereignty held by national governments it should not be pursued; and
- Subsidiarity test: if national or local governments are providing the service well, intervention at the multi-country level should be minimal.

144. These three tests indicate that, within the six categories outlined above, there are regional public goods that require concerted action and attention to enhance their resilience to natural hazards and climate change. Regional public services have also been identified that can enhance the resilience of development in ways that could not be achieved if PICs acted alone.

145. Other needs and initiatives identified in the analysis as best addressed regionally include the following. These are elaborated on in Appendix 4.

- Climate Change Mitigation through Improved Energy Efficiency;
- Multi-hazard and Climate Early Warning Systems;
- Climate and Natural Hazard Science, Impacts and Adaptation;
- Ocean Resources Management, including Fisheries and Deep Sea Minerals;
- Oceanic and Inshore Fisheries; and
- Deep Sea Mining.

IV. PROPOSAL: PARTNERSHIP FOR RESILIENT DEVELOPMENT

146. **Integration of DEC and Development.** Given the fundamental purpose of Australian aid is poverty reduction, Australia's DEC interventions in the Pacific should not be undertaken in isolation. Rather they should contribute to enhancing the resilience of the development outcomes to be achieved by the ODA. At national levels the Partnership for Development (P4D) is a very effective instrument for integrating DEC and development. The Port Moresby Declaration of 6 March 2008 formalised Australia's intentions for a new and elevated engagement by negotiating P4Ds with Pacific island countries. These commit Australia to work together with PICs to make more rapid progress towards the MDGs and the partner government's own development ambitions, setting out a clear framework of results and indicators with the underlying assumptions of mutual responsibility and accountability.

147. Table 4 illustrates how the outcome statements in a P4D can be revised to reflect the intention to increase the resilience of each and every development outcome. Such a comprehensive revision is justified on the basis that every reasonable effort should be made to increase the resilience of any given development outcome to reduce climate and disaster risks at every opportunity. It is proposed that when a P4D with outcomes statements revised in this way as part of new negotiations, it will be referred to as a Partnership for 'Resilient' Development (P4RD). This approach reflects the priority to work with, and build-on, existing national systems.

Table 4. Illustrative Example of Revising P4D Outcome Statements to Show Enhanced Resilience, as well as adding an Outcome to Strengthen the Enabling Environment for DEC and Development Initiatives.

Outcome Statements		
Current P4D	Current P4D + Resilience	P4RD
Private sector growth and increased employment	Private sector more dominant and robust, and providing increased and reliable employment	Private sector more dominant and robust, and providing increased and reliable employment
Improved health	Health services of higher quality and more equitable and resilient	Health services of higher quality and more equitable and resilient
Improved education	Improved education, including reliability of education services and facilities	Improved education, including reliability of education services and facilities
Improved governance and strengthened law and justice	Improved governance and strengthened law and justice	Improved governance and strengthened law and justice
		Strengthened enabling environment for managing disaster, climate and environment risk and improved management of regional public goods

148. Table 4 also shows that an additional outcome statement might be included in a P4RD when there is agreement to strengthen the enabling environment for managing disaster, climate and environmental risks. Such an outcome of the development assistance will increase the ability to achieve the other development outcomes, and sustain them in the face of change. In a P4D, DEC considerations can also be integrated into the actions under a given outcome – see Table 5.

Table 5. Example of the Integration of DEC Considerations into Actions for a Priority Outcome.

Priority Outcome	Actions to Achieve the Development Outcome	Examples of Integrated Actions to Enhance Resilience of the Outcome
Private sector growth and increased employment	Private sector development with a focus on the agriculture and fisheries sectors	Increase access to, and application of, targeted seasonal forecasts and climate change projections
	Promotion of regional economic integration and trade liberalisation	Strengthen quarantine and other border controls to reduce the chance of invasive pests and diseases
	Improve economic infrastructure and lower costs of doing business	Ensure design of infrastructure takes into account climate and disaster risk; increase access to risk financing
	Labour market assistance	Technical and vocational education schemes raise awareness of climate and disaster risks and how to manage them

149. **Framework for Australia’s future DEC investments.** Spatially, and as illustrated in Figure 1, the ‘resilient’ P4D (P4RD) is at the national end of the climate and hazard science – impacts – responses system. At the other end is Research for Resilient Development), where Australian and other international science providers join with applied research partners in the Pacific to develop the knowledge and skills base that underpins successful adaptation, disaster risk reduction and environmental management, resulting in more resilient development outcomes.

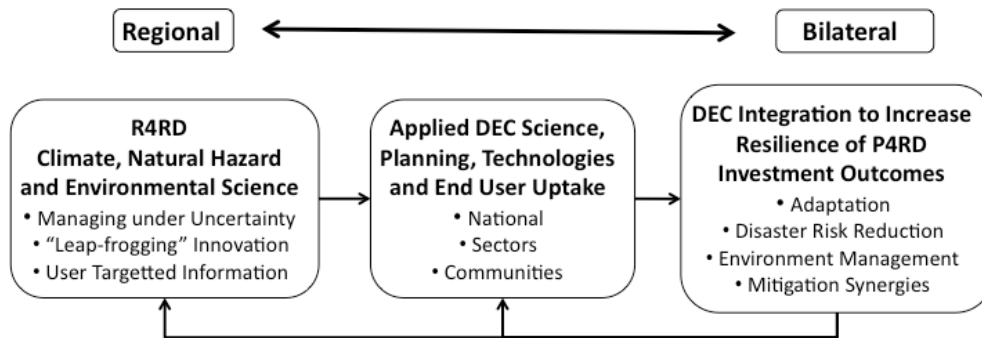


Figure 1. Visualisation of the key operational components and linkages in a system to integrate DEC into resilient development.

150. It is proposed that, for the Pacific, the system illustrated in Figure 1 be referred to as the Australia Pacific Alliance for DEC and Development (APADD). In many ways the APADD is analogous to the AusAID/CSIRO Research for Development Alliance, but in the present case the APADD is truly regional and fully integrated into regional, national and sub-national development planning and processes. It would therefore be important to include relevant regional organisations in the Alliance, where they would play an active role so it is a fully comprehensive in-and-out of region partnership, bringing the comparative advantages of all partners to the Alliance. The number of active partners in the Alliance would be limited so that interactions and administrative requirements remain manageable.

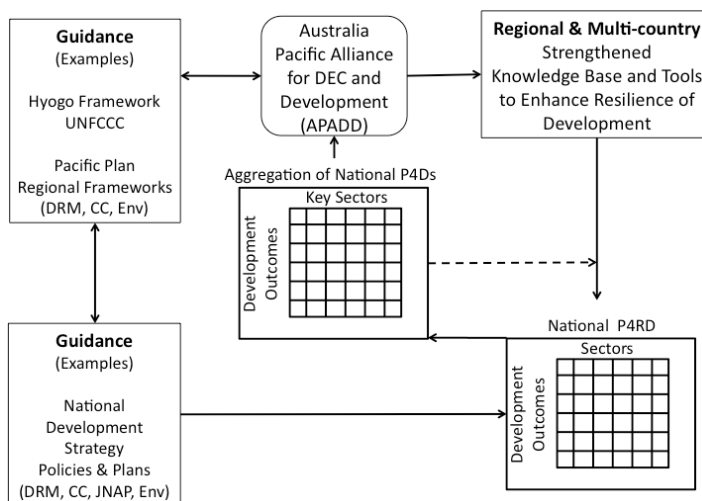


Figure 2. The broader operational policy and planning context for the APADD.

151. The process of transitioning from P4Ds to 'resilient' P4Ds (P4RD) would be nationally led, supported by guidance from both in-country and other national and regional organisations. This could be an integral part of negotiating a revised partnership agreement. In the first instance, transitioning to a P4RD would involve screening the proposed activities for DEC-related sensitivities, using AusAID's Environment Screening Questions. Currently these do not form part of the Environment Management Guide for Australia's Aid Program (AusAID, 2012b), which limits their status and application. This shortcoming could be addressed by including some enabling language in the Guide when it is next revised, making reference to the need to use the Environment Screening Questions. The latter could continue to be a stand-alone document, since it is likely to be revised as a result of experience gained in the coming years.

152. Any screening that is undertaken should give explicit emphasis to those decisions being made now, or soon, that will face external pressures and consequences over their lifetime, including natural hazards affected by changes in the climate. The overall aim of the screening should be to differentiate between activities that have no sensitivity (allowing business as usual), low sensitivity

(where DEC integration could normally be handled by Post), and high sensitivity. In the last case DEC integration could still be handled by Post, but with support from relevant Sector Specialists, and other experts as required. As part of this screening process it is also important that monitoring and reporting systems for DEC and development investments include metrics that separate out the climate change investment, thereby ensuring that climate change related ODA is documented.

153. Aggregating the Pacific's P4Ds provides useful guidance on where the work of the APPAD might focus. Table 2 in Appendix 4 shows the aggregation of current P4Ds in terms of priority development outcomes and sectors. Based on this analysis, efforts would focus, at least initially, on ensuring the resilience of investments in health, education and the public and private sectors, as well as in infrastructure and coastal zones. Since fisheries is a key regional public good, there are strong arguments for that sector to also be included in the work programme. The resilience of all five of these sectors is strongly dependent on effective management of DEC-related risks.

154. **Climate Proofing the Assistance Program:** Since the climate and hazard science impacts/responses system would be fully integrated with development planning and processes, it could become vulnerable to change over time, given that the priorities and policies of both PICs and their development partners, including Australia, will change as a result of political and other events. Therefore it is important to ensure that the system itself is resilient to changes as the P4RDs and the regional and international policy environment evolve. For example, work is currently underway to replace the regional policy frameworks for climate change and disaster risk management with a Pacific Integrated Regional Strategy for Disaster Risk Management and Climate Change by 2015.

155. The framework illustrated in Figure 2 has many features which are both mutually reinforcing and inter-dependent, making it more resilient to change. For example, substantive changes in P4Ds will be reflected in the regionally aggregated P4D matrix (Table 2 in Appendix 4), sending signals to the P4D and other components of the system, which itself would be responsive to any significant changes arising from the current review of the Pacific Plan and from the new Pacific Integrated Regional Strategy for Disaster Risk Management and Climate Change.

V. RECOMMENDATIONS

156. These recommendations reflect the findings and conclusions of both the review analysis (including the six recommendations from the climate science and adaptation planning review) and the situation and analysis and needs assessment, many concerns of which are naturally inter-linked, particularly the focus on sustainable resilient development. Common recommendations include using the P4D as a key tool for integrating DEC into development, and the need for program designs to take national and local government capacity and familiarity with procedures into account. Designs also need to take into account the skills, experience and capacity of AusAID Posts where they are expected to play a significant role in project implementation or supervision. The separate country Annexes on situational analysis and needs assessments provide more specific recommendations per country.

a. Focus on Sustainable Resilient Development

1. Ensure that Australia's disaster, environmental and climate change interventions make a direct contribution to enhancing the resilience of development, given that the fundamental purpose of Australian aid is to help people overcome poverty. Effective use of AusAID's Environment Screening process would facilitate this process. Climate change adaptation should not be treated as a separate issue and stand alone DEC interventions should only be undertaken when related to resilient development and within a sound program framework. **[priority]**
2. A regional strategy and program framework should be developed that clearly establishes an overall framework within which DEC initiatives can be clearly based, and assessed.

This should clearly specify program objectives, and establish linkages between component parts, helping ensure mutual support and synergies. The strategy should be harmonised with activities of other donors and show clearly where Australia has comparative advantage, skills or experience as the basis for selection of initiatives and implementation strategies. Donor coordination needs to be improved. **[priority]**

b. Priority areas for climate change adaptation funding in the Pacific

3. In light of the high exposure of natural and human systems in the Pacific to natural hazards, and the vulnerability of these systems to climate change, Australian-funded development initiatives should include, where appropriate, investments in disaster risk reduction, disaster preparedness and climate change adaptation in the following key areas²²:
 - (i) Improve the immediate and longer-term resilience of food production systems (agriculture and fisheries), especially at community levels, covering both resilient technologies and community resilience building.
 - (ii) Improve the resilience of key economic infrastructure (such as roads, bridges and wharves), and coastal zone management, working with other partners such as MDBs where AusAID lacks the technical skills or resources;
 - (iii) Improve the resilience of key services such as water supplies (including provision of household water tanks for rainwater harvesting), and health and education;
 - (iv) Provide capacity building at local, Provincial and national government levels to improve planning and implementation in a coordinated integrated manner (see “e” below);
 - (v) Support regional public goods and services - many regional public goods (e.g. ocean fish stocks) require concerted action to enhance their resilience to natural hazards and climate change; regional public services (e.g. multi-country and regional multi-hazard and climate early warning systems) can also enhance the resilience of development in ways that could not be achieved if Pacific island countries act alone.
 - (vi) Support regional agencies such as SPC and SPREP in providing (a) technical skills and experience to support national-level initiatives as above, and (b) regional public goods, including knowledge; and
 - (vii) Continue to support further adaptive climate science research where meeting specific regional needs (see separate Annex for details).
4. Appropriate levels of investment should also be made in strengthening the enabling environment for disaster risk reduction and climate change adaptation, in order that development outcomes will be more resilient to disasters and climate extremes, variability and change.

c. Modality

5. Ensure the modality used in a specific instance aligns with the need(s) being addressed, and with the absorptive capacity of countries and the region, including at national, local government and community levels. Some needs are best addressed through direct bi-lateral support initiatives, while other national needs are best addressed through

²² These recommendations are based on both needs and relevance of activities and on AusAID implementation experience to date, as discussed in the Review. While not all activities have been as successful as others, those listed remain very important with the aim of poverty reduction in a resilient development context.

regional, sub-regional or multi-country initiatives. Needs related to regional public goods, and provision of regionally relevant technical and related services, are most appropriately addressed using regional modalities. **[priority]**

6. Work within government systems²³: use a country's own institutions and systems where these provide assurance that aid will be used for agreed purposes and where PFM and fiduciary systems and standards are adequate. In particular, sector project approaches should only be followed where national capacity (including management and implementation skills), are adequate.

d. Partnerships for Development and Project Screening

7. Partnerships for Development (P4Ds), or their equivalents, are very effective instruments at national and sub-national levels for integrating DEC and development and should be used as the basis for future programming of DEC initiatives. **[priority]**
8. An analysis and aggregation of the Pacific's current P4Ds, and their equivalents, in terms of priority development outcomes and sectors would help AusAID determine where it has focus, experience and comparative advantage, which would provide a useful tool for AusAID and partners on where and how they might better align their P4Ds.
9. When a P4D is renegotiated, its outcomes statements should be revised to reflect the need to enhance their resilience to disasters and climate change; this revised version could be referred to as a Partnership for 'Resilient' Development (P4RD), in recognition of integrating DEC risk considerations into the development assistance agreement.
10. Consider supporting the proposed Australia Pacific Alliance for DEC and Development (APADD) for integrating DEC into resilient development to help ensure the successful implementation of 'resilient' P4Ds. Australian and other international science providers could join with applied research partners to develop the knowledge and skills base that underpins successful adaptation, disaster risk reduction and environmental management, to ensure more resilient development outcomes

e. Capacity Strengthening and Institutional Support

11. Capacity building should be a core purpose of project activities for climate change adaptation and resilient development to help development of national and local capacity for planning and implementation. The strategy should encourage local ownership and use participatory actions and learning. **[priority]**
12. AusAID Canberra should provide support to AusAID Posts to assist the DEC integration process, and provide greater clarity about best practices and options for integration; this requires adequate skilled resources in Canberra.

f. Improved Program and Project Design, Monitoring and Evaluation

13. Rigorous program and project planning and design are essential preparatory tasks to guide management, implementation and monitoring. Recommendation 2 above refers to an overall program framework being needed, setting out overall objectives and linkages.
14. Program governance and management arrangements should enhance coherence, clarity and rigour.
15. Project design and monitoring, evaluation and reporting systems (M&E) should be improved, and include clear statements of objectives and how these will be achieved,

²³ In line with the Paris Declaration on Aid Effectiveness (2005).

with measurable indicators. A logical frame analysis (or theory of change analysis where skills and understanding are sufficient) will greatly facilitate this. **[priority]**

16. Conduct further analysis of the costs and benefits of climate change adaptation initiatives.
17. Conduct further analysis of the costs and impacts of climate change adaptation initiatives at community levels and lessons learned to help determine where replication and scaling up is appropriate. In this context, AusAID oversight of NGO programs should be improved, enabling enhanced linkages to and awareness of other NGO programs operating in Pacific, including the GEF program. There is a need to simplify NGO project designs to have a more focused approach.
18. Monitoring and reporting systems for DEC and development investments need to be aligned with international reporting obligations for CCA and must include metrics that separate out any climate change investment, thereby ensuring that climate change related ODA is documented (a requirement of some donors). **[priority]**

Appendix 1 – Situation and Needs Assessment Reports

The following regional and country reports are included in separate Annexes.

1. Regional Situation and Needs Assessment of Programming Priorities for Australia's Pacific Disaster Risk Management, Environment and Climate Change (DEC) Development Agenda and Delivery Strategy.
2. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Kiribati.
3. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Samoa.
4. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Papua New Guinea.
5. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Tonga.
6. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Tuvalu.
7. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to the Cook Islands.
8. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to the Federated States of Micronesia.
9. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Tokelau.
10. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to the Solomon Islands.
11. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Vanuatu.
12. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Fiji.
13. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Nauru.
14. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Niue.
15. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to Palau.

16. Situation and Needs Assessment, and Programming of Australia's Disaster Risk Management, Environment and Climate Change Assistance to the Republic of Micronesia.

Appendix 2 – List of Key Persons Met

Canberra and Melbourne

AusAID	
Zoe Mander-Jones	ADG Pacific Regional Branch
Caitlin Wilson,	ADG PNG and Solomon Islands Branch
Fiona McKergow	Director, CC, DRR & Env Pacific
Kevin Playford	Director, Strategic Planning Pacific
Nic Notarpietro	Director Polynesia and Micronesia
Hugh MacLeman	Director DRR
Felicity Lee	Policy/Program Manager DRR
Dirk Platzen	Director Environment and Climate Section
Jay Roop	CC Advisor
Matt Spannagle	Senior CC Specialist
Claire Ireland	Senior Environment Specialist
Susie Byers	Environment and CC integration Policy Officer
John Anakotta	Sustainable Development Fund Section
Fiona Lord	Sustainable Development Fund Section
Matthew Harding	Senior Economist, Pacific
Rob Harden	Senior Economist, PNG and Solomons
Sophie McKinnon	Economist, Microstates
Ryan Medrana	(formerly in AusAID Post Suva)
Duncan McCullough	Pacific CCEDRM Section
Karen Lummis	CC Specialist, Pacific CCEDRM Section
Susan MacDonald	Pacific CCEDRM Section
Kellie Raab	Pacific Environment and Climate Section
Melissa Bull	Pacific Environment and Climate Section
Freya Baumont	Kiribati Desk
Claire Cullen	Tuvalu Desk
Clyde Hamilton	Polynesia Desk
Justin Ho	Pacific Fisheries
Pacific Posts (via Telecon)	
Asenati Tuiletufuga	Apia, Samoa
Misileti Satuala	
Lilieta Takau	Nuku'alofa, Tonga
Ana Baker	
David Momcilovic	Port Vila, Vanuatu
Cathie Hurst	Port Moresby, Papua New Guinea
Isolde Macatol	
Caroline McGann	

Nige Kaupa	
Department of Climate Change and Energy Efficiency (DCCEE)	
Joe Mummery	Assistant Secretary, Science & International Adaptation Branch
Lalage Cherry	Director, International Adaptation Strategies Team
David Higgins	Director, International Climate Finance
Cameron Darragh	International Adaptation Strategies Team
Tim Farrell	Energy Efficiency Division
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	
Ian Cresswell	A/g Director, Wealth from Oceans National Research Flagship
Andrew Ash	Director, Climate Adaptation Flagship
Geoff Gooley	Science Program Manager (PACCSAP)
Andrew Lenton	Project Leader; Carbon Cycle Modeller
Jaclyn Brown	Research Scientist
Jessica Ciccotelli	Communications Support Officer
Jill Rischbieth	Communications Advisor
Kathleen McInnes	Project Leader (PACCSAP 4.4)
Kevin Hennessy	Theme Leader, Impacts, Adaptation and Vulnerability
Mandy Hopkins	Program Coordinator
Padma Lal	visiting expert
Tom Beer	Research Program Leader
Xiaoming Wang	SR. Principal Scientist, Climate Adaptation Flagship
Bureau of Meteorology	
Peter May	Centre for Australian Weather & Climate Research
Neil Plummer	Assistant Director Climate Information Services
Andrew Howard	IT Support
Aurel Moise	Research Scientist
Claire Spillman	Scientist
David Jones	Head of Climate Analysis, Project Leader
Ian Smith	Consultant
Mandy Hopkins	Executive Officer
Jodie Kane	International Liaison Officer
Lily Frencham	International Liaison Support
Rob Colman	Project Leader
Rod Hutchinson	Climate Data Expert
Yuriy Kuleshov	Scientist, Ag Team Leader, Adaptation Strategy
GeoScience Australia	
John Schneider	Group Leader, International Group, Energy Division
Martine Woolf	Director, Climate Hazard Risk
Department of Sustainability, Environment, Water, Population and Communities (SEWPaC)	
John McDougall	Treaties & Bilaterals Section, International Branch

Ms Angela Williamson	
Giles West/ Peter Komidar	
Department of Foreign Affairs and Trade (DFAT)	
Elena Balogh	Executive Officer, Climate Change and Environment Section, IOLD
Les Humphries	Pacific Division
Department of Immigration and Citizenship (DIAC)	
Tarina Rubin	A/g Assistant Director, Irregular Migration Policy & Multilateral Engagement Branch

Fiji

Organisation	Name of Person	Position
PIFS	Tuiloma Neroni Slade	SG – PIFS
	Coral Pasisi	Ag Director – Partnerships and Coordination
	Scott Hook	Adviser – Infrastructure
	John (Willy) Morrell	Adviser – NRM
SPC	Jimmie Rogers	DG – SPC
	Patricia Sachs Cornish	Special Adviser to the DG
	Brian Dawson	Snr Climate Change Adviser
	Lindsay Chapman	Dep Director – Coastal Fisheries
	Johann Bell	Special Adviser – Fisheries
	Andre Volentera	Climate Change Adviser
	Moses Sikivou	Dep Director DRP
	Cristina Casella	Policy Adviser – DRP
	Dean Solofa	Adviser – LRD
	Gillian Cambers	Project Manager – GCCA
	Arthur Webb	Dep Director OIP
	John Hogan	Director – EDD
UNDP-PC	Moortaza Jiwanji	DRM Specialist
	Thomas Jensen	Env and Energy Specialist
	Kevin Petrini	CC Specialist
UNDP MCO	Winifereti Nainoca	Env Unit Team Leader
	Nacanieli Speight	Env Programme Associate
GIZ	Katerina Syngellakis	Adviser-Sustainable Energy Management
	Hanna Sabass	Adviser CC and Education
USP	Elizabeth Holland	Director – PACE SD
	Dan F Orcherton	Senior Lecturer – CC
	Sumeet Naidu	Project Coord – FCLP
	Bill Aalbersberg	Director – IAS
ADB	Marc Overmars	CC Adviser

WWF SPPO	Kesaia Tabunakawai	Head – WWF SPPO
	Stephanie Robinson	Building Resilience Project Coordinator
	Sally Bailey	Conservation Director
	Akisi Bolabola	Sustainable CRM Coordinator
JICA	Yohei Hashimoto	Asst Resident Representative
	Ishigaki Shigeki	Advisor DM and ENV
IUCN	Taholo Kami	Regional Director – Oceania
	Poul Engberg Pedersen	Dep DG IUCN
EU	Malcolm Ponton	REI/ENV/NRM
NZAP	Helen Leslie	First Secretary-Reg DEV
IFRC	Aurelia Balpe	Head – Pacific Regional Office
	Lesu Waqaniburotu	CPU-DRR Officer
ODI	Katie Harris	ODI – UK
FSPI	Rex Horoi	Executive Director
	Jiuta Korovulavula	DRM Program Officer
PLAN	Dave Husy	Director – Programs
USAID	Joseph Foltz	Dep Chief Energy-ENV-CC
	Christina Velez	

Kiribati

Organisation	Name of Person	Position
Secretary to the Office of the President	Mr. Tebao Awerika	Deputy Secretary
	Mr. Terieta Mwemwenikeaki	Strategic Risk Management Unit
	Andrew Teem	CC Policy Advisor
	Mike Foon	DRM Officer
KAP III	Kautuna Kaitara	Project Manager
	Ms. Marella Rebgetz	Sr. Water Engineer
	Cliff Juillerat	Sr. Civil Engineer
	Mr. John McLean	Sr. Water Utilities & Asset Management Engineer
Min Agriculture	Tearo Otiuea	Principal Agriculture Officer
	Takene Redfern	Head of Research
Min Health	Dr. Teatao Tira	Director of Health
FSPK	Teitirua Bwatee	Project Manager, Greenbag Project
	[Ruiti Aretaake]	FSPK Coordinator
Min Environment	Manikaoti Timeon	Secretary
	Nenenteiti Ruatu	Deputy Director for Environment
	Farran Redfern	EIA Officer
	Mari Marae	Environmental Inspector
	Riibeta Abeta	Climate Change Officer

Min Finance	Atanteora Beiatou	Secretary
ADB/WBank	Teea Tira	Liaison Officer
South Tarawa Sanitation Improvement Program	Chris Commerford	Team Leader
	Michael Chapman	Dep Team Leader
	Ms. Cecily Neil	Community Engagement Specialist
Min Public Works	Mr. Eita Metai	Secretary Public Works and Utilities
PUB	Kevin Routu	CEO
Met Office	Rition Kabunaeiti	Chief Met Officer
Kiribati Copra Mill Co. Ltd.	Mr. Teabi Tekeaa	Manager
Fisheries and Marine Resources	Mrs Maryanne Ian Namakin	Senior Assistant Secretary
	Nick Harding	Project Team Leader Safe Aggregate
	Ms. Naomi Biribo	Ag Director, Minerals
Community Development Services	Tannako Baraam	OIC
KANGO	Ms Rereao Teingia	Committee member
Live and Learn	Ms. Pelenise Alofa	KIRCAN Coordinator
Red Cross	Ms. Meaua Tooki	Secretary General
	Mr. Toube Aberaam	Disaster Mgt Officer
Eco care	Mr. Komeri Onorio	Managing Director
Chamber of Commerce	Mr. Tekeua Tarati	President
NZ AID Program	Michael Upton	First Secretary
EU	Mr. Teriba Tabee	NAO
AusAID	Mark Sayers	Acting Head Post
	Ms. Aretitea Teeta	Assistant Program Manager

Solomon Islands

Organisation	Name of Person	Position
Government Ministries		
MECDM	Douglas Yee	Director CC Division
	Hudson Kauhiona	Deputy Director CC
Ministry of Foreign Affairs and Trade	Joy Kere	Permanent Secretary
	Bernard Baba'anicia	Deputy Secretary
Ministry of Infrastructure Development	Moses Virivolomo	Permanent Secretary
Ministry of Lands, Housing & Survey	Stanley Waleanisia	Permanent Secretary
	Donald Kudu	UN Habitat (former PS)
Ministry of Education & Human Resources Development	Noelyne Bilila	Director of Planning Division
	Benedict Esibaea	Director – Primary
	Patrick Davdeu	Director – Curriculum
	Christina Bakelh	UNESCO
	Richard Hellyer	Education Sector Adviser

Ministry of Provincial Government	Nancy Rose Legua	Under Secretary
	Momodou Lamin Sawaneh	CTA & Local Gov. Specialist
Choiseul Provincial Government	John Tubebuda	Provincial Secretary
Ministry of Forestry	Gordon Konairam	Under Secretary
	Kedson Ago	Director Planning
	Richard Raomae	Dep Commissioner of Forest; Reforestation Div.
Ministry of Finance and Treasury	Matthew Pitavato	Chief Economic Officer
Ministry of Development, Planning and Aid Coordination	Andrew Prakash	Director, Economic and Productive Sectors
	Susan Sulu	Director, Aid Coordination Division
	Samuel Wara	Chief Planning Officer, Multilateral Aid, Aid Coordination Division
Ministry of Fisheries and Marine Resources (MFRM)	Dr. Christain Ramofafia	Permanent Secretary
Donor Agencies		
Asian Development Bank	Paula Baleilevuka	Infrastructure Adviser
	Tony Telford	SIRIP2 Team Leader
World Bank	Suzanne Paisley	DRR and CCA Specialist
European Union	Eoghan Walsh	Charge d'Affairs
New Zealand High Commission	Luke Kiddel	
	Eileen Kwalea	
UNDP Country Office	Jude Devesi	Ass.Res Rep (Programmes)
	Gloria Suluia	Environment Portfolio
SPC	Mia Rimon	Coordinator, Country Office
FFA	Wez Norris	Deputy Director General
AusAID	Jane Lake	Development Coordinator
	Scott McNamara	Sr. Dev Program Specialist, Economic infrastructure
	Sid Chakrabarti	
	Eric Liu	
	Luke Simmons	Rural Dev Prog Specialist
	Judy Tarailopo	Prog Mgr Livelihoods
Non-Government Organisations		
Kastom Gaden	Moses	
Live and Learn	Morgan Wairiu	Project Manager
	Bill Apusae	REDD +
	Elmah Palisi	Finance Manager
Oxfam	Katie Greenwood	Director, Community Action Grants
	Aloysius Erobaea	

SIDT	Lampio Gereia	Program Manager – Child Centred CCA (C4A)
	Usenio Tadagao	Project Officer – C4A
TNC	Robyn James	Program Manager
	Willie Atu	TNC Solomon Islands
	Richard Hamilton	Sr. Melanesia Scientist
World Fish Centre	Anne-Maree Schwarz	Country Manager
World Vision	Andrew Catford	Country Director
	Lawrence Hillary	

Samoa

Organisation	Name of Person	Position
Government Ministries		
Ministry of Finance	Litara Taulealo	PPCR Coordinator
	Lita Lui	Principal Aid Officer, Aid Coordination Unit
	Elena Ainuu	Principal Policy Analyst, Aid Coordination Unit
Ministry of Natural Resources and Environment (MNRE)	Taulealeausumai Laavasa Malua	CEO
	Maafanua Tolusina	ACEO Forestry
	Anne Rasmussen	GEF Coordinator
	Anae Aokuso Leavasa	Principal Forestry Policy and Planning Officer
	Amataga Penaia	ACEO Water Resources
	Toelau Rulio	
	Pau Ione	Technical Services
	Moira Faletutulu	PACC Samoa Coordinator
Ministry of Works, Transport and Infrastructure	Leota Kapeneta Perelini	ACEO Land Transport
	Elsa Fruean	ACEO Building Division
	Paulino Pania	ACEO Policy and Planning Division
Ministry of Health	Lameko Tesimale	Principal HCW Officer, Ag ACEO HPED
	Victoria Faasili	Principal Environment Health Officer
Electric Power Corporation (EPC)	Tologata Tile Lef'a Tuimalealiifano	General Manager
Samoa Tourism Authority	Matatamalii Sonja Hunter	CEO
	Christina Leala-Gale	Manager Planning and Development
	Amiafolau A Lotua	
	Kari Martin	STA
Civil Society Support Programme (CSSP)	Leiataua Lesa Kilali Alailima	Programme Manager

SUNGO	Roina Vavatau	CEO
	Moana Clarke	National President
Regional Agencies and Donor Organisations		
SPREP	David Sheppard	Director General
	Kosi Latu	Deputy Director
	Netatua Pelesikoti	Director Climate Change
	Taito Nakalevu	PACC Project Manager
	Peni Leavai	PACC Adaptation Planning Officer
	Stuart Chape	Director, BEM
	Seema Dao	Communications and Outreach Advisor
	Salesa Nihmei	Met and Climate Officer
	Neville Koop	Met Advisor
	Tim Carruthers	Coastal and Marine
	Phil Wiles	PI GOOS Officer
	Carlo Iacovini	CC Communications
	Tagaloa Cooper	CC Coordination Advisor
	Makelesi Gonelevu (Nanette Woonton)	Knowledge Mgt Officer Media & Pub Relations
DCCEE (SPREP)	Shin Furuno	Program Manager
	Purdey Wong	Program Manager
FAO	Gavin Wall	Sub-regional Coordinator
UNDP	Anthony Wood	Deputy Resident Representative A.I.
	Sala Georgina Bonin	Assistant Resident Representative
	Jaime de Aguinaga	Programme Manager
	Gabor Vereczi	Regional Technical Adviser, Adaptation
	Marta Moneo	UNV Climate Change Specialist
WHO	Dr Yang Baoping	WHO Representative
	Brooke Conway	
European Union	John Stanley	Attache
New Zealand HC	Richard Crichton	Development Programme Administrator, NZAID
ADB/World Bank	Maeva Betham-Vaai	Liaison Officer
Australian High Commission	Stephen Henningham	High Commissioner
	Anthony Stannard	Counsellor
	Frances Sutherland	Second Secretary, Development Cooperation
	Ben Ale	
	Asenati Tuiletufuga	
	Ben Ale	
	Asenati Tuiletufuga	

Appendix 3: REVIEW OF ICCAI PACIFIC PROGRAM

I. Introduction

1. AusAID works with Pacific partner governments and regional/multilateral organisations to implement environment, climate change and disaster risk management activities nationally and in a range of sectors, including infrastructure, coastal management, water resource management, sanitation, education, fisheries and agriculture. AusAID Posts in the Pacific, with support from Canberra, have undertaken a range of related activities based on development partner priorities and capacities.

2. As part of these wider initiatives, Australia is providing approximately \$156 million to the Pacific under the International Climate Change Adaptation Initiative (ICCAI) from mid-2008 to mid-2013 to help countries adapt to climate change. Of this, over \$47 million is being provided directly through bilateral programs in 15 countries, \$15 million through multi-country programs run by Non-Government Organisations (NGOs), and about \$94 million through regional programs.

3. The four objectives of the ICCAI are to:

- Establish a sound policy, scientific and analytical basis for long-term Australian action to help partner countries adapt to the impacts of climate change;
- Increase partner country understanding of the impacts of climate change on their natural and socio-economic systems;
- Enhance partner country capacity to assess key climate vulnerabilities and risks, formulate appropriate adaptation strategies and plans, and mainstream adaptation into decision making; and
- Identify and finance priority adaptation measures that can immediately increase the resilience of partner countries to the impacts of climate change.

4. The ICCAI is jointly administered by AusAID and the Department of Climate Change and Energy Efficiency (DCCEE)²⁴. DCCEE manages programs in partnership with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology (BoM). These programs cover (i) the development of climate change science – including national-level projections, communication and capacity building – and (ii) the integration of climate change adaptation into Pacific country policies and plans, addressing vulnerability in food and water security, the coastal zone and infrastructure

5. AusAID is currently preparing a strategic programming framework, referred to as a Development Agenda, together with a related Delivery Strategy. The former will provide the framework for anticipated new funding and will guide management decisions for climate change investments for the period 1 July 2013 to 30 June 2016.

6. This Appendix forms part of a full report prepared by a team²⁵ of individual consultants that will inform the Development Agenda and Delivery strategy. This Appendix covers the bi-lateral, multi-country and regional programs funded by ICCAIA. The regional programs include the climate science and

²⁴ DCCEE has been replaced by the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, (DIICCS RTE), which has taken over most of its functions: however DCCEE is retained in this Review as it is DCCEE's activities that this Review is examining.

²⁵ The team comprises Graham Walter (GW – Team Leader, Monitoring and Evaluation (M&E) Specialist), Peter Hunnam (M&E Specialist), Cristelle Pratt and Professor John Hay Sector Specialists).

adaptation planning programs managed by DCCEE – a separate free-standing report has been prepared on these DCCEE managed programs and a summary the main findings integrated into this Appendix. This Appendix thus includes, and integrates, outputs 1 and 2 of the ToRs: (i) an overarching review of all Pacific climate change activities funded under ICCAI, and (ii) a targeted review of the Pacific Climate Change Science Program (PCCSP), the Pacific Adaptation Strategy Assistance Program (PASAP), and the follow-on Pacific-Australia Climate Change Science and Adaptation Planning Program (PACCSAP).

7. Separate Annexes provides details of the Situation Analysis and Needs Assessment for DEC Resilient Development in the Pacific (Output 3). These Situation Analysis and Needs Assessment Reports are listed in Appendix 1 above and include a regional assessment and 15 country reports; key findings have been incorporated into the main report in Section III.

II. Review Approach and Methodology

Methods, Process, Countries Visited

8. A Scope and Methodology Report was prepared in January 2013 following an Inception Mission in Canberra and Melbourne, and an Inception Report prepared in March following further desk review. Terms of Reference (ToRs) for the Team are included as Annex 1 of the Scope and Methodology report and discussed in Section II of the same report. These are not repeated here. The methodology and approach adopted can be summarised as:

- identification, review and analysis of relevant documentation, some provided by Australian government agencies and some collected in the field, and through internet;
- semi-structured interviews with key stakeholders – some of these interviews were face-to-face, others were conducted electronically (internet, Skype and teleconferences). The interview approach differed depending upon the interview environment, and in some cases in the field visits this was hindered by the fact that the team had to cover different parts of the program during a single interview. These interviews covered: (i) staff of AusAID in Canberra and those posted in Fiji, Samoa, Solomon Islands and Kiribati; (ii) staff of DCCEE, BoM, CSIRO and GA in Canberra, Melbourne, Hobart, Brisbane and Samoa; (iii) Government officials, regional organisations, NGOs and other development agencies in Fiji, Samoa, Solomon Islands and Kiribati (electronically other countries), and (iv) where possible, consultations with other stakeholders in these countries;
- consultation visits to Fiji, Kiribati, Samoa, and Solomon Islands (in Solomon Islands the visit overlapped with a PACCSAP Symposium which many key Pacific stakeholders and DCCEE, CSIRO and BoM staff participated); the country visits included some project site visits; and
- validation of report analysis and findings through discussions and information exchanges with key stakeholders and Posts.

9. Country visits took part in two separate phases in March and April due partly to availability of team members but also suitability to the countries concerned. The choice of countries was largely based on what is required for the situation analysis and needs assessment (the criteria were presented in the Scope and Methodology Report) but this included a criterion covering program size, which was important also to the Review. A de-briefing was held in Canberra following the country visits, which was invaluable in enabling the Team to meet and discuss the initial review findings and seek feedback from AusAID, DCCEE and other whole-of-government partners.

Constraints and Limitations the Review faced

10. The greatest challenge faced by the Review was the number of activities being implemented by AusAID and its partners in climate change science and adaptation, many overlapping, and the multitude of institutions and stakeholders involved. The Team faced significant challenges in addressing this and had to be selective²⁶ the need for selectivity and consequent trade offs were discussed with AusAID, which had identified many of these during the review design process. The volume of documentation and information acquired by the Team was very large, but a significant constraint has been the lack of detail and quantification in the specific objectives and activities, and in the monitoring and reporting systems, for many of the ICCAI programs and projects including the three climate science and adaptation planning programs. The stakeholder interview process during the field visits also presented some problems, the team having to cover the three outputs of the review process during a single interview. Other constraints have included the inherent difficulties of attribution; the lack of historical information and design data for many of the programs²⁷, and shortcomings in baseline data; and logistical constraints. Another constraint concerns the lack of an overall program framework which could have linked activities together and with the overall ICCAI objectives; without such a framework, and given the limitations in the reporting and M&E systems, the Review cannot adequately assess the effectiveness of ICCAI funded activities in the Pacific as a whole and thus has focused on its constituent parts; however due to lack of data and information, assessment of the effectiveness and efficiency of many activities would be speculative. The Review is based on the information received, interviews conducted and the time available to assimilate, analyse and draw conclusions from it.

III. Overview of ICCAI Programs

11. As noted above, Australia is providing approximately \$156 million to the Pacific under the ICCAI from mid-2008 to mid-2013 to help countries adapt to climate change. Of this, over \$47 million is being provided directly through bilateral programs in 15 countries, \$15 million through multi-country programs run by NGOs, and about \$94 million through regional programs. Looking forward, the AusAID budget for 2013/14, handed down on 14 May 2013, states that “Australia is also making a significant long-term investment to help Pacific countries adapt to climate change. With many low-lying islands and atolls, the Pacific region is particularly vulnerable to extreme weather events. Australia is investing \$104 million over three years (2013-16) to help protect water supplies, climate-proof essential infrastructure, boost food security and enhance disaster preparedness.”

12. AusAID is directly responsible for managing 30% of the current ICCAI program through bilateral programs and 58% overall when multi-country and regional programs, including NGOs are included. The climate science and adaptation planning programs implemented by “whole of government” – primarily DCCEE with BoM and CSIRO – totals about \$65.6 million, representing 42% of the total. NGOs implement \$15 million (9.6%), SPC \$9.0 million (5.7%) and SPREP \$3.0 million (1.9%), which AusAID oversees. In addition, about \$88 million is being provided to global programs which impact on the Pacific to some degree. This is illustrated in Table 1 below.

²⁶ Resource and time constraints led to lesser coverage and analysis of some activities. For some small projects no information was provided on progress and decisions had to be taken on how much time should be taken on searching the web and following up with AusAID for projects (e.g. the projects in Cook Islands, Niue and Tokelau).

²⁷ Design and reporting requirements for projects under A\$3 million are not as rigorous as for large projects.

13. Attachment 1 to this Appendix lists projects and programs assisted with ICCAI funding²⁸. The list covers the direct bilateral programs and the multi-country and regional programs, indicating the amount financed together with a summary of project objectives or expected results. Attachment 2 indicates what sectors each project and program address, and whether they have targeted the poor and vulnerable (paras.19-21 below).

Table 1: ICCAI Program Responsibilities

Responsibility	Program	Amount	%
AusAID	Total	90.4	58.0
	Bilateral Program	47.4	30.0
	Multi-Country (NGO delivered) Total	15.0	9.6
	Action Grants	12.7	8.1
	Small island Developing States (SIDS) program	2.3	1.5
	Regional (excluding PCCSP, PASAP and PACCSAP)	28.0	18.0
	PACC Plus	7.35	4.7
	SPC	9.00	5.8
	SPREP	3.00	1.9
	Future Climate Leaders Program (USP)	2.94	1.9
	Others	5.71	3.7
DCCEE (with CSIRO and BoM)	Total	65.6	42.0
	PCCSP	20.0	12.8
	PACSAP	13.6	8.7
	PACCSAP	32.0	20.5
Total		156.0	

Note: figs may not exactly add up due to rounding (not all regional programs shown)

14. Attachment 1 includes some pie charts and a table, provided by AusAID, showing: (i) modalities through which climate change budget measure expenditure has been spent; (ii) regional and bilateral split; (iii) breakdown of activities by primary sector (some activities have secondary outputs in other sectors or include a component for capacity building – these are not captured. Multi-sector CCA Activities are generally where a program is designed to respond to a range of sectors and it is not possible to breakdown at time of reporting); (iv) stages of activity cycle (commencement, implementation, complete); and (v) integration of climate change expenditure (shows total value of all programs in the Pacific that include climate change budget measure funds i.e. where climate change budget measure either wholly funds activities or are combined with other sources of funding. This is designed to show to what extent climate change expenditure has been integrated with other forms of expenditure). The graph shows all ICCAI bilateral expenditure to 30 June 2011, plus expected expenditure for 2011/12 and 2012/12.

15. The original ICCAI commitment was \$150 million over three years (2008-09 to 2010-11), which was extended in 2010 with a further \$178.2 million for 2011-12 and 2012-13. Of the \$328 million ICCAI funding, approximately \$156 million has been committed to climate change work in the Pacific islands region. When established in 2008, ICCAI had four inter-linked components: (i) improved science and understanding; (ii) strategic planning and vulnerability assessments; (iii) implementing, financing and coordinating adaptation measures; and (iv) multilateral support.

²⁸ The list excludes some projects just recently approved for: Fiji (AQEP, health sector support, and community development), PNG (Agriculture Research Institute), RMI (drought relief) and Tuvalu (Funafuti resilience to water shortages).

16. The ICCAI 1st phase budget of \$150 million was allocated to approximately 25 programs, as summarised in Table 2²⁹ below. As discussed further below, the first two components were developed into PCCSP, the Pacific Climate Change Science Program, and PASAP, the Pacific Adaptation Strategy Assistance Program, with budgets of \$20 million and \$12 m respectively. The third component was developed into a portfolio of projects implemented by AusAID directly, including the Pacific bilateral programs; and the fourth component channelled funding to a number of multilateral Climate Change initiatives.

Table 2: ICCAI 1st Phase Budget (all ICCAI funded programs – Pacific and non-Pacific)

Region/Country	Activity	Allocation (AUD million)	
A. Pacific Climate Change Science			
PICs and East Timor	Pacific Climate Change Science Program (PCCSP)		20.00
B. Pacific Adaptation Planning and Assessment			
PICs and East Timor	Pacific Adaptation Strategy Assistance Program (PASAP)		12.00
C. Implementation, Financing, Coordination			54.20
PICs	Meteorological Services Review	0.10	
PICs	SPREP adaptation work program	1.50	
PICs	Australia-Pacific Climate Adaptation Platform	3.00	
PICs	Future Climate Leaders Program	3.00	
PICs	SPSLCMP network upgrade	4.30	
PICs	Support for SPC adaptation activities	4.50	
PICs	Pacific Bilateral Adaptation Program	25.00	
PICS & Timor-Leste	Strategic NGO Programs	2.70	
Timor-Leste	Mekong & Asia-Pacific Adaptation Program	6.00	
Asia Pacific	CC into bilateral program; NAPA support	0.90	
Asia Pacific	Australian Development Research Awards (CC)	1.20	
Asia Pacific	AusAID – CSIRO Alliance	2.00	
D. Multilateral support for Climate Change Adaptation			
Global	UNFCCC report on CC insurance	0.30	45.10
Global	UNFCCC Trust Fund for Participation	0.30	
Global	AOSIS Institutional Capacity Building	0.50	
Global	UNFCCC Least Developed Countries Fund	4.00	

²⁹ Table derived from the separate Annex Review of PCCSP, PASAP and PACSAP.

Global	Pilot Program on Climate Resilience	40.00	
E. Other regions			11.60
F. Departmental and administrative			7.10
Total			150.00

17. To assess the relevance, effectiveness and efficiency of ICCAI funded activities in the Pacific, this Review first examined each activity, assessing it against these three OECD criteria in the context of the country and regional needs and environment, and the activity's alignment with the ICCAI objectives. An assessment of ICCAI as a whole is then drawn from this.

18. This Appendix presents the country bilateral projects, the two multi-country programs covering the community-based climate change action grants program and the SIDS program, both implemented by NGOs, and then the regional program. As noted below, the PACC program is listed by AusAID as a regional program but in reality it is a multi-country program implemented by a regional organisation.

IV. Bilateral Programs

A. Sectors and Targets

19. Almost all of the projects and programs were focused on building community awareness and resilience and included some climate change adaptation activities (see Attachment 2 for details). Many of these projects also addressed building capacity of local governments and national governments, helping improve the development resilience and climate change adaptation environment, and linkages between communities and governments.

20. Several programs targeted improvements in service delivery, particularly water supplies and sanitation services (e.g. in Kiribati, Nauru, RMI, Samoa and Tuvalu) while a few focused on economic infrastructure (e.g. roads in Solomon Islands and Vanuatu), but these programs also included elements of community and government awareness building and capacity strengthening. Livelihoods, poverty reduction and food security featured strongly in the NGO implemented programs, some of which also specifically targeted the poor and vulnerable. Most of the programs did not specifically target the poor or vulnerable although project benefits often covered them.

21. The breakdown of activities by primary sector (Fig A.3, Attachment 1 chart) shows that: policy and planning account for \$ 48.9 million, science programs \$24.3 million, transport infrastructure \$10 million, water resource management \$7.7 million, coastal protection \$6.8 million, education and awareness \$5.2 million, sanitation \$3.9 million, water tanks \$3.7 million, agriculture and food security \$3.1 million, fisheries \$ 0.8 million, and health \$0.1 million. Several programs, however, respond to several sectors and cannot be readily classified; these total \$ 39 million, which may distort this breakdown. In addition, secondary outputs in other sectors are not captured, nor components for capacity building where this is not the primary objective, but these are captured in Attachment 2.

22. Three projects provide additional funds to infrastructure projects being implemented by ADB and the World Bank which include climate adaptation components, such inclusion facilitated by the additional financing – the road program in Solomon Islands, and in Kiribati a sanitation project and the Kiribati Adaptation Program which address impacts of climate change on coastal infrastructure and

water supplies and sanitation. ICCAI has also provided additional funds to an AusAID-financed road program in Vanuatu, which includes components to address climate change.

23. The sections below provide program details by country. The biggest bilateral program is Kiribati (\$9.4 million,) then Solomon Islands (\$6.0 million), Samoa (\$4.4 million), Vanuatu (\$4.0 million), Tuvalu (\$3.6 million), and PNG (\$2.4 million). All the other programs are small, \$1.5 million or less. Country programs in the North Pacific (FSM, RMI and Palau- which unlike other countries are run from Canberra with no country presence), and in Nauru and Tonga are all very small. Palau has one project (\$0.02 million). Small allocations have been made to the Cook Islands, Tokelau and Niue through the regional PACC Plus program and the donor harmonised program implemented by the New Zealand Ministry of Foreign Affairs and Trade (NZMFAT).

B. North Pacific

24. The country programs for these three countries are managed from AusAID in Canberra, with no AusAID representation in-country. The programs are very small apart from a Climate & Disaster Risk Education Program (CADRE) being implemented by the International Organisation for Migration (IOM) in FSM and RMI with ICCAI funding totalling \$3.0 million. ICCAI assistance to the North Pacific totals \$3.9 million.

B.1 FSM

(a) Partnership for Development, National Strategies and Coordination/Implementation Responsibilities

25. The August 2010 P4D focuses on public sector reforms and management. It does not include a specific priority outcome on climate change but priority outcome 3 focuses on environmental management with emphasis on legislation and coordination of development assistance. In partnership talks in 2012 on future assistance, FSM (and RMI) indicated they would like climate change adaptation and disaster risk reduction reflected in future P4D.

26. FSM's Strategic Development Plan 2004–2023 includes a strategic goal to 'mainstream environmental considerations, including climate change, in national policy and planning as well as in all economic development activities', and aims to have climate adaptation strategies developed and implemented in all states by 2010. The goal has a strong focus on 'climate-proofing' infrastructure assets. FSM has developed an effective platform to implement a cross-sectoral mainstreamed approach to climate change adaptation through the Nationwide Climate Change Policy (2009).

(b) Climate and Disaster Risk Education Program (CADRE) – FSM and RMI

Relevance

27. This project, being implemented by the International Organisation for Migration (IOM), aims to build the resilience of vulnerable communities in FSM and RMI to natural hazards, particularly those that are climate induced. It targets approximately 10,000 school-aged students, and up to 50 schools and their surrounding communities with awareness-raising activities. It will help empower schools and communities to independently respond to natural disasters, combining climate change adaptation (CCA) and disaster risk reduction (DRR), and support National Government efforts in implementing their

national policies and strategies on CCA and DRR. It is very relevant to national needs given their high vulnerability to climate change and need to address DRR.

28. The January 2012 AusAID QAE report notes the response to the Japanese tsunami showed that most communities did not have disaster preparedness plans and did not know the respondent agencies. Many did not receive tsunami warnings. Improving preparedness to respond to disasters is thus very relevant, and is a key component of AusAID's new development assistance strategy.

29. The project is also very relevant to the three country-level ICCAI objectives: (i) increasing partner country understanding of the impacts of climate change on their natural and socio-economic systems; (ii) enhancing partner country capacity to assess key climate vulnerabilities and risks, formulate appropriate adaptation strategies and plans, and mainstream adaptation into decision making; and (iii) identify and finance priority adaptation measures that can immediately increase the resilience of partner countries to the impacts of climate change.

Effectiveness and Efficiency

30. **Effectiveness.** The Review has very limited documentation on the program, apart from the design document and the January 2012 AusAID QAE. The program is building on lessons learned from the pilot CADRE project, financed by USAID, enhancing the educational component of the program, as well as conducting thorough assessments on the impact of climate change and the adaptation measures required to mitigate its effects and risks.

31. The QAE points to IOM's past track record in FSM and RMI, and with DRR and working with education departments, as reasons to anticipate progress and effectiveness. IOM has established partnerships with both national governments and civil society, and experience and lessons learned in implementing Phase 1 of the program (USAID funding) should lead to an effective project.

32. The QAE also reports that IOM have secured the support of the two education ministries to include CCA and DRR in the English language curriculum (starting with English and Science), thus helping mainstream climate change rather than treat it as a separate topic.

33. The AusAID 2012 North Pacific Environment Mission observed that for the local adaptation initiatives, IOM should develop a set of criteria to assess appropriateness of the initiatives, which should be readily available to communities and government stakeholders.

34. **Efficiency.** ICCAI is funding \$3 million, of which about half is for grants, direct assistance and monitoring (just over \$1 million is for climate adaptation & disaster risk reduction measures, nearly \$250,00 for field mobility and civil society field support, and \$120,000 for education materials). Staff and office costs total \$1.3 million, plus an additional 5% IOM overhead fee. This expenditure breakdown is in line with many other NGO type programs where staff costs are a high proportion of delivering the program.

35. IOM has built good relations with both National Governments, as well as the four State Governments in the FSM. IOM has coordinated with the relevant offices in the FSM and RMI National Governments in the preparation of the CADRE Program Proposal, including the Office of Environment and Emergency Management (OEEM) and Department of Education in both countries, and civil society partners.

(c) Environmental Law Adviser

36. The position is funded under AusAID's Pacific Technical Assistance Mechanism (PACTAM – contractor is Australian Volunteers International, AVI) with the role of amending the Environmental Protection Act to enhance protection and management of FSM natural resources. The activity will amend laws to clarify national and state level jurisdictional responsibilities, and implement multilateral environment agreements FSM has entered into. A third objective, to review each State's jurisdiction, has been held pending possible fielding of law advisers to each state to do this.

37. **Relevance:** the PACTAM assignment progress report notes that these law amendments are fundamental to regulation of activities of companies and individuals that might degrade the environment, and thus is very relevant to FSM's needs. It also directly relevant to the P4Ds Priority Outcome 3 on "environmental management, with an emphasis on legislation and legal reform".

Effectiveness and Efficiency

38. The PACTAM assignment progress report sets out progress during the year, focusing on the activities of the adviser, identifying laws amended, a key one being the legal establishment of the Office of Environment and Emergency Management (OEEM), defining its mandate and powers. The report notes that a key to success was the trust enjoyed between OEEM and stakeholders in national and state level governments.

39. The report also states that amendments are efficient, having been drafted to take account of capacity constraints. The potential cost of any environmental disaster averted by these laws could be very significant. The report recommended further training for local staff to help ensure sustainability, the gap between the skills and experience of the law adviser being substantial.

B.2 RMI

40. The August 2010 P4D focuses on sustainable energy and increased access to clean water and sanitation. It does not include a specific priority outcome on climate change but sanitation and water resource management are highly sensitive to climate change. In partnership talks in 2012 on future assistance, RMI (and FSM) indicated they would like climate change adaptation and disaster risk reduction reflected in future P4D.

41. RMI's Strategic Development Plan Framework (2003-2018 – also referred to as the RMI Vision 2018) highlights the need to develop contingency/adaptation plans for the risk of natural disasters, raise public awareness about climate change and improve the regulatory framework for environmental protection. RMI has a Cabinet endorsed (but not yet publically released) National Climate Change Policy Framework. RMI also has a draft Joint CCA/DRR National Action Plan that is planned to serve as the main implementation mechanism for the NCCPF.

(a) Climate and Disaster Risk Education Program (CADRE) – FSM and RMI

42. See paras.28-36 above.

(b) Water and Sanitation Adviser

43. The position is funded under AusAID's Pacific Technical Assistance Mechanism (PACTAM) with the role of facilitating the development and implementation of the 2nd year action plans of the Marshall Islands Water and Sewerage Co (MWSC) and Kwajalein Atoll Joint Utilities Resources (KAJUR). The adviser supports the planning, approval and implementation of the national water and sanitation policy and in securing funding for improvements in projects.

Relevance

44. The population of RMI, and particularly the urban areas in Majuro and Kwajalein, have inadequate water and sanitation systems, and water borne diseases are a problem. The PACTAM assignment progress report notes that building capacity of MWSC and KAJUR is very relevant as better systems and management plans are needed. The infrastructure is in poor condition, particularly in Kwajalein, with little operational performance data to help decision making. Given the likelihood of substantial new investment in the Kwajalein system, it is important to not make incorrect investment decisions now.

45. A Priority Outcome of P4D is "increased access to clean water and sanitation". The adviser is helping overcome the institutional and capacity limitations, improving operational management, asset performance and investment planning.

Effectiveness and Efficiency

46. The PACTAM assignment progress report sets out progress on achievement of overall objectives rather than of the individual adviser, noting poor progress in building capacity in the National Water Office/Commission due partly to staff shortages but also lack of representation of some key stakeholder groups. Funding constraints affect both MWSC and KAJUR, with significant gaps between revenue and cost of delivery water and sanitation services. Institutional barriers have also affected effectiveness, and a champion is needed (Minister or Secretary) to lead the Water Office/Commission. MWSC's objectives are not adequately defined regarding its commercial versus social obligations. In addition, institutional arrangements for both MWSC and KAJUR led the Board into paying less attention to water and sanitation than to the commercial needs of their energy business (MEC). Structural reform is needed. However one major success recorded relates to acceptance by government of the critical role of the airport runway catchment and the need to clean up storage and catchment, and improve maintenance to improve quality.

47. Efficiency of the adviser role and position could be improved with a focus on expediting immediate investments that will lead to improved data and improvements to raw water collection and storage.

(c) Kwajalein Atoll – household water tanks

48. AusAID has provided funding for 380 water tanks to be provided to households for rainwater harvesting, at an estimated cost of \$520,000. The original design project proposal was for 220 water tanks at a cost of \$315,000.

Relevance

49. Kwajalein atoll is the most crowded atoll in RMI and faces serious water shortages. Infrastructure is in very poor condition, partly due to poor maintenance, but not helped by the very high humidity and salt water corrosion. Rainwater catchment has become increasingly widespread but periods of drought affect supply. Water catchment, and particularly household water catchment, has been given very high priority by the government. However household space, particularly on Ebeye, is a constraint. As noted above, a Priority Outcome of P4D is “increased access to clean water and sanitation”. The project is thus very relevant to both RMI’s needs and to the P4D.

50. Australia is also providing funding for technical assistance to the Asian Development Bank to design the proposed Ebeye Water Supply and Sanitation Project (not ICCAI funding). If approved, the proposed project will improve access to safe and reliable water supply and sanitation infrastructure, improve operations and asset management of KAJUR, and will promote behavioural change to improve hygiene standards. ADB has comprehensive environment safeguards for infrastructure projects.

51. **Effectiveness and Efficiency:** Unfortunately the only document available to the review team is the project proposal document referred to above and has no information to assess progress or management aspects.

B.3 Palau

52. The August 2010 P4D focuses on workforce skills of teachers and health sector and improving Govt capacity in budget planning and management. There is no specific mention of environmental management or climate change but the environmental vulnerability of Palau is high (see Situation and Needs Assessment Country Report). Palau’s National Master Development Plan 2020, published in 1996, includes a specific section on environmental management.

(a) Palau Conservation Society (PCS)

53. The Palau Conservation Society was granted \$19,540 from the Australian Government Small Grant Scheme in June 2011 to conduct a climate change adaptation community awareness campaign and a vulnerability assessment with one community for management planning purposes.

Relevance

54. Building community awareness of the effects of climate change is very relevant to Palau’s needs and is also in line with the ICCAI objective of increasing partner understanding of the impacts of climate change and building capacity to assess vulnerabilities.

Effectiveness and Efficiency

55. The brief final report, prepared by the PCS, reporting on activities to June 2012 notes that since June 2011, PCS has held climate change adaptation awareness and outreach presentations and activities with community youth, traditional leaders, state governors, and the Belau Watershed Alliance. PCS partnered with the Micronesian Conservation Trust (MCT) and TNC in some of these activities; MCT consultants completed a workshop with management planning teams from states and communities on Jan 30 – Feb 3, 2012. Problems arose in the proposed vulnerability assessment, which could not be completed.

56. A core achievement was securing national political support for climate change as a priority.

57. The report notes that PCS “has been able to build awareness through its management planning and public awareness activities and building climate consciousness and urgency for action with Palau leadership and community stakeholders. Management plans now all address climate by protecting ecosystems health to maintain and build natural resiliency. In addition, advocacy actions by the Belau Watershed Alliance (BWA) with their state legislators, governors and traditional leaders to endorse and reinforce management efforts have been successful as the sense of urgency built with regards to the actual effects of climate.” This last point was emphasised as the Palau Council of Chiefs and Governors Association reportedly now see the urgency for conservation and resource management actions necessary due to climate change.

58. **Efficiency.** The report notes the delay in meeting the timelines, but that this should be expected when handling complex issues such as climate change and when affected stakeholders are local communities with limited absorptive capacity. A key lesson learned cited in the report was that communication success can be achieved by engaging a few key community individuals and groups that can champion messages and advocate for action.

C. Kiribati

(a) Introduction – ICCAI funded Program

59. The bilateral program funded under ICCAI comprises two programs): (i) A\$ 8.61 million contribution to the World Bank led Kiribati Adaptation Program Phase 2 (2006-2011), which also has direct AusAID bilateral program support, and all of AusAID’s contribution to Phase 3 (2011-2016); and (ii) A\$ 3.85 million contribution to the Asian Development Bank led South Tarawa Sanitation Improvement Project, which is also protecting vulnerable ground water resources. Some climate change adaptation activities of KAP support the ADB – World Bank Road Rehabilitation Project in South Tarawa, which AusAID is supporting under the direct bilateral program (US\$ 5.79 million, implemented through PRIF).

(b) Partnership for Development, National Strategies and Coordination/Implementation Responsibilities

60. The Australia-Kiribati Partnership for Development (P4D), signed in 2009 does not include a specific priority outcome on climate change but is mentioned under other priorities, with emphasis on improving readiness to climate change and sea level rise. Economic infrastructure and climate change are now additional priorities for P4D.

61. The Kiribati Development Plan 2012-2015 includes environment as a key policy area, with protection and replenishment of natural resources, and protection of island biodiversity being identified as key strategies to address key issues. A National Framework for Climate Change and Climate Change Adaptation was developed in 2010 to guide the management of climate change and sea level rise issues in Kiribati. A National Integrated Environment Policy (NIEP) has recently been submitted to Cabinet for approval. It recognizes the environment as one of the three important pillars of sustainable development and integrates all the thematic plans and strategies within the environment division of the Ministry into a single strategic framework document. It will also facilitate the implementation of the environment key policy area of the Kiribati Development Plan 2012 – 2015.

62. **Institutional Arrangements:** the Office of the Beretitenti (President), including the Policy Coordination and Strategic Risk Management Division, has responsibilities for ministerial co-ordination and cross-Ministry functions, including communications, disaster risk management, climate change policy and population policy. The Ministry of Environment, Land and Agricultural Development (MELAD) hosts the Climate Change Unit and the Climate Change Study Team. The Kiribati National Expert Group (KNEG) has a key coordination role to play. Potentially this is a good structure, with OB responsible for policy coordination and MELAD and other sectors with responsibility for implementation. However, capacity building is needed to make the structure work: the KNEG needs to be supported by a technical working group.

63. National institutional arrangements and limited capacity can impede effective coordination and implementation of DEC projects. Apart from the two projects above, USAID is funding coastal adaptation water sector project (implemented by SPREP) and the EU a water and sanitation project for outer islands, replicating groundwater resource assessment methods used in South Tarawa. In addition, a PACCSAP project to assess Tarawa – Bonriki’s groundwater vulnerability is about to start. There is a perceived notion of Kiribati being over consulted by development partners in relation to the various climate change related issues and concerns, highlighting the need for more effective donor coordination.

64. The separate Needs Assessment Report provides further details on the institutional arrangements for DEC, and on the policy environment, and discusses Kiribati’s vulnerability to climate change, which these programs help address. The National Adaptation Program of Action (NAPA) adopted by government in 2007, identifies salt water intrusion and coastal zone inundation as the most relevant climate related hazards for Kiribati, with impacts including reduced agricultural land, flooding, infrastructure damage, water pollution, displacement of people, loss of biodiversity, damage to community assets, and ecosystem degradation and biodiversity loss.

(c) Kiribati Adaptation Program (KAP)

65. AusAID is providing A\$ 8.61 million contribution to KAP II and KAP III, programs led by the World Bank. KAP III builds on the achievements of KAP I (technical assistance to increase awareness 2003-2006) and on the experience of KAP II (pilot implementation project 2006-2011) to enhance the Government’s capacity to design and implement adaptation measures that respond to the most pressing climate-related and natural hazard issues facing Kiribati. KAP III totals US\$10.8 million (US\$ 4.85 from AusAID, with co-financing from GEF, GFDDR and Japan).

Relevance to Partner country needs and priorities

66. KAP II’s objectives were to: (i) develop and demonstrate the systematic diagnosis of climate-related problems and the design of cost-effective adaptation measures in Kiribati; and (ii) continue the integration of climate risk awareness and responsiveness into economic and operation planning by the Recipient. KAP III’s objective is to improve the resilience of Kiribati to the impacts of climate change on freshwater supply and coastal infrastructure. KAP III will achieve this objective by strengthening the government capacity and improving the management and governance of water resources and infrastructure. Both these align with the priorities of the national development plan and NIEP, and with P4D.

67. Infrastructure is a relatively new sector of support for AusAID in Kiribati and AusAID has delegated responsibility for these programs to its partners (i.e. ADB, the World Bank and PRIF),

consistent with the principles of 'lead donor' outlined in the Cairns Compact. However, the Government has expressed some concerns about the effectiveness of this, including limited in-country liaison with these agencies, which hampers communications, and very short visits of technical supervisors. The AusAID Post, however, does not have sufficient technical and implementation capacity to implement these programs itself, presenting a trade-off by providing support to the sector via partners.

Effectiveness and Efficiency

68. **Effectiveness.** KAP I had the objectives to mainstream adaptation in national economic planning and to prepare a pilot National Adaptation Program of Action (NAPA) and was considered successful. KAP II aimed at piloting adaptation measures and consolidating the mainstreaming of adaptation into economic planning, but during the Review mission the Government (Ministry of Finance and notably) expressed concerns that while KAP had done a lot of useful planning, there was little evidence of any physical results on the ground.

69. The World Bank prepared a detailed implementation and completion report (December 2011) on KAP II that rated the project as only moderately satisfactory. The Review has examined this report and found its analysis sound. The report notes that while its objectives (integrating climate risk awareness and responsiveness into economic and operational planning, capacity building, and developing and demonstrating the design of cost-effective adaptation measures) were achieved to some extent, overall the project was over ambitious, procurement processes were too complex, particularly given the weak institutional capacity and lack of experience with Bank processes, early implementation was unsatisfactory and the Bank did not provide the level of implementation support needed in such a capacity-constrained environment. The project had a large number of diverse activities across different sectors, too many of which were in remote outer islands.

70. On the plus side, the report notes that stakeholder participation in design was noteworthy. However during the Review interviewees noted that mangrove rehabilitation and planting programs have largely been a result of intra-government consultations and decisions and not as a result of community consultations, although communities are now involved.

71. KAP III is more focused than KAP II, targeting strengthening the government capacity and improving the management and governance of water resources and infrastructure, drawing on lessons learned, particularly balancing capacity building and on-the-ground investments and emphasizing community consultation and participation and the role of civil society to ensure long-term adaptation. It draws on the experience gained in rainwater harvesting, coastal infrastructure protection and in community consultations. It is planned that an additional 6,000 people would benefit from "new" sources of water from rainwater harvesting and galleries in both North and South Tarawa. Shoreline protection investments will improve the coastal resilience for the adjacent communities and, at some sites, adjacent government infrastructure. Communities living in reef and non-reef islands, Kiritimati Island and South Tarawa will be helped to prepare and implement locally managed adaptation plans. However concerns were expressed to the Review that KAP III was focusing more on the technical aspects rather than on community involvement and this could impact on effectiveness and sustainability.

72. Many of the findings in the KAP II completion report were corroborated to the review team during the mission, particularly the delays in implementation. Some successes were cited (e.g. rainwater harvesting in Banaba; rehabilitation of the port water reserve, ground water assessments, particularly in

N Tarawa), but some of these activities were now being implemented under the EU sanitation and water program (Kiriwatsan). However capacity and skills remained a constraint. Two points made by government and quoted in the completion report were repeated: (i) significant erosion of the shoreline experienced at either end of some seawalls (the project's current coastal engineer held the view that the approach and design of the sea walls was incorrect and that more near shore protection was needed in addition – i.e. dissipation measures); and (ii) large amount of funds spent on international consultants relative to on-the-ground investments. A lesson was cited that KAP had too many small dispersed activities whereas a few larger activities might have been more appropriate. KAP III is more focused, but still runs this risk.

73. **Efficiency:** the completion report rated implementation as only moderately satisfactory. On economic efficiency, the report noted that although it is difficult to quantify there is consensus in government and among donors and communities that KAP II investments are economically worthwhile.

74. Implementation arrangements for KAP III have been strengthened, particularly the PMU, but concerns were still expressed about the KAP steering committee, which did not seem to effectively link with some of the environmental integration and policy concerns of MELAD. High level participation in the National Adaptation Steering Committee was not occurring, the Committee not giving direction to KAP. The National Infrastructure Steering Committee is functioning better. However the Public Works Department noted that its internal coordination committee brings together the EU funded Kiriwatsan program, the PRIF road program, the World Bank KAP, the ADB South Tarawa sanitation program (which also includes water), solar energy programs from Japan, World Bank and others, and the Public Works Department's own programs. A National Infrastructure Committee involving MinFin, Transport, Public work and Environment was also cited as a key coordination committee. The separate project steering committees have been folded into this. However, the Dept indicated that ADB and World Bank procurement procedures were not really appropriate for small island countries such as Kiribati. The Dept noted that the ADB/WB Liaison Officer could be more proactive, including increased liaison with government, rather than focussing mostly on mission logistics.

(d) South Tarawa Sanitation Improvement Project (STSIP)

75. The Sector Project loan from ADB and the AusAID grant became effective June 2012. The project is estimated to cost US\$22.5 million, comprising loan of US\$7.56 million from ADB and grant of \$13.95 million from AusAID, of which A\$3.85 million is from ICCAI.

Relevance to Partner country needs and priorities

76. The project's goal is to improve the health of South Tarawa's population. The project will: (i) improve sanitation infrastructure including rehabilitation and upgrading of existing sewerage systems and ocean outfalls in Bairiki, Betio and Bikenibeu, (ii) promote improved hygiene and sanitation awareness and behaviour change among South Tarawa communities, (iii) build the capacity of Ministry of Public Works and Utilities (MPWU) and Public Utilities Board (PUB) staff to effectively deliver sustainable sanitation services, and (iv) carry out project management, implementation supervision. It also includes water supply preservation. A key component is community engagement – the problem of inadequate sanitation infrastructure is compounded by limited public awareness of the links between sanitation, hygiene, and health. Development of a sanitation maintenance fund is a project objective.

77. The project is in line with both the P4D and Kiribati's development plan, improving health outcomes, strengthening governance in the provision of public services, and investing in social and

economic infrastructure. The project supports the country's National Sanitation Policy; National Water Resources Policy; and the Government of Kiribati's Water Supply, Sanitation, and Solid Waste Management Program for South Tarawa that was developed in 2010 with assistance from the Pacific Infrastructure Advisory Centre.

78. The project has adopted an integrated approach to water and sanitation, which requires a coordinated effort with the other water projects. A major element is its asset management and training components; there is overlap in this and other ongoing projects within Public Works and coordination is necessary.

Effectiveness and Efficiency

79. The project is being implemented by the Snowy Mountains Engineering Corporation (SMEC) and has only just started. Two joint review missions have been made by ADB and AusAID (Nov 2012 and March 2013) and project supervision to date seems adequate. The following takes into account these mission reports.

80. **Effectiveness – Infrastructure:** a number of minor changes have been made to the preliminary design to improve overall system performance and sustainability, and a design workshop is being conducted to ensure full involvement of MPWU and PUB. Contract award is now expected in December 2013, while actual works are scheduled to begin in early 2014. This has delayed the project, but given local capacity constraints and the remoteness of Kiribati and need for an extended bidding period, seems unavoidable. The possibility of cost over-runs in the construction of the outfalls using both horizontal drilling or trenching methods remains a concern, given higher than anticipated costs faced by other large infrastructure projects in South Tarawa. Land issues continue, with landowners being unwilling to lease land to the project for upgrading pump stations. Alternative sites are being looked at, but this could delay this component.

81. **The community engagement component** has made good progress. Baseline data on sanitation in South Tarawa has been collected for project monitoring purposes, and is currently being analyzed. Community mobilisers have been recruited to promote hygiene and sanitation awareness and behaviour change in South Tarawa communities. A key issue is that it is difficult to discourage open defecation through behaviour change campaigns when households do not have access to toilet facilities.

82. **Efficiency:** There have been significant start up delays, some as a result of the sector approach based on outline designs which are not suitable for going out to tender – detailed design work has had to be done and draft bid documents for core sub-projects improved to provide the required level of detail needed to go out to tender. Six months is needed for this (end March 2013). Sector approaches should be followed where local systems and capacity are adequate to enable an immediate start and subsequent roll out of successive projects; design, tendering and procurement systems are inadequate Kiribati for this modality.

83. **Project Management:** there have been gaps in project coordination and monitoring caused by delays in recruitment of MPWU's project coordinator and establishment of the project steering committee. The joint review mission prepared a project implementation action plan for 2013 which outlines key actions and timelines to support project implementation. Capacity building and support to PUB now progressing.

84. **Coordination and Supervision:** the National Infrastructure Development Committee was to be the steering committee but in its revised format is too high level. A sub-committee of the National Water and Sanitation Coordination Committee, consisting of MPWU as the chair, PUB, Ministry of Health and Medical Services, MELAD, MFED and will act as the project steering committee. The Project Steering Committee will be expected to meet on a quarterly basis. MPWU has not yet contracted a project manager to oversee project implementation, local salaries being constraint.

85. **Maintenance and sustainability:** Sanitation infrastructure in South Tarawa quickly fell into disrepair following the original Australian-funded project, and most recently under the ADB-supported SAPHE (sanitation, public health and environment) project, due to inadequate funds to support proper maintenance of the system. The greatest challenge facing the sustainability of investments in sanitation under the project was the ability to generate revenues from sanitation charges. Although the PUB has approved tariff increases to move towards improved cost recovery, these increases which have been submitted to Cabinet, have not yet been approved.

D. Samoa

(a) Introduction – ICCAI funded Program

86. The bilateral program funded under ICCAI comprises 3 programs: (i) Support to implement NAPA 4 (A\$2.1million); (ii) Samoa Agro-forestry and Tree Farming Program (A\$2.29 million); and (iii) Civil Society Strengthening Program (A\$2.1 million). In addition Samoa received support from the Pacific Adaptation to Climate Change Program (PACC), a regional GEF funded program implemented by SPREP/UNDP – ICCAI is supporting the second phase of this program, PACC Plus (see section below). Samoa a is a pilot site for the Pilot Program for Climate Resilience (PPCR), funded as part of AusAID’s global contribution to the Climate Investment Fund (CIF) and not assessed as part of this Review (although referred to for completeness). Under the program the road between Apia and the airport is being upgraded, and community adaptation activities are being undertaken.

(b) Partnership for Development, National Strategies and Coordination/Implementation Responsibilities

87. The Australia-Samoa Partnership for Development (P4D), signed in 2008, aims to help achieve the vision articulated in the Government’s Strategy for the Development of Samoa (SDS – 2008-2012). Achieving this will result in the achievement of the MDGs and Samoa’s Pacific Plan targets. Under P4D priority outcome 5, climate change, Australia supports the analysis, scoping and design of measures to: monitor the impacts of climate change on health, agriculture and food security; develop adaptation measures for vulnerable communities, including coastal infrastructure and development of early warning systems; and develop viable options for clean and renewable energy. Relevant areas under other priority outcomes include agriculture and fisheries and health. In developing a new P4D, this outcome is being reprogrammed for inclusion under the governance and economic stability schedule of the partnership, with a target of strengthened climate resilience for all sectors. It recognises that climate change is an increasingly crowded sector, and Australia and Samoa will look to mainstream climate change work into other sectors.

88. The SDS is prepared by the Ministry of Finance (MOF), and guides the development of Samoa, identifying priority development areas. The achievement of its strategic outcomes is monitored by MOF through the use of key performance indicators which form part of the SDS. In the SDS, climate and disaster management were incorporated as a general statement under Environmental Sustainability.

The SDS 2012-2016 launched on 31 July 2012 includes the building of climate resilience as one of its key focus under Priority Area 4, Outcome 14; DRM is also firmly embedded in this outcome. Priority Area 2 includes enhanced resilience of communities to meet the impact of climate change and natural disasters.

89. Unlike many other Pacific countries, Samoa is more clearly in control of its own planning and budgeting with a strong Ministry of Finance which is directly responsible for planning and aid coordination and for monitoring and reporting. Many development partners are active in Samoa, including Australia, the European Union, China, Japan, New Zealand, the World Bank, the Asian Development Bank and the United National Development Programme. Development assistance makes up around 15% of GDP. The multi-donor contributions are well coordinated by the Aid Coordination Division, located in the MoF. This has resulted in a number of multi-donor, multi-year sector-wide programmes, including water and health. A three-year public sector investment programme that has been formulated and integrated into the budgetary process. Development partners work through the Aid Coordination Division. When development and related proposals are approved by Cabinet Development Committee, and require external financing, they are then processed through the Aid Coordination Committee, chaired by Prime Minister, before submission to development partners.

90. Donors' in general³⁰ have expressed confidence in the system by the provision of project support through national financial systems, with funding being routed through MoF, who then control and report on expenditures of Govt Ministries and agencies through the regular development budget process. Samoa receives direct budget support from some agencies (e.g. for implementation of reform programs), not just project support. The AusAID Post liaises closely with MoF and line ministries in overseeing the aid program.

91. The Country Needs Assessment Report provides further details on the policy environment and institutional arrangements for DEC. Given the role and capacity of MoF, Samoa is relatively efficient in coordinating and managing climate change response activities. This institutional capability is further strengthened in climate change responses by the Ministry of Natural Resources and Environment (MNRE), which is responsible for coordinating and implementing all climate change activities in Samoa. It brings together the agencies involved in CCA activities, enhancing coordination of planning and implementation, in contrast to other countries with separate agencies which experience coordination and implementation problems. The separate Needs Assessment Report also discusses Samoa's vulnerability to climate change, which these programs help address.

(c) National Adaptation Programme of Action 4 (NAPA 4)

92. ICCAI helps fund implementation of Area 4 of NAPA, which integrates five components to help build capacity in building resilience to climate change at national and community levels, providing support to: (i) meteorology – climate early warning system, (ii) land use planning and urban management – surface water flooding, (iii) water resource management (ground water, well monitoring), (iv) forest fire protection, and (v) Tourism. Each component is led by a different authority: MNRE's Meteorology Division; its Planning and Urban Management Agency (PUMA); Water and Sanitation Sector Division; the Fire Emergency Services Authority (FESA); and the Samoa Tourism Authority (STA). In addition, support is being provided to capacity building (Outcome 5 of the P4D).

³⁰ AusAID expressed some reservation of whether funds are being managed effectively (e.g. purchase of vehicles).

93. \$0.75 million was provided for NAPA 4 in 2010, with a further \$0.10 million for sustainable financing for climate change adaptation and \$0.15 million for capacity building and enhancing mainstreaming. An additional \$1.2 million was provided in 2012.

Relevance to Partner country needs and priorities

94. The design documents do not provide a program framework setting out program goals and objectives, components and how these will help achieve program objectives, but the programs all support key areas in the SDS and P4D Outcome 5 (climate change) as set out above, and are relevant, addressing priority activities identified in the development of the NAPA. The Initial Delivery Strategy for P4D Priority Outcome 5, developed in 2009, envisaged assisting the Government in implementing priority adaptation measure under NAPA (plus mitigation measures under the greenhouse abatement strategy – biomass gasification). The 2005 NAPA had conducted vulnerability assessments and prioritised activities based on criteria from the SDS, with two key criteria being that they should be country-driven and local community based. NAPA 4 integrates 5 of the key priority activities, as noted above (GEF and other donors are supporting other areas). The program in particular supports the SDS focus on building climate change resilience at the local and community level.

Effectiveness and Efficiency

95. The Review met with MNRE in what was to have been a roundtable involving all agencies implementing the 5 components. However attendance was only partial and focused on big picture concerns. However reports provided to the review team on the components are substantial and have since been examined in detail – key points are referred to briefly here. The Review had a separate meeting with STA and was able to pursue project level concerns further.

96. **Effectiveness – Achievements.** The reports provide quarterly activities and achievements and future work plans covering each of the 5 components up to December 2012, including installation of rain water gauges to improve Met Div ability to monitor rainfall changes, analysis and planning of risks and development in the urban area (PUMA), establishment and monitoring of groundwater profiles, and the opening of a fire station in a drought affected area. NAPA5 will implement the Climate Change Tourism Strategy developed under the NAPA4. Overall effectiveness was initially poor due to delays in procurement and recruitment, but effectiveness was satisfactory in some components, as noted below.

97. **Climate Early Warning System, Meteorology Division:** the objective of this component is to enhance technical and organisational capabilities of the Division to monitor climate trends and provide monthly climate trends and provide monthly climate risk and early warning communications to planning, water, fire prevention and tourism sectors to help augment existing Disaster Risk Reduction management processes. Initial work focused on sector specific and community consultations. The report sets out achievements including technical installations, data collection and climate monitoring to improve and provide strong foundation for the information system expansion, and early warning dissemination.

98. The Division has worked with the Australian Bureau of Meteorology to upgrade the Climate Database Management System called CLiDE (Climate Database for the Environment) to improve its functionality, an example of which is the availability of the wind rose report, which is now one of the main features of the climate summary report; the availability of the wind information is crucial in the management of forest resources and forest fire control.

99. Public awareness has also been a key activity including launch of a Current Climate of Samoa brochure aimed at improving local understanding of the scientific assessment conducted by the meteorological staff in collaboration with Australian scientists based at BoM and CSIRO. The brochure has been translated into Samoan language and more than 500 copies have been printed and released to the public. The Meteorology Division have also conducted awareness-raising activities of the project with communities, and promoted the new climate brochure. More than 500 people in rural communities have been consulted.

100. **Surface Water Flooding**, Planning and Urban Management Agency (PUMA): the aim of the component is to strengthen capacity of Samoa's planning sector to adapt to impacts of climate change. Consultations have been held with some sectors on the preparation of the Apia Spatial Plan, with village consultations the next step. The report notes the challenge is to ensure reasonable attendance and generate interest and buy-in. Cyclone Evan impressed the need for more information on planned urban investments to be integrated into the Spatial Plan. Awareness-raising was conducted during the Environment week.

101. **Ground Water**, Water Resources Division: the aim of the component is to establish the capacity of water resource managers and GIS planners to identify the impact of climate change on groundwater resources. Initial work has focussed on the data collection, maintenance and monitoring of previous works as well as sustaining the climate change awareness campaign, but the Division is still dealing with the recovery and damage, loss and needs assessments following Cyclone Evan. There have been significant delays in procurement of the drilling truck needed for installation of ground water stations. These stations will monitor salt water intrusion into coastal spring water resources as a result of sea level rise. The report notes that time is needed to fully install monitoring stations to help in sound decision making. Public awareness campaigns have targeted schools and have included radio talk-back shows.

102. **Forest Fire Protection**, Fire and Emergency Services Authority (FESA): aims to strengthen Samoa's fire prevention and suppression capacity to reduce the impact of climate change on native forests and forest plantations during drought periods. Public awareness has included television campaigns and inclusion of a forest fire prevention page in the yellow pages. Fire danger indicators have been installed in vulnerable forests and a new fire station established in a vulnerable area. Voluntary forest fire systems have been established and fire prevention exercises carried out.

103. **Samoa Tourism Authority (STA)**: The aim of the component is to strengthen the capacity of Samoa's tourism resource managers to increase the adaptive capacity and resilience of the tourism sector to the adverse impacts of climate change. A main output is the National Tourism Climate Change Adaptation Strategy for Samoa, 2012 – 2017. This focuses on several areas including increasing the resilience of the tourism sector to climate change impacts through the implementation of immediate adaptation measures and making key tourism infrastructure and resources (food water electricity) more resilient. Increased public awareness was also key. The Review discussed with STA next steps and sustainability of STA's activities, and what modalities of support would be needed in integrating this work into country-wide activities. There are many challenges in implementing the strategy, such as whether STA should have its own CCA unit to work with hotel and tour operators. There was significant demand from beach operators and others after the cyclone for advice. More support was needed, but STA indicated MNRE was already too busy to provide this and thus STA needed its own technical capacity to be proactive. Tourism is a major contributor to employment and the economy, and the resilience of tourism needed to be addressed. One criticism expressed about the report is that it focused

too much on adaptation to climate change rather than presenting a strategy for the tourism sector in the light of future climate change and disaster risks, which might have been more useful.

104. **State of the Environment Report** – as part of AusAID’s capacity building support, MNRE is preparing a State of the Environment Report; currently a draft has been prepared and it is hoped it will be finalised by June.

105. **Efficiency** – there have been procurement and recruitment delays which have affected project coordination and implementation, which are not highlighted in the NAPA Progress reports (apart from the crane procurement delays) but which were discussed in the meeting, and which have been discussed and monitored by MoF and the AusAID Post. MNRE noted it has to be mindful of the Public Service Commission (PSC) when recruiting for the positions in agro-forestry and groundwater as these persons may be absorbed into the establishment at a later date.

106. **Monitoring** – as noted above, the program is monitored by MoF which provides regular reports (based on reports from MNRE) to the AusAID Post, which has taken an active role in monitoring the program, including following up implementation delays in procurement and recruitment. The implementation and monitoring process being established under NAPA 4 will be internalised once established.

107. **Issues** – in the main meeting, the MNRE CEO indicated that bilateral support was preferable to being part of a regional program, and any regional or multilateral support to national programs should provide additionality. In response to queries about how SPREP was benefitting MNRE, being based in Apia, MNRE noted that apart from support for PACC and its coastal resilience building, support from SPREP was not more than any other country would request, MNRE respecting SPREP’s regional role. Support had been appreciated in biodiversity and waste management (JICA program) and in the Recovery Plan after the cyclone, building back better and avoiding flood plains and other high risk areas. Building codes and their enforcement were raised as a concern.

(d) Samoa Agro-forestry and Tree Farming Project (SATF)

Relevance

108. The SATF project is designed to build resilience to climate change in agro-forestry by introducing diverse or mixed farming to commercial timber species and bio-energy crops. The program was originally designed in 2007 but was re-developed in late 2010 to be in alignment with SDS priorities and climate change adaptation objectives, for funding under P4D priority outcome 5. P4D Area 2 supports the implementation of priority activities under the 2003 Forestry Sector Plan. Forests are valued for their protection function and forestry is included in the SDS under Priority Area 3 (Environmental Sustainability) which notes the adverse impacts of the depletion of commercial forests and degradation of native forests, with climate change a threat to environmental sustainability. The SDS notes the important role of forests in the protection of water resources.

109. The SDS recognizes the need to reverse the loss of native forests through replanting activities. The Forest Policy 2007 envisions both native forests and a planted forestry sector component that will complement agriculture as the major source of employment in rural areas, based on planted agro-forests in lowlands that will provide timber for domestic and industrial uses (furniture) value adding being important. SATF components thus cover both agro-forestry and tree farming systems and value adding, together with institutional capacity building and management.

Effectiveness and Efficiency

110. Progress has been slow due to delayed recruitment of the technical advisor and project coordinator. Whilst the former has been resolved, the project coordinator recruitment has not. The SATF February 2013 progress report notes that the long delay in the recruitment of the project coordinator is the single most important issue affecting the effective implementation of the Program to date. It will continue to frustrate the Program in future if it is not resolved soon.

111. Cyclone Evan, which hit Samoa in early December 2012, also caused some implementation delays, with MNRE staff (in collaboration with SPREP and other partners) carrying out a rapid assessment of the damage caused by the cyclone to the forestry sector and developing a recovery plan. An updated Forestry Sector plan is being developed, but the strategy for agro-forestry and trees has been delayed pending this. There has been some limited progress in activities, with increased engagement with farmers, and extension of nurseries and production of seedlings.

(e) Civil Society Support Program (CSSP)

Relevance

112. The program is designed to support civil society development in Samoa, providing resources to help build capacity and the ability to also manage projects more effectively bringing community wide benefit. The ICCAI-funded program (A\$2.1 million) focuses on rainwater harvesting, through providing water tanks and associated items, to increase access to safe water for vulnerable households and communities. It is complementary to the EU-funded Water and Sanitation Policy Support Programme, and will work closely with the Samoa Red Cross Society which is also supporting provision of water tanks, and has developed expertise in managing this, including identification of poor and vulnerable households.

113. The original program design of 2010 included a program framework which indicated the purpose was to deliver sustainable social and economic benefits to the people of Samoa through strengthened civil society organisations. Grants could be provided for several purposes, including provision of water supplies. The new design for the CCSP, developed in March 2013, focuses only on increased access to safe water, targeted at vulnerable households and communities.

114. The program is very relevant to Samoa's priority development outcomes as set out in the SDS 2012-2016, which specifically cites the CSSP. Key Outcome 9 focuses on sustainable access to safe drinking water (and basic sanitation) with the key indicator being the percentage of households that have access to reliable and affordable water supply. Community development is also a key component of outcome 8 (social cohesion). The Community Sector Plan 2010-2015 presents the vision of "Empowering communities for sustainable community development"; key strategies include strengthening village governance, building greater cohesion and facilitate community ownership of development initiatives, and enhancing the delivery of community development services and programs. Although It is not specifically cited in the climate adaptation priorities of outcome 14 (climate and disaster resilience), the Community Sector Plan under Outcome 8 refers to addressing the impacts of climate change and ensure community preparedness for disaster risk reduction, disaster management and strong community resilience.

115. The CCSP is also relevant to the P4D which under outcome 5 includes developing climate change adaptation measures for vulnerable communities.

Effectiveness and Efficiency

116. The ICCAI program is only starting now with a new design being finalised in March 2013, and will support civil society organisations requesting assistance, providing water tanks for an additional 800 households. The Review Team discussed the program with both the CSSP Programme Manager and with representatives of the Samoa Union of NGOS (SUNGO), NGOs being heavily involved in implementing the programme, including in particular the selection criteria and engagement at community levels. The program has developed selection criteria which focus on applicants from areas not connected to the reticulation system, with requirements on household income. While these requirements will ensure that only poor and vulnerable households will benefit, the selection will be from those who have applied and the Review queried whether this would thus not capture the poorest and most vulnerable who may be unable to apply. The Review was assured that through the Red Cross surveys of the poorest, this should not be a concern; applications can come from civil society groups applying on behalf of the poorest. There are households within reticulation systems that are not able to access the reticulated water (too far away; uphill) and these are not seemingly covered by the current design and selection criteria. This needs continued monitoring; the AusAID Post is liaising with CSSP on this.

117. The new program design includes a matrix setting out design objectives together with tasks milestones and means of verification. This includes brief mention of the capacity building component whereby the Samoa Red Cross Society will have in place approved training programs and schedule of activities that will build capacity of CSOs and beneficiaries to install and maintain the water systems. SRCS will report on these activities, but this aspect needs monitoring also by the AusAID Post.

118. Programme oversight and monitoring is the responsibility of the MoF program unit, which has robust M&E systems, and has adopted MoF procurement systems. At the community level, project committees will provide progress reports to CCSP, which in turn will report to MoF. Thus implementation risks look minimal, but AusAID needs to remain involved, particularly to ensure the recommendations (including selection criteria and effective targeting of vulnerable communities, civil society strengthening and community development and training, PMU management and M&E of individual projects) of the MTR jointly conducted with the EU are implemented, and unsure that the program reaches the poorest and most vulnerable.

E. Solomon Islands

(a) Introduction – ICCAI funded Program

119. The bilateral program funded under ICCAI comprises a contribution to a road program being implemented by ADB, and two NGO projects funded under the regional climate change action grants facility: (i) A\$ 5.98 million contribution to the second Solomon Islands Road Improvement Program (SIRIP 2) – AusAID has also provided direct assistance to the program from the bilateral program, as noted below; (ii) program run by the Nature Conservancy (TNC) to strengthen the capacity of target communities to adapt to climate change impacts; and (iii) program run by Live and Learn to protect local food supplies, ecosystems, assets and livelihoods through improved agricultural practices. In addition Solomon Islands received support from the Pacific Adaptation to Climate Change Program (PACC), a regional GEF funded program implemented by SPREP/UNDP – ICCAI is supporting the second phase of this program, PACC Plus (see below). Annex 1 of the PACC MTR, Supplementary Appendix includes a list of climate change adaptation projects ongoing in Solomon Islands, some supported by AusAID and

PACCSAP, and this demonstrates clearly the number of agencies involved in such activities in a single country.

(b) Partnership for Development, National Strategies and Coordination/Implementation Responsibilities

120. The Australia-Solomon Islands Partnership for Development (P4D), signed in 2009, focused on service delivery and economic improvements, including economic infrastructure. An updated P4D was signed in 2013 focusing on service delivery (health and education), justice, broad-based economic growth (infrastructure and livelihoods) and governance. The justice and governance programs were previously part of the Regional Assistance Mission to Solomon Islands (RAMSI). Making roads resilient to risks and climate change a key part of the infrastructure program.

121. The Ministry of Planning and Aid Coordination has integrated climate change into the recently produced National Development Strategy (2011-2020) and the national cabinet endorsed budget provision for climate change adaptation actions within the 2012 national development budget

122. The Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) has mandated responsibilities for DEC policy, planning, coordination and implementation. DEC functions were brought together under this single ministry in 2008, yet integration, seeking of synergies and overall coordination of policy and practice between the various functional areas required to achieve overall disaster and climate risk resilient development is neither readily nor obviously apparent. This has been put down to the ongoing lack of leadership³¹ and the lack of directives to coordinate and integrate across work programme activities under the MECDM corporate plan, since 2011. MDPAC's mandated responsibilities to coordinate and monitor progress of NDS implementation is crucial for integrating DEC and development and needs to be improved.

123. The Secretariat of the Pacific Community (SPC) and Solomon Islands have a Joint Country Strategy (2009–2012) which focuses on ensuring the sustainable utilization and conservation of natural resources, protection of the environment and successful adaptation to climate change as development priorities. SPC's strategic support includes technical and advisory support and capacity building in sustainable use of sea and marine resources and in sustainable management of forest and agriculture systems.

124. There are many donors working in Solomon Islands and recently an attempt has been made for Joint Programming in the Choiseul Integrated Climate Change Adaptation Programme (CICCAP), which is supported by various donor and development partners including SPC-GIZ, DCCEE, USAID, UNDP, SPREP and TNC in partnership with the Solomon Islands National and Choiseul's Provincial Governments. It is intended to provide a coherent joint programme of work and a collaborative, collective investment to assist Choiseul Province to address their CCA priorities; it is still in the early stages of implementation and, therefore the costs, long-term sustainability and the ability of SIG (with or without partner support) to replicate in other provinces or at country scale remains to be seen. Various informants suggested a lack of clarity on the criteria and process used to select Choiseul as the Province for the initiative apart from its small size and population, a 'few' CC issues, positive performance of the provincial government and some, long-standing relationships between a few of the partners (e.g. TNC) and the PG of Choiseul.

³¹ Lack of leadership is largely a result of the Government reshuffling the former PS of the Ministry from the position in March 2012 and not installing a full time replacement until July 2013

125. The separate Needs Assessment Report provides further details on the policy environment and institutional arrangements for DEC. It also discusses Solomon Island's vulnerability to climate change, which these programs help address, so these aspects will not be covered in this part of the report.

(c) Solomon Islands Road Improvement Program Phases 1 and 2 (SIRP 1 & SIRP 2)

126. Australia has contributed to both SIRIP 1 and 2, programs led by the ADB (SIRIP 1 US\$19.4 million and SIRIP 2 US\$24 million), with funding from both its bilateral program and A\$ 5.98 from ICCAI (A\$4.5 million for SIRIP2). Australia is also contributing A\$30 million under its bilateral program to the National Transport Fund as part of a Transport Sector-Based Approach. Adding resilience to infrastructure projects in Solomon Islands started with the EU-financed wharves program, but data limitations had impeded design. The SIRP project (a partnership involving ADB, AusAID, NZAID and the EU) marked the development of a policy on infrastructure and CCA (many bridges had been badly damaged due to flooding in 2009 and 2010).

Relevance

127. Improved infrastructure is a key outcome of the P4D. The road network has been poorly maintained and significant work is needed to rehabilitate and upgrade it. Improved road infrastructure is essential for achieving other priority outcomes such as improved economic livelihoods and service delivery, and as such is very relevant to the whole P4D and to Government's own NDS.

128. The ADB design and approval documents include a design and monitoring framework (DMF) which sets out the expected impacts and outcomes, targeting improvements in employment opportunities and income as a result of improved road transport, resulting from roads remaining passable, reduced travel times, and increased public transport. SIRP1 applied labour-based equipment-supported techniques for road maintenance, with community contractors trained to bid for and implement maintenance contracts. The design for SIRP 2 adopted this, with training for contractors (including women) being a component.

Effectiveness and Efficiency

129. **Effectiveness.** SIRIP has rehabilitated many parts of the road network. The November 2012 joint review mission³² sets out achievements to date, with implementation progress being reported at 85% complete. Rehabilitation and construction of 17 km of road and 19 water crossings in Guadalcanal Province is complete, while the final rehabilitation and climate change adaptation of 14 km of road in Malaita Province is underway. Nine road maintenance contracts using labour-based equipment-supported technologies engaging national private sector contractors over 47.4 km of unsealed road are underway.

130. The SIRP 2 program is proceeding well, with regular oversight by ADB technical and administration missions (see ADB and Joint reports). The program design benefited from work conducted by ADB on climate proofing infrastructure and on the incremental costs of maintenance. DCCEE is providing assistance to the Ministry in support of the Transport Sector-Based Approach to assist in developing guidelines for future CCA activities (development of climate resilient transport sector design standards and adaptation guidelines). While there were delays in the recruitment of experts a climate change specialist commenced in May 2013.

³² ADB, AusAID, NZMFAT and SIG.

131. Communities have been involved in road rehabilitation and maintenance; female participation has been reported as 40%.

132. The Review Team visited part of the SIRP 2 project in west Guadalcanal – as noted above, the SIRP 2 project seeks to improve resilience of the road infrastructure in the light of CC projections through improved drainage and bridge design (Guadalcanal), and building coastal protection and raising of the road height (Malaita Province). The design of SIRIP 2 had taken account of CCA considerations, analysing rainfall intensities in particular, and storm surge impacts, with climate and hydrology simulations for 2020, 2050 and 2080. On Guadalcanal this meant changes to bridge designs (height, width etc.) and stream crossings; in Malaita it meant raising the height of the whole road and give provision to protection against storm surges. The Ministry of Infrastructure has not had to track and report on CCA costs within a project, reporting on total costs and on outcomes, but staff estimated that this added 6 % to the Guadalcanal road costs, whereas on Malaita over 90% of the road rehabilitation cost is due to CCA. However, the Guadalcanal road is only rehabilitation whereas the Malaita road is virtually a rebuild. Ideally the Malaita road might have been moved inland, but land ownership concerns would make this a costly venture.

133. **Capacity building** has been a key component of SIRIP and the TSDP with the aim of enhancing MID's capacity in project management and implementation, including strengthening of financial systems. AusAID support to the National Transport Fund marks a shift to a sector-based approach, aligning assistance with Government's financing and procurement systems, although this introduces an element of risk.

134. **Efficiency and Monitoring.** The overall supervision of the program by ADB, in which AusAID has participated, and the good quality of M&E systems, have enabled good monitoring and reporting. Regular visits include participation in contractor monthly meetings. Compliance with safeguards and environmental concerns are a key part of the supervision. There is very good donor coordination across the transport sector, the Ministry of Infrastructure Development playing a key role in engaging with MoF, MDPAC and Provincial Governments and the donor agencies. ADB has played a key role in project supervision, with regular technical review missions, working closely with MID and the contractors. While contributing to programs of other donors, including multilateral banks such as ADB, have positive aspects in that AusAID can engage in sectors where others can provide specialist expertise and program supervision, and also enabling larger disbursements to be made, it can have a down side as delays have occurred, such as the lengthy negotiations between ADB and EU on co-financing.

135. **Gender.** SIRIP provides gender disaggregated data, which according to supervision reports, show that women have been provided opportunities for both skilled and unskilled work, and in training designed to help small businesses bid for contracts, with reports showing a 40% participation rate.

(d) NGO Programs in Solomon Islands

136. There are many NGOs with a track record of working in the Solomon Islands and they seem to choose to implement their DEC related projects in those provinces and communities where they have an established relationship with, such as TNC who have worked for several decades in Choiseul and more recently in Isabel. There are other NGOs such as WorldFish who appear to be aligning their strategic engagement with government and particularly provincial government, establishing criteria to select communities and provinces to work with and developing a CBRM+ approach with low to no-cost solutions for building a communities adaptive capacity and resilience. Kastom Gaden focuses on food

security and is widely appreciated and mentioned by government, donors, other development partners and NGOs. Based on discussions with various NGOs, there appears to be no criteria or process that identifies provinces and communities to target based on need, issues and priorities.

137. The section below on Climate Change action Grants, provides a review of the 5 major NGO programs being supported under this initiative, including the Live and Learn and TNC programs, which include Solomon Islands. These programs are thus not covered in this section, but given the joint interaction amongst NGOs in Solomon Islands, and extensive discussions with some other NGOs such as Kastom Gaden on the effectiveness of AusAID support to NGOs, the KGA program is reported on below as being illustrative of such complementary programs funded by AusAID.

(e) Kastom Gaden Association (KGA) – not ICCAI funded

138. KGA is a national NGO, which aims to improve food security in rural areas. KGA's Plant Material Network provides members across the country with agricultural information, training and new plant varieties. AusAID and KGA signed a three-year \$2.53m funding agreement in September 2011. The program objective is to strengthen family food security and income generation using a livelihoods approach. The program addresses two main outcomes: (i) farmers have access to the relevant technical services needed for food security and income generation; and (ii) increased capacity of KGA and rural farmer organizations to deliver services to their members.

139. AusAID's approach in the agriculture sector has been to support smallholder farmers to improve their food security (funding to KGA) and improve their cash incomes by improving the production and marketing of better quality cocoa, including supporting a cocoa adviser in the Ministry. AusAID's support to KGA is very relevant, given the limited economic opportunities in remote parts of the country. People in these areas depend on subsistence agriculture for their food security and have limited access to government services.

140. A mid-term review of KGA in late 2012 found there has been significant achievement in building the capacity of Plant Material Network (PMN) members and lead farmers in past year. There has been an increase in new PMN members (membership now at 3,627) and three new partner organisations have been signed. Farmers in remote areas have better access to planting materials and technical information to enable them to grow food closer to home. There review also highlighted some management and reporting issues with KGA.

141. KGA has expanded its reach with the addition of three new community-based partner organisations in 2012 (total now of 13 partner CBOs). The program is slightly under spent and a few activities are behind schedule. The main reason for under-expenditure was savings on personnel costs due to several vacant staff positions. With recent recruitments these posts were now being filled. To speed-up activity implementation, KGA is working to better coordinate between program components. This will also save on travel time and operational expenses. KGA has made some progress on sourcing alternative funding, although AusAID still supplies the majority of funding. Progress has also been made on staff capacity building, with staff attending several short-term training courses during the year. Two staff graduated with a certificate in tropical agriculture from Solomon Islands College of Higher Education.

142. In early 2012 AusAID requested an independent audit of KGA's program. The findings of this audit are being used to strengthen KGA's financial, administrative and management systems. The bigger question around KGA is how to shift to a longer-term partnership arrangement with the organisation

that gives them more funding certainty and reduces the management burden on AusAID staff. It is proposed that for the next phase of support to KGA, AusAID should consider a five year funding agreement with some in-built support from a partner NGO or managing contractor. Determining an appropriate arrangement will be a management focus in 2013.

143. KGA developed a new M&E framework in late 2011 but it has not been effectively implemented yet. The M&E office position was vacant until mid-2012 when a relatively inexperienced person was recruited to fill the role. KGA's partner TerraCircle has been conducting introductory training for Program Support Officers on how to use the new M&E framework and some baseline data has been collected but no M&E report has been provided to AusAID yet for 2012.

144. AusAID will discuss further technical backstopping options with TerraCircle to support KGA to use the M&E framework and provide six-monthly reports on the implementation status of the program.

145. KGA is still heavily dependent on AusAID funding and needs to diversify its funding sources to ensure sustainability. KGA recognises that the sustainability of its local partners depends on their ability to become registered entities and attract direct support, including from the government. KGA has facilitated the development of constitutions for their local partner organisations and provided relevant governance and leadership trainings to strengthen management capacity.

146. AusAID is working with the KGA board and management to develop strategies for improving the organisations M&E and financial systems. This is very important for KGA to be able to report on results and expenditure in a transparent manner to be able to attract other sources of funding. AusAID will also investigate placement of a volunteer with KGA to help them develop a fundraising strategy. As discussed under efficiency, AusAID will look at options to form a longer-term partnership with KGA that reduces the management burden on AusAID and gives KGA more funding certainty.

F. Fiji

(a) Introduction – ICCAI funded Program

147. The bilateral program funded under ICCAI is relatively small and is delivered through regional agencies and not directly with any government agency. It comprises three programs: (i) A\$ 0.89 million for a community adaptation and resilience building program, implemented by USP; (ii) A\$ 0.72 million for a community awareness building and adaptation program implemented by WWF; and (iii) A\$ 0.49 million for a coastal fisheries program, implemented by SPC. Fiji benefited from the first PACC program and also hosts programs run by USP (e.g. Future Climate Leaders Program), and SPC.

(b) Partnership for Development, National Strategies and Coordination/Implementation Responsibilities

148. There is no P4D for Fiji, but Fiji benefits from many regional programs. AusAID's country strategy 2012–2014 for Fiji targets poverty and vulnerability in Fiji's most disadvantaged communities, focusing on supporting health and education services and creating economic opportunities in rural and peri-urban communities. The Strategy notes "Assistance will be provided in partnership with community organisations, managing contractors, the private sector in Fiji and international development partners". Australian "whole-of government" approach engages other Australian Government agencies, such as DCCEE and CSIRO. There is no specific reference to climate change adaptation in the strategy, but building community resilience to shocks (natural disasters and household financial shocks) is a feature.

149. Ensuring environmental sustainability is included in Fiji's Strategic Development Plan (SDP) 2007-2011, but climate change is just briefly noted as one of several central challenges for achieving sustainable development, although disaster mitigation and management is highlighted. Policies such as the Environment Management Act (EMA) 2005 and the National Land Use Policy (2005) have provided the framework for sustainable management of land resources. But the Environmental Management Act contains few climate-specific provisions apart from environmental impact assessment requirements. A comprehensive National Climate Change Policy has been developed with SPC assistance and published in January 2012, replacing the 2007 policy framework. It provides a platform for coordination among sectors, and direction on national positions and priorities regarding climate change mitigation and adaptation, setting out policies, strategies and objectives, and provides an implementation framework, but is yet to be implemented.

150. Institutional Arrangements: Department of Environment, National Climate Change Committee (NCCC). The ability of the Department of Environment to administer climate policy effectively has been constrained by limited institutional capacity as well as political instability, while the National Climate Change Committee (NCCC) has lacked a clear mandate for its functions. Mainstreaming climate concerns into sector ministries has proved difficult due to inter-agency conflicts and the limited mandate of the Department of Environment.

151. The separate Needs Assessment Report provides further details on the institutional arrangements for DEC, and on the policy environment, and discusses Fiji's vulnerability to climate change, which these programs help address.

(c) Enhancing Climate Change Adaptation in Rural Communities of Fiji (USP – A\$0.89 million)

152. USP is implementing a community adaptation and resilience building program targeted at six rural communities, through management of key ecosystem services (e.g. water provisioning, erosion control, food security). The program is run from the Pacific Centre for Environment & Sustainable Development (PACE-SD), USP, and uses their integrated V&A approach and adaptation methodology. The aim of the program is to improve CCA in an integrated approach in these sectors, and internalize CCA at rural community level. Anticipated outputs are: (i) enhanced understanding of DEC impacts and adaptation through community level planning and capacity building; and (ii) improved resilience of target communities to impacts of climate variability and DEC.

153. This phase II program is building on the successful 2007-10 community adaptation project (funded by AusAID, but not ICCAI) and uses PACE-SD's proven participatory methodology. The first project provided a lot of valuable lessons for the USP project team and the stakeholders. The project team was able to formulate an approach and methodology for engaging with communities in adapting to climate variability and change. The project carried out vulnerability and adaptation assessment studies in collaboration with the communities and identified the most prominent problems faced by the communities in each of the six sites, implementing some adaptation activities that addressed the most prominent of these.

154. The first phase pilot projects have demonstrated that significant adaptation outcomes that are likely to be sustainable can be obtained with modest cash expenditures coupled with close and continuing engagement of the community concerned. Phase II builds on this concept, using USP's Integrated Assessment and Action Methodology for Climate Change

Relevance to Partner country needs and priorities

155. AusAID Australia has been supporting civil society organisations in Fiji since 2000, contributing about \$7.8 million to respond to community needs and provide important services to poor and vulnerable communities. As noted above the new project draws on USP's successful experience with the participatory approach to vulnerability assessment and implementation in the first community climate change adaptation project.

156. The project strategies and adaptation planning and implementation processes are consistent with Fiji's National Climate Change Policy Framework (adopted in December 2007) and the Pacific Islands Framework for Action on Climate Change (adopted by the PI Forum in 2005). The sectors identified in the draft Fiji Climate Change Policy as being most vulnerable to climate change are, (i) agriculture, (ii) coastal zone, (iii) public health and (iv) water resources, the project focusing on two of these.

Effectiveness and Efficiency

157. The first phase project chose three water resource sites and three coastal management sites. In developing management plans communities often had multiple issues related to climate change such as health, food supply (marine and terrestrial). The new project is adopting a more holistic approach as often these effects are inter-related (e.g. hillside erosion of topsoil affecting water quality and thus human health as well as agricultural productivity and coral reef health). Communities have prioritized these threats and the major interventions address the high priority threat, but opportunities to implement simple measure to address other threats (or some like tree planting that address multiple threats) will not be overlooked. The first project completion report noted that an integrated approach that blends traditional knowledge with modern tools and methodologies has a much better chance of acceptance and success

158. Three of the rural communities are again focused on water management concerns and three on coastal protection. Food security is a key concern. The new phase also includes adaptive monitoring at the six project sites of phase I of the project.

159. The challenges of the first project were quite daunting and not enough time was spent on analysing and using lessons learned, including the need for a stronger project advisory committee and greater involvement of the Department of Environment. Phase II takes this into account.

160. The program is very dependent on activities and staff of PACE-SD: the Future Climate Leaders Program (FCLP) – a regional activity supported by ICCAI – and related courses at USP provide key elements in supporting PACE-SD. The FCLP is reported on separately below and is considered to be successful and valuable. Additional support is provided by the EU under European Union's Global Climate Change Alliance (EU-GCCA) funding (further details had been requested on this, together with further details on the workshop reports and the Annual Report for 2012 of the ECCA program – Enhancing Climate Change Adaptation in Rural Communities of Fiji, but has not yet been received).

161. USP have provided a progress report for 2102 which provides summary details of achievements to date in the project sites. Adaptation planning meetings have been completed for all the six project sites and implementation is now being completed except for Denimanu, Bua and Soso, Yasawa. Work on these two communities will commence in early 2013. Bad weather (Cyclone Evans) in late 2012 affected the transportation of the materials to the islands. There have been delays, but the project work plan for

2013 outlines all the activities that the project team has to accomplish before the conclusion of the project in June 2013. An evaluation of the project in the communities was expected to be done by March 2013, providing materials and lessons for PACE-SD.

162. The report notes that the V& A assessment tool kits have been completed and are used in other countries within the USP-EUGCCA project and other collaborating projects within PACE-SD. A report for the 6 communities will be part of the final project report.

(d) Building Resilience: Strengthening community adaptation measures to effects of climate change in Fiji – WWF Program (\$0.72 million)

163. The project targets groups in river catchment areas in Macuata Province (including Labasa town), and Ba Province, the second largest in Fiji, building resilience in communities through increasing awareness and piloting selected adaptation measure. The project targets the integration of adaptation into provincial, municipal, district and communal plans and synergies into national adaptation sector policies, to be reflected in community on ground adaptation activities. It has four proposed outcomes: local capacity building (23% of activity spending), enhancing local awareness (19%), policy integration (8%), and community adaptation activities (50%). Total spending on activities is budgeted at \$308,000, with salaries, administration and management fees adding a further \$412,000. The design document includes details of activities expected to achieve these four outcomes, with some output indicators (not outcome indicators). It also sets out implementation and monitoring arrangements.

164. WWF leads the program but are working closely with an NGO (Live and Learn) and with the Land Use Planning Unit, Division of Land Resource Planning & Development (Ministry of Primary Industry). WWF is also collaborating with the National Disaster Management Office (NDMO) in Labasa.

Relevance

165. The project aims at protecting and improving coastal ecosystem services and supporting long-term food security and livelihoods and is very relevant both to Fiji's needs and to ICCAI objectives. The proposal document provides detailed rationale for the project, emphasising the link between adaptation and development as particularly relevant when seeking to enhance the capacity of people and communities to adapt to climate change, noting this adaptive capacity is often limited by lack of capital and human resources, poor institutions and institutional frameworks. Adaptation to impacts of climate change needs to consider development aimed at improving and ensuring the viability of living conditions and access to resources by those experiencing the impacts, as this will enhance their adaptive capacity. The proposal notes it will complement AusAID's strategy on contributing effectively to the MDG7 (environmental sustainability), integrating best practices in adaptation policy and programmes.

Effectiveness and Efficiency

166. The project has held several workshops in the two Provinces, including training of trainers in vulnerability assessments, and awareness building. A National Summit for Building Resilience to Climate Change was held in Labasa in October 2012 with the objective of bringing together practitioners, community leaders, educators, communicators and managers guided by related government agencies on the broad theme of "Building Resilience to Climate Change". It also provided a platform to share accounts of how climate change has impacted people's way of life, and also identify gaps, challenges and concerns and recommend solutions on best ways to address them. In May, 2012, the project partnered with the IUCN/MESCAL project to outline an awareness campaign plan on the importance of

mangroves to these river systems. WWF with its project partners has developed and tested an adaptation approach through resilience building in high biodiversity tropical mangrove areas and associated coral reef, sea-grass and upland ecosystems across its community project sites in Fiji.

167. WWF have conducted bio-physical surveys of the two river catchments and site surveys to select sites for model farms to show adaptation techniques. Integrated farming techniques currently focus on crops but WWF also plan to focus also on protein production. Food security is the current focus rather than livelihoods. River care (including rehabilitation of river banks) and land care are key current project activities, while participatory land use planning is a forthcoming activity. However, WWF have not yet reached the stage of analysis of costs and impacts of these activities, including lessons learned and subsequent replication. Appropriateness and cost effectiveness of this sort of activity for replication is an issue in particular that needs to be examined further before replication can be considered.

(e) Coastal Fisheries – SPC Program (\$0.49 million)

168. This program is focused on improving coastal fisheries governance capacity, strengthening national and provincial government delivery mechanisms, and producing CCA resource materials. The Review Team held a meeting with SPC in Fiji, with staff of SPC joining by telecom from Noumea, but this largely focused on overall SPC programs and programmatic concerns (see section below), and on the PPCR programs, and did not have time to specifically discuss the Fiji program in any detail, referring to it as part of an overall regional program with country-level activities. The coastal fisheries program in Fiji is being implemented with USP who have on ground presence in Kadavu.

169. The project is part of a multi-country program and aims to strengthen provincial coastal fisheries governance capacity and frameworks (connecting community to national and provincial levels) to enhance coastal fisheries and marine ecosystem resilience and the ability to identify and implement climate change responses. The project supports community-based management of natural resources and adaptation responses, with SPC, national fisheries experts and USP providing technical support. On-ground adaptation measures for income generation and/or conservation are being implemented in selected coastal communities in Kadavu, with marketing trials for products produced from income generating adaptation measures.

170. **Relevance:** the project is very relevant, focusing on conservation of fisheries, food security and income generation. Community capacity building for climate change resilience is also very relevant, with the project improving linkages to national and provincial governments. It is in line with all three ICCAI country level objectives.

171. **Effectiveness and Efficiency:** unfortunately no information has been provided on progress and achievements and thus effectiveness and efficiency cannot be assessed. However under the project SPC coastal fisheries specialists planned to synthesis the information and lessons learnt in Kadavu and produce policy briefs and case studies for broader regional distribution. This in line with SPCs Climate Change Engagement Strategy which aims to increase the flow of knowledge on climate change to member countries as a means of assisting them to address emerging climate change risks. It was anticipated that at least three knowledge products would be produced by SPC based on the work undertaken in Kadavu. A range of awareness materials have already been produced by SPC in English to assist communities, and people working with communities, to better manage coastal resources and build resilience to the impacts of climate change on coastal fisheries.

(f) Pacific Adaptation to Climate Change (PACC) – Fiji Project Component

172. The PACC program, implemented by SPREP/UNDP, includes a Fiji component targeted at food security. The MTR for the PACC program had raised several concerns about the component, which in its first stages targeted drainage in the Rewa and Navua river systems. The Team met with staff of the Primary Industries section of the Ministry of Agriculture, which is implementing the program. They responded to the MTR observations and recommendations, noting that while the initial emphasis was on drainage works, this was necessary to make the land usable again for agriculture development; The emphasis from 2012 has switched to building community resilience (operating through the Provincial Office, using community facilitators and NGOs, and targeting ‘champions’, linking individuals within the community) and adoption of more resilient crop varieties (resilient to both water damage and salt intrusion). They have used climate data from the Met Station in Nadi (i.e. using the science being developed under the PCCSP) and crop varieties from SPC and sourced locally (mostly traditional sturdy varieties). They noted more localised adaptation research was needed. Some financial data showing this switch in balance of activities is awaited. The program now seems to be progressing well, reflecting the strengths and maturity of institutions in Fiji, who regularly cooperate with each other.

G. Papua New Guinea

173. The bilateral program funded under ICCAI includes two programs³³ being implemented by NGOs: (i) Conservation International (CI) program is boosting traditional approaches to food security (\$0.396 million); and (ii) WCS program is strengthening capacity within local social systems to enable communities in Manus to adapt to climate change (\$1.847 million). PNG is a pilot site for the PPCR (managed by ADB) which will support climate change adaptation interventions in vulnerable communities, address threats to food security, and mainstream climate change risk management in key sectors.

(a) Improving the food security of climate-sensitive communities – Conservation International (\$0.396 million)

174. The project under ICCAI aims to improve the uptake of approaches that contribute to stability of food access by buffering vulnerable subsistence and cash-earning activities against climate variability and change in the Milne Bay. This will integrate traditional knowledge contained in agricultural calendars with results from climate change studies to address information needs of local communities. CI and the Foundation for Development Cooperation are working together as service providers.

175. **Relevance, Effectiveness and Efficiency:** the project proposal notes complementarity of the project with adaptation activities in the country – i.e., support of the PNG government’s national adaptation planning framework and the Milne Bay provincial government’s sustainability planning and in scaling up development outcomes in the Milne Bay area. Unfortunately, insufficient information was available for the Review to make an assessment.

(b) Ecological Resilience – Wildlife Conservation Society (\$1.847 million)

176. The project addresses the need to strengthen ecological resilience to adapt to the impacts of climate change through effective resource management and improved local capacity in New Ireland and

³³ A completed small program provided \$0.15 million to support climate change workshops.

Manus, to adapt to the impacts of climate change. In particular, WCS in partnership with local and international organizations (Research and Conservation Foundation of Papua New Guinea, Oxfam International, Ailan Awareness, The Manus Civil Society Forum, SAVE PNG, and the National Fisheries College) will develop tools and information to augment existing resource management programs in the project sites to help communities prepare for and adapt to climate change; and improve the capacity for sub-national government and civil society to incorporate climate change adaptation into planning activities.

177. **Relevance:** the proposal document details coherence of project objectives with several national agency policies on climate change as reflected in the National Climate Change Policy Framework for PNG, Forestry and Climate Change Policy Framework for Action, and the draft policy paper on Climate-Compatible Development for PNG as well as Australia's Adaptation to Climate Change Initiative.

178. **Effectiveness and Efficiency:** Insufficient information is available to make an assessment, however the AusAID monitoring review mission in 2012 cited evidence of significant progress made by the project in delivering desired outcomes, visible signs of improved understanding of climate change and strengthened capacity of communities in Manus to adapt to climate change, and on time implementation of activities.

(c) PNG's Strategic Program for Climate Resilience (SPCR)

179. **Relevance:** an external review of the program highlights the relevance of the program towards better climate resilience by focusing on key sectors and areas, targeting the most vulnerable groups, and using investments to advance programmatic approaches in overall development planning, capacity building, and institutional strengthening.

180. **Effectiveness and Efficiency:** Insufficient information is available to make an assessment; documents indicate approval by Climate Investments Funds Board is pending.

H. Tonga

181. The Tonga direct bilateral program covers support for the JNAP Secretariat (\$0.29 million). Tonga has benefited from the PACC program which provided \$1.71 million for water resource management program, and from an SPC multi-country program focusing on integrated water resource management for coastal communities in Vava'u; and on integrating climate change into education (\$0.85 million). Tonga is a pilot site for the PCCR which will mainstream climate change risk management in key sectors such as infrastructure; community vulnerability mapping and development of early warning systems and community emergency preparedness; and addressing identified threats to food security.

(a) Support for the JNAP Secretariat (\$0.29 million)

182. **Relevance:** the project is part of Australia's bilateral support to Tonga. It is relevant to the National Climate Change Framework and Policy (2006) and the Tonga Strategic Development Framework (2009–2014), which recognize the country's vulnerability to climate change and natural disasters and which prioritize climate change by mainstreaming climate change and disaster risk in planning and development initiatives. Joint National Action Plan (JNAP) coordinates climate change finances and prioritizes adaptation activities. AusAID support to JNAP advances the achievement of the outcomes of the framework by aligning with its associated strategy on climate change resilience that

focuses on the implementation of the JNAP– Climate Change Adaptation and Disaster Risk Management (2010–2015). In addition, JNAP support addresses two main constraints (i.e., institutional capacity and funding constraints) that impede the coordination, and implementation, and mainstreaming of climate change plans and programs.

183. **Effectiveness and Efficiency:** Insufficient information is available to make an assessment, however feedback from MDB staff and consultants working in Tonga has indicated that progress in activities is evident and the assistance is valued.

(b) Water Resource Management Program – PACC (\$1.71 million)

184. The project is part of the PACC program in Tonga with the Department of Environment and Natural Resources as the executing agency. The goal of this project is to enhance the current water infrastructure in Hihifo, which suffers from drought and saltwater intrusion resulting from climate change; and to ensure that people in Hihifo have access to good clean water by using climate change models, technical expertise, and traditional knowledge.

185. **Relevance:** the project focuses on one of the key sectors in Tonga that is particularly vulnerable to climate change (water). It supports the government development strategy (Tonga Strategic Development Framework [2009–2014]) and climate change policies (National Climate Change Framework and Policy [2006]) and JNAP–CCADRM [2010–2015]). In particular, Objective 5 of the National Climate Change Policy of Tonga aims to protect the populations, resources and assets, vulnerable areas at risk from climate change.

186. **Effectiveness and Efficiency:** progress in project activities is evident, but the MTR does not provide a rating.

(c) Integrated Water resource Management for Coastal Communities in Vava’u – SPC (\$0.85 million)

187. **Relevance:** The project is relevant, supporting the government development strategy and long term development vision of improved living standards and equity. It is also consistent with Tonga’s climate change policy as reflected in its National Climate Change Framework and Policy (2006) and JNAP–CCADRM (2010–2015). Utilization of project funds was low at 22% (\$973,488) by end 2012.

188. **Effectiveness and Efficiency:** Insufficient information is available to make an assessment.

I. Tuvalu

189. The ICCAI bilateral program is supporting development of Tuvalu’s NAPA (\$1.0 million) increasing freshwater supply, expanding mangrove plantations, rehabilitating agricultural areas to establish 12 new food crop plantations. Improving water supply is a key priority; the project is providing water tanks for households on Funafuti and for schools in outer islands (\$1.78 million). Australia responded to Tuvalu’s 2011 drought by providing water deliveries by ship and water distribution trucks (\$0.8 million) together with needs assessments on outer islands and of solar-powered water desalination plants. The P4D focuses on long term economic prospects as priority area one, but significantly also prioritises climate change and sea level rise, with ICCAI funding expected for practical adaptation measures to handle impacts of these. Priority outcome 3 of the Partnership now indicates

specific support to Tuvalu's *Te Kakeega II* key policy objective to minimise climate change impacts and strengthened capacity on disaster preparedness.

(a) Supporting the development of Tuvalu's NAPA – ICCAI (\$1.0 million)

190. NAPA-I+ aims to build on existing project mechanisms that are piloted through NAPA-I to enable efficient replication and up-scaling of practical adaptation measures at the community level. The project is implemented through the Department of Environment over 4 years. Actual investments by the project started in 2010.

191. **Relevance:** the midterm report for NAPA I and NAPA 1+ states that the project supports the development priorities of Tuvalu's *Tekakeega II* and other development plans, priorities, and policies of the country at the national level, such as the *Te Kaniva*, and local priorities at the local level, which recognize climate change. The project's adaptation responses (i.e., food security, water security and coastal protection) address key development concerns resulting from climate change and lack of capacity in climate change adaptation response, planning, policies, and awareness, particularly at the local level through the review of *Te Kakeega II* and the development of the *Te Kaniva* Climate Change Policy, etc. The midterm evaluation however noted the need to improve the understanding on climate change and how to plan for and manage adaptation responses, particular at local level, and relevance of project activities to women.

192. **Effectiveness:** the project made reasonable progress in the implementation of the activities under Component 1 on policy development and Component 2 on food security and water were noted in the midterm report. However, serious delays were observed in budget implementation and in the execution of activities related to Outputs 1.3 on the National Climate Change Advisory Council, Output 1.4 on national awareness, Output 2.2 on coastal protection, Output 2.3 on the analysis of community-based demonstration projects, Output 3.1 on analysing, updating and disseminating climate change information, and Output 3.2 on collating and disseminating lessons learned.

(b) Water Tanks for Primary and Secondary Schools in Tuvalu – V&A Initiative, base allocation and ICCAI (\$1.78 million)

193. One hundred and fifty 10,000 litre water tanks were provided to all primary schools in Tuvalu and two secondary schools (Motufoua Secondary Schools in Vaitupu and Fetuvalu Secondary School in Funafuti) to improve the storage capacity of harvested rain water to reduce disruptions during droughts. The project was implemented from June 2011 to November 2012 and was coordinated by the Education Department, Ministry of Education, Youth and Sports.

194. **Relevance:** water security is a crucial element of climate change adaptation in Tuvalu because water is sourced almost entirely from captured rainfall with some supplemental supply from desalinated water and it is vulnerable to drought due to climate change. On 28 September 2011 the government declared a state of emergency when the country ran out of drinking water from severe drought, followed by the declaration of national crisis situations in Funafuti and Nukulaelae due to prolonged dry weather. As shown in the vulnerability assessment for Tuvalu, while rainfall will increase as a result of climate change, and periods of droughts will decrease, droughts during the dry season, and salt water intrusion, will continue, and the quality and supply of water resources remain very vulnerable. The project supports Tuvalu's Climate Change Policy, "Te Kaniva" (2011–2020) and its five-year implementation plan through the *National Strategic Action Plan for Climate Change Adaptation and Disaster Risk Management* (2012–2016). Both documents support the country's national strategy for

sustainable development as contained in the Tekakeega II (2005–2015). The project also complements Tuvalu’s National NAPA, which identified priority projects to adapt to frequent water shortages through increasing household water capacity, water collection accessories, and water conservation techniques.

195. **Effectiveness and Efficiency:** the project completion document reports that the project was successful in assisting the government in achieving water security through the provision of water tanks and improved guttering covering 85% of households Funafuti as well as the installation of 150 water tanks as designed. Water storage capacities have now improved in households and schools and local communities are able to better cope with rainfall variability resulting from climate change. Local governments are working with school management in the have taken over care of the water tanks to ensure sustainability. There is insufficient information to assess efficiency, but project benefits are likely to outweigh AusAID investment.

(c) Drought Emergency Support – ICCAI (\$0.8 million)

196. Australia provided water distribution trucks and funds for a needs assessment on outer islands. Solar-powered water desalination plants (and associated Implementation maintenance program) were also being provided in response to the 2011 drought in Tuvalu.

197. **Relevance:** the project responds to an immediate and critical need of water shortage and water security in the longer term by increasing freshwater supply. It is consistent with Australia’s Partnership for Development with Tuvalu, which carries out the policy objectives of Kakeega II of minimizing the impacts of climate change and supports priority adaptation interventions, such as those in the NAPA. However, NAPA priority adaptation measures for implementation identified increased water supply and storage capacity, specifically for agriculture in at least four islands (Nanumea, Nui, Vaitupu, and Nanumaga).

198. **Effectiveness and Efficiency:** Insufficient information is available to make an assessment.

J. Vanuatu

199. AusAID is supporting the road transport sector with a long term (15 year) \$58 million road maintenance and asset management program. Phase I focused on Malekula, Ambae and Tanna, while Phase II (\$36.6 million) expands this to include Pentecost and continues to support institutional reforms. ICCAI is contributing \$4.0 million to this phase, contributing to storm water drains and pavement resilience. The NGO Live and Learn project covers Vanuatu (see the Climate Change Action Grants section below).

(a) Vanuatu Transport Sector Support Program – ICCAI (\$4 million)

200. This long term (10-15 years) three-phased program is part of AusAID support to government effort towards broad based and inclusive economic growth and service delivery in rural areas through the provision of affordable, safe, and reliable transport infrastructure. Phase 1 from February 2009 to June 2012 involved completion of the maintenance of key roads in Tanna, Malekula, and Ambae. Phase 2 will include the island of Pentecost and institutional reforms in the Ministry of Infrastructure and Public Utilities and the Public Works Department. Phase 3 will build on efforts in the earlier phases. The Review team did not visit Vanuatu and as such the assessment below is based on the only documents provided which include a QAI on both phase 1 and phase 2, and project design reports. The focus of these documents is largely on the project as a whole with limited references to the climate change

component, although the February 2013 QAI on phase 1 emphasises that the project has introduced climate change measures including an increased emphasis on engineered drainage structures and pavement to respond to climate change impacts. It notes that these will be reviewed in early 2013 to include more effective measures in phase 2. The phase 2 design documents note that the majority of the outer islands of Vanuatu are facing serious impacts from climate change, including: increased precipitation and flooding, more intense wave action, and coastal road erosion resulting from sea level rise, and states that a focus issue for Vanuatu is to increase the resilience of key coastal roads. Where necessary this will include the realignment of highly vulnerable sections. But much of the emphasis of the design is on policy and improved management within the department of works.

201. **Relevance:** the QAI rated the phase 1 project as highly relevant (5 out of 6). It addresses limited, expensive, and poor transport infrastructure in Vanuatu, which is a serious constraint to development. It supports the priorities and strategies for the next 10 years as contained in Vanuatu's Priorities and Action Agenda (2006–2015) by addressing key areas of concern through capacity building in planning, budgeting, management (including financial management) of the road transport network to improve the management (including the quality of public financial management) of the road transport sector; strengthened role of the private sector and communities in road maintenance; and improvements in road transport access are using labour based appropriate technology. The project directly supports the implementation of the Australia's Partnership for Development with Vanuatu, where improved infrastructure (i.e., develop essential infrastructure to support economic growth and service delivery) is one of the four priority areas for assistance. The climate proofing funding from ICCAI targeted improved pavement reliance and better engineered storm water drains to cope with climate change, notably increased rainfall, which as noted under efficiency below, has been successful in extending expected road life; this component is thus very relevant.

202. **Effectiveness:** phase 1 of the project was highly effective in rehabilitating 165 kilometres of the rural road network in Malekula, Ambae and Tanna, which (i) enhanced access to basic services for up to 40,000 people; (ii) reduced transport cost of goods to markets in the Middlebush area of Tanna³⁴ by 50% and; (iii) introduced public bus services in Malekula, which reduced bus fares between the main business centre and the airport by more than 50%; (iv) provided new business opportunities to 28 small-scale contractors (exceeding the target of 15), which generated 101,588 hours of employment from 2010–2011 (exceeding the target of 108,000 hours) with an 14% participation rate by women; (v) institutionalized reforms³⁵ that improved the capacity of the Public Works Department. In addition, 23 of the small-scale contractors were obtained other road maintenance and other contracts outside of the project. The QAI for phase 1 suggests the climate proofing components were effective as noted under efficiency below.

203. **Efficiency:** phase 1 was efficient in achieving its targeted outcomes despite initial delays and extension of the original closing date of the project from September 2011 to July 2012 due to a confluence of factors that were addressed through the adoption of a delivery strategy based on equipment hire contracting, infusion of additional \$3 million funding from the regional Climate Change Initiative, and AusAID linkage of its investments on the Urban Development Project to improve on staffing concerns with the Public Works Department and the creation of a Project Management Unit in Vanuatu. The QAI for phase 1 refers to the \$3 million spent on climate proofing high exposure roads,

³⁴ From an average of 1,000 vatu per person per load to 500 vatu per person per load.

³⁵ Include the following: (i) new environmental management system; (ii) new financial management procedures; (iii) improved budget and planning preparation; (iv) initiated outsourcing and new work approaches; (v) prepared a full inventory of plant, equipment, and road conditions.

with the thicker pavement and improved drainage leading to less pavement wear and an expected extension of road life.

K. Nauru

204. A \$100,000 project developed an Integrated Water Resource Management strategy, while a A\$1.0 million project is providing water tanks and guttering for approximately 300 households to increase capacity to store water and reduce vulnerability to drought.

Relevance

205. P4D does not include climate change as a priority outcome, The P4D focuses on more efficient and accountable public sector, and particularly financial management, and improved education and health systems, cost effective infrastructure and increased private sector growth. However, as noted below, Nauru is very vulnerable to climate change, particularly in water supplies, and has already experienced prolonged droughts. The project is very relevant. The project is also directly relevant to ICCAI objective 4.

206. Improved and secure access to food and water is a priority and strategic goal of the *National Sustainability Development Strategy* (NSDS) developed by the Government of Nauru in 2005 and reviewed in 2009. However, due to prevailing climate change and specifically increasing periods of drought in Nauru over the last few years, water has become an increasingly scarce resource – affecting both food and water security.

207. Nauru is located in the dry belt of the equatorial oceanic zone and is subject to La Nina (dry) episodes. Annual rainfall is extremely variable and able to range between 280 mm to 4,950 mm per annum. Prolonged droughts are common and have been recorded to extend out as long as nine years. Nauru is also very unique because it has no dams or catchment areas for collecting water. As a result, Nauru is currently reliant on water storage tanks for securing water supply.

208. The problem for Nauru is a lack of storage capacity. Government's immediate focus is therefore on augmenting household water storage capacity and improving supply-side constraints.

209. The NSDS short term goal focuses on reliability and highlights improved water storage and rainwater harvesting capacity, optimal groundwater use, and cost effective RO water production. Long term goals are that 50% of potable and non-potable water should emanate from rain water harvesting or groundwater extraction. The supply of desalinated water is a back-up to rainwater, with a tariff structure that encourages rain water harvesting. The *Nauru Economic Infrastructure Strategic Investment Plan* (NEISIP) identified the development of a 10 year integrated Water and Sanitation Sector Master Plan as the single priority action for the water sector.

210. **Effectiveness and Efficiency:** Insufficient information is available to make an assessment.

L. Cook Islands

211. ICCAI support includes the PACC Plus program and a donor harmonised program implemented by the New Zealand Ministry of Foreign Affairs and Trade (NZMFAT), to which AusAID is providing A\$8.99 million over 4 years, of which \$2.19 million is from ICCAI (see Attachment). The ICCAI funding will support activities in the water and sanitation sector and disaster risk reduction sectors. The harmonised

program allows the Government of Australia to use the development assistance delivery mechanisms of the Government of New Zealand in the Cook Islands rather than establish parallel aid delivery processes. AusAID has no on the ground representation in the Cook Islands.

212. **Relevance:** the scope of the harmonised program encompasses those sectors of the Cook Islands National Sustainable Development Plan to which the Government of the Cook Islands accords greatest priority. The Program's support to these priority sectors are set out in the Cook Islands-New Zealand Joint Commitment for Development. Cook Islands also recently released a Joint National Action Plan that outlines priorities to reduce vulnerability to climate change and disaster impacts. ICCAI funding will be tagged to priority adaptation measures that increase the resilience of the Cook Islands to the impacts of climate change, including in the water and sanitation sector and disaster risk reduction sectors.

213. **Effectiveness and Efficiency:** Mainstreaming ICCAI funding into the Harmonised Aid Program is expected to improve program effectiveness and reduce program administration, but no report is currently available to review this.

M. Tokelau and Niue

214. The PACC Plus program provides a country-specific allocation of \$0.5 million to both Tokelau and Niue. There is nothing yet to report on these as the program has not yet started and components not finalised (see PACC Plus below).

215. In Tokelau, SPC is building the capacity of coastal fisheries managers in assessing and managing marine resources; and enhancing water security and integrated water resource management (\$0.28 million). In Niue \$0.42 million is being provided to climate proof a new school. The project has only just commenced. The design document indicates the school has tropical features such as verandas and louvered windows but notes that this will need to be climate change proofed from hazard risks associated with catastrophic storms, cyclones and earthquakes. The old school site is close to the sea and subject to severe storm activity from wave run-up as well as cyclonic winds and thus a new school on a higher site (upper terrace) is being built. The total cost is just over \$4million and is funded by AusAID. AusAID is managing the design stage and has provided the total construction cost to the Government of New Zealand (who will manage the construction phase on behalf of Australia under a delegated cooperation arrangement) , but no information has been provided on the ICCAI contribution and whether specific components have been allocated against the ICCAI funds or whether it has been pooled with other funds. No progress reports have been provided either. Thus this ICCAI project cannot be assessed.

V. Community-based Climate Change Action Grants Program (Multi-country Programs)

A. Introduction

216. ICCAI has provided funding totalling \$21.7 million to support Australian and International NGOs to work with local organisations to implement community-based adaptation activities. This includes funding of almost \$10 million provided to five NGOs for work in the Pacific, as summarised in the Table below.

217. Review had discussions with NGOs when in Solomon Islands, including Live and Learn and TNC, but did not meet with other NGOs and time precluded detailed teleconferences with each other. Much of the analysis below is thus based on desk review of documents provided by the NGOs and AusAID which the Review cannot independently verify given time and resources. In addition, the Review analysis on effectiveness and efficiency was hampered by the lack of information provided on achievement of outcomes, the reports focusing more on inputs and outputs.

Table 2. NGO Pacific Projects under Action Grants Program

Country	Lead NGO	Project Title	Funding (million AUD)
Vanuatu, Solomon Islands and PNG	Live & Learn Environmental Education	Protection of Food Security through Adaptation to Climate Change	\$1.88
PNG, Solomon Islands, Marshall Islands	The Nature Conservancy	Building the resilience of communities and their ecosystems to the impacts of climate change	\$2.00
Vanuatu	Oxfam Australia	“Yumi stap redi for climate change” – The Vanuatu NGO Climate Change Adaptation Program	\$2.00
PNG	CARE Australia	Strongem Komunities Tingim Climate Change	\$2.00
Tonga and Vanuatu	Act for Peace	Pacific Community Climate Change Risk Reduction (‘PCCRR’)	\$2.00

B. Overview

218. This section summarises some key findings from the analysis of the five programs set out below. Several of the findings are consistent with the findings of the AusAID 2011 Review of three NGO programs, including the first two of these here, which have been extended for a second phase.

- All the programs are relevant to country priorities and needs and are consistent with the ICCAI objectives of increasing awareness of impacts of climate change, capacity building and implementing adaptation activities.
- Most programs target the poor, with several targeting the vulnerable. Food security and livelihoods is a direct focus for some; others focus mainly on capacity building and awareness-raising.
- Project objectives and outcomes are too numerous and complex. There is a need to simplify designs and have a more focused approach;
- Many programs overlap with, or are complementary to, other programs of the NGO implementing the program, programs of other NGOs and with the GEF small grants scheme. This is partly a result of the broad and multi objectives of each program. There is thus no clear picture of what most individual NGOs are focusing on or where they have a comparative advantage.

- Existing NGO networks and partnerships have enable projects to be effective and through this provide value for money. The NGOs have strong history and established relationships in the countries where they are working.
- However, as most build on existing work, there is often no clear delineation where the former work ends and AusAID supported work begins. This should not be a concern unless the need for attribution to AusAID is important.
- Efficiencies are being gained through working with others undertaking similar activities in the same location. But this raises a concern of why several agencies are all working in same area – complementary or duplication?
- Fitting a climate lens onto existing programs can help achieve immediate impacts and can be cost effective.
- Most programs have combined local knowledge with new science, improving both effectiveness and appropriateness.
- There is a need to report more on outcomes and not just inputs and outputs. However, many of the activities are targeted at awareness building and capacity building and do not have quantifiable outcome targets, making assessment and reporting difficult.
- Assessment of value for money is not possible as most reports do not include financial details, and also there are no readily available comparators for CB analysis
- High cost of reaching most vulnerable – often in isolated locations.
- Although multi-country approaches provide great opportunities for sharing lessons and exchanging ideas, the travel cost and spread of management and technical capacity across such diverse geographies needs careful management.
- Building local capacity can reduce costs when it reduces travel costs and need for external consultants.
- Contracts support not just climate change activities but also support institutional strengthening local of partners, thereby helping sustainability.
- Flexibility in project delivery: several reports emphasise the importance of flexibility in terms of project sites (operating where communities request assistance), time frames and types of activities undertaken will be incorporated into project design, while keeping a robust project framework and delivery.
- AusAID financing has allowed more participatory approaches and engagement with NGOs at local levels and with local government.
- AusAID funding has allowed long-term engagements, which is important for establishing relationships and building capacity.
- USP PACE-SD provided initial training of trainers program for AfP program in Tonga and Vanuatu and are looking to enhance mutual learning and to identify possible research scholars and topics. Other programs could benefit from similar linkage. A staff from Live and Learn is a graduate of the USP Climate Leaders Program.

- Overall project design and proposal documentation is quite thorough for such relatively small programs, and include action plans, ToCs and logframes, and risk assessment. Project reports include substantial M&E frameworks and action plans. This, however, can raise expectations on the quality of anticipated progress reports which, given the nature of program activities and capacity constraints in the project locations, are probably not likely to be met. Consideration may need to be given to simplification of both project designs and project design and reporting documentation.
- More analysis is needed on the costs and replicability of programs. Several programs indicate this is a program intent, but it is unclear in action plans where this is provided for, who will be doing it, and when.
- AusAID could usefully conduct a detailed analysis of programs across the NGO and small grants program, looking for lessons learned, synergies, and replicability. This Review does not have the time and resources to do this. A knowledge platform could be developed for information sharing – some NGOs already have knowledge systems and platforms.

C. Live and Learn – Protection of Food Security through Adaptation to Climate Change (A\$1,827,108)

219. The current Phase II program is a continuation of the 2012 financed program entitled “Protecting Food Security through Adaptation to Climate Change”. Phase I benefited about 36,000 people; Phase II is targeted to benefit at least 127,000 people. The program is targeted at community levels and currently is working in 5 communities in Solomon Islands and PNG, and 3 communities in Kiribati and Vanuatu.

220. The program focuses on food security, livelihoods and ecosystems at local levels, creating knowledge hubs in each community, promoting farm technology, information sharing and farm input sharing. There is a relatively narrow focus on food, improving food security through building resilience.

Relevance

221. This design document notes that the project is seeking improvements in two areas: (i) building resilience for protecting local food supplies, assets and livelihoods against the effects of increasing weather variability and increased frequency and intensity of extreme weather events including natural disasters and sea level rise; and (ii) protecting ecosystems and strengthening the provision of environmental services (food).

222. The program is very relevant to the four targeted countries, with its emphasis on improving food security. It is also relevant to the ICCAI program objectives, focusing on capacity building and implementing adaptation activities that can immediately increase the resilience of partner countries to the impacts of climate change.

Effectiveness

223. Phase I demonstrated significant community support and impact of food security approaches that build on existing local knowledge systems. It became clear early during Phase I that the effectiveness of adaptation approaches depend on the strength and inclusiveness of the partnerships, networks and alliances, which they are able to develop at all levels. Phase I activities paid particular attention to connecting with national governments because of their central coordinating role and resources through the NAPAs and with local farmers.

224. Phase II drew on lessons learned from Phase I, set out in the design report, key lessons being recognition of the knowledge and resourcefulness of farmers, and the effectiveness of farmers' networking and knowledge hubs. Another lesson cited is that National climate change predictions rarely reach farmers and communities and that better efforts need to be made in including climate predictions in education and training programs so farmers and communities are better informed and can use scientific information to make decisions.

225. The design document sets out expected results under two objectives of (i) extending the skills, capacity building, farm technologies and ecosystems management approaches developed in Phase 1; and (ii) building government capacity in community based adaptation, specifically in ecosystems-based approaches, and linking communities with national projections, planning and action on climate change, specifically to complement the NAPAs and the JNAPs. Its strategy is to build on existing local knowledge systems, and promote ecosystems based approaches to adaptation, linking to national adaptation planning strategies.

226. The design report for Phase II states that during Phase I, fifty climate resilient farm technologies were documented and widely disseminated through locally established networks and backed up through innovative farm demonstration sites. The farm technologies were documented by local farmers involved in the project, and who are helping out in extending the farm technologies to other communities. Many farmers have adopted the farm technologies. Phase II is building on these farm technologies and networks, as a resource.

227. A key document output of Phase I is a "Farm Technology Manual", produced by L&L with significant input from local farm technology practitioners and lead farmers. The Design report notes that their presence in the communities will help ensure that technical support for the farm technologies is always available to other interested farmers. The report cites the raised bed farm technology in Langa Langa Lagoon on Malaita as an example.

228. Phase II seeks to extend and increase the uptake of climate resilient farm technologies and climate change leadership through community based knowledge hubs, which will be well supported under the program. The role of these hubs is to train, support and expand knowledge about assessing climate risk, adaptation planning, understand application of farm technologies that increase agricultural resilience and promote ecosystems based adaptation. However, while the adoption of farm technologies by farmers during Phase I was good, there is a need for continuous support in terms of capacity building and regular monitoring. New communities are being identified to participate in the training as part of capacity building program.

229. The project focuses on food crops, both for local consumption and for income, and now extends to other crops. In Solomon Islands farmers have requested support for tree crop production, which is seen as a longer term need, and also for livestock. In Kiribati, the initial focus was on small gardens

growing vegetables, both for immediate income and improved nutrition, and on improving soils, with own composting. The project will move onto cassava, breadfruit and other tree crops (figs, lime, and nuts).

230. The program has prepared a progress report on the first 6 months of Phase II, but this does not provide any details of achievements to date in this phase. It includes an implementation plan, based on the design document M&E framework, but does not include financial reporting.

Efficiency

231. There is insufficient information or compactors to indicate whether the program is “value for money” , but as noted above the project has produced positive outcomes and some efficiencies have been gained in the way the project has been delivered through partnerships, for example through complementing the activities of other stakeholder programs or projects (para.20 below). However, as noted below, projects targeting vulnerable persons who are likely to be in remote areas can be costly to implement.

232. **Implementation and Supervision.** Community facilitators, engaged by L&L, run the hubs, working with a community committee. Coordination is through a national coordinator based in the capital city. The program also works at national levels with government departments to enhance community participation in national adaptation planning and to strengthen government-community partnerships.

233. However, lessons cited at design include the problem of coordination of project activities in communities from central locations like Honiara, Port Vila and Kimbe (PNG) without regular visits, which may impact project implementation. Only three visits to communities in a year is inadequate to effectively implement activities and provide regular monitoring and evaluation. There is a need to provide more resources so that project coordinators make regular visits.

234. In addition, vulnerable communities that most require capacity building to address impacts of climate change on food production are located in isolated areas of the countries. This makes access in terms of travel and logistics costly and unreliable. More resources are required to reach and work with these communities on a regular basis. It also makes coordination between different communities difficult and costly.

235. **Monitoring.** The design includes a simple ToC, but also a logframe and risk management framework. These are quite thorough and professionally prepared however there is limited baseline data to help monitoring and evaluation and thus fulfilment of this may have problems.

236. **Sustainability.** During Phase I, farmers and communities adopted farm technologies documented and disseminated by Live and Learn. Farmers have also been trained in leadership for climate change adaptation at community level. This has built their confidence to share information on climate change and demonstrate adaptive farm technologies in their respective communities. In discussions with the Review Team, it was stressed that the project approach which strengthens and formalises existing processes and informal systems, will help ensure sustainability. L&L’s inputs are catalytic, helping set up processes so that local communities can help themselves.

237. **Partners and Information Sharing.** There are number of organizations working on food security and climate change in the Pacific and Live and Learn is also implementing a number of projects funded

by AusAID and other donors in a number of communities and project activities are being carried out in the same communities. This project has provided the opportunity for L&L to consult and share relevant information in this sector. The Design report indicates the project is enhancing synergies amongst various stakeholders working in food security and climate change across all four countries. However it is unclear to the Review what actual synergy there is between the programs across the four countries and how lessons learned are being shared across the countries. L&L indicated to Review that it was looking at what is the best knowledge arising in each country, and then will share this and other lesson learning across countries. However it is unclear who will do this, and when. A more regional approach at design could have ensured greater sharing of lessons and knowledge.

D. The Nature Conservancy (TNC) – Building the Resilience of Communities and Their Ecosystems to the Impacts of Climate Change (\$2.0 million)

238. Phase 1 of this project commenced in July 2010 and focused on strengthening the capacity of target communities, partners and policy makers in PNG Solomon Islands, and Marshall Islands, to understand, assess and better adapt to climate change impacts. The project has engaged and supported local communities, and provincial and national level government, to increase awareness and integrate adaptation options into development planning. Participatory activities were designed to build a strong foundation of collaboration with local and international partners.

239. One of the strengths of Phase I was the co-investment and matching commitment by TNC and its 15 contracted partners, to enable the project to build on existing structures, programs and relationships.

240. Lessons learned from Phase 1 guided the design of Phase 2. These are detailed in the design document but include: (i) participatory approaches and communications: the use of visual participatory approaches such as participatory video are highly effective in increasing understanding of climate change issues and allow the inclusion of marginalised groups (such as women and children), who are typically excluded from planning processes. Communication of climate and adaptation work through visual mechanisms is essential for capturing and sharing knowledge and scaling up; (ii) It is important to examine climate change issues in the context of ongoing development issues faced by communities and governments; and (iii) engaging with partners and building relationships: much of the success of Phase 1 is the result of working in areas where there continues to be a strong history of engagement.

241. An integrated approach has been adopted, drawing on local and technical support, cultural heritage, traditional knowledge, gender, socio-economics and governance to understand climate risk and assist with resilience options for local communities in places.

Relevance

242. The design document states that the goal of the project is to build on the existing community-based adaptation (CBA) work of Phase 1 in Solomon Islands, Marshall Islands and Papua New Guinea, to further demonstrate the effectiveness of participatory approaches that help local communities understand and implement adaptation measures; to incorporate this information into local, provincial and national planning and policy; and to communicate the lessons and outcomes at the local, national and international scale.

243. The documents do not set out a higher level objective or goal (such as improved resilience to climate change) but the approach recognizes that healthy natural environments are more resilient to

climate impacts and that the communities where the project works are largely dependent on healthy ecosystems for their livelihoods. Thus the implicit goal is seemingly the development of resilient healthy ecosystems, which is very relevant to the needs of the four countries.

244. Community activities are linked to Government priorities and planning processes at the local and provincial administrative level, and to umbrella national and even regional policy and commitments (such as the CTI) where relevant. All recurrent costs are designed to be incorporated into either TNC and partner ongoing program budgets, or already form part of local investments. The project is thus relevant to national priorities, and is consistent with ICCAI objectives, focusing on increasing awareness of impacts of climate change, capacity building and implementing adaptation activities.

Effectiveness

245. Phase 1 and the start of Phase 2 have been quite effective and have achieved some positive results. The design document for Phase 2 includes a logframe setting out outputs and outcomes. The expected outcomes are: (i) CBA planning and implementation better incorporates cultural heritage, natural resources, socioeconomics, traditional knowledge and marginalized demographics; (ii) policy makers have increased understanding of climate change issues and CBA is better incorporated at the local, provincial and national levels of government and across the broader Pacific region; (iii) local communities and local institutions have increased capacity to adapt to climate change impacts; and (iv) participatory approaches to evaluation are implemented and (a) demonstrate the effectiveness of specific activities and approaches; (b) show the impacts of climate change and results of adaptation measures; and (c) allow lessons to be learned and adaptive management to be applied.

246. The TNC progress report for second half of 2012 sets out list of key achievements and provides a summary of progress of activities against each objective; most of this reports on activities, but include some observations on outcomes and feedback for some activities (e.g. vulnerability assessments, integrated approaches to ecosystem based adaptation and fisheries management, and incorporating CBA into the Choiseul planning process, a multi-institutional activity including SPREP, GIZ, SPC, YNDP and PACCSAP). Achievements described mostly cover Solomon Islands and include: (i) Isabel Ridges to Reef protected area network, raising awareness; (ii) Climate Challenger voyage, a traditional voyage from PNG to Solomon Islands raising awareness at 11 destinations; (iii) Cateret Islands exchange visit to see impacts of climate change; (iv) sustainable fisheries management involving a two week underwater census with local universities and staff; (v) climate awareness and sea level rise monitoring in Choiseul; and (vi) local capacity building for monitoring in PNG.

247. In PNG and Solomon Islands the programs adopt a ridge to reef approach, whereas in RMI the program focuses on an integrated atoll plan, with emphasis on water resources, and planned to support other atoll plans, ensuring integration of CCA in the plans. In Solomon Islands there has been an emphasis on participatory modelling (Choiseul) including laser mapping and 3D mapping of sea level rises. Storm surges and rainfall do not seem to have featured as much as sea level rise in the model, which also includes coral bleaching, saline intrusion, and king tides). The Review Team has some concerns about the value of the 3D modelling as costs and scaling up are a concern. TNC conceded that while the VAs were basically a static analysis, populations do move in response to disasters (providing land is not a constraint).

248. Separate reports have been prepared on some activities, such as the Isabel Ridges to Reef program which is building a strong partnership with Mothers Union across the Province, to improve the

wellbeing of communities, and particularly women and children. A joint donor/partner report has been prepared on the Choiseul VA and ecosystem-based adaptation program.

249. The project is focused on partnerships and the report briefly describes the 15 contracted partners from locally based organisations (technical institutions and provincial governments).

250. AusAID financing has allowed more participatory approaches and engagement with NGOs at local levels and with local government, enabling them to place staff within the Provincial Govt in Choiseul and Western Province, providing housing assistance and getting the positions on the establishment to enable eventual finance by the Govt (similarly in Manus Province in the PNG program). They emphasised the need to build capacity at local levels to roll out programs. TNC noted that climate change was low in people's perceptions, their emphasis being on food security (and mining on Isabel).

251. TNC reported that the VAs adopted the USP best practices, in both Solomon Islands and the PNG program. AusAID funding has allowed a long-term engagement, which is important.

Efficiency

252. The progress reports states that the project is on track to achieve its objectives within the time frame and budget, the project benefiting from the design stage. The Review cannot verify this, but a review of the achievements listed in the varied reports suggest that this is achievable. Efficiencies are being gained through working with others undertaking similar activities in the same location. Building local capacity can reduce costs when it reduces travel costs and need for external consultants. The report states that fitting a climate lens onto existing programs is cost effective and achieves maximum impact. The Isabel Ridge to Reef project being cited as an example.

253. A challenge for this project is the spread of geography. All sites in this project are large distances apart and often difficult and expensive to reach. Although multi-country approaches provide great opportunities for sharing lessons and exchanging ideas, the travel cost and spread of management and technical capacity across such diverse geographies needs careful management.

254. **Sustainability.** Sub-contracts made by TNC with partners support not just climate change activities but also support institutional strengthening local of partners, thereby helping sustainability.

E. Oxfam Australia – Vanuatu “Yumi stap redi” (\$2.0 million)

255. The Vanuatu NGO Climate Change Adaptation Program is implemented by a consortium of six NGOs led by Oxfam – Save the Children Australia (SCA), CARE International in Vanuatu, the Vanuatu Rural Development Training Centres Association (VRDTCA), the Vanuatu Red Cross Society (VRCS – supported by the French Red Cross (FRC), and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The program helped formalise the Vanuatu Climate Change Adaptation Network (9VCAN) which works at the national level to increase the NGO sectors' coordination around climate change issues and practice. The program supports communities to build their resilience in nine islands across four Provinces, and links the lessons to national policy and practice. The program period is from May 2012 to April 2015.

256. A consortium approach was adopted with NGOs already working in Vanuatu in this field pursuing a coordinated approach to community based adaption programming, allowing partners to learn from each other's experience. The design document states that each program location builds on

existing relationships and/or programs with communities through one of the implementing partners. Existing technologies, tools, education materials and resources are being utilised to limit duplication, building in or developing climate change content as appropriate. The approach links community knowledge of local environments and weather patterns with external scientific analysis; the program plans to document local knowledge and link this to the available scientific knowledge from PCCSP.

Relevance

257. A resilience framework was developed by the consortium partners articulating common factors the consortium partners considered are key to resilience building in Vanuatu. The program is directly relevant to achieving this aim. The program targets over 5,400 people who will be supported to develop a greater understanding of climate change impacts in their area and ability to identify key risks, and to increase their skills, capacity and ability to implement actions that will increase their resilience to climate variability and change. Particular focus has been given to supporting the capacities of young people and women to take action on climate change and engage in decision making processes. Indirectly, through communications, awareness-raising and local influences the program will reach a further 30,000 people. Some limited adaptation activities have been included.

258. The program is also relevant to the ICCAI program objectives, focusing on awareness-raising and capacity building, with some limited community level demonstration activities, increasing the resilience of this partner country to the impacts of climate change.

Effectiveness

259. The overall goal of the program is to increase the resilience of women, men and young people in Vanuatu to the unavoidable impacts of climate change. It has three objectives: (i) women, men and young people across Vanuatu have a greater ability to anticipate and respond to the impacts of climate change, both natural hazards and longer term changes; (ii) the delivery of climate change initiatives in Vanuatu is more efficient and effective due to increased capacity, collaboration and information sharing amongst the NGO sector and with the Government.; and (iii) learning from this program influences government and other stakeholders to develop and implement policy and practice that better support women, men and young people in Vanuatu adapt to climate change. This was included in the design document ToC.

260. The design has many small activities and objectives and is both too complex and overambitious. A more limited focus would more likely have been more appropriate.

261. Progress reports prepared by Oxfam in November 2012 and April 2013 summarises progress in achieving the program objectives. The VCAN network has been established and regular meetings are held. It has a seat on the National Advisory Board for Climate Change Adaptation and DRR.

262. It is not possible on information provided to assess effectiveness, largely due to the nature of the activities. Given the nature of the program, the emphasis is on training, awareness building and capacity development, with reports not surprisingly reporting on inputs rather than outcomes. Activities for Objective 1 have focused on base line data collection, development and refinement of DRR tools and training staff in their use. Community awareness workshops have been held, and CARE has implemented some adaptation activities in villages. For Objective 2 reports largely cover participation in meetings and events, including involvement of stakeholders. Under Output 3, GIZ facilitated a retreat for the Vanuatu delegation to the 18th UNFCC COP meeting and helped support the set up and management of the NAB

portal. VRCS has worked with a student on a CSIRO scholarship on a comparative analysis of risk perception.

Efficiency

263. The latest progress reports indicate that the program is now on track to achieve its objectives within the timeframe and budget provided. Efficiency is one of the main reasons for the consortium approach, although getting approaches and systems aligned took some time. But the reports indicate this initial investment in time is now paying dividends in strong relationships and agreed processes. The program builds on Oxfam's programmatic approach in Vanuatu, which is fostering collaboration and effective ways of working amongst civil society organisations as well as between civil society organisations and the key government agencies. The report cites the Vanuatu Humanitarian Team as a good example of this; it has established a way of working with government and networks that will be valuable to the climate change adaptation consortium and network. There have been delays in recruitment, due largely to the small pool of candidates to draw from, which has slowed some activities. Limited government capacity and budgets, particularly in outer islands, has also affected progress.

264. **Monitoring.** The program level M&E is being overseen and coordinated by Oxfam, as the lead agency; Oxfam provides capacity building and technical support across the program. The project design included a ToC and a resilience framework, although no logframe. The ToC indicated the program would build adaptive resilience through a combination of activities that support communities' increased access to basic services, improved and diversified livelihood assets, improved access to information, support for innovative practice, access to information and knowledge, more open and equitable decision making processes, enabling government policies, and greater connections to external resources and support networks.

265. These features had been identified in the Community Resilience Framework as reflecting the capacity of communities in Vanuatu to address both current and future vulnerabilities in the face of ongoing change.

266. **Sustainability.** The program's focus on supporting participants' adaptive resilience in the long term helps ensure that the gains of the program will continue beyond the program timeframe.

F. CARE Australia – PNG “Strongem Komunities Tingim Climate Change” (A\$ 1,999,937)

267. The community based adaptation program is located in Nissan District in Bougainville PNG, comprising two main coral atolls, Nissan and Pinepal. It has twin objectives of building community resilience to existing hazards and the impacts of climate change, and create an enabling environment for ongoing climate change adaptation.

268. This project will contribute significantly to improved food security on Nissan and Pinepal through the integration of climate adapted agriculture technologies and climate resilient varieties. These activities will be carried out in partnership with the National Agricultural Research Institute (NARI) and local government agencies.

269. Disaster preparedness will be integrated through communities developing action plans with a particular focus on improving water availability during times of drought. Disaster Risk Reduction activities will be carried out in coordination with the Autonomous Bougainville Government's Disaster Management Office (ABG-DMO) and the Nissan District Administration (NDA).

270. The design document notes the design is founded on a Climate Vulnerability and Capacity Analysis (CVCA), a comprehensive participatory methodology developed by CARE that provides a foundation for an integrated approach to building climate resilience. The approach combines community knowledge and scientific data to yield a greater understanding about local impacts of climate change; including hazards and changing conditions, and differential social vulnerabilities. It connects to a multi-level stakeholder participatory scenario-development and planning processes that looks at specific vulnerabilities, why they exist, and how they can be addressed, covering DRR as well as climate change adaptation).

Relevance

271. This project will build the climate change adaptive capacity and resilience of the Nissan District communities to existing climate change vulnerabilities and hazards and the unavoidable impacts of these by improving food and water security, enhancing disaster preparedness, and building knowledge and capacity of climate change adaptation for planning at local and provincial levels.

272. The project is designed to focus on the most vulnerable, in particular women, although it also has provisions to involve all stakeholders, recognising Melanesian culture.

273. The project is very relevant to the needs of Nissan District. The need for improved food security is currently the most significant vulnerability faced by communities; the communities identified chronic food insecurity and vulnerability to climate related hazards as principal concerns during community consultation workshops during design and implementation stages.

274. The program is also relevant to the ICCAI program objectives, focusing on awareness-raising and capacity building, increasing the resilience of this partner country to the impacts of climate change.

Effectiveness

275. The expected outcomes are improved food security, increased capacity to prepare for and respond to hazard events, and an enhanced understanding of climate change adaptation that informs planning and policy development.

276. Activities are based on participatory analysis and planning process with communities, development services providers, and government stakeholders, targeting those most vulnerable to the impacts of climate change, including men, women, youth and the elderly. Activities included in the design include backyard gardening and field gardening using climate resilient varieties, improved water efficiency, integrated pest management, improved livestock management (pigs), food preservation, improved community level adaptation planning and DRM.

277. CARE prepared a progress report in October 2012. It notes that the project was then only four months into implementation, and thus not much to report on apart from processes, which had met with some success. The latter include some specific examples such as stakeholder's ability, after assessment workshops, to clearly link changes within their subsistence and livelihood efforts to climate change and seasonal variations; recognition by vulnerable people of their ability to self-organise; the roles and responsibilities of community and district leaders.

278. The report notes the Team spent some considerable time to identify and target the 'most vulnerable'. This presented challenges, not least of which was building in to the program processes that they could be involved in, given that normally included in activities or community meetings.

279. Experience from the project will be continuously documented and distributed through various forums in the Bougainville Region, PNG and the Pacific region, providing an evidence base for community-led approaches to adaptation. However, the report highlights difficulties in connecting the project to the broader PNG and regional space, given both limited human and financial resources available, and logistical problems (e-communications are very problematic). This could limit the reach and outward connectivity of the project. To overcome this challenge, the CARE Australia Climate Change Advisor is working closely with the Project Manager, CARE PNG and AusAID to identify and support appropriate opportunities for knowledge sharing and advocacy at Pacific-Regional and international level.

Efficiency

280. The progress report notes PNG also very expensive logistically and inter and intra-island communication is extremely difficult. However, the project has remained on schedule and on budget through the mobilisation phase despite the need to further train national staff in climate change, community based adaption, disaster risk reduction and CVCA.

281. The report notes that the consultation process with community leaders, government, and non-government stakeholders has led to more efficient ways of conducting CVCAs (geographic clustering), delivering community-based training and installing potential community based adaptation demonstration sites acceptable to communities (along the lines of customary multi-village groupings). Community members have also taken on greater responsibilities for providing two-way feedback between their respective communities and the CBA team of their own accord. This has greatly helped the CBA team stay on track at the field level.

G. Act for Peace – Pacific Community Climate Change Risk Reduction (PCCRR) Project: Vanuatu, Tonga (\$2.0 million)

282. Act for Peace (AfP) is the lead agency for the Pacific Community Climate Change Risk Reduction Project (PCCRR) which is being implemented in two of the most vulnerable Pacific Island States, Vanuatu and Tonga, with government, civil society and communities. The project will support up to 22 highly vulnerable communities in Ha'apai island group in Tonga and 17 in Tafea, Malampa and Shefa provinces in Vanuatu, to better understand climate change and adaption options, implement adaption activities, and enhance capacities to access resources from government and other service providers.

283. This project is building on AfP's work in community based disaster risk management (CBDRM), and relationships formed in support of CBDRM with government and civil society under the Pacific Community-focused Integrated Disaster Risk Reduction Project (PCIDRR). Using CBDRM as an entry point for supporting communities to implement climate resilient activities is considered a highly effective approach providing reach into communities, and networks already engaged in disaster risk reduction (DRR).

284. AfP has partnered with the Vanuatu Christian Council (VCC) and the Tonga National Council of Churches (TNCC) to implement this project. AfP has a long history of working with these faith based organisations. Both organisations have considerable experience in CBDRM, and to community-based

adaptation (CBA) as an approach to building the capacity of vulnerable communities to adapt to the impacts of climate change. AfP is providing an overarching coordination, and management role, while the local partners will implement project activities with technical support from AfP. AfP has a formal Partnership Agreement in place already with each partner.

285. VCC and TNCC have extensive local networks, and established relationships with government, civil society, and many communities which the project will utilise. Given the central role of the church in people's lives in Tonga and Vanuatu, churches can be powerful drivers of change. VCC and TNCC will partner with local CSO's.

Relevance

286. The goal of the project is: Strengthen the resilience of communities in Tonga and Vanuatu to the impacts of climate change. It has four key objectives: (i) increase capacity of local partners to provide support to communities in their adaptation efforts; (ii) enhance community capacity to assess climate vulnerability, access resources, and implement community based climate resilient activities; (iii) improve community linkages with government to enable a stronger community voice in government planning and decisions about CCA; and (iv) develop a body of evidence on CCA integration into CBDRM from project learning. Strengthening capacity and building resilience is very relevant to the needs of Tonga and Vanuatu.

287. The design document does not indicate any specific focus for adaptation activities, rather it lists several areas that eligible communities have shown an interest in, including: water supply; food security / agriculture; re-forestation / soil conservation; drainage improvement; sanitation; mangroves; and relocation of homes. All these areas are priority areas and relevant to the countries' needs.

288. The program is also relevant to the ICCAI program objectives, focusing on awareness-raising and capacity building, with community level adaptation activities, and improving linkages to with government planning, increasing the resilience of this partner country to the impacts of climate change.

Effectiveness

289. The November 2012 progress report notes that the project had only just started, but notes some key activities that had been implemented. For objective 1, capacity building, key Project staff from VCC and TNCC have participated in a comprehensive 2 week USP Climate Change Adaptation Training of Trainers conducted in Tonga and Vanuatu, and are scheduled for further USP CCA training in 2013. The Act for Peace Sydney Finance Officer provided hands-on training to the VCC Finance Manager on improved management of finances, and advised on improved systems for the Tonga program which will be incorporated into a comprehensive Finance Policy and Procedures Manual for the use of both project teams.

290. A comprehensive capacity assessment of the VCC was conducted in 2012 which identified skills that needed to be developed on project and financial management, and organisational governance. No formal Capacity Assessment has been conducted in Tonga, although originally scheduled for January, as it was decided that capacity development across a wide range of areas was required for TNCC, which had new staff for the project, including climate change, community mobilisation, project proposal development, and project management.

291. On objective 3, initial assessments indicate that Tonga is better placed to provide a framework to support community linkages with government than is the case in Vanuatu. On objective 4, the design indicated that learning is a key priority of the PCCRR.

Efficiency

292. At this stage the Project is behind schedule in a number of activities. This is primarily due to a late submission of the revised Project Design and further delays in final feedback from AusAID.

293. Delays in recruitment of staff and short-term capacity building advisers has impacted on expenditure forecasts for the initial two quarters however we anticipate that outputs and expenditure will catch up

294. Monitoring. The Project Design included a comprehensive risk assessment and management strategy and this will guide implementation for the first year.

H. Small Island Developing States (SIDS) Community Based Adaptation (CBA) Program

Introduction

295. ICCAI has provided A\$ 4million for small-scale community-based climate change adaptation projects for 15 PICs, including Tokelau, to be implemented through the Global Environment Facility Small Grants Programme. In total, AusAID is providing \$12 million over five years (2008-2013) for the program, implemented across 42 countries, focusing on Small Island Developing States, Mekong countries and Sri Lanka. The program is implemented by UNDP and focuses on practical adaptation activities such as coastal strengthening, relocation of vulnerable households and infrastructure, restoration of coral, and replanting of mangroves.

296. This report will provide only summary details as full details are provided in the UNDP SIDS –CBA Program Design Document and the 2012 Annual Consolidated Report covering both MAPS CBA and SIDS CBA.

Relevance

297. The SIDS program builds on the experiences, lessons and practices developed from the ten pilot countries that includes the global GEF Special Priority on Adaptation (SPA) CBA programme and the first phase of the AusAID-supported Mekong and Asia Pacific Community-Based Adaptation programme (MAP CBA). These generated knowledge about how to achieve adaptation at the local level. The program is refining methodologies developed under these for replication and up-scaling.

298. The program addresses sustainable development through the climate change adaptation lens. SIDS funding supports: (i) community level interventions, (ii) knowledge sharing, (iii) up scaling of good practices, and (iv)upstream activities which will improve adaptive capacity of communities and ecosystems to climate change.

299. The programme is designed to target highly vulnerable communities, and to assist these countries to increase their capacity to adapt to long-term climate change, including variability, addressing capacity and policy gaps and the need for mainstreaming lessons at local, sub-national, and

national levels. The programme is thus relevant to ICCAI objectives, and at the individual country level to national needs.

300. Other frameworks to which the programme is relevant include the Pacific Islands Framework for Action on Climate Change (2006-2015) and the Pacific Disaster Risk Reduction and Disaster Management: Framework for Action (2006-2015) which calls for action on climate change, including helping the most vulnerable communities adapt to unavoidable impacts from changes resulting from climate change.

Effectiveness

301. The UNDP report states that there has been good progress in countries such as Fiji, Kiribati, Vanuatu, PNG and the Solomon Islands since the Pacific regional workshop in March 2012 in Fiji, which nine Pacific SIDS participated (Fiji, Tuvalu, Nauru, Samoa, Kiribati, Federated States of Micronesia, Solomon Islands, Papua New Guinea, and Vanuatu). CBA lessons have been shared in national climate change forums, UN agencies meetings and national small donors meetings. Individual project details in the countries can be viewed in the UNDP report. This Review did not have the resources or time to examine and verify this in any detail.

302. Development of country programme strategies (CPS) where they did not exist was the first step and in some countries this has been slow due partly to lack of information on likely changes in climate and human systems at the small-island scale. The report is unclear on whether all the Pacific countries have country program strategies as it reports on both these programs and those in other regions, noting that out of the 26 established SIDS programmes 16 have approved CPS, while 10 are still to complete the final stages of the process. The countries of the Samoan sub-region (Samoa, Niue, Cook Islands and Tokelau) have revised their CPS to take a coordinated sub-regional approach. In Tuvalu, Tonga and Nauru there has been limited progress due to staffing issues. In Papua New Guinea the CPS is under revision. During 2012 the Micronesian sub-region of Republic of Palau, Federated States of Micronesia and the Republic of Marshall Islands, was establishing full country programmes.

Efficiency

303. The program works within the national institutional and legal framework of the participating countries. The GEF Secretariat supervises the program from its New York office but implementation is largely the responsibility of national coordinators who liaise with regional coordinators in UNDP offices. AusAID has largely played a passive review role, receiving and commenting on reports, seeking views of the Posts on these reports. AusAID have indicated that staff constraints was largely responsible for limiting them to a comment and review role, but next year would like a greater involvement in supervision and would hope for greater ownership by Posts, devolving responsibility where feasible and appropriate.

304. Implementation has been somewhat slow, partly caused by the high turnover of staff in the region (particularly the national coordinators) and difficulties in recruiting staff. The report notes that “competition in the Pacific between donors for competent staff, disparity between scales of pay from various organisations, and local capacity in the smaller islands has made retention and identification of suitable personnel an on-going challenge”.

VI. Regional Programs

A. Future Climate Leaders Program (FCLP)

305. ICCAI has provided \$ 3.01 million to the FCLP, which is implemented by the University of the South Pacific's (USP) Pacific Centre for Environment and Sustainable Development (PACE-SD). The program has developed curriculum for courses in climate change adaptation and climate science which are key modules of post graduate courses provided by USP (Post Graduate Diploma and a Masters Degree in Climate Change). The courses have been incorporated into the regular USP program and are conducted in close association with USP's Institute of Applied Science (IAS). Modules in disaster risk management are also provided. Community engagement workshops are also part of the CLP, involving non-academics, community leaders etc., focused on raising awareness. Outreach programs include training of trainers.

306. An Independent Evaluation of the FCLP was conducted in February 2013 and this section draws on this and the Review Team's discussions in USP.

307. **Relevance:** climate change adaptation requires training, education awareness and research, which the FCLP provides. The FCLP's goal is to create awareness and improve understanding of climate change issues through training, teaching, formal and non-formal courses and research in climate change. The Independent Evaluation concluded that the program is relevant to the Pacific Plan and to country and regional needs and the Review concurs in this assessment; the Evaluation also noted it is relevant to USP's own Strategic Plan (2013-2018).

308. **Effectiveness and Efficiency:** the Evaluation found that the FCLP project has been effective and has achieved its objectives, providing much needed assistance in climate change capacity building for countries in the Pacific (see below). In-country non-credit workshops have been held in Kiribati for training and capacity building in climate variability and change, and in Vanuatu on food security and climate change, focused on improving technical knowledge and understanding on climate change adaptation in agriculture, forestry and food. Details of the courses and workshops are set out below.

309. The Evaluation notes that PACE-SD is viewed by those interviewed as responsive, efficient and supported by a very good team of academics who are highly competent and who produce high quality work. Overall it concluded that the FCLP Project had been well executed and has produced excellent results that are contributing to climate change human resources and change in the Pacific region.

310. The FCLP project also provides an enabling environment for awareness on relevant climate change issues for the Pacific Island Countries (PICs). Climate change adaptation is a key response that PICs can make to cope with climate change. But it requires training, education awareness and research. Community Adaptation measures in Climate Change is supported by conducting regional and national workshops with the aim to enhance coping capacity and resilience and finding solutions to manage risks that climate change poses across all sectors in Pacific Island Countries. It partners with Pacific Island Countries' stakeholders for networking and capacity building in climate change future leaders.

311. The FCLP project has helped build capacity in Pacific leadership at the community to national levels to enable understanding of climate change issues in PICs. The program has also helped equip leaders with knowledge and skills to assist them in understanding emerging issues on climate change and also to enhance resilience on possible negative impacts of climate change.

312. **Climate Change Scholarships:** Scholarships were awarded for two programmes, Postgraduate diploma in Climate Change and Masters in Climate Change. Over the 3 years 29 post graduate and 7 masters have been awarded. 22 (18+4) have been awarded to students from Fiji, 7 in Solomon Islands, 2 in Tonga. And 1 each in Samoa, Palau and PNG, Vanuatu and Tuvalu.

313. **Climate Change Credit Course and Credit Workshop Development:** three courses: (i) Climate Change Vulnerability, Impacts & Adaptation; (ii) Climate Science; and (iii) Disaster Risk Management.

314. **In Country Training:** (i) Training & Capacity Building on Climate Variability and Change in Kiribati: Impacts Vulnerability and Adaptation – a non-credit national workshop held in Tarawa, Kiribati.; and (ii) Food Security and Climate Change: Impacts of Adaptation to Climate Change in Agriculture, Forestry and Food Security Sectors – to improve technical knowledge and understanding on climate change adaptation in agriculture, forestry and food security sectors in Vanuatu.

315. **Non-credit workshops :** sub-regional workshops were undertaken for the Polynesian sub-region and for the Melanesian sub-region as follows:

- Training & Capacity Building Workshop on Climate Change Variability and Change in Kiribati: Impacts Vulnerability and Adaptation;
- Regional Training & Capacity Building Workshop on Climate Change Variability and Change in the PICs: Impacts, Vulnerability and Adaptation;
- Food Security and Climate Change in Vanuatu: Impacts of Adaptation to Climate Change in Agriculture, Forestry and Food Security Sectors;
- Regional Training and Capacity Building Course on “ Human Rights and Climate Change”;
- In its more than 3 years of operations, the FCLP Project under PACE-SD has performed well and these performances have been through various activities such as scholarships for postgraduate students (Postgraduate diploma (PGDCC) and Masters (MSc)), course development and update of courses for PGDCC; and regional and sub-regional training workshops on relevant climate change issues;
- The highlight of the FCLP project is the establishment of program for the Postgraduate Diploma in Climate Change at USP that did not previously exist. FCLP provided the mechanisms to mainstream the development of climate change program through PACE-SD. Four courses were developed and were delivered through the flexi teaching mode (online) and through workshops. These provided the core courses for the Postgraduate Diploma in Climate Change; and
- The MSc in Climate Change Program was also established through the FCLP project. The University of the South Pacific facilitated the Postgraduate diploma in climate change and the Masters program in climate change by creating the Board of Studies and the Research.

B. Pacific Adaptation to Climate Change (PACC) and Follow On PACC Plus

316. PACC (a regional program) was funded by the Special Climate Change Fund (SCCF), with management and oversight by SPREP and UNDP. Under PACC Plus, Australia is providing A\$7.35 million to expand adaptation projects (water resource management, coastal zone management, and food

production and food security) in the 13 countries covered (Kiribati was not a beneficiary), and extend it to Tokelau. An MTR, commissioned by UNDP as the GEF implementing agency was conducted in 2012.

317. Assessment of the relevance, effectiveness and efficiency of the PACC program is not really appropriate for this Review as they were not funded by ICCAI and a separate MTR has already been commissioned by UNDP for the program and has done this. This report thus draws on the MTR assessment for PACC while providing some observations on PACC Plus.

318. **Relevance:** ICCAI's contribution to PACC Plus focuses on ICCAI Objective 4 by supporting replication and up-scaling of adaptation measures implemented by the PACC project; it also aligns with objectives 2 and 3 by supporting training, technical backstopping and exchange visits. Individual country programs are being aligned with country priorities, but details are not yet available. Country programs were reviewed by the MTR and details can be viewed in the MTR. PACC covers three main components concerned with climate adaptation: (i) policy mainstreaming; (ii) pilot demonstration measures; and (iii) capacity building. Countries had to select one sector from three priority development sectors: (i) food production and food security; (ii) water resources management; and (iii) coastal zone management. The PACC MTR notes that the concept of assisting Pacific island countries to adapt to future climatic and environmental conditions is clearly highly relevant; it is vital for the PICs to adapt and bolster resilience and reduce vulnerabilities as effectively as possible. As noted in the sector and targets section above, the program targets community level and local government awareness and capacity building and linkages. Its adaptation activities include a focus on livelihoods, poverty reduction and food security. While they target the poor, there is no specific targeting of the vulnerable. The program is relevant to each country in that the sector chosen for coverage are based on their selected priorities. The program is very relevant to ICCAI priorities, addressing the three country level objectives.

319. The MTR notes that PACC was intended to provide the region with a programmatic framework for adaptation work, but this has not occurred to an adequate extent, and there are many initiatives being planned or implemented with little apparent connectivity. It notes that the relevance of PACC and the several other comparable initiatives would be enhanced greatly if they worked together effectively and covered the whole Pacific region. A significant portion of the region neither contributes to nor gains from PACC. SPREP and the other CROP agencies do not readily use the projects to extend services to all members, nor thoroughly engage all members in assisting the Pacific island countries to adapt to climate change.

320. Effectiveness and efficiency: PACC Plus has only just started and country and regional programs are yet to be implemented, thus there is nothing yet to review. The PACC program was slow to start but progress has been made in most countries. The MTR details these, including successful and not-so-successful activities, and provides a detailed assessment of the effectiveness of the PACC program, including detailed annexes by each country. The PACC Plus design document includes some examples of these achievements, but these are not summarised in this Review as these documents can be readily accessed.

321. PACC Plus follows the existing project implementation and management procedures. The PACC MTR refers to the unsatisfactory disbursement arrangements under PACC, with GEF funds being given to UNDP to manage; UNDP in turn passes on funds to SPREP. There have been significant delays in topping up funds, which has created problems at project levels. According to the MTR, lot of the problems with PACC governance and management seem to have stemmed from the involvement of UNDP and SPREP as (unequal) implementing partners. PACC Plus has followed the same process, providing funds to UNDP

to manage, via SPREP, thus potentially continuing the disbursement problems. AusAID's funds to PACC Plus going via UNDP contrast with USAID's funds going directly to SPREP for another "PACC" project, which is implemented directly by SPREP. The PACC project monitoring and evaluation processes are managed by the UNDP Samoa Multi-Country Office. The PACC Plus design document includes a strategic results framework with targets to facilitate monitoring. The PACC team in SPREP has just been strengthened which will help in this, but it will be very dependent on in-country teams for on the ground monitoring. The role and effectiveness of UNDP in monitoring to date remains unclear to the Review, but based on discussions in Apia this seems to be only very limited, raising doubts on the efficiency of providing funding via UNDP. A more detailed assessment is needed on this, the Review not having the time or resources.

322. The MTR recommended that PACC should be transformed into a set of individual country projects and the uniform application of generic tools from the regional centre should be discontinued. Future support should be tailored primarily to meet the individual country's needs. This Review from its own discussions in countries and with SPREP tends to agree that the program has not shown any regional strengths and synergies and could thus be seen as a multi-country program, catering to individual country needs, rather than a regional program. However, delivery through a regional organisation such as SPREP provides the opportunity for individual countries to draw on the broader experience of SPREP, which can share experience across the individual programs. It is not clear, however, whether this has happened to a large extent, given the capacity limitations of the PACC team in SPREP (but recently augmented with ICCAI support).

323. In discussions with the PACC program manager in SPREP, he indicated that the program was currently being audited by UNDP and that the accounting systems adopted under the UN system did not make it easy to manage individual operations and determine where funds were actually being spent by activity rather than by item. However, the Technical Officer recruited under PACC Plus funding, who had just started during the mission, will help in this regard.

324. He noted the restriction imposed by the original project selection criteria facing countries, with the entry point in any one of 3 sectors (water resources management, agriculture and food production, and coastal (infrastructure) management) but for which they could obtain co-financing – for Samoa this meant they were restricted to coastal infrastructure management whereas they would have also liked to include water and food security concerns. The PACC program coordinator confirmed that the coastal activities were a priority, and indicated the strong support provided by SPREP to this. PACC has covered 3 districts, while the balance is being covered under the PPCR project (15) and the Adaptation Fund. Reservations have been raised, however, about the appropriateness of building sea walls (possible mal-adaptation), and also that lessons learned from PACC are not being taken into account in other activities of MNRE in building resilient coastal communities.

Table 3: PACC and PACC Plus Funding

Country	GEF Allocation (US\$)	PACC Plus (US\$)	Total (US\$)
1. Cook Islands	800,000	499,775	1,299,775
2. FSM	1,000,000		1,000,000
3. Fiji	1,000,000		1,000,000
4. Marshall Islands	800,000		800,000
5. Nauru	750,000		750,000
6. Niue	750,000	499,775	1,249,775
7. Palau	800,000		800,000
8. Papua New Guinea	800,000		800,000
9. Samoa	750,000		750,000
10. Solomon Islands	750,000		750,000
11. Tonga	750,000	1,707,232	2,457,232
12. Tuvalu	750,000		750,000
13. Vanuatu	750,000		750,000
14. Tokelau		499,775	499,775
Sub Total Countries	10,450,000		10,450,000
Regional	2,675,000	1,530,215	4,205,215
Multi Country Programme		2,608,164	2,608,164
GMS 7% to UNDP		514,146	514,146
Total		7,859,082	20,984,082

PACC Plus Breakdown	Amount US\$
Country Specific Programmes	3,206,557
Multi Country Programme (tbd)	2,608,164
Regional Programme	1,530,215
GMS 7% to UNDP	514,146
Total	7,859,082
Regional Programme	1,530,215
UNDP Specialised Technical Services	349,759
PACC Project Technical Officer	245,000
Gender Plan & Implementation	100,215
Communication Materials	55,000
Knowledge Management Products	70,000
Participation at meetings	65,000
M&E MPR costs	35,000
M&E Terminal Evaluation	35,000
M&E country assistance	80,241
Annual Audit	20,000
SPREP Implementation Costs	440,000
Gender Regional Workshop	35,000

Notes: Figures provided by PACC Program Manager. US\$ 7.859 million equal to A\$ 7.35 million equivalent

C. Secretariat of the Pacific Community (SPC)

325. AusAID is providing funds from ICCAI to SPC (\$ 9.00 million) in addition to separate AusAID support for core budget and program financing from its regular program (a \$17 million December 2011 agreement with SPC for 4 years).

326. SPC is the oldest regional organisation in the Pacific and is primarily a technical agency. SPC provides technical assistance for capacity building, capacity supplementation, and transnational services in key areas (agriculture, aquaculture, culture, education, energy, fisheries, forestry, geosciences, public health, information and communication technology, infrastructure, media development, transport, statistics and demography, water and sanitation, and cross cutting themes, including climate change, disaster risk reduction, food security, gender, human rights and policy analysis and advice.

327. SPC's work program aims to contribute to higher level development outcomes of countries in three key development outcomes: sustainable economic development, sustainable human and social development, and sustainable natural resources management and development. SPC's advantage lies in the delivery of technical services and inputs at the national level to small island country members and territories that lack the resources and capacity, and in addressing key regional constraints.

328. SPC has produced a publication ("SPC climate change support activities in Pacific Islands countries and territories") setting out all their activities in the Pacific, by sector and country, indicating the donor agency of each activity, including in AusAID's case specifying whether the funding is from AusAID core support or from ICCAI. The country listings show an emphasis of ICCAI funding on agriculture and food security and on fisheries, with programs examining the impacts of climate change on sectors together with activities to improve technologies. In the case of food crops this includes development and testing of climate adapted varieties with programs for delivery of varied climate ready crops (SPC has supported the PACC programs focusing on food security), improved soil and crop fertility. Fisheries activities cover coastal and aquaculture fisheries as well as oceanic.

329. The four year SPC program supported by ICCAI (two phases) supports SPC's climate change adaptation work in fisheries and food security, and activities that strengthen the organisations capacity to respond to the challenges of climate change. This includes: (i) monitoring potential impacts of climate change on Pacific fisheries; (ii) conserving and promoting crop diversity to enhance food security; and (iii) establishing SPCs climate change mainstreaming program to develop a strategic and integrated approach to planning across all its programs.

Relevance

330. An independent external review of SPC noted the continued relevance of SPC core services highlighted the high vulnerability of the countries in the region to natural disasters as part of the specific challenges to the Pacific and the impact of climate change in exacerbating these issues. The SPC has increasingly been called on to handle cross-cutting priorities in the region covering food security, climate change, and the millennium development goals. SPC has become a large regional body with the substantial increase in funding from major development partners during the past 10 years and the inclusion of Applied Geoscience and Technology Division and Secretariat of the Pacific Board for Educational Assessment as part of the reforms under the Regional Institutional Framework. To strengthen its support to member countries, the SPC has recently developed its joint country strategy process and continues to communicate and cooperate with other regional players to maximize its contribution to the region.

331. The Pacific Plan recognises that many of the Pacific's challenges cannot be addressed solely at an individual country level. Some issues are better managed through regional approaches, which allow for the pooling of resources and knowledge. A regional approach to improving development outcomes can effectively support country level development efforts, provided the two approaches are adequately coordinated. This is consistent with AusAID's interim Pacific Regional Strategy.

332. Climate change requires a technical response – SPC is widely recognised as the lead technical regional organisation in the Pacific. SPC's joint country strategies also harmonise the organisations activities with national development plans, ensuring the services it delivers are relevant in the country context.

333. Agriculture and fisheries underpin the livelihoods of a large proportion of the Pacific islands population, especially for subsistence and low income rural communities. They also account for a majority of export income for most countries in the region. Both agriculture and fisheries are highly vulnerable to the impacts of climate change and could compromise the region's future food security. The food security work under the program specifically targets Pacific agriculture cropping systems. The knowledge products from this and the fisheries initiatives help fill an information gap. Addressing the impacts of climate change on food security is the central focus of the Phase 2 SPC program, building on the work that was initiated under Phase 1.

Effectiveness and Efficiency

334. SPC has prepared a report on Phase 1 operations. The program was implemented over a 30 month period from January 2010 – June 2012 and included three primary components, namely:

- Component 1: Monitoring the vulnerability and adaptation of Pacific fisheries to climate change (Budget allocation – AUD 1,935,000).
- Component 2: Conserving and promoting crop diversity to enhance food security in a changing climate (Budget allocation AUD 1,538,000).
- Component 3: SPC Climate Change Mainstreaming (Budget allocation -AUD 1,027,000)

335. The report states that overall the program has largely achieved its intended outcomes though the full benefits of the work undertaken may take some years to materialise. The program laid the foundations for the Phase 2 project that is currently being implemented by SPC and is due for completion in December 2013.

336. Component 1: Monitoring the Vulnerability and Adaptation of Pacific Fisheries to Climate Change outputs included a substantial report entitled "*Assessment Report on of the vulnerability of Pacific fisheries to climate change*", which was peer reviewed and that provides valuable information on the projected future impacts of climate change on Pacific fisheries. The report provides a detailed scientific assessment of the projected impacts on oceanic, coastal and freshwater fisheries, and aquaculture/mariculture. The report also identifies a range of potential adaptation responses that countries could potentially employ to address these impacts. The assessment brought together 88 experts from 36 institutions to complete the detailed scientific and analytical work. The findings of this work were published in November 2011. The book was also accompanied by a Policy Makers Summary and a series of information briefs on specific topics. These knowledge products have been widely disseminated and have already attracted considerable international recognition.

337. Component 1 outputs also improved capacity to monitor and track climate change impacts on coastal fisheries over time. Achievements cited in the report included: (i) formation of a network of coastal fisheries experts to develop consistent guidelines and methodologies to data collection, surveys and analysis; (ii) development of support tools to assist countries to undertake and maintain regionally consistent coastal fish survey work, including the creation of a coastal fisheries database that is accessible by countries; (iii) established monitoring sites in five countries (PNG, FSM, RMI, Kiribati and Tuvalu) that would form the initial basis of the regional monitoring network; (iv) completed initial surveys and baseline monitoring reports for each country; and (v) carried out extensive technical training and capacity development for national fisheries staff.

338. Component 2: Conserving and promoting crop diversity to enhance food security in a changing climate. The primary objectives were to: (i) increase the understanding of crop diversity in the Pacific and how this can be used to increase the resilience of Pacific food production systems; (ii) establish a collection of climate resilient varieties of staple crops for use by farmers – the ‘Climate Ready Collection’; (iii) build a modern laboratory and virus screening capability at Pacific Centre for Crops and Trees (CePaCT) to house, develop and distribute climate resilient planting material to the PICTs; (iv) develop drought and salt tolerant crops and screening methodologies, and (v) improved understanding of the impact of changes in key environmental variables on crop productivity (for example, elevated carbon dioxide levels, heat, water, soil biodiversity).

339. Component 2 consisted of five subcomponents and produced a wide range of valuable outputs including the establishment of the ‘Climate Ready Collection’ (CRC), and the successful development of a world class laboratory and virus testing capability at CePaCT. , are important and significant achievements of this program. The component also assessed the impact of climate change on key environmental variables, assessed the importance of local agro-biodiversity in reducing the vulnerability of Pacific food production systems to climate change, and improved awareness of the contribution of Phase 1 activities to building climate resilience of food production systems, sharing the information regionally.

340. Component 3: SPC Climate Change Mainstreaming. The key objectives of Component 3 were to: (i) develop and implement an organizational climate change strategy; (ii) mainstream climate change into Divisions and sector programs; (iii) establish internal climate change coordination and technical support mechanisms; and (iv) expand the level of coordination and cooperation with other agencies providing technical assistance across the region.

341. The final report notes that significant progress was made during Phase 1 in meeting these target objectives. Key outcomes of this work include the establishment of a dedicated climate change unit within the Strategic Engagement, Policy and Planning Facility, consisting of a Senior Climate Change Adviser and a Climate Change Adviser, that are responsible for coordinating SPC’s climate change engagement activities and providing technical support to staff, and development of a Climate Change Engagement Strategy (completed and endorsed by member countries and territories at the November 2011 CRGA) to guide SPCs climate change work across the organization. Other outputs included the formation (with other regional agencies) of the CROP CEOs Subcommittee on Climate Change and the establishment of the CROP Working Arm on Climate Change (WACC)³⁶. SPC has also been able to assist SPREP in servicing member PICT needs in the UNFCCC process.

³⁶ WACC was formed in 2010 but was convened for the first time in September 2011

342. The report concludes that overall the support provided by AusAID to facilitate the internal climate change coordination and mainstreaming activities has been instrumental in building the capacity of SPC to provide an integrated package of services to member PICTs. It is recognised that effectively integrating climate change across the organization is an on-going task that needs to be sustained over several years but good progress has been achieved during Phase 1 of the program and the main target outcomes have been largely achieved.

343. The objective of the **Phase 2 program** is to help Pacific Island Countries and Territories (PICTs) effectively manage the risks of climate change and increase SPC’s capacity to implement and manage climate change adaptation programs. SPC recently developed its Climate Change Engagement Strategy (CCES) which articulates their role in the region’s response to climate change. The CCES has three major strategic outcomes:

- Strengthened capacity of the Pacific Island community to respond to the impacts of climate change
- Climate change integrated into SPC programmes and activities
- Strengthened partnerships at the regional and international level.

344. The Phase 2 program consists of four components: (i) building climate change understanding and adaptive capacity in coastal and oceanic Pacific fisheries; (ii) enhancing the climate change resilience of Pacific islands agriculture; (iii) increased understanding of the health implications of climate change for the Pacific community; and (iv) climate change mainstreaming and programme coordination.

Table 4: SPC Phase 2 Program Components

Activity	Description	Allocation (AUD)
Building climate change understanding and adaptive capacity in coastal and oceanic Pacific fisheries	Supporting the development of national climate change adaptation plans and response strategies for fisheries; improved understanding of the impacts of climate change on national and sub-regional oceanic fisheries, and monitoring and assessing the impact of climate change on coastal fisheries. This builds on the regional vulnerability assessment of Pacific fisheries supported through the first phase of the ICCAI.	1,870,000
Enhancing the climate change resilience of Pacific islands agriculture	Building resilience to climate change through enhancing crop diversity at the farm level, and addressing the knowledge gaps relating to the impacts of climate change on the agriculture sector.	1,387,000
Increased understanding of the health implications of climate change for the Pacific community	Detailed assessment of the impact of climate change on human health in the Pacific, including: Identification of potential impacts on nutrition, vector and water borne diseases, fungal and bacteria regimes, and health infrastructure; identification of the timing and magnitude of different climate related health risks; and presenting potential adaptation measures.	450,000
Climate change	Strengthening cross agency technical support and coordination	478,000

Activity	Description	Allocation (AUD)
mainstreaming and program coordination	including: Establishment of an agency wide climate change reporting, monitoring and evaluation framework; expanding the level of climate change awareness and technical skills development across SPC sectoral programs; and contributing to regional climate change coordination and mainstreaming activities (e.g. the Pacific Technical Support Mechanism for Climate Change).	
SPC Management fee 7%		315,000
	Total	\$4,500,000

345. In addition to climate change and food security, the proposed work programme also includes activities that aim to increase the region’s understanding of the impacts of climate change on human health, support the integration of climate change into SPC programmes and operations, and contribute to regional climate change coordination efforts.

346. Component 2 includes on-farm Evaluation of the Climate Ready Collection (Cook Islands, Tonga and Kiribati) and establishment of pilot sites for gene pool enhancement (Solomon Islands, FSM and Palau. In Solomon Islands SPC is working with a local NGO, Kastom Gaden Association (KGA), to increase the diversity of germplasm available to farmers through collecting and evaluation which will specifically target climatic tolerant traits.

347. **Efficiency:** SPC’s operations are overseen by the Committee of Representatives of Governments and Administrations, (CRGA), SPC Governing Body. AusAID is represented on this Committee and oversees the work in this way. The Suva Post takes an active role in overseeing the ICCAI program and is in regular consultation with both the Suva based and the Noumea based staff.

348. The program appears to be efficiently implemented, particularly since SPC has improved its internal management and implementation systems, following the independent review. The documents reviewed by the team refer to M& frameworks being used for monitoring, but these frameworks were not included in design document seen and thus have not been reviewed.

D. Secretariat of the Pacific Regional Environment Programme (SPREP)

349. SPREP’s mandate, set out in its Strategic Plan 2011-2015, is to “promote cooperation in the Pacific region and provide assistance in order to protect and improve its environment, and to ensure sustainable development for present and future generations”. The Strategic Plan sets out four strategic areas: (i) climate change; (ii) biodiversity and ecosystem management; (iii) waste management and pollution control; and (iv) environmental monitoring and management. The Plan sets out goals and targets for each priority.

350. AusAID is providing SPREP with \$3.0 million ICCAI funding for period up to 2012-2013 (\$0.63 million in 2009/10 and then \$0.87 million. \$0.7 million and \$ 0.8 in the three following years to 2012/13). Whether ICCAI funding is specifically targeted is unclear to the Review. In discussions with SPREP, staff had indicated that Australia’s funding is pooled by SPREP with other core funding and is not

tagged to specific elements of the core budget program, covering both staff costs and associated operating costs.

351. SPREP provided a list of staff funded from AusAID program funds totalling \$ 1.9 million in 2011 and \$2.4 million for 2012, indicating the bulk of these funds go to the climate change division to fund staff costs and their operating costs for climate change activities, but these are calendar years and not immediately reconcilable with AusAID's contributions³⁷. However, a review of the 2012 and 2013 budget documents indicate that program and project contributions of AusAID and other donors are allocated across all priority program areas, and cover both personnel and operating costs. Analysis of the budget shows that for 2013, 39% of funding from AusAID was allocated to climate change. Overall, SPREP is allocating 54% of its total budget to climate change in 2013, compared to 43% in 2012.

352. An assessment of the relevance, effectiveness and efficiency of the ICCAI contribution would require an assessment of the whole work of the climate change division, and other divisions where the contribution is allocated, which is beyond the capacity of this review. A broad assessment only can be made, with a focus on climate change activities.

353. **Efficiency:** SPREP has substantially improved financial and human resources systems, with an emphasis on improving performance, efficiency and service delivery to members. For 2013, this includes a new results based monitoring and evaluation framework that links activities to the Strategic Plan.

354. In May 2013 a new multi-year AUD 10.5 million agreement was signed with Australia that allows longer term planning. ICCAI funds are seemingly pooled with other AusAID contributions and those of other donors, and not targeted or allocated to specific activities or projects and thus are indistinguishable from other AusAID contributions. Thus it is not clear why two separate allocations are made. Given the newly announced multi-year support of \$10.5 million, it is not clear whether additional funds are needed from ICCAI.

355. At the 2012 Pacific Islands Forum Leaders meeting in Cook Islands, Leaders acknowledged the important and collaborative work of both SPREP and SPC in the area of climate change, however the respective roles of SPC and SPREP are not completely clear with overlap of mandates and activities. SPC is recognised as the lead technical regional organisation in the Pacific, and has conducted significant work in several sectors, including agriculture and food security and in fisheries, in adapting to climate change. SPREP's Strategic Plan 2011-2015 states that SPREP will lead the coordination of regional climate change policies and programs through the Pacific Climate Change Roundtable, the Pacific Islands Framework for Action on Climate Change, and the CROP working group on Climate Change, suggesting it sees its role as focusing more on policy advice and program development. SPC and SPREP are currently developing a road map towards a Pacific regional joint climate change adaptation and disaster risk management framework. This process encourages better coordination between the two organisations and the two fields of work which are closely linked.

356. However a mixed message has been sent recently by donors on the role of SPREP as lead in climate change, with the EU providing substantial financing to SPC rather than SPREP for climate change activities.

³⁷ SPREP budget documents show program funding from AusAID of \$1.2 million in 2012 and \$1.4 million in 2013, and project funding of \$0.25 million and \$1.83 million respectively.

Relevance

357. Climate change remains a major challenge facing the region, with enormous impact on the way of life and livelihoods of Pacific peoples. SPREP's Strategic Plan states that SPREP will lead the coordination of regional climate change policies and programs through the Pacific Climate Change Roundtable, the Pacific Islands Framework for Action on Climate Change, and the CROP working group on Climate Change. It has three strategies: (i) implementing adaptation measures; (ii) improving capacity, knowledge and understanding of climate change and risks reduction; and (iii) contributing to global greenhouse gas reduction. These are very relevant for the Pacific, as demonstrated in the Needs Assessment part of this Review, and the first two are very relevant to ICCAI objectives.

Effectiveness

358. SPREP's annual reports highlight the breadth of work SPREP is undertaking to support Pacific countries to better manage and protect their environments and address key climate change challenges. PACC is an important program implemented by SPREP. SPREP also works with DCCEE in strengthening the science base of climate change support and awareness to members through the PACCSAP where SPREP is involved in two initiatives to communicate community climate science to users (see separate PACC and PACCSAP sections).

359. The SPREP 2011 annual report noted that SPREP continued on ground support to Members in developing national climate change policies and action strategies on climate change and disaster risk management, strategies being completed for RMI, Niue, Cook Islands and Tuvalu and commencing in Nauru (financed under PASAP). These national policies and action strategies prioritize actions for support and implementation and provide the framework for donors and regional organisations for national climate change activities.

360. SPREP provided a list of achievements for staff funded by AusAID including the three positions noted above. These are summarised in the table below.

Efficiency

361. SPREP has substantially improved financial and human resources systems, with an emphasis on improving performance, efficiency and service delivery to members. For 2013, this includes a new results based monitoring and evaluation framework that links activities to the Strategic Plan.

362. Issue: as noted above, AusAID provides both program and project funding and this comes both from AusAID's regional budget and from ICCAI. ICCAI funds are seemingly not targeted or allocated to specific activities or projects and thus are indistinguishable from the regional contribution. Thus it is not clear why two separate allocations are made. Given the newly announced multi-year support of \$10.5 million, it is not clear what value would be added by additional funds from ICCAI.

Table 5: SPREP Climate Change Division Achievements

Position	Examples of 2012 achievements
Director – Climate Change	<ul style="list-style-type: none"> • Provided strategic leadership for the Climate Change Division, which provides support to 21 Pacific island countries and territories through targeted programmes that address climate change impacts and sustainable development in Pacific Island Countries and Territories (PICTs). • Provided support to Nauru and Tuvalu in developing their National Climate Change Policy and Joint National Action Plan (JNAP) for climate change and disaster risk management. This involved a consultative process working all relevant national sectors as well as local communities, to reduce risks; • Lead the SPREP team, in partnership with SPC and UNDP, on supporting PICTs on the JNAP and improved SPREP’s climate change presence at national levels; • Increased collaboration with other Pacific regional organisations, ensuring better delivery of the Pacific Plan, the Pacific Islands Framework for Climate Change Actions (PIFACC) and the Pacific Islands Meteorological Strategy (PIMS).Support also provided for the CEO CROP Sub-Committee on Climate Change and its "Working Arm". • Ensured effective management of the Climate Change Division, including programme design, annual work programming and budget preparation, performance monitoring and evaluation, and providing technical advice linked to work plans and monitoring staff performance. • Reported to the 2012 SPREP Meeting (Governing Council) on programme implementation in the Climate Change Division. • Increased partnerships with key stakeholders, e.g. UNEP, GIZ, USAID, AusAID, NZAID EU, and GEF, including through representing SPREP on Steering Committees of regional climate change projects such as PACCSAP, EU-GCCA-PSIS and GIZ-CCCPIR • Established and maintained constructive relationships with donor and SPREP member representatives and ensured processes were in place for effective communication and timely reporting; • Contributed to efficient and effective management of the Secretariat’s programmes and support services, through membership of SPREP's Senior Management Team; • Ensured effective oversight of projects in the Climate Change Division to ensure quality and efficient delivery; • Conducted fund-raising on climate change and related areas through project proposal development and discussions with potential donors;

	<p>and</p> <ul style="list-style-type: none"> • Represented the Secretariat at regional, national and international meetings on climate change.
Climate Change Adviser	<ul style="list-style-type: none"> • Provided technical advice and support to Pacific Island Countries in the UNFCCC process, through technical briefings, technical advice for submissions to the UNFCCC on selected subjects, negotiations skills training and preparatory work for negotiations. Specific support on adaptation and the issue of loss and damage from slow onset climate change was also provided. Negotiations skill training was provided to Pacific negotiators through a workshop in Samoa. Assistance was also provided to the preparatory refresher course held before the COP in Doha. Provided support and advice to SPREP officers responsible for different projects such as PACC and PIGGAREP. Regional coordination has been assisted through participation in PPAC, SIS and DPCC as well as the CROP CEO Sub-committee on Climate Change and its Working Arm. • Provided oversight of ICCAI projects within SPREP and coordinated reporting on phase 1 of ICCAI. Assistance provided to the further development and launch of the Climate Change Portal at the 2012 SPREP meeting. Provided support and technical papers for various workshops convened under PCCSP and PASAP. • Supported development of several new project and programme proposals, including the regional PPCR, AusAID and USAID funding for PACC+, EU-GCCA, GIZ, as well as proposals under the PIGGAREP+ concept. Supported development and implementation of SIDS DOCK, which has now received substantial resources for renewable energy in the Pacific. • Participated in a number of national, regional and international climate change meetings and workshops convened outside the UNFCCC process, and provided technical advice and information. This included advice provided to the Samoa Hotel Association “model Fale” project, support for the national PPCR project in PNG, GEF Extended Constituency
Climate Change Adaptation Adviser	<ul style="list-style-type: none"> • Organized a number of training workshops, such as the Asia Pacific Adaptation Network (on adaptation and financing) and a national workshop in the Cook Islands. Attended relevant UNFCCC meetings on adaptation as a resource person for PICs. • Provided technical advice and support for PICs in the UNFCCC process, including through technical briefings, technical advice for submissions to the UNFCCC on selected subjects, negotiations skills training and preparatory work for negotiations. Provided support for National

	<p>Adaptation Action Plans and for the Nairobi Work Programme. The CCCA contributed technical skills and organizational efforts to the negotiations skills training that were provided at a dedicated workshop in Samoa.</p> <ul style="list-style-type: none"> • Provided technical support for the development of Joint National Action Plans for CCA/DRM for a number of countries and assisted with follow up implementation. • Assisted with the regional negotiations training and provided in-country assistance, including on media training, for Nauru, Palau and Vanuatu. • Provided assistance to the SPREP Adaptation Fund application as well as to the Cook Islands National Implementing Entity Application. Supported SPREP's work with UNEP's "Fit for Funds Initiative" to improve PICs access to international climate change funds. • Contributed to guidelines on adaptation mainstreaming, gender and climate change, and for Nationally Appropriate Mitigation Actions. Provided technical backstopping to the PACC project, as the assigned desk officer for the Cook Islands. Developed communications products and supported development of the Pacific Climate Change Portal. • Managed the USAID Kiribati Climate Change Project, which supports adaptation in the water sector, focusing on vulnerable outer island communities in the Gilberts chain.
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363. SPREP's mandate, set out in its Strategic Plan 2011-2015, is to "promote cooperation in the Pacific region and provide assistance in order to protect and improve its environment, and to ensure sustainable development for present and future generations". The Strategic Plan sets out four strategic areas: (i) climate change; (ii) biodiversity and ecosystem management; (iii) waste management and pollution control; and (iv) environmental monitoring and management. The Plan sets out goals and targets for each priority.

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E. South Pacific Sea Level and Climate Monitoring Program Network Upgrade (SPSLCMP)

365. The program is managed by the Australian Bureau of Meteorology. ICCAI has provided \$4.29 million support for equipment upgrading. The monitoring stations for Kiribati, Solomon Islands, Fiji, Vanuatu, Tonga and Samoa have been completed. The remainder (PNG, Cook Islands, FSM, RMI, Tuvalu and Nauru) are due to be completed by end-2013. Niue and Palau are project partners but do not host an Australian tide gauge. SPSLCMP 4 and its next phase, SLMP 5 (a subproject of COSPPac) are funded from the Pacific base appropriation, not ICCAI. No further information was provided to the Review but the program is clearly very relevant to Pacific needs and the monitoring stations have been successfully upgraded and are running effectively.

VII. Climate Science and adaptation planning: PCCSP, PASAP and PACCSAP

366. ICCAI has provided funding for three climate science and adaptation planning programs; the Pacific Climate Change Science Program (PCCSP – \$20 million), the Pacific Adaptation Strategy Assistance Program (PASAP – \$13.6 million), were implemented separately from 2009 to 2011 and then combined and extended as the Pacific-Australian Climate Change and Adaptation Planning (PACCSAP) Program (\$32 million) for a further two years from 2011. This section highlights some key findings drawn from the full review of the three programs, which is available as a separate Annex.

367. The PCCSP was designed as a program of climate change scientific research led by Australian scientists, aiming to benefit primarily the PICs and East Timor. The PCCSP was intended to contribute to the priority needs for scientific knowledge that had been identified in the 2007 IPCC report on the Small Island States, and in the 2005 Pacific Islands Framework for Action on Climate Change (PIFACC) for the period 2006-2015. The PCCSP had a secondary objective of capacity building, which was aimed at enabling “partner country scientific organisations” to participate in the scientific research and contribute to the production of climate science information. A third related broad objective for PCCSP was to disseminate the scientific information.

368. PASAP’s stated aim is “to enhance partner country capacity to assess key climate vulnerabilities and formulate adaptation strategies to address them.” PASAP was developed into a relatively-loose program of activities, to be delivered in just two years (2009-10 to 2010-11). The planned outputs from the PASAP Program were aligned to the expected outcomes of the overarching regional Framework of Action on Climate Change, PIFACC (2006-15).

369. PACCSAP combines the climate science and adaptation planning programs and had three expected outcomes: (i) improved scientific understanding of climate change in the Pacific; (ii) increased awareness key climate science, impacts, adaptation options; and (iii) better adaptation planning to build resilience to climate change impacts.

A. Pacific Climate Change Science Program (PCCSP)

370. The PCCSP was a \$20 million program delivered by CSIRO and BoM, based on the long relationship between BoM and the Pacific National Meteorological Services (NMS). The Program was developed through consultations with Australian, PIC national, regional and international organisations. The Program was structured around four themes of climate change research, concerned with a) recent and current climate and trends, to underpin improved projections of future climate change; b) major regional climate phenomena which drive seasonal and longer-term variations in rainfall, winds and

tropical cyclones; c) more detailed climate projections and fine-resolution modelling to understand regional and country-level climate impacts; and d) ocean processes including sea level rise and ocean acidification. These components, together with achievements, are summarised in table 6 below. A fifth PCCSP component organised synthesis and communication of the science information produced by the research activities.

371. The PCCSP was developed following commitments made to the UNFCCC Copenhagen conference as part of Australia's support to the Pacific island countries to prepare for and cope with climate change. It was planned and developed rapidly and, in a number of ways, not as a typical aid program: there was no overall program framework specifying the logical linkages across the research activities, nor monitoring plans for the individual components. The overall Program goal and overall end point specified for all the projects was essentially to improve scientific information, which the Review considers was a simple low level objective that did not provide sufficient guidance on higher objectives or on strategy to be followed.

372. The PCCSP formed a coherent program of 16 research activities undertaken skilfully and completed to a large extent within the tight time-frame, over 33 months, from March 2009 to December 2011; and with close compliance to the prescribed budget. It was a major achievement for the CSIRO-BoM partnership to mobilise the large and complex Program efficiently.

373. The Program was highly successful in meeting its primary objective, generating an impressive volume and broad range of new scientific information about climate and climate change in the Pacific; updating and improving quality of climate data records; and producing substantial increases in scientific knowledge and understanding. The PCCSP secondary objective of capacity building – to enable especially the PIC NMS to participate in climate research and contribute to the production of climate science information – was achieved to a reasonable extent considering the generally low capacity of the PICs, the small number of qualified personnel, and the short-term Program focus.

374. NMS capacity was significantly enhanced with a new customised climate database management system called CliDE³⁸, developed in consultation with the NMS, and established in each of the 15 countries. The PCCSP also developed four significant tools for Pacific NMS scientists to collate data and prepare their own analyses and reports: the Pacific Climate Change Data Portal; Pacific Tropical Cyclone Data Portal; Tropical Cyclone Wind Risk Model; and the Pacific Climate Futures web-tool.

375. The third related broad objective for PCCSP was to disseminate the scientific information, and this was achieved in impressive style. The Program delivered a significant volume of complex and broad-ranging scientific research in a short space of time, publishing the major two volume report Climate Change in the Pacific and ancillary scientific articles and information materials.

³⁸ CliDE, Climate Database for the Environment.

Table 6: PCCSP Science Projects: Components and Achievements

<p>Component 1: Current and Recent Climate</p> <ul style="list-style-type: none"> • Pacific climate data rescued and secured in the PIC NMS. • Improved climate data management system (CliDE) developed and established, with training, in 14 PIC NMS. • Recent climate and climate change in the region analysed and documented (air temperatures and rainfall). • Development of the <i>Pacific Climate Change Data Portal</i> – freely-available, user-friendly web-tool providing access to basic climate information and trends data from observation sites across the Pacific islands region. • Better understanding of tropical cyclones (TC) including behaviour, variability, long-term risk and prediction. Archived and analysed TC best track data for the Southern Hemisphere from 1969-70 to 2009-10. • Development of web-based <i>Pacific Tropical Cyclone Data Portal</i> – detailed historical information on TC for the Southern Hemisphere; allows users to plot tracks and characteristics of TC between 1969 and 2010. • GA's <i>Tropical Cyclone Risk Model</i> used to generate synthetic TC behaviour data – genesis location, tracks, size, speeds and intensity. <i>Tropical Cyclone Wind Risk Model</i> developed to estimate wind hazard associated with TC in Pacific region. • Understanding extreme sea-levels and their relationships with high tides, storm surges, ENSO; review of literature, analysis of tide gauge data; modeling studies of tropical cyclones and storm surges.
<p>Component 2: Regional Drivers of Climate Variability</p> <ul style="list-style-type: none"> • Understanding of the El Niño-Southern Oscillation (ENSO) as a major driver of climate change in the Pacific and globally – rainfall, flood, drought, winds, and variability of tropical cyclones. • Documentation and understanding of the South Pacific Convergence Zone (SPCZ) as a major driver of seasonal climate – rainfall, flood, drought, winds, TC formation/ severity – in the Pacific island countries; the impacts of global warming; through climate modeling and analysis of observations. • Documentation and understanding of the influences of the West Pacific Monsoon (WPM) especially over New Guinea-Solomon Islands; and the Inter-Tropical Convergence Zone on PIC climate – rainfall, wind, tropical cyclones.
<p>Component 3: Climate Projections</p> <ul style="list-style-type: none"> • Development of detailed atmospheric and ocean projections for each PIC – air temperatures, rainfall, drought frequency, humidity, surface wind speed, solar radiation – for three 20-year periods (around 2030, 2055 and 2090); under three emissions scenarios (low-B1, medium-A1B and high-A2); using a selection of 18 out of 24 global climate models (GCM). • Generation of 60km down-scaled projections for the PIR; and evaluation of 8km down-scaled projects for seven PIC; in combination with development and testing of a new methodology for statistical down-scaling; application to generation of daily climate projections (2021-2040/2046-2065) for seven PIC. • Development and testing of the <i>Climate Futures</i> web-based tool to present climate projection information for the PIC using combined projections; at basic, intermediate and advanced levels; introduction with training in all 15 PCCSP countries to enable generation of local tailored projections.
<p>Component 4: Oceans and Sea-Level Rise</p> <ul style="list-style-type: none"> • Understanding of the impacts of global warming on ocean currents, water temperatures, salinity and nutrients; analysis of Pacific salinity and temperature data over the previous 60 years. Understanding of ENSO variability, Pacific ocean climate change and impacts on fisheries. • Explanation of observed sea-level rise (SLR) since 1972; and rises from 1993-2009 of 2-10 mm/year (up to three times the global average of 3.2 mm/year) caused by ocean warming, glacier and ice sheet melt. Preparation of SLR projections for the PICs; comparison of model projections with observations. • Study of ocean acidification from absorption of atmospheric carbon dioxide; estimation of reduction in aragonite carbonate concentration in Pacific surface waters from pre-industrial times to present day; projection of aragonite saturation levels for 2010-2090 in the Pacific, showing marginal conditions for healthy reef growth in the central Pacific within a few decades.

B. Pacific Adaptation Strategy Assistance Program (PASAP)

376. The PASAP was the second core component of the ICCAI, intended “to enhance partner country capacity to assess key climate vulnerabilities and formulate adaptation strategies to address them.” DCCEE implemented PASAP directly. A significant development which became a major feature of the organisation of DCCEE’s adaptation planning activities in the PIC, was to establish a PASAP Program Implementation Unit (PIU) in Apia, Samoa, at SPREP headquarters. From that base two DCCEE Program Managers organised much of the development and implementation of PASAP projects (and subsequently PACCSAP). From observations and interviews with Program and project participants and consideration of the results achieved, the Review concludes that overall DCCEE’s Apia outpost did not provide the most appropriate or effective mechanism for PASAP or PACCSAP management; it contributed to the Program being developed as a collection of relatively discrete activities, each essentially from scratch, with limited connections to other initiatives or institutional arrangements, either the ICCAI Science, bilateral or multi-lateral programs; Australian ODA; or the several relevant Pacific regional initiatives. It would have been more relevant, efficient and effective for PASAP (and the rest of the ICCAI) to have been implemented as a joint initiative by DCCEE and AusAID with AusAID using its programming and project management experience to lead delivery, and DCCEE providing policy guidance. At country level, the ICCAI and PASAP Programs should have been developed with close connections to national development plans and to the Australian-PIC Partnerships for Development. This could have been managed more effectively, appropriately and cost-efficiently through the established AusAID Posts and programs augmented by the additional PASAP resources. It is likely these alternative arrangements would have brought greater coherence and purpose to the ICCAI, PASAP and Australian assistance to the Pacific.

377. The PASAP Program was not well-designed, with little structure or clear logic, changeable components and vague outputs. The Program Design Document (PDD, September 2009) did not include specifications for individual projects; concepts and proposals were developed subsequently between the PASAP Program Managers and potential project executants and collaborators. The particular issue was that, in contrast to the PCCSP under which virtually all activities were executed by the CSIRO-BoM team of scientists, PASAP activities were not executed by DCCEE but by a wide variety of other agents, each of which had to be individually negotiated and supervised. DCCEE did not have the capacity or time to organise rigorous Program or project planning and management.

378. PASAP developed into a collection of relatively ad hoc projects with little coherence as a program. Nine PASAP projects or sets of activities were actually implemented in the PIC in the period from mid-2009 onwards. Delivery was not efficient under the multiple sub-contracts; only two or three of the projects were completed by the original deadline of June 2011; and at the time of the Review, six PASAP projects were still active or being completed.

379. Overall the achievements of the PASAP were limited. Planned Outcome 1, to provide strategic guidance to climate adaptation programs in the Pacific, was an ambitious proposition and was not able to be completed. Planned Outcome 2, to strengthen Pacific regional organisations’ support for climate adaptation, was achieved to only a minor extent: there was no clear strategy and limited activity: PASAP gave a small amount of funding to SPREP, to support PIC national adaptation planning; and three separate projects were assigned to SPC, which gained skills in organising and executing relevant technical and scientific work. Planned Outcome 3, to build country capacities, was the core of the Program and was partly effective. The most significant achievement was the training by BoM of all 15 NMS to use dynamical forecasting tools for generation and to communicate seasonal climate forecasts.

The small grant to SPREP to support formulation of PIC climate change adaptation policies and plans was also useful. PASAP also funded a relevant and effective model program of local community-based assessment of adaptation issues and options (in Roviana, Solomon Islands), leading to preparation of a useful resilience plan.

380. The Review questions the relevance and value of the most expensive project implemented under PASAP, the use of LiDAR-DEM³⁹ to produce high resolution elevation maps of three coastal sites vulnerable to inundation. The Review’s main concern is that the project became a complicated challenge for the DCCEE to organise, yet did not amount in the end to a useful demonstration of an appropriate, replicable model project; it does not provide PIC with a satisfactory set of tools or capacity for future work; there are more locally-appropriate and less expensive alternative technologies that are sufficiently precise.

Table 7: PASAP Components and Achievements

Program Objective – build resilience by helping people adapt to their changing environment and respond to new opportunities	
Component 1 Objective – Build regional capacities to support adaptive planning and action	
Planned Outcome 1: A <u>strategic basis</u> is developed for long term action to help partner countries adapt	PASAP commissioned a number of useful assessments of specific PIC vulnerabilities to climate change and adaptation options. The intention is for these to be synthesised into a guiding framework.
Planned Outcome 2: <u>Regional organisations</u> have enhanced skills and knowledge to support adaptation in the Pacific and East Timor	<ul style="list-style-type: none"> • PASAP funded SPC modeling of climate change impacts on Pacific tuna populations. • PASAP funded SPREP to support national climate adaptation planning. • PASAP contracted SPC SOPAC to lead an assessment of climate change and food security in FSM. • PASAP contracted SPC SOPAC to implement an assessment of coastal vulnerability to sea-level rise on Lifuka island, Tonga.
Component 2 Objective – Build country capacities to conduct vulnerability assessments and implement adaptive strategies	
Planned Outcome 3: <u>Capacity of partner countries</u> in the Pacific and East Timor is enhanced to conduct sound vulnerability assessments and develop adaptive strategies	<ul style="list-style-type: none"> • NMS in 10-15 PICS were trained in generating and communicating improved seasonal climate outlooks and tailored forecasts using predictions from the dynamical model POAMA incorporated into SCOPIC forecasting software. • LiDAR surveys provided high resolution elevation maps for sites in 3 PIC. • 5-9 PIC received assistance to develop climate change and adaptation policies and plans. • A vulnerability assessment and resilience plan was developed with the local community of Roviana Lagoon, Solomon Islands.

³⁹ LiDAR-DEM – Light Detection and Ranging surveys and Digital Elevation Models.

C. Pacific-Australia Climate Change Science and Adaptation Program (PACCSAP)

381. For the ICCAI 2nd phase, it was decided that the climate science and adaptation planning programs would be combined into a single program, PACCSAP, with DCCEE as the lead implementation agency, and an allocation of \$32 million for the additional two years from July 2011 to June 2013. The rationale was to strengthen the communication of the science information to planners and other end users; and to improve the governance and management arrangements for the ICCAI, which had been considered weakly coordinated in the 1st phase.

382. The three-tiered PACCSAP governance structure was similar to the 1st phase, with joint AusAID-DCCEE oversight; an expanded Executive Management Committee (EMC), chaired by DCCEE, with AusAID, CSIRO, BoM, SPC and SPREP as members; and a Project Implementation Team (subsequently named Implementation Working Group, IWG) responsible for day-to-day management of the Program, also chaired by DCCEE. The EMC's mandate and DCCEE's mandate did not extend beyond PACCSAP to the two other programs. The Review considers that effectiveness and efficiency of the PACCSAP and of the 2nd phase of the ICCAI overall would have been improved considerably under a unified management structure.

383. The DCCEE design specified three component Outcomes ((see Table 8): 1. Science Program extension; 2. Awareness about climate change science and adaptation options; and 3. next phase of Adaptation planning support; and a total of 10 major sub-outcomes. DCCEE undertook direct implementation of Outcomes 2 and 3, through its PASAP PIU in Apia; and contracted CSIRO and BoM to implement Outcome 1, plus sub-outcome 3.1, NMS Capacity Building.

384. The PACCSAP Program design, logical framework and objectives statements were not well-formulated and did not provide a clear and coherent plan for management, communications and monitoring purposes. Major weaknesses were continued segregation of science, planning and actual implementation of adaptation; and failure to formulate and implement an effective strategy for capacity development. Monitoring and evaluation (M&E) were also poorly developed.

385. Implementation of the PACCSAP Program started in July 2011; over the first six months, PACCSAP was implemented by DCCEE and CSIRO-BoM in parallel with the PASAP and PCCSP Programs operating under no-cost extensions. PCCSP was completed and closed by December 2011, and led relatively seamlessly on to the PACCSAP Science Program. It was more difficult for DCCEE, which in mid-2011 was still mobilising most of the PASAP projects, at the same time being required to start implementation of PACCSAP components 2 Awareness and 3 Adaptation planning. The drawn-out process (due mainly to the need for consultation with partners) that has characterised the adaptation planning work meant that the PACCSAP component 3 was not able to build on a successful 1st phase. Several PASAP projects had not been completed and were extended to eventually form follow-up activities under PACCSAP. It is notable that most of the work started under the PASAP was not developed further under PACCSAP.

386. **The PACCSAP Science Program** comprised 17 climate research studies extending the work done under the PCCSP, plus four projects focused on further improvements to PIC climate data management⁴⁰ and a suite of tools for Pacific island climate scientists. The research addressed an impressive range of topics, including modelling seasonal predictions of tropical cyclones, extreme sea-

⁴⁰ PACCSAP work on climate data management and tools has included digitisation of climate records; continued development of CliDE; and technical support and training.

levels, rainfall, air temperature, sea-surface temperature, coral bleaching; understanding large-scale climate features and patterns of variability; improving and down-scaling climate projections; and understanding and projecting regional ocean processes. At the time of the Review, the second year of studies were reported to be largely on target to be drawn to a conclusion reasonably close to the June 2013 deadline.

387. The Science work done to date illustrates that major progress can be achieved in short amounts of time. However, the Program illustrates also the continuing nature of the research needed to extend scientific understanding of climate variability and change; and the need for continuing support and further development of the CDMS and tools, so that they may be of most utility for PIC climate scientists and those who require their services.

388. **PACCSAP Outcome 2 Awareness-raising** was developed by DCCEE into a small number of projects or grant activities. At the time of the Review, three activities had produced interim results: climate change briefings had been provided to PIC journalists through a grant to SPREP's media outreach program; preliminary draft material had been prepared for an illustrated book for PIC school students, through a grant to an SPC-GIZ regional project; and preliminary materials for two animated films were developed by the CSIRO-BoM SIT. Other activities were just being started in the first part of 2013.

389. **PACCSAP Outcome 3 Adaptation Planning:** Compared to PASAP, the Science Program and other parts of the ICCAI, DCCEE developed a narrow range of adaptation planning activities under PACCSAP, primarily on climate adaptation of Infrastructure and the Coastal zone. Five projects were intended to contribute to climate resilient infrastructure in the PICs, through preparation of engineering guidelines, primarily for climate resilient roads (in Solomon Islands and Vanuatu); development of a Tropical Cyclone wind risk model for the region; and modelling coastal flooding risk from wave storm surge (for Nadi floodplain in Fiji and Apia foreshore in Samoa).

390. The storm surge modelling is linked to the PACCSAP coastal activity LiDAR survey work extended from the PASAP Program. A similar activity is to advise on re-location of low-lying Taro township in Choiseul Province, Solomon Islands. None of these projects has reached the stage of producing results; and it is apparent that executants will require extensions of at least 12 months. Two other activities planned for the coastal sector were commissioned only in early 2013 and will not produce results for some time. One is a proposed assessment of the vulnerable Bonriki freshwater lens on Tarawa atoll in Kiribati; the other proposal is for an extensive analysis of the main geomorphological types of coastline in the PIC and their vulnerabilities to climate change impacts. The Review considers that this analysis would be more relevant and useful if it was organised as a participatory and collaborative exercise to enhance local capacity; link several related initiatives; and produce simple sets of guidelines for managing resilience of the main types of coastal ecosystem.

391. The narrow scope of PACCSAP AP work and overlaps between different projects suggest an ad hoc approach and poor collaboration in Program and project planning. The Review recognises that much of the adaptation planning and awareness work has not progressed sufficiently to yield results; nevertheless, based on assessment of the proposals, project designs and activities started there is a risk that several of the activities will not be effective in achieving their intended results, particularly in the short time available, and will remain isolated activities.

Table8: PACCSAP Framework and Components

Program Goal	People of Pacific Island countries have developed their capacity to monitor and adapt to their changing natural environment and enhance their resilience to the impacts of climate change.
Objective	To develop the capacity of Pacific Island country scientists, decision-makers and planners to access and apply information and tools to identify and develop in-country adaptation responses.
Outcome	Components
1. Improved scientific understanding of climate change in the Pacific	1.1 Seasonal Predictions and Climate Data
	1.2 Large scale climate features and patterns of variability
	1.3 Climate Projections and Extreme Events
	1.4 Regional Ocean Processes
2. Increased awareness key climate science, impacts, adaptation options	2.1 Improve national and sub-national understanding of how climate information integrates with sectoral decision making
	2.2 Improve understanding in the region about CC and adaptation
3. Better adaptation planning to build resilience to CC impacts	3.1 Build capacity of NMS to aid decision making
	3.2 Adaptation planning in infrastructure sector at reg. and nat. levels
	3.3 Adaptation planning in coastal zone at reg. and nat. levels
	3.4 Improve cross sectoral and long-term planning processes

D. Summary Assessment of Relevance, Effectiveness and Efficiency

Relevance

392. Much of the work done under the three Programs was relevant to addressing a priority issue or need of principal stakeholders. Program activities were less relevant when priorities had been determined without adequate reference to local participants or beneficiaries. The Review found all 37 of the Science projects/ activities (under both PCCSP and PACCSAP) to have been high relevance, and of the 31 Adaptation Planning projects, 10 to have been of high relevance and 19 of medium relevance (2 were cancelled/ inactive).

393. The Science Program has investigated topics and produced a substantial body of information highly relevant to the needs of all countries in the region, including Australia, for improved knowledge and understanding of climate variability and change. Relevance was assured through continuing consultation among climate scientists. Highly relevant achievements included development of the climate data management system CliDE and securing archival climate records with each of the 15 partner country NMS.

394. Under PASAP and PACCSAP, the assessment and adaptation planning projects also were focused on topics that were relevant to the PICs, as determined through national and regional assessments; and were developed in consultation with the PIC national governments to address their priority concerns, including food security, water resources, coastal management, and infrastructure. The 2nd phase PACCSAP was focused on a narrower set of adaptation priorities, which has reduced the relevance of the Program for PIC stakeholders.

395. A fundamental issue for PASAP and PACCSAP was that vulnerability assessment and adaptation planning activities by themselves were not considered by the PIC as a particular priority for ODA support. An important lesson for ensuring relevance is to support development and demonstration of comprehensive solutions, rather than targeting only assessment and planning activities.

396. The focus of the three Programs on capacity building in the PIC was a crucial factor in enhancing their relevance. While much of the research was reliant on facilities and support housed in the Australian agencies and not available in the PIC, and the work was done wholly or primarily by Australian scientists, the major mode of capacity building under the Science Program was through making the research findings available and accessible. The PASAP and PACCSAP Adaptation Planning projects, , were generally less effective at building local/ national institutional capacity, and thus were of reduced relevance to the PICs.

Effectiveness

397. The projects and activities implemented under the three Programs varied in their effectiveness in meeting expectations and achieving their objectives. The Science Program was designed with simple objectives – to build research capacity, generate information and disseminate the information. Both phases have been highly effective in orchestrating the impressive amount of complex and broad-ranging scientific research and generating new scientific information in a short space of time. The Science Program has not been as effective in achieving the two further objectives: the strategy adopted was to work with the staff of the NMS in each of the 15 countries, but not with next- and end-users. With a broader strategy and systemic approach the Science Program could have been aimed higher and could have built greater capacity and achieved greater dissemination of information with a wider range of stakeholders.

398. Under PASAP and PACCSAP, Adaptation planning activities were a series of relatively disconnected projects rather than a cohesive program of work. This has reduced effectiveness overall and provided a clear lesson of the value of rigorous program planning to establish a coherent set of articulated components and subsidiary projects. This was not achieved successfully by DCCEE Program management, and it is apparent from discussions with stakeholders in the region and Australia through the Review that there has been relatively little recognition or understanding gained of the PASAP and PACCSAP adaptation planning work; its purpose, strategies, tools and achievements have not been clear or convincing, and the Review considers that this recognition and impact are unlikely to improve significantly in the time available for the current Program activities to be completed.

399. An important lesson from both the 1st and 2nd phases is that separate climate adaptation programs are generally likely to be less efficient, relevant and effective, compared to mainstream programs which work towards sustainable and resilient development in a comprehensive manner. Many of the PASAP and PACCSAP projects were not clearly designed and directed towards the essential goal of resilient development, but were concerned with supporting climate adaptation as a discrete activity. This was not a requirement of Fast-Start financing⁴¹. The Review recommends that future assistance should be directed towards economic and social development that is resilient, involving comprehensive, integrated solutions rather than creating programs and projects that attempt to address climate adaptation as a separate issue.

⁴¹ The requirement was for assistance with climate adaptation to be additional to existing aid funding, but this seemingly has been interpreted as needing to be discrete or separate.

Efficiency

400. PCCSP, PASAP and PACCSAP were large, high cost programs, especially for the smaller states, and for testing solutions in the relatively new field of climate change adaptation. These factors were not taken sufficiently into account in the conception and initiation of the Programs. PCCSP and PASAP (three years) and PACCSAP (two years) were given too little time to be designed, developed and delivered; under-estimation of time required for planning and implementation was an issue for all the “process-intensive” projects and activities of PASAP and PACCSAP; there was never sufficient time “at the end” to analyse, reflect and learn from the work that had been done. The essential problem was that there was insufficient time to plan and use the large amounts of money efficiently. The Review considers that the purpose of the Fast-Start financing for the Programs was misinterpreted as having to be implemented in a short amount of time, and the requirement for the funding to be “new and additional” to existing aid was seemingly interpreted as having to be separate, thus ruling out the comprehensive integrated approach advocated by the Review. These problems were compounded by the practice of allocating budgets and stipulating time-lines in advance of any planning.

401. The complicated management arrangements for the three Programs reduced their efficiency, with three tiers of committees responsible separately for each Program; not producing synergies between the agencies; and not ultimately achieving better Program outcomes. The ICCAI could have been more efficient if a single management structure had been applied across all Programs, based on the core structure of Australian Government’s Pacific ODA delivered via the AusAID Posts and regional desks, which would have served the need to organise unified and integrated programs.

402. Based on experience with many other programs in the region, the Review concludes that the PASAP and PACCSAP adaptation planning work does not represent value for money: notwithstanding the late implementation of many activities, around \$25 million of expenditure over five years has produced a sparse set of results and little lasting impact in the form of replicable solutions, lessons or capacity. The Science Program produced better value for money, with around \$40 million of expenditure over five years being spent more efficiently and yielding a large quantity of significant results that will have cumulative impacts.

Program Planning, Design and Management

403. None of the three Programs were equipped with adequate Program Design Documents and planning and M&E frameworks; and this was a critical issue for their development, implementation, monitoring, communications and reporting. A common weakness of the Program designs was the lack of definition of a clear strategic program of activities contributing to substantive objectives. The Program design listed and described tasks that would be carried out, but the tasks, individual projects and components were not linked to serve a logical hierarchy of explicit strategic objectives. A structured planning process such as the logical framework approach was not adopted, and the substantive, strategic objectives intended to be achieved by each set of activities and projects were not articulated in the PDD. There was no overall program framework specifying the logical linkages across the planned activities; there were no design details or monitoring plans for the Program components or the individual projects and activities; and there were no specifications in the PDD of how components, projects or activities would be subsequently developed, managed and monitored.

404. The lack of specific detail in the PASAP Program Design and the lack of clear strategies for developing the Program actions meant that the purpose, objectives and implementation arrangements

remained unclear to potential partners, participants and beneficiaries; and the drawn-out development process contributed to PASAP becoming a series of relatively ad hoc projects with little coherence. The final portfolio of PASAP projects implemented forms a relatively sparse and uneven series of individual country actions.

405. Surprisingly, the PACCSAP Program Design was also incompletely-developed, with few specific details. The logical framework was inadequate: outcome, output and overall objective statements were not well-formulated, but tended to refer to processes and activities to be carried out. Many were simply “to develop capacity” or “access information”, and did not make the substantive objective clear – what was to be achieved with the capacity or information. The PDD (and subsequent Implementation Plan) did not provide a clear, rigorous and coherent plan for the purposes of management, communications and monitoring.

406. Overall the management arrangements appear to have enabled the main agencies to meet their individual obligations reasonably efficiently. However, there has been awkwardness over leadership and governance roles between AusAID and DCCEE and between DCCEE and CSIRO-BoM. Management has not been as strategically effective as expected.

407. The 1st phase ICCAI suffered from overall weak coordination between the Australian government agencies responsible. This occurred largely because the ICCAI had been split into four components which were developed into separate programs under different governance arrangements. The decision to combine the first two ICCAI programs, PCCSP and PASAP, into the single 2nd phase PACCSAP Program framework was not sufficient nor effective. It would have been beneficial for the agencies to have established a single committee to oversee and guide the implementation of all the ICCAI programs. Both Programs and the ICCAI overall would have been considerably more effective, efficient and relevant to the Pacific islands region if there had been a single program and a single management framework, within which the roles of different agencies were differentiated clearly.

408. The ICCAI Climate Science and Adaptation Planning Programs would have been more relevant and effective, and more cost-efficient, if they had been implemented as a Whole-of-Government ODA initiative, with AusAID providing the lead and providing delivery and management capacity, and DCCEE (and other central policy agencies as required, such as SEWPAC) providing policy guidance. It has not proved efficient, effective or relevant for DCCEE to establish a new program and project implementation agency. DCCEE was the Australian lead agency for climate change policy, but not an implementing agency with the capacity to organise and deliver a complex new program of assistance for climate adaptation, especially overseas as a component of Australia’s international development assistance. The Apia office was a source of confusion for local stakeholders, who welcomed closer access to Australian aid but did not understand the point of an additional separate channel of support.

409. It has not proved effective, efficient or relevant for DCCEE to try to manage the Science Program implemented by CSIRO-BoM. A better model would be for direct AusAID engagement of CAWCR, with the relevant policy agencies contributing policy and technical advice.

Specific Recommendations from the Review

410. The Separate Annex Review provides summary lessons drawn from the three Pacific climate science and adaptation planning programs, which lead to the following six recommendations intended to guide relevant, effective and efficient future programming of Australian aid to the Pacific island countries. These recommendations have been incorporated into the overall Review recommendations.

Recommendation [1]	Future assistance should be directed towards environmentally sustainable, social and economic development that is resilient to climate change, rather than attempting to implement climate adaptation separately as a discrete additional measure.
Recommendation [2]	Future DEC-resilient development programs should support comprehensive solutions through integrated management strategies, rather than implementing multiple separate programs and projects that are aimed narrowly at climate science, vulnerability assessment, adaptation planning or implementation of adaptation measures. Program planning should be demand-driven, centred on resilience building and supported by appropriate and specific research, assessment and planning activities.
Recommendation [3]	Program governance and management arrangements should ensure accountability and enhance coherence, synergy, clarity and rigour.
Recommendation [4]	Apply rigorous program and project planning and design procedures as essential preparatory tasks to guide management, implementation and monitoring.
Recommendation [5]	Strengthen monitoring, evaluation, learning and adaptive management procedures, as essential components of good management practice.
Recommendation [6]	Capacity building should be built into each ODA program and project as the underlying purpose of each component and activity, following a clear strategy based on systems thinking and ensuring local ownership through participatory action and learning.

VIII. Overall Assessment of ICCAI funded activities in the Pacific

Relevance

411. The bilateral, multi-country and NGO programs are relevant to and in line with the second and third ICCAI objectives, particularly activities related to raising awareness and capacity building. The regional programs have lent support to this, again particularly in capacity building and providing technical expertise not always available in countries. Priority adaptation measures have been financed (thus meeting ICCAI objective four – Identify and finance priority adaptation measures that can immediately increase the resilience of partner countries to the impacts of climate change), but the actual identification process is very dependent on existing country-level national strategic planning processes, which vary in their capacity to seek out and develop priority measures. As discussed in the main report, an improved planning process and development of P4Ds into Partnerships for Resilient Development (P4RD) will help this process. Greater involvement of SPREP and SPC in this planning process could also contribute in identifying and developing a pipeline of priority programs.

412. The analysis also shows that all the programs are relevant to country needs, the bilateral projects being grounded in each country's own development strategy and priorities. Many of the projects, and particularly the NGO implemented projects, are focused on building community awareness and resilience, and include some important and relevant climate change adaptation activities. Many of these projects also address building capacity of local governments and national governments, helping improve the development resilience and climate change adaptation environment, and linkages between communities and governments.

413. Most of these projects are not isolated climate change adaptation projects, but address specific concerns in national development plans such as poverty reduction and improving food security, while several programs target improvements in service delivery, particularly water supplies and sanitation services. While not necessarily being the best approach or model for mainstreaming DEC into sectors, it has helped ensure that the projects are seen as priority activities by government. Provision of improved water supplies is of high priority in several countries, and particularly the atoll countries. A few projects focus on economic infrastructure, such as roads, which are largely being financed by regular bilateral programs or by the multilateral banks, but ICCAI funding is helping improve climate resilience of these, both for the physical infrastructure itself and also by strengthening awareness and capacity in climate change adaptation in government departments and communities involved. Livelihoods, poverty reduction and food security featured strongly in the NGO implemented programs, some of which also specifically targeted the poor and vulnerable. Most of the bilateral programs did not specifically target the poor or vulnerable although project benefits often extend to them.

414. The bilateral programs are relevant and in line with the respective country P4Ds. However, most P4Ds do not highlight climate change adaptation as a key outcome priority, although most include elements under other priorities. Samoa and Tuvalu are exceptions in having a specific climate change outcome.

415. Regional programs examined have generally supported national activities, but linkages are not always clear and opportunities for information and skill sharing and other synergies need to be developed from the design stage.

416. Taken overall the activities financed under ICCAI are relevant to the region and to individual countries and, as each is in line with the four stated ICCAI objectives, the ICCAI objectives by inference are thus also relevant. The review also notes that ICCAI objectives are relevant to the PICs and region as a whole, as determined through assessments carried out in recent years, at country-level including the National Adaptation Programs of Actions (NAPA) prepared by five PICs, the broader-focused National Capacity Self-Assessments (NCSA), prepared by all the PICs; and at regional level through the Pacific Climate Change Round Table (PCRR), the Pacific Island Framework for Action on Climate Change (PIFACC), and the Pacific Plan. However, as discussed further below, the relevance of ICCAI as an appropriate delivery mechanism for an integrated program is less clear. ICCAI has not been delivered as a coherent program of integrated climate science, vulnerability assessment, adaptation planning and adaptation initiatives, and this has limited its overall relevance and effectiveness for the Pacific region and countries, and the efficiency of its delivery.

417. Currently there is no theme across the region linking the separate ICCAI funded bilateral programs, and viewed regionally the bilateral projects included under ICCAI look an ad-hoc selection. As with the PASAP program, the bilateral projects appear as a series of individual country projects with no themes. They do not seem to have been selected based on any overall perspective of AusAID having a

particular comparative advantage, current experience and expertise in any one area, or because of any potential synergies. This is undoubtedly the result of basing the selection clearly in the existing country programs and priorities, which is appropriate and extremely important, but future programming could look for comparative advantage, special expertise and experience and synergies.

418. The sections above provide more detail on relevance of the three climate science and adaptation planning programs. The analysis has shown that the climate science and adaptation planning programs are very relevant to ICCAI objective one of establishing a sound policy, scientific and analytical basis for long-term Australian action to help partner countries adapt to the impacts of climate change, and contributes to objectives two (increasing partner country understanding of the impacts of climate change on their natural and socio-economic systems) and to a lesser extent objective three (enhancing partner country capacity to assess key climate vulnerabilities and risks, formulate appropriate adaptation strategies and plans, and mainstream adaptation into decision making).

419. It notes that much of the work done under the three programs was relevant in the sense of addressing a significant or urgent issue or priority need of one or more of the principal stakeholders. Program activities that were less relevant tended to be those for which significance or priority had been determined by the Program designers or managers without adequate reference to the local participants or beneficiaries, although informed by the several broad assessments made in the Pacific in recent years of climate vulnerabilities and adaptation needs, priorities and options; and also through consultation with PIC government agencies, often through the national climate change focal points. The focus throughout each of the three Programs on capacity building in the participating countries was a crucial factor in enhancing their relevance. The major mode of capacity building under the Science Program was through making the research findings available and accessible to the partner agencies and the public in the PIC and generally

420. The Science Program selected topics for investigation that were highly relevant to the needs of all countries in the broad region of Oceania, including Australia, to improve knowledge and understanding of the atmospheric and ocean climate, variability and change. The relevance of the scope and areas of work targeted was assured through continuing consultation among the community of experienced climate scientists active in the broad region. Importantly, this included drawing on the long-standing relationships (i) between the BoM and the Pacific national meteorological services (NMS); and (ii) within the international and regional climate science community and the science agencies in Australia, New Zealand, Japan, USA and Canada.

421. Under PASAP and PACCSAP, the assessment and adaptation planning projects were focused on topics that were relevant to the PICs, as determined through assessments carried out in recent years at country and regional levels. However, a fundamental issue for PASAP and PACCSAP was that vulnerability assessment and adaptation planning were not considered by the PIC (government, community and agency leaders) as a particular priority for ODA support. By targeting only assessment and planning functions, the two Programs were less relevant, “harder to sell”, more difficult to get “buy in” and traction; they were not able to respond to the PICs’ perennial demand for action; i.e. for development partners to support actual adaptation and resilience-building measures, which were considered urgent. In the 2nd phase, several of the PACCSAP “projects” were simply add-ons to existing major infrastructure development programs, which while effective and supported by governments, is not necessarily an appropriate model for ensuring that climate change adaptation is fully integrated with each mainstream development sector.

Effectiveness

422. Projects have been effective to varying degrees with no specific example yet of a failed project, although implementation of some has been very slow and they have not achieved very much to date. However for several projects and programs, there is very little documentation to assess effectiveness and efficiency (activities under \$3million have less rigorous design and reporting requirements than large projects) and specific project missions would be needed to address this, which is beyond the resources of this Review. Many of the projects have not been planned (nor retro-fitted during implementation) with substantive measurable objectives, thus existing reports are not clear on achievements, often reporting activities and inputs and not outcomes.

423. Infrastructure projects not surprisingly have recorded noted successes in building resilience to climate change, such the climate proofing of roads in Solomon Islands and improvements in water supplies in RMI and Tuvalu (with similar rainwater harvesting projects under way in several countries). Not all infrastructure projects however have been fully successful with some of the sea walls providing coastal protection presenting problems if inappropriately designed or sited (e.g. in Kiribati and Samoa, seeming to cause erosion along adjacent areas). Climate change awareness building has been successful in several countries, with even very small projects having an impact, such as in Palau where national political support for climate change as a priority has been secured following the program. Laws have been improved in FSM, while a climate change adaptation strategy for tourism has been prepared in Samoa. An early warning system has been established in Samoa. Several of the NGO programs have been successful in raising awareness, building capacity, and improving planning for climate change adaptation at community levels, and improving food security, such as the Live and Learn and TNC programs in Solomon Islands.

424. The analysis has shown that building on existing programs can be effective, and indeed adding climate change resilience measures to existing programs can help achieve immediate impacts and can be cost effective.

425. The PCCSP and PACCSAP Science projects were highly effective in generating a useful volume and scope of new scientific information; the program's outstanding achievement was the delivery of the impressive amount of complex and broad-ranging scientific research in a short space of time, and publication of the peer-reviewed results. As noted above, the strategy adopted by the Science Program was to work closely with the staff of the NMS in each of the 15 countries, but not with the systems of next- and end-users, such as the extension services in natural resource sectors, to address their needs for capacity building in accessing and applying the climate science. With a broader strategy and systemic approach the Science Program could have aimed higher and could have built greater capacity and achieved greater dissemination of information with a wider range of stakeholders.

426. The adaptation planning work under PASAP and PACCSAP did not form a cohesive program in the same way as the Science Program, but was developed and implemented as a series of relatively disconnected projects and activities. There is a clear lesson of the value of thorough and rigorous program planning and design, as a coherent set of articulated components and subsidiary projects, using a tool such as the logical framework to ensure a degree of rigour in both planning and M&E; and of monitoring, reporting, communicating and championing the work and results of the Program overall.

427. A critical issue for the PASAP was the management decision at the outset for the program to be established as a relatively independent (stand-alone) mechanism for providing guidance, tools and

systems to the Pacific islands region on how countries, sectors and communities should be organised, to understand the risks and adapt to the impacts of climate change. This was an unrealistic and unnecessary ambition. The Review concludes that the Program would have been more effective if the original modest plan of a preparatory analysis had been followed; and then used to guide PASAP as a set of linked modest pilot exercises, to identify, test, demonstrate and subsequently promote for adoption and replication, best practice in vulnerability assessment, adaptation planning and action leading to climate resilience.

428. For some bilateral programs, AusAID has worked through development partners. This can have both positive and negative benefits. It can be most useful where skills are not available in AusAID which a partner can provide. Contributing to MDB projects may enable AusAID to support a sector where it has limited capacity, and also help disburse funds, but the administrative burden on Posts this might entail also needs to be considered. In Kiribati working through ADB and the World Bank on two projects has added a significant burden to the Post, but it can be effective and efficient, as in the road program in the Solomon Islands, led by ADB. The design of the road program in Solomon Islands benefited from work conducted by ADB on climate proofing infrastructure.

429. While some of the NGO implemented programs have had significant achievements, particularly in strengthening awareness and capacity at community levels and involving the poor and vulnerable, objectives and outcomes are often too numerous, affecting effectiveness and imposing management and implementation problems. There is a need to simplify designs and have a more focused approach. For the NGO programs examined, it is unclear whether regional benefits (lessons, knowledge) are being actively sought in all, again missing possible regional synergies. Some NGO programs do not inform or involve government sufficiently.

430. Multi-country approaches have provided opportunities for sharing lessons and exchanging ideas and for creating efficiencies in skill usage. However, as noted above, it is not clear whether full advantage has been taken of this. The regional programs cited above, including the support to USP for the FCLP, and to SPC and SPREP, have yielded substantial benefits, particularly in provision of public goods, but also in support of country level activities.

431. **Constraints and Barriers:** the biggest constraint, or barrier, to project effectiveness is one of limited national capacity, not primarily technical (which can be provided externally) but administrative and managerial. Managerial oversight is generally weak at both local and national government levels. Funding is also a major constraint. The inability to generate sufficient revenue to even cover operational and day-to-day maintenance costs is a key constraint for maintaining service delivery in many countries, and assets quickly deteriorate, not helped by the hot and wet environment. The plethora of donors and other actors also adds to already weak coordination capacity in the PICs. Overall, institutional capacity and funding constraints impede project implementation and coordination, and mainstreaming of climate change into plans and programs.

Efficiency

432. Many of the bilateral projects had a slow start, mostly due to delays in procurement and recruitment, which has affected both efficiency and effectiveness (e.g. KAP program in Kiribati, NAPA program in Samoa). While much of this was due to capacity constraints within governments and their lack of familiarity with the procurement procedures of external agencies, including those of AusAID, the procurement procedures of the MDBs in particular are not always appropriate for small island countries;

in Kiribati the AusAID Post had to help in liaison with the MDBs over procurement concerns. But using national systems does not always overcome this as shown by delays in the process in Samoa. Program designs need to take local government capacity and familiarity with procedures into account. Designs also need to take into account the skills, experience and capacity of AusAID Posts where they are expected to play a significant role in project implementation or supervision. Apart from general capacity constraints, Posts do not have experience or skills in DEC and indicated during the review mission that they would like ongoing support to assist the DEC integration process, and greater clarity about best practices and options for integration.

433. Existing NGO networks and partnerships have enabled several NGO projects to be effective and through this provide value for money. Efficiencies are being gained through working with others undertaking similar activities in the same location. However, for NGO programs, a high proportion of project costs relate to staff costs, although this seemingly is an unavoidable cost of engaging at community levels, building awareness and capacity.

434. PCCSP, PASAP and PACCSAP were large programs, especially in the context of the Pacific island countries, and especially for exploring solutions in the relatively new and untested field of climate change adaptation. PCCSP and PASAP (three years) and PACCSAP (two years) were given far too little time to be designed, developed and delivered. The essential problem was that there was insufficient time to use the large amounts of money efficiently; efficiency was not a priority consideration for management, success being more likely judged by the indicator of expenditure rate. None of the projects or individual activities have been monitored or evaluated for their efficiency in organising the inputs.

435. Throughout the PASAP, PACCSAP and PCCSP Programs, time has been too short. Under-estimation of time required for planning and implementation was an issue for all the “process-intensive” projects and activities of PASAP and PACCSAP; one consequence was that there was insufficient time to analyse, reflect and learn from the work that was done. The projects that worked best were those that ignored the time; such as SPREP’s support for PICs’ national adaptation planning (PASAP 3), which despite being given only \$200,000 of PASAP funds has so far been extended over four years. Several PASAP projects were extended several times, and final completion dates have been reset. This is not good practice; the preferred solutions are to reduce the ambition or to extend the time-frame.

436. Section 7 D above provides an analysis of program planning and design for these three programs, none of which were equipped with adequate design documents and planning and M&E frameworks; and this was a critical issue for their development, implementation, monitoring, communications and reporting. A common weakness of the Program designs was the lack of definition of a clear strategic program of activities contributing to substantive objectives. There was no overall program framework specifying the logical linkages across the planned activities; there were no design details or monitoring plans for the program components or the individual projects and activities; and there were no specifications in the design of how components, projects or activities would be subsequently developed, managed and monitored.

437. The review overall is unable to make assessments of value for money except in isolated cases. The projects reports examined did not include a cost benefit or cost effectiveness analyses and with the resources and time available, the review team could not address this weakness. Projects did not generally include clear statements of quantifiable expected outcomes, and hence did not report on this, which might have facilitated any such analysis. Detailed in-country missions would be needed for this,

project by project. Some cost-benefit analysis has been conducted by ADB on the costs of climate proofing infrastructure, which fed into the design of the road program in Solomon Islands. However no conclusion can be drawn from this one-off example as staff estimated that the climate change adaptation component added 6 % to the Guadalcanal Province road costs, whereas in Malaita Province over 90% of the road rehabilitation cost is due to climate change adaptation. NGO projects are effective at reaching community levels, but the proportion of staff costs spent on a project to achieve this is high, often being about 50%. Project reports show that there is a high cost of reaching the most vulnerable.

438. AusAID supervision of programs has been varied, with some concerns being expressed in the countries visited on processes and information flows on the climate change action grants (NGOs), and on the degree of oversight of programs of SPC, SPREP and UNDP. AusAID in Canberra has its own capacity constraints which limit the amount of effective supervision they can carry out. The NGO program in the Pacific is an AusAID global program and is the responsibility of another Division (not the Pacific Division) which has less knowledge of the Pacific and less opportunity to travel to supervise projects. However, AusAID's project preparation approach includes risk management assessments and risk management plans, increasing the likelihood of success.

439. Several NGO programs welcomed AusAID's flexibility and responsiveness to requests for adjustments, several reports emphasise the importance of flexibility in terms of project sites (operating where communities request assistance), time frames and types of activities undertaken will be incorporated into project design, while keeping a robust project framework and delivery. AusAID financing has allowed more participatory approaches and engagement with NGOs at local levels and with local government

440. There is a plethora of stakeholders and donors – there is a need for improved coordination amongst donors, with each (including AusAID) having a clear view of what other agencies are doing, and of their own comparative advantage and what their most appropriate role should be.

Governance and Management

441. When viewed as a Program, ICCAI to date has not been a fully integrated program and there has been weak linkages and coordination between the responsible Australian government agencies. This has occurred largely because the ICCAI had been split into four components which were developed into separate programs under different governance arrangements. As the MTR for ICCAI noted, there was no overall program framework to link individual activities to ICCAI program goals and objectives, and no effective monitoring and reporting system at that level to ensure individual activities were indeed linked to this. In addition the originally proposed "platform" management structure within AusAID that might have helped this integration was not fully pursued.

442. For the climate science and adaptation programs, the management arrangements appear to have enabled the main agencies to meet their individual obligations reasonably efficiently. However, there has been awkwardness over leadership and governance roles between AusAID and DCCEE and between DCCEE and CSIRO-BoM. Management has not been as strategically effective as expected. The Review concludes that the ICCAI climate science and adaptation planning programs would have been more relevant and effective, and more cost-efficient, if they had been implemented as a Whole-of-Government ODA initiative, with AusAID providing the lead and providing delivery and management capacity, and DCCEE (and other central policy agencies as required, such as SEWPAC) providing policy guidance.

443. Posts supervise bilateral programs, and although information flows to staff in Canberra are not always complete, programs are generally well monitored. However, as with the climate science and adaptation planning programs, most project documents do not include adequate M&E frameworks, nor clear linkages of activities to expected outcome achievements; monitoring largely has thus not reported on outcome achievements. The oversight of the NGO program is not conducted by the Pacific Division, thus losing some synergies and country expertise, but there are plans to improve supervision. Canberra and the Posts in Fiji, Solomon Islands and Samoa have good links and cooperation with SPREP and SPC, but these agencies largely run their own regional and national programs. It is unclear to the Review, however, why a regular AusAID contribution plus an ICCAI contribution is needed if funds are pooled and projects are not specifically targeted at climate change adaptation. On the other hand, this might not be considered a concern if sharing costs of the contribution to a program and project budget helps ensure climate change adaptation is actually carried out by agencies.

444. Some concerns are noted in the PACC Plus assessment about the value of routing funds via UNDP to SPREP. It is unclear what value is added, while there are some clear implementation disadvantages and implementation inefficiencies.

Integration of Science, Planning and Adaptation Initiatives within ICCAI

445. The initial concept of the ICCAI as an integrated program was not followed fully during development of the initiative. Instead, the emphasis was placed on developing and delivering separate programs under different agencies and modalities, with virtually no linkages or collaborative, combined actions. As a consequence, the ICCAI has not been delivered as a coherent program of integrated climate science, vulnerability assessment, adaptation planning and adaptation initiatives, and this has limited its overall relevance and effectiveness for the Pacific Islands region and countries, and the efficiency of its delivery.

446. The Australian Government's Fast Start financing was shared among a significant number of different initiatives, within each of which the support was further divided among numerous actions, several of which appear to be closely related and liable to overlap. The relevance and effectiveness of this dispersed approach across such a range of delivery mechanisms, partners and activities are doubtful, particularly as they were all pointed ultimately at the same target of building climate resilience in the PIC. It may have been a fast way of dispersing funds, but it appears that it was not guided by a realistic strategy, and was highly unlikely to be effective, especially in the short time frame allocated. The Fast-Start funding seems to have been construed as fast track and short-term or one-off support from the Australian Government, which has reduced its relevance, value and impacts.

447. The ICCAI climate science programs were not integrated or connected adequately with the array of other Australian-supported but non-ICCAI climate programs that were current: South Pacific Sea Level & Climate Monitoring (SPSLCM), Pacific Islands Climate Prediction Program (PI-CPP); COSPPac; International Forest Carbon Initiative (IFCI), PNG-Australia Forest Carbon Partnership, Pacific Region Infrastructure Facility (PRIF); and the Renewable Energy and Energy Efficiency Partnership (REEEP).

448. Although the PCCSP, PASAP and subsequent PACCSAP had been intended to be an integral part of the ICCAI, this was not achieved adequately at the Program design stage: the various ICCAI component programs were planned, managed and subsequently implemented separately, and followed different modalities, even though there was considerable overlap in their fundamental objectives. The intended linkages and synergies between the component programs were largely inhibited by the

separate management arrangements for each. Design and delivery of the ICCAI as separate programs meant that inadequate attention would be given to connecting and integrating the science, planning and adaptation initiatives.

IX. Some Key Findings and Lessons

ICCAI as a “Program”

449. A lesson from the ICCAI is that the whole initiative could have been planned and implemented consistently as a single, integrated program with greater coherence and unified structure, management and governance, communications, and monitoring, with better external links. But for this to have occurred, the four designated components would need to have been planned and implemented as a single strategy, with an emphasis on the essentially linked process of scientific research, assessment, planning and action, rather than organising them as discrete areas of activity. However, without an overall program framework and matching implementation plan and management system, these interactions and information flows could not readily or adequately occur across the ICCAI programs; delivering four separate components and numerous separate projects and sub-projects inhibited the essential flow of information from scientists to planners to managers and stakeholders, and reduced the effectiveness and efficiency of the overall initiative and of its component parts. This might not have occurred if the ICCAI 2008 proposal for a “platform” had gone ahead whereby AusAID would have had the resources to play a critical role in coordinating Australia’s ICCAI inputs to the region, contributing to regional coordination, providing services to partner countries in the areas of project identification, design and financing, assisting in the flow of climate science knowledge and expertise, and in training and capacity building.

450. In the case of the climate science and adaptation planning programs, the lesson apparent from the first phase of the ICCAI was that an adaptation or resilience-building project is more likely to be effective and efficient if it is organised as a staged management process of research, planning and action within an integrating framework, with a single overall objective and common purpose; rather than as discrete components undertaken separately under several management structures. The response to combine PCCSP and PASAP into PACCSAP failed to resolve the issue; PACCSAP continued to operate separately and without adequate links to “the other parts of the ICCAI”.

451. However a single integrated ICCAI program would probably have been unmanageable, even with an overall program framework and matching implementation, management and governance systems. What might have been more appropriate was a better integrated climate science and adaptation planning program, with an overall program framework and AusAID management and governance system that ensured linkages to the separate adaptation initiatives included in bilateral and regional programs.

Project Lessons

452. Bilateral programs are selected, approved and implemented with significant involvement of AusAID Post/Desk teams which are predominantly embedded in Pacific countries. They are firmly founded in national priorities, as reflected in the respective P4Ds, and based on key development objectives such as improved service delivery, improved economic infrastructure, or poverty alleviation, which helps create government buy-in for the adaptation components. This may not be the best model for mainstreaming climate adaptation into sectors and the development agenda, but it is very effective.

453. Building on existing programs can be effective, and indeed fitting a climate lens onto existing programs can help achieve immediate impacts and can be cost effective.
454. Efficiencies are to be gained by working with partners who have established track records and working relationships, although care is needed not to duplicate efforts.
455. Combining local knowledge with new science improves likelihood of acceptability and leads to improved effectiveness and efficiency.
456. Multi-country approaches provide opportunities for sharing lessons learned and exchanging ideas. Efficiencies can be gained by shared technical skills and experience from other activities and implementation institutions, such as regional organisations and NGOs.
457. Sustainability is greatly helped by building capacity at community and local government levels.
458. AusAID funding has allowed longer term engagement, essential to build up trust and relationships and build capacity.
459. AusAID financing has allowed more participatory approaches and engagement with NGOs at local levels and with local government.
460. Effective project supervision requires improved M&E systems based on sound logical frameworks (and theory of change where understanding and capacity is sufficient) to help create results based management and supervision systems.

X. Conclusions and Recommendations

Conclusions

461. The analysis shows that all the programs are relevant to country needs, the bilateral projects being grounded in each country's own development strategy and priorities and are in line with the respective country P4Ds. As discussed in the situation and needs assessment section below, at national and sub-national levels the P4D is a very effective instrument for integrating DEC and development.
462. Many of the projects, and particularly the NGO implemented projects, are focused on building community awareness and resilience, and include some climate change adaptation activities. Many of these projects also address building capacity of local governments and national governments, helping improve the development resilience and climate change adaptation environment, and linkages between communities and governments. The climate science and adaptation planning programs are very relevant to the ICCAI objective of establishing a sound policy, scientific and analytical basis for long-term Australian action to help partner countries adapt to the impacts of climate change. The focus of the three programs on capacity building in the participating countries was a crucial factor in enhancing their relevance.
463. Most of the projects are not isolated climate change adaptation projects, but address specific concerns in national development plans such as poverty reduction and improving food security, while several programs target improvements in service delivery, particularly water supplies and sanitation services.

464. However, currently there is no theme across the region linking the separate ICCAI funded bilateral programs, and viewed regionally the bilateral projects included under ICCAI look an ad-hoc selection. As with the PASAP program, the bilateral projects appear as a series of individual country projects with no themes. They do not seem to have been selected based on any overall perspective of AusAID having a particular comparative advantage in any one area, current experience and expertise, or because of any potential synergies. This is largely the result of basing the selection in the existing country programs and priorities, which is appropriate, but future programming could look for comparative advantage, special expertise and experience and synergies. The adaptation planning work under PASAP and PACCSAP did not form a cohesive program in the same way as the Science Program, but was developed and implemented as a series of relatively disconnected projects and activities.

465. Effectiveness and efficiency of projects has varied, but project documentation constrained analysis, many projects not having substantive measurable objectives, thus reports are not clear on achievements, often reporting activities and inputs and not outcomes. Climate change awareness building has been successful in several countries. Notably in the NGO implemented projects and the climate science and adaptation planning programs. The PCCSP and PACCSAP Science projects were highly effective in generating new scientific information; the program's outstanding achievement was the delivery of the impressive amount of complex and broad-ranging scientific research in a short space of time, and publication of the peer-reviewed results. Similarly SPC has produced some notable research work.

466. The analysis has shown that building on existing programs can be effective, and indeed fitting a climate lens onto existing programs can help achieve immediate impacts and can be cost effective.

467. Delivery modalities are discussed in paras.124-125 of the main report in the Situation and Needs Assessment part. The above analysis has shown that projects can be relevant and effective whether delivered bilaterally, multi-country or regionally. AusAID needs to select the most appropriate for the objective in mind. But as discussed in the Needs Assessment, regional programs should either be providing a regional public good, or be supporting activities at national levels.

468. However, many of the bilateral projects had a slow start, mostly due to delays in procurement and recruitment, which has affected both efficiency and effectiveness. While much of this was due to capacity constraints within governments and their lack of familiarity with the procurement procedures of external agencies, but using national systems does not always overcome this.

469. Existing NGO networks and partnerships have enabled several NGO projects to be effective and through this provide value for money. Efficiencies are being gained through working with others undertaking similar activities in the same location. For some bilateral programs, AusAID has worked through development partners. This can have both positive and negative benefits. It can be most useful where skills are not available in AusAID which a partner can provide, thereby supporting a sector where AusAID has limited capacity, but the administrative burden on Posts this might entail also needs to be considered.

470. As noted above, local capacity constraints have hindered effective and efficient implementation of many programs. This can be addressed through capacity building programs, but as discussed further in below, coordination both within countries and across programs and organisations is also a constraint. In addition, overall program management has its constraints noted briefly below.

471. AusAID supervision of programs has been varied, with some concerns being expressed in the countries visited on processes and information flows on the climate change action grants (NGOs), and on the degree of oversight of programs of SPC and SPREP, and UNDP. For the climate science and adaptation programs, the management arrangements appear to have enabled the main agencies to meet their individual obligations reasonably efficiently.

472. However, Program review, monitoring and supervision by AusAID and DCCEE has been hindered due to the lack of an overall program framework specifying the logical linkages across the planned activities. In addition, project designs lacked adequate monitoring plans and individual project frameworks. As discussed further below, monitoring and evaluation play a critical role in managing for results and improvements are needed.

473. Overall, the initial concept of the ICCAI as an integrated program was not followed fully during development of the varied initiative. Instead, the emphasis was placed on developing and delivering separate programs under different agencies and modalities, with virtually no linkages or collaborative, combined actions. As a consequence, the ICCAI has not been delivered as a coherent program of integrated climate science, vulnerability assessment, adaptation planning and adaptation initiatives, and this has limited its overall relevance and effectiveness for the Pacific region and countries, and the efficiency of its delivery. ICCAI could have been implemented as a single, integrated program with greater coherence and unified structure, management and governance, communications, and monitoring, with better external links. But for this to have occurred, the four designated components would need to have been planned and implemented as a single strategy, with an emphasis on linked processes of scientific research, assessment, planning and action, rather than organising them as discrete areas of activity. However, without an overall program framework and matching implementation plan and management system, these interactions and information flows could not readily or adequately occur across the ICCAI program.

474. However a single integrated ICCAI program would probably have been unmanageable, even with an overall program framework and matching implementation, management and governance systems. What might have been more appropriate was a better integrated climate science and adaptation planning program, with an overall program framework and AusAID management and governance system that ensured linkages of these climate science and adaptation planning programs to the bilateral and regional programs funded under ICCAI.

Recommendations

475. Recommendations from the Review are included in the main report above and reflect findings of both the review analysis and conclusions and findings from the separate situation analyses and needs assessment review, many concerns of which are naturally related. These include the key recommendation on using the P4D as a key tool for integrating DEC into development, developing them into Partnerships for Resilient Development (P4RD).

476. Other common issues include the need for program designs to take local government capacity and familiarity with procedures into account. Designs also need to take into account the skills, experience and capacity of AusAID Posts where they are expected to play a significant role in project implementation or supervision. Apart from general capacity constraints, Posts do not have experience or skills in DEC and indicated during the review mission that they would like ongoing support to assist the DEC integration process, and greater clarity about best practices and options for integration. For NGOs, there is a need to simplify designs and have a more focused approach.

Attachment 1: Summary of Australia’s Climate Change Assistance⁴² to the Pacific

Country	\$ millions (AUD)	Name of Project	Objectives/Results
North Pacific			
FSM and RMI	3.00	Climate & Disaster Risk Education Program (CADRE)	IOM is integrating climate change and disaster awareness into the school curriculum; strengthening community awareness
FSM	0.20	Environment Law Adviser	Update the Environmental Protection Act
RMI	0.16	Water Resource Management Adviser	Establish a national water policy and taskforce to improve the quantity and quality of drinking water.
	0.52	Kwajalein Atoll Household Water Catchments	380 household water tanks are being installed on Ebeye Island.
Palau	0.02	Palau Conservation Society	Build awareness of the effects of climate change.
Four Target Countries Visited			
Fiji	0.89	USP Community Based Adaptation	Community adaptation activities
	0.72	Worldwide Fund for Nature – Community resilience and adaptation	Increase community awareness of climate change impacts and adaptation solutions in Macuata and Ba; mainstream adaptation into planning, decision making
	(0.50)	SPC Multi-country Program	Improving coastal fisheries governance capacity (Kadavu island), strengthening national and provincial government delivery mechanisms
Kiribati	8.61	World Bank led Kiribati Adaptation Program Phases 2	Protecting freshwater supplies, increasing coastal resistance (through mangrove planting and seawall rehabilitation) and assisting

⁴² The list excludes some projects just recently approved for: Fiji (AQEP, health sector support, and community development), PNG (Agriculture Research Institute), RMI (drought relief) and Tuvalu (Funafuti resilience to water shortages).

		(2006-2011) and 3 (2011-2016).	communities to respond to droughts and damage caused by sea level rise. (Implementation)
	3.85	ADB led South Tarawa Sanitation Improvement Program	Rehabilitating of the sanitation system (and water supplies)
Samoa	2.20	Support to implement NAPA 4	Climate early warning system; a National Tourism Climate Change Adaptation Strategy; water resource management (flood mitigation and monitoring of wells); and support for the Fire Emergency Services Authority and the Planning and Urban Management Authority.
	2.29	Samoa Agro-forestry & Tree Farming Program	Improve resilience to climate change impacts through better use of agricultural and forest resources.
	2.10	Civil Society Strengthening Program	Funds are targeted at water projects in vulnerable communities, such as rainwater harvesting and well water distribution systems.
	-	Multi-donor program – Samoa is a pilot site for the PPCR	Upgrading the road between the Airport and Apia and undertaking community based adaptation activities.
Solomon Islands	5.98	ADB Roads Program	Upgrading roads and bridges in Guadalcanal that are vulnerable to extreme weather events
	-	NGO Regional program (TNC)	Strengthening community capacity to adapt to climate change impacts
	-	NGO Regional program (Live & Learn)	Protect local food supplies, ecosystems, assets and livelihoods
Other Countries			
Cook Islands	0.50	PACC Regional Program	Country specific allocation
	2.50	Delegated cooperation agreement with New Zealand	Donor harmonised program
Nauru	1.00	Water Resource Management Plan Implementation	Water tanks and guttering for approximately 300 households
	0.10	Water Resource Management Plan Development	Develop an Integrated Water Resource Management strategy.
Niue	0.50	PACC Contribution	Country specific allocation

	0.92	Primary School Development	Funds to climate proof a new school
PNG	0.90	Conservation International	Boosting Traditional Approaches to Food Security
	1.60	Wildlife Conservation Society	Strengthening capacity within local social systems to enable communities in Manus to adapt to climate change.
	-	Multi-donor program – PNG is a pilot site for the PPCR	The PNG PPCR will support climate change adaptation interventions in vulnerable communities, address threats to food security, and mainstream climate change risk management in key sectors
	0.15	Support for National Climate Change Workshops	Support for national climate change workshops.
Tonga	0.29	Support for the JNAP Secretariat	Support for JNAP Taskforce Secretariat, responsible for coordinating climate change finances and prioritizing adaptation activities.
	(1.71)	PACC Regional Program	Water resource management.
	(0.85)	SPC Multi-country Program	Support for SPC program focusing on integrated water resource management for coastal communities in Vava'u; and on integrating climate change into education. (Commenced 2012)
	-	Multi-donor program – Tonga is a pilot site for the PPCR	mainstream climate change risk management in key sectors such as infrastructure; community vulnerability mapping and development of early warning systems and community emergency preparedness; and addressing identified threats to food security
Tuvalu	1.78	Water Tanks	607 water tanks on Funafuti; 150 water tanks for primary schools on outer islands.
	1.00	Support to implement Tuvalu's NAPA	Increasing freshwater supply, expanding mangrove plantations, rehabilitating agricultural areas to establish 12 new food crop plantations.
	0.80	Response to the Tuvalu Drought	In response to the recent drought in Tuvalu, Australia is providing funds for 2 water deliveries by ship, water distribution trucks, a needs assessment on outer islands and solar-powered water desalination plants (and associated ongoing maintenance program).
Vanuatu	4.00	Vanuatu Roads Project	Support to increase the resilience of transport infrastructure to the

			impacts of climate change under the Vanuatu roads project.
	-	NGO Regional program – Live & Learn	protect local food supplies, ecosystems, assets and livelihoods through improved agricultural practices
Tokelau	0.50	PACC Regional Program	Country-specific allocation under the Pacific Adaptation to Climate Change (PACC) Program
	0.28	SPC Multi-country Program	SPC is building the capacity of coastal fisheries managers in assessing and managing marine resources; and enhancing water security and integrated water resource management. (Commenced 2012)
Multi-Country			
Community- Based Climate Change Action Grants Program (\$12.7 million)			
Country	\$ millions (AUD)	Lead NGO	Objectives/Results
Vanuatu Solomon Islands and PNG	1.88	Live & Learn Environmental Education	Protection of Food Security through Adaptation to Climate Change
PNG, Solomon Islands, Marshall Islands	2.00	The Nature Conservancy	Building the resilience of communities and their ecosystems to the impacts of climate change
Vanuatu	2.00	Oxfam Australia	“Yumi stap redi for climate change” – The Vanuatu NGO Climate Change Adaptation Program
PNG	2,00	CARE Australia	Strongem Komunities Tingim Climate Change
Tonga and Vanuatu	2.00	Act for Peace	Pacific Community Climate Risk Reduction (‘PCCRR’)
Small Island Developing States Community Based Adaptation (SIDS-CBA) through the GEF Small Grants Program			
15 PICs	2.33	UNDP	Practical adaptation activities such as coastal strengthening, relocation of vulnerable households and infrastructure, restoration of coral, and replanting of mangroves.
Pacific Regional Programs			

Name of Project	\$ millions (AUD)	Agency	Objectives/Results
Climate Science and Adaptation Planning Programs			
Pacific Climate Change Science Program (PCCSP)	20.00	Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology (BoM)	PCCSP is helping PICs to gain a better understanding of how climate change will impact the region. Includes: Climate Futures training; CliDE (a climate data tool); detailed scientific projections for long term climate change for Pacific Island Countries
Pacific Adaptation Strategy Assistance Program (PASAP)	13.6	Department of Climate Change and Energy Efficiency (DCCEE)	PASAP is strengthening the capacity of PICs to assess vulnerabilities to climate change and develop evidence-based adaptation strategies.
Pacific Australia Climate Change Science and Adaptation Program (PACCSAP)	32.0	Department of Climate Change and Energy Efficiency (DCCEE)	PACCSAP is the next phase of the combined PASAP and PCCSP programs (see above). It is providing new research at island scale on the expected impacts of climate change. It will help Pacific governments and communities to understand the new science and to use it in developing informed plans to prepare for and adapt to long term change.
Secretariat of the Pacific Community (SPC) Regional Activities	9.0	SPC	Support to ongoing SPC program. The program for 2012 and 2013 focuses on building adaptive capacity in coastal and oceanic fisheries; enhancing the resilience of agriculture; increasing the understanding of the health implications of climate change; and improving climate change program coordination.
Secretariat of the Pacific Regional Environment Program (SPREP) Regional	3.0	SPREP	Support to ongoing SPREP program. The program for 2012 and 2013 will focus on assisting countries climate proof landfill sites; implementing priority adaptation activities identified by countries under the Pacific Climate Change Roundtable; and supporting ecosystem-based adaptation for specific coastal zones and other sites.

Activities			
Other Regional Programs			
Pacific Adaptation to Climate Change Program (PACC) and PACC Plus	7.35	UNDP and SPREP	Providing support to mainstream climate change adaptation and demonstrate on-the-ground adaptation activities. Australia's contribution will expand adaptation projects in water supply, coastal management and agriculture in 13 Pacific countries and extend the Program to Tokelau. Australia's contribution is divided into: country-specific allocations for Tonga (1.708 million), Cook Islands (0.5 million), Niue (0.5 million) and Tokelau (0.5 million); a multi-country project financing component (2.60 million); and a regional support component (1.53 million).
Future Climate Leaders Program	2.94	University of the South Pacific (USP)	Scholarships, exchange programs with partner institutions, Post-Graduate Diploma and Master's degree. Sub-program to enhance awareness, outreach and education in communities and secondary schools.
South Pacific Sea Level and Climate Monitoring Program Network Upgrade	4.29	Australian Bureau of Meteorology	Establishment of monitoring stations
Support for Regional Activities (funded under the Platform)	1.4	AusAID	Conferences, meetings etc.
Global Programs (not included in Review assessment)			
Contribution to the Adaptation Fund	15.0 (pledged)	Australia's contribution to the AF was deferred from 2011-12 to this financial year pending negotiation of an appropriate funding agreement that meets AusAID's standard due diligence requirements.	

Contribution to the Least Developed Countries Fund	31.5	The Least Developed Countries Fund (LDCF) was established to assist Least Developed Countries (LDCs) carry out the preparation and implementation of National Adaptation Programs of Action (NAPAs).
Pilot Program for Climate Resilience (PPCR)	40.0	AusAID provided \$40 million to the international Climate Investment Fund (CIF) which is funding Strategic Programs for Climate Resilience (SPCR) pilot programs across regions and within selected developing countries. It is being led by the Asian Development Bank and World Bank. The purpose of PPCR is to provide finance to demonstrate how climate change adaptation can be integrated into national development plans. There are four pilots in the Pacific – PNG, Tonga, Samoa and a regional pilot program (see relevant country program section for further information).
Support for the Alliance of Small Island States (AOSIS)	1.5	Australian funds helped AOSIS establish a permanent secretariat to meet the needs of member countries in negotiation and adaptation planning. Nauru’s Ambassador to the UN is currently the chair of AOSIS.

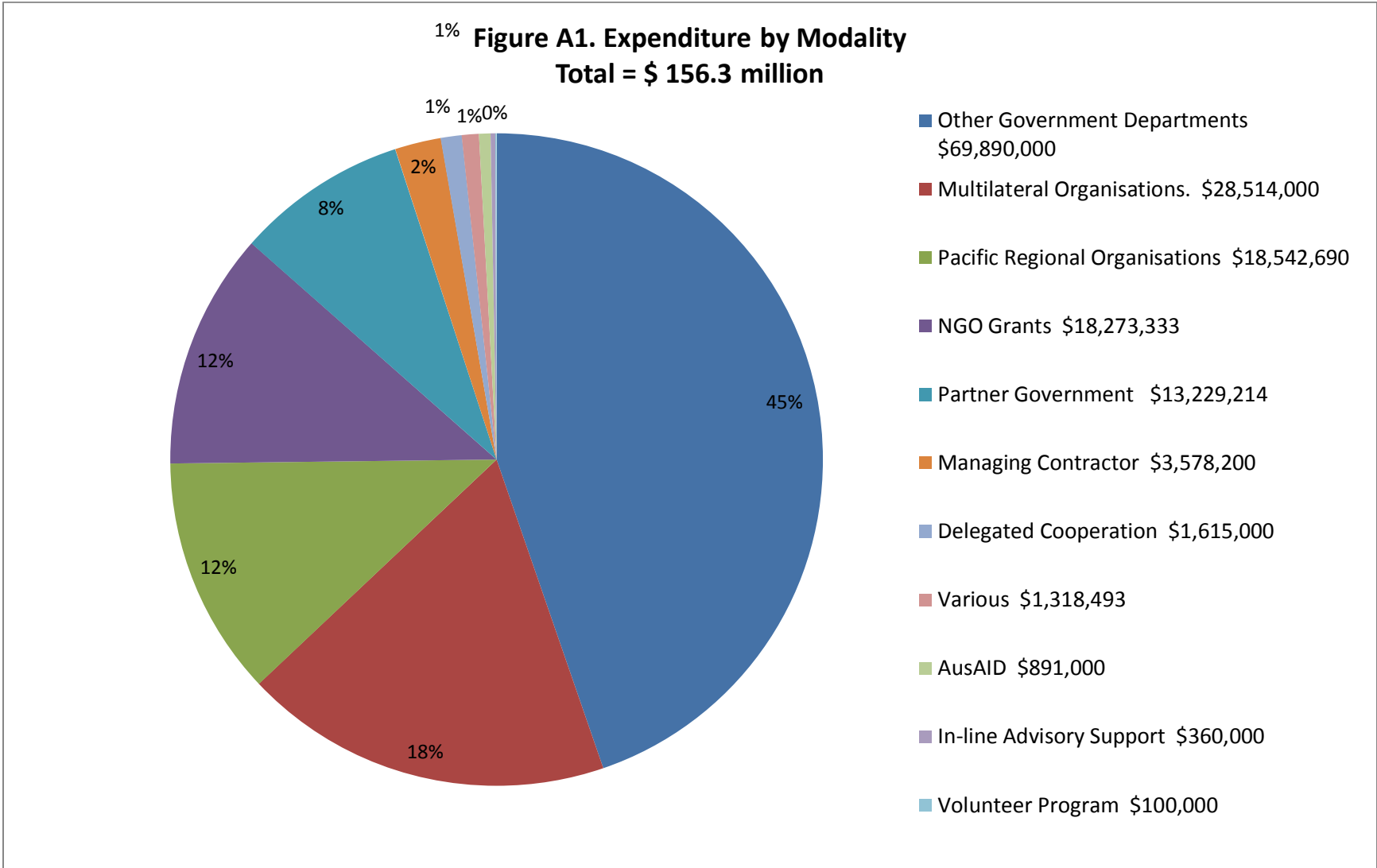


Chart shows modalities through which climate change budget measure expenditure has been spent.

Figure A2. Expenditure - Regional/Bilateral Split
Total = \$ 156.3 million

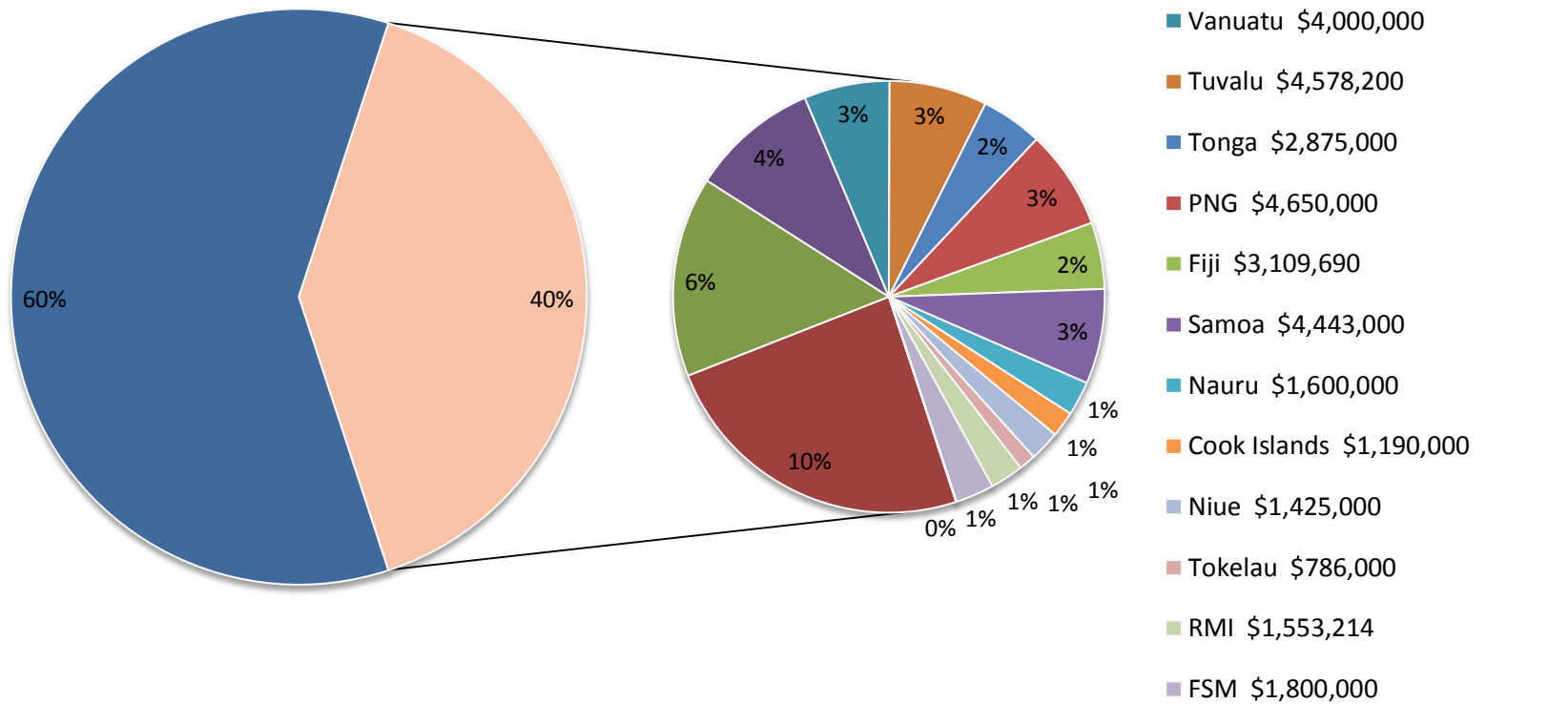


Figure A3. Expenditure by Primary Sector
Total = \$ 156.3 million

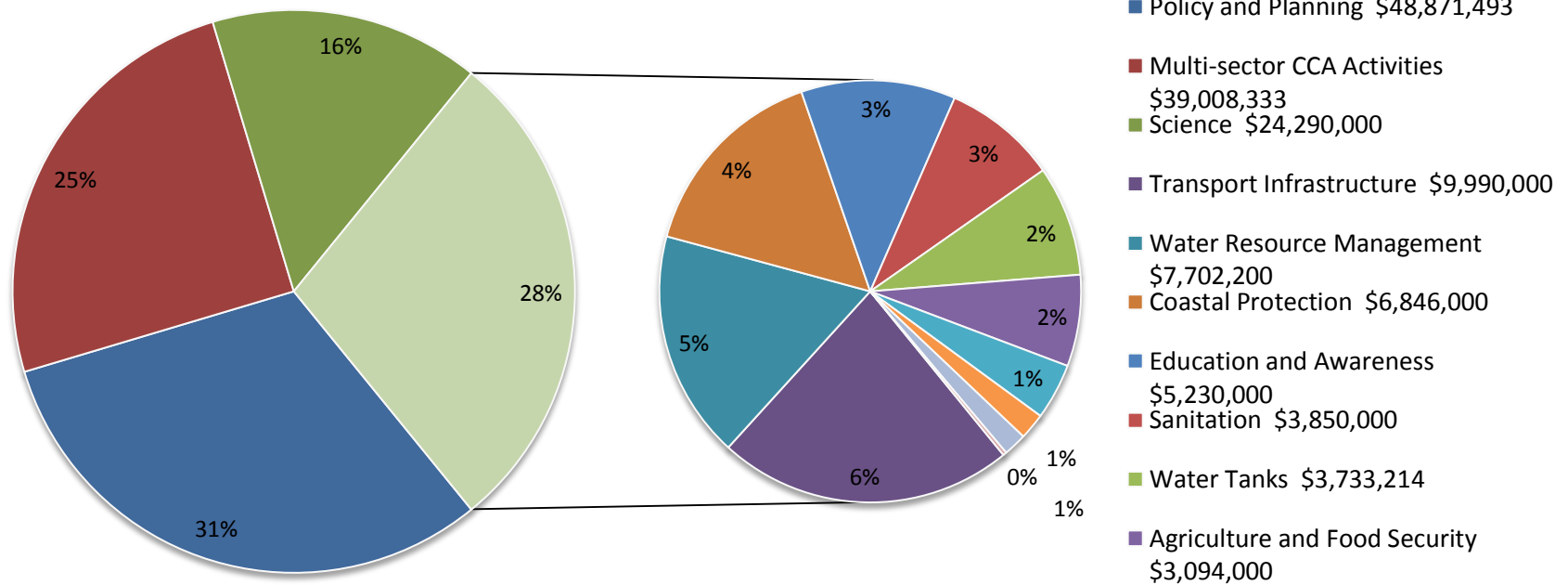


Chart shows breakdown of activities by primary sector. Some activities have secondary outputs in other sectors or include a component for capacity building – these are not captured. Multi-sector CCA Activities are generally where a program is designed to respond to a range of sectors and it is not possible to breakdown at time of reporting.

Figure A4. Stage of Activity Cycle
Total = \$156.3 million

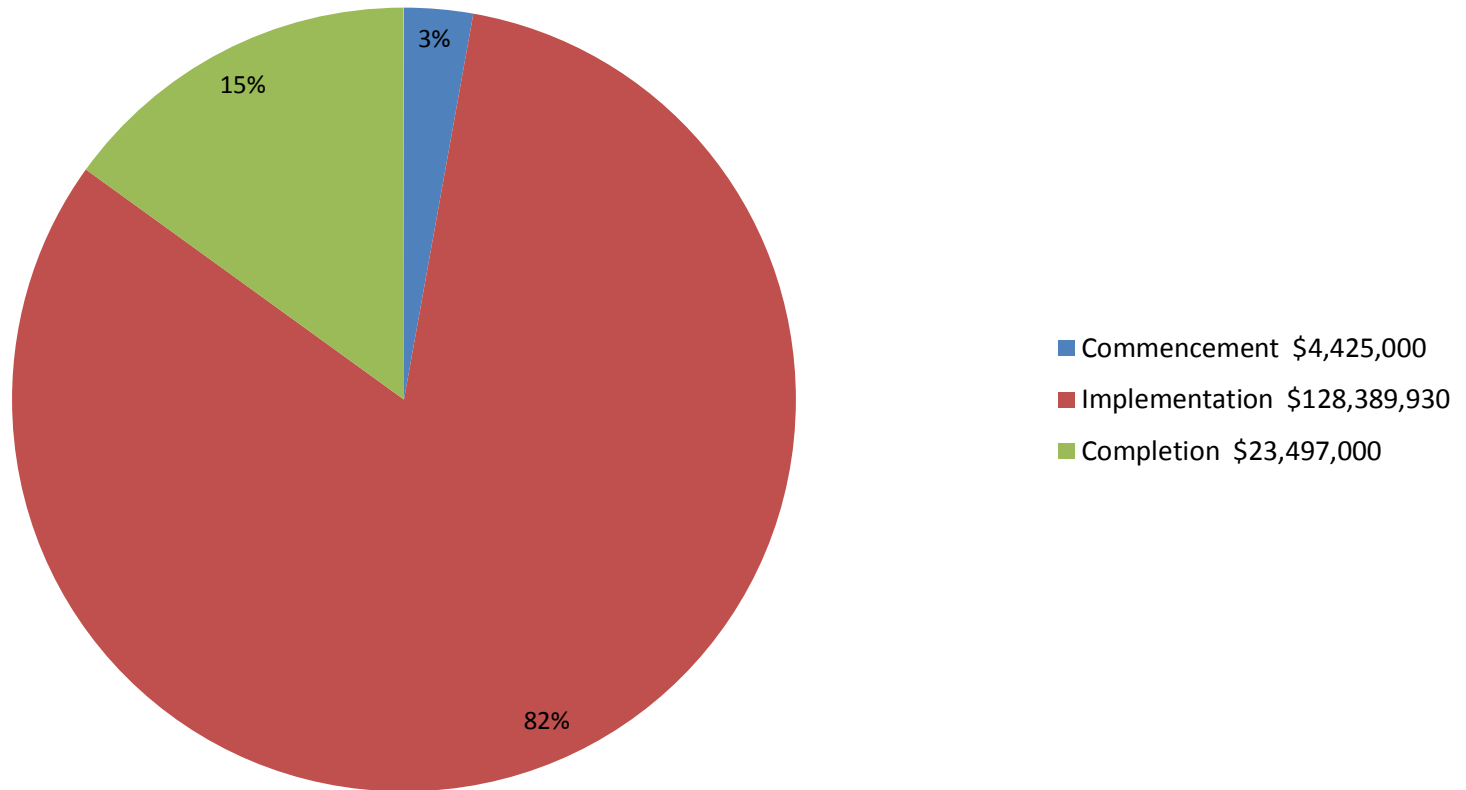


Figure A5. Integration of Climate Change Expenditure
Integrated Climate Change Fund = \$289.5 million

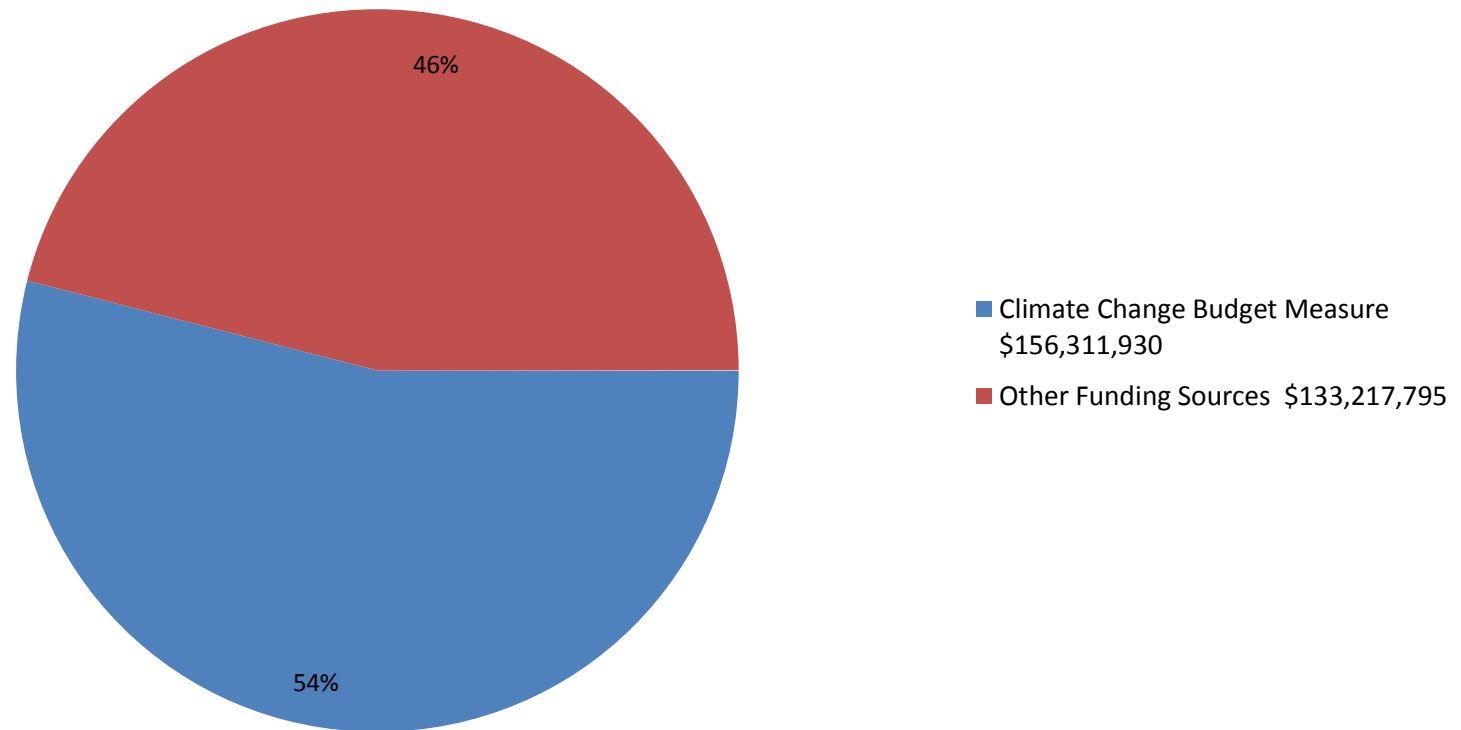
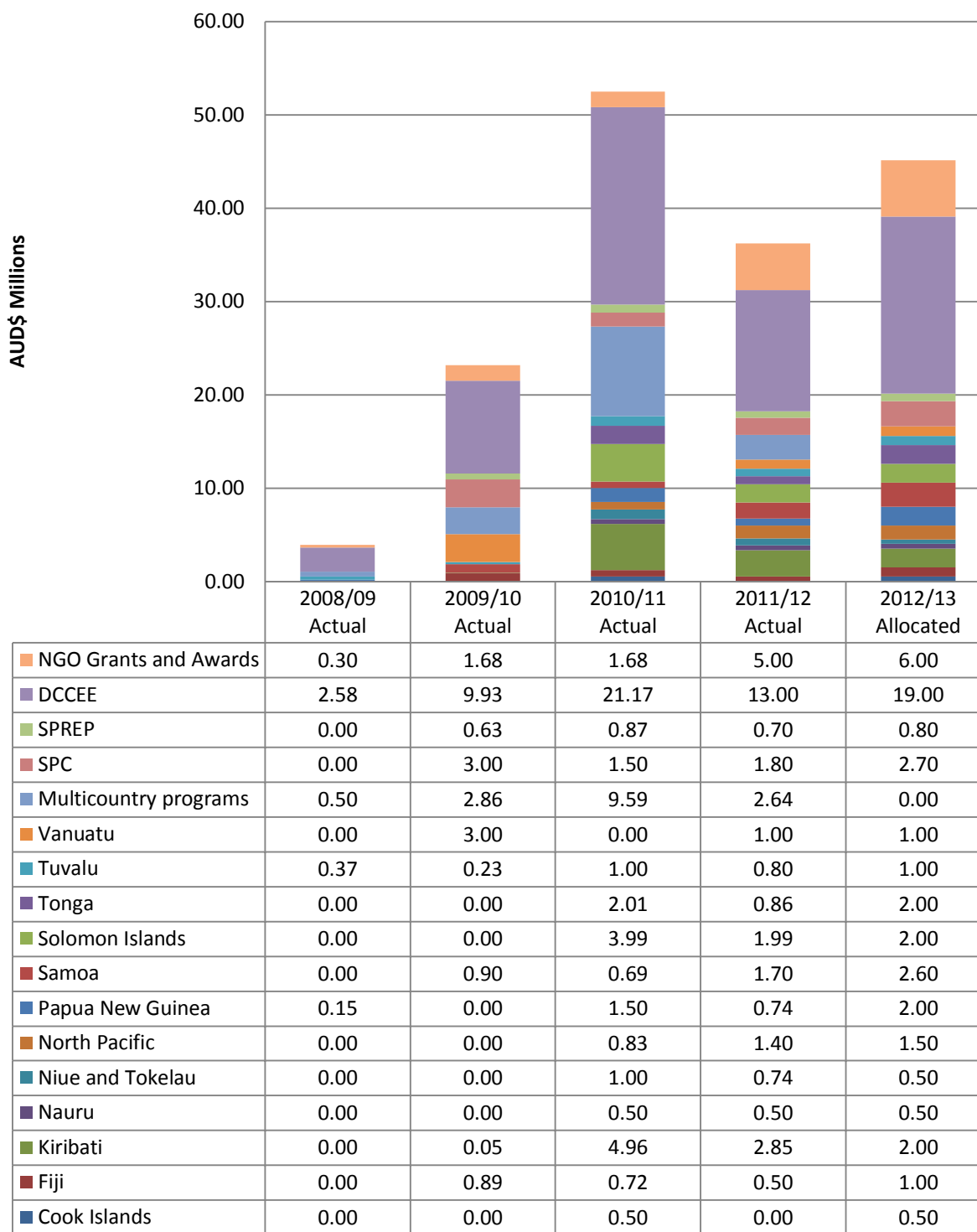


Chart shows total value of all programs in the Pacific that include climate change budget measure funds i.e. where climate change budget measure either wholly funds activities or are combined with other sources of funding. This is designed to show to what extent climate change expenditure has been integrated with other forms of expenditure.

**Figure A6: ICCAI Expenditure in the Pacific,
2008/09 to 2012/13**



Attachment 2: Activity and Program Sectors and Targets

Country	Name of Project	Objectives/Results	Sector and Target						
			Community awareness, resilience and adaptation capacity	Enhance ⁴³ Natl and Local Govt Capacity	Economic Development Infrastructure	Service Delivery (water, health, education)	Livelihoods & Poverty Reduction	Food Security	Target Poor and Vulnerable
North Pacific									
FSM and RMI	Climate & Disaster Risk Education Program (CADRE)	IOM is integrating climate change and disaster awareness into the school curriculum; strengthening community awareness	X						
FSM	Environment Law Adviser	Update the Environmental Protection Act		X					
RMI	Water Resource Management Adviser	Establish a national water policy and taskforce to improve the quantity and quality of drinking water.		X					
	Kwajalein Atoll Household Water Catchments	380 household water tanks are being installed on Ebeye Island.				X			X
	NGO Regional program (TNC)	Strengthening the capacity of a target community in RMI to adapt to climate change impacts	X						X
Palau	Palau Conservation Society	Build awareness of the effects of climate change.	X	X					
Four Target Countries visited									
Fiji	USP Community	Community adaptation	X						X

⁴³ Included when this is a direct component, not when simply strengthening community linkages to govt.

	Based Adaptation	activities							
	Worldwide Fund for Nature – Community resilience and adaptation	Increase community awareness of climate change impacts and adaptation solutions in Macuata and Ba; mainstream adaptation into planning, decision making	X	X				X	
	SPC Multi-country Program	Improving coastal fisheries governance capacity (Kadavu island), strengthening national and provincial government delivery mechanisms	X	X			X	X	
Kiribati	World Bank led Kiribati Adaptation Program Phases 2 (2006-2011) and 3 (2011-2016).	Protecting freshwater supplies, increasing coastal resistance (through mangrove planting and seawall rehabilitation) and assisting communities to respond to droughts and damage caused by sea level rise. (Implementation)	X	X		X			
	ADB led South Tarawa Sanitation Improvement Program	Rehabilitating of the sanitation system (and water supplies)	X	X		X			
Samoa	Support to implement NAPA 4	Climate early warning system; a National Tourism Climate Change Adaptation Strategy; water resource management (flood mitigation	X	X		X			

		and monitoring of wells); and support for the Fire Emergency Services Authority and the Planning and Urban Management Authority.							
	Samoa Agro-forestry & Tree Farming Program	Improve resilience to climate change impacts through better use of agricultural and forest resources.		X			X		
	Civil Society Strengthening Program	Funds are targeted at water projects in vulnerable communities, such as rainwater harvesting and well water distribution systems.	X	X		X			X
	Multi-donor program – Samoa is a pilot site for the PPCR	Upgrading the road between the Airport and Apia and undertaking community based adaptation activities.	X		X				
Solomon Islands	ADB Roads Program	Upgrading roads and bridges in Guadalcanal that are vulnerable to extreme weather events		X	X				
	NGO Regional program (TNC)	Strengthening community capacity to adapt to climate change impacts	X						X
	NGO Regional program (Live & Learn)	Protect local food supplies, ecosystems, assets and livelihoods	X				X	X	X
Other Countries									
Cook Islands	Donor harmonised program	Country specific allocation				X	X		
Nauru	Water Resource Management Plan	Water tanks and guttering for approximately 300	X			X			

	Implementation	households							
	Water Resource Management Plan Development	Develop an Integrated Water Resource Management strategy.		X		X			
Niue	Primary School Development	Funds to climate proof a new school				X			
PNG	Conservation International	Boosting Traditional Approaches to Food Security	X					X	
	Wildlife Conservation Society	Strengthening capacity within local social systems to enable communities in Manus to adapt to climate change.	X						X
	Multi-donor program – PNG is a pilot site for the PPCR	The PNG PPCR will support climate change adaptation interventions in vulnerable communities, address threats to food security, and mainstream climate change risk management in key sectors	X	X				X	
	Support for National Climate Change Workshops	Support for national climate change workshops.	X	X					
Tonga	Support for the JNAP Secretariat	Support for JNAP Taskforce Secretariat, responsible for coordinating climate change finances and prioritizing adaptation activities.		X					
	PACC Regional Program	Water resource management.	X			X			

	SPC Multi-country Program	Support for SPC program focusing on integrated water resource management for coastal communities in Vava'u; and on integrating climate change into education. (Commenced 2012)	X			X			
	Multi-donor program – Tonga is a pilot site for the PPCR	mainstream climate change risk management in key sectors such as infrastructure; community vulnerability mapping and development of early warning systems and community emergency preparedness; and addressing identified threats to food security	X	X				X	
Tuvalu	Water Tanks	607 water tanks on Funafuti; 150 water tanks for primary schools on outer islands.	X			X			
	Support to implement Tuvalu's NAPA	Increasing freshwater supply, expanding mangrove plantations, rehabilitating agricultural areas to establish 12 new food crop plantations.	X	X			X	X	
	Response to the Tuvalu Drought	In response to the recent drought in Tuvalu, Australia is providing funds for 2 water deliveries by ship, water distribution trucks, a needs assessment on outer islands and solar-powered water desalination plants (and associated ongoing		X		X			

		maintenance program).							
Vanuatu	Vanuatu Roads Project	Support to increase the resilience of transport infrastructure to the impacts of climate change under the Vanuatu roads project.		X	X				
	NGO Regional program – Live & Learn	protect local food supplies, ecosystems, assets and livelihoods through improved agricultural practices	X				X		X
Tokelau	SPC Multi-country Program	SPC is building the capacity of coastal fisheries managers in assessing and managing marine resources; and enhancing water security and integrated water resource management. (Commenced 2012)	X	X		X	X		
Community-based Climate Change Action Grants Program									
Country	Lead NGO	Objectives/Results							
Vanuatu Solomon Islands and PNG	Live & Learn Environmental Education	Protection of Food Security through Adaptation to Climate Change	X	X				X	X
PNG, Solomon Islands, Marshall Islands	The Nature Conservancy	Building the resilience of communities and their ecosystems to the impacts of climate change	X	X					X
Vanuatu	Oxfam Australia	“Yumi stap redi for climate change” – The Vanuatu NGO Climate Change Adaptation Program	X	X					X
PNG	CARE Australia	Strongem Komunities Tingim Climate Change	X					X	X
Tonga and Vanuatu	Act for Peace	Pacific Community Climate Risk Reduction (‘PCCRR’)	X						X

Small Island Developing States Community Based Adaptation (SIDS-CBA) through the GEF Small Grants Program										
15 PICs	UNDP	Practical adaptation activities such as coastal strengthening, relocation of vulnerable households and infrastructure, restoration of coral, and replanting of mangroves.	X					X	X	X
Pacific Regional Programs										
Name of Project	Agency	Objectives/Results								
Climate Science and Adaptation Planning Programs										
Pacific Climate Change Science Program (PCCSP)	Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology (BoM),	PCCSP is helping PICs to gain a better understanding of how climate change will impact the region. Includes: Climate Futures training; CliDE (a climate data tool); detailed scientific projections for long term climate change for Pacific Island Countries	X	X						
Pacific Adaptation Strategy Assistance Program (PASAP)	Department of Climate Change and Energy Efficiency (DCCEE)	PASAP is strengthening the capacity of PICs to assess vulnerabilities to climate change and develop evidence-based adaptation strategies.	X	X						
Pacific Australia Climate Change Science and Adaptation Program (PACCSAP)	Department of Climate Change and Energy Efficiency (DCCEE)	PACCSAP is the next phase of the combined PASAP and PCCSP programs (see above). It is providing new research at island scale on the expected impacts of climate change. It will help Pacific governments and communities to	X	X						

		understand the new science and to use it in developing informed plans to prepare for and adapt to long term change.							
Secretariat of the Pacific Community (SPC) Regional Activities	SPC	Support to ongoing SPC program. The program for 2012 and 2013 focuses on building adaptive capacity in coastal and oceanic fisheries; enhancing the resilience of agriculture; increasing the understanding of the health implications of climate change; and improving climate change program coordination.	X	X			X	X	
Secretariat of the Pacific Regional Environment Program (SPREP) Regional Activities	SPREP	Support to ongoing SPREP program. The program for 2012 and 2013 will focus on assisting countries climate proof landfill sites; implementing priority adaptation activities identified by countries under the Pacific Climate Change Roundtable; and supporting ecosystem-based adaptation for specific coastal zones and other sites.	X	X			X	X	
Pacific Adaptation to Climate Change Program (PACC)	UNDP and SPREP	Providing support to mainstream climate change adaptation and demonstrate on-the-ground adaptation activities. Australia's contribution will expand adaptation projects in water supply, coastal	X	X			X	X	

		management and agriculture in 13 Pacific countries and extend the Program to Tokelau. Australia's contribution is divided into: country-specific allocations for Tonga (1.708 million), Cook Islands (0.5 million), Niue (0.5 million) and Tokelau (0.5 million); a multi-country project financing component (2.60 million); and a regional support component (1.53 million).							
Future Climate Leaders Program	University of the South Pacific (USP)	Scholarships, exchange programs with partner institutions, Post-Graduate Diploma and Master's degree. sub-program to enhance awareness, outreach and education in communities and secondary schools.	X	X					
South Pacific Sea Level and Climate Monitoring Program Network Upgrade	Australian Bureau of Meteorology	Establishment of monitoring stations	X	X					
Contribution to the Adaptation Fund	Australia's contribution to the AF was deferred from 2011-12 to this financial year pending negotiation of an appropriate funding agreement that meets AusAID's standard due diligence requirements.			X					
Contribution to the Least Developed Countries	The Least Developed Countries Fund (LDCF) was established to assist Least Developed Countries (LDCs) carry out the preparation and			X					

Fund	implementation of National Adaptation Programs of Action (NAPAs).							
Pilot Program for Climate Resilience (PPCR)	AusAID provided \$40 million to the international Climate Investment Fund (CIF) which is funding Strategic Programs for Climate Resilience (SPCR) pilot programs across regions and within selected developing countries. It is being led by the Asian Development Bank and World Bank. The purpose of PPCR is to provide finance to demonstrate how climate change adaptation can be integrated into national development plans. There are four pilots in the Pacific – PNG, Tonga, Samoa and a regional pilot program (see relevant country program section for further information).	X	X					
Support for the Alliance of Small Island States (AOSIS)	Australian funds helped AOSIS establish a permanent secretariat to meet the needs of member countries in negotiation and adaptation planning. Nauru's Ambassador to the UN is currently the chair of AOSIS.		X					

Appendix 4: SITUATION ANALYSIS AND NEEDS ASSESSMENT

I. Methodology

1. Regional and national situation analyses, needs assessments, and programming prioritisation (NAs) have been undertaken, concurrent to the Review (Figure 1). Firstly, the NAs analysed the natural hazards and the risks and vulnerabilities, and the resulting needs related to disaster risk management (DRM) (focused on risk reduction), environment and climate change (focused on adaptation). These three areas are collectively referred to as disaster, environment and climate (DEC). A particular focus of the analysis was to identify the future DEC needs that should be addressed in order to increase the resilience of development outcomes.

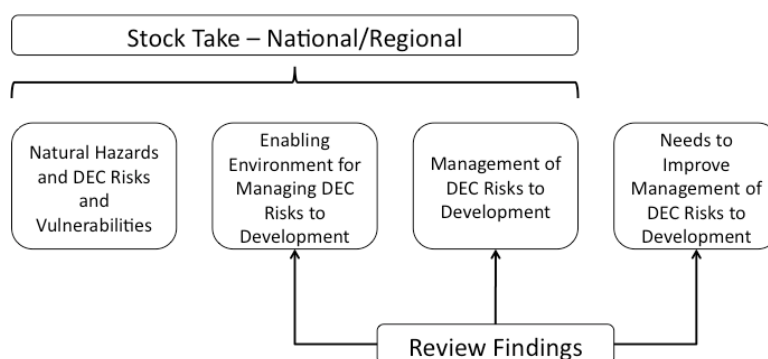


Figure 1. Scope of the Needs Assessment.

2. NAs for each of 15 countries and territories, along with one regional NA, have been prepared (see separate Annex). The following synthesis of the information presented in these 15 reports does not describe the detailed evidence base (including references) for the findings described here.

3. Collectively, these NAs will make an important contribution to the paradigm shift for Australian ODA and other DEC and development related investments from being “supply driven” to becoming “needs driven”. It thereby contributes to increased certainty and effectiveness in development assistance provided by Australia to the region. The findings and recommendations of the NAs are not only directed to Australia, but also to the Governments and people of the region, with the intention to inform their efforts to ensure the sustainability of regional and national development by giving due and appropriate attention to DEC considerations.

II. Situation Analysis

477. Regional approaches for regional integration and cooperation, and for improved donor coordination, harmonisation and alignment, play an important role in supporting PIC governments to meet their sustainable development challenges and priority needs. They are particularly pertinent, given PICs increasing vulnerabilities to natural and human-induced hazards and risks, their geographic isolation and, their comparatively small populations and markets, as these factors limit economies of scale and place human and institutional capacity constraints on PICs to effectively meet their responsibilities and functions.

A. DEC Policy, Planning and Multi-lateral Agreements

478. The region has in place regional policy and planning instruments for DEC, including the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015 (RFA), Pacific Regional Environment Programme Strategic Plan 2011 – 2015 and Pacific Islands Framework for Action on Climate Change 2006 – 2015 (PIFACC) and an array of regional environmental strategies,

frameworks and action plans including the Action Strategy for Nature Conservation and Protected Areas in the Pacific Islands Region 2008-2012. They clearly reflect regional and national commitments to relevant international agreements such as the Hyogo Framework for Action and, the three Rio Conventions on climate (UNFCCC), biodiversity (UNCBD) and desertification (UNCCD), which have also spawned national action plans including NAPAs and NEMS which provide links to development as well as links and synergies to each other.

479. The region struggles to effectively implement the plethora of DEC and Sector policies and plans, given the constraints of existing capacity and a development agenda that is already crowded, complex and competitive. Therefore, the recognition of DEC issues and implications in relevant sector policies and plans provide ready entry points to integrate DEC rather than continue to treat and deliver DEC as stand-alone, separate issues. This would require allocating additional resources to address the underlying drivers of disaster risk to ensure existing sector priorities are augmented and not compromised and, DEC initiatives are not viewed as an elective add-on or overlooked.

B. Capacity, Institutional Arrangements and Coordination

480. The situation analyses examined capacity constraints at national and regional levels that affect implementation of DEC activities, including both technical and administrative/managerial constraints. For some countries, such as Solomon Islands and Kiribati, there is evidence of limited capacity yet increased DEC capability, but this is not always used effectively or productively. They are also likely to be constrained by the relatively weak influence of DEC agencies on government priorities and processes.

481. A recent paper addressing PIC capacity development needs for DEC notes that “SIDS continue to be deficient in a critical mass of intellectual capital, policy coherence, financial resources, and qualified personnel that are needed to develop and implement sustainable development policies and projects” and identifies the following four key areas as critical for the success of capacity development in the Pacific: Leadership; human resources development; institutional strengthening; and, local level support. Some of this may be addressed in part by the Regional Technical Support Mechanism being developed by ADB and SPREP, as part of the Pacific regional CIF-SPCR. The initiative seeks to provide specialised technical skills to PICs, on request, in order to address capacity constraints and gaps in their response efforts to climate change.

482. Countries use a variety of structures to manage DEC⁴⁴, however, even having the ‘ideal institutional arrangement’ does not necessarily translate into success as evidenced by the need for greater coordination and communication between different offices in both Kiribati and Solomon Islands. Institutional arrangements often do not address disconnects between sectors at national level, between national and sub-national levels and between sub-national and community levels.

483. Regionally, mandated responsibilities for DEC are shared between SPC for disaster risk management and SPREP for protecting and managing the environment and climate change. The Pacific Islands Forum (PIF) also has an important role in providing political leadership for strengthened regional cooperation and integration and, around key emerging regional DEC-related issues such as climate change response and, improved energy, water and food security. However, the development-wide implications of DEC issues create frequent confusion and a level of competitiveness between institutions, resulting in considerable inefficiencies in the use of financial and other resources.

⁴⁴ e.g. Kiribati – Office of the President and Ministry of Environment (MoE); Solomon Islands – Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) and the Ministry of Development Planning and Aid Coordination (MDPAC); Samoa – Ministry of Finance and Ministry of Natural Resources and Environment; and the Cook Islands – Office of the Prime Minister.

484. The CROP Executives sub-Committee on Climate Change (CES-CCC) and its Working Arm on Climate Change (WACC) were established in 2010, to strengthen coordination, collaboration and alignment between the regional institutions to support effective responses to climate change as well as resolve issues and overlap that may arise. Expanding this CROP mechanism to include disaster risk and environment would serve to focus CROP efforts to integrate and mainstream these in development planning and processes. This would encourage efficiencies and enable regional institutions to respond to their mandates, capacity and comparative technical advantages to deliver quality regional public goods and services.

485. Sub-regional groupings such as the Small Islands States (issues common to micro-States), the Micronesian Challenge (environmental conservation), the Partners to the Nauru Agreement (oceanic fisheries) and the Melanesian Spearhead Group (trade and investment and, social and economic development) are not prominent DEC actors now, but might play a greater role given the implications of DEC risk to resilient development.

486. The regional landscape is filled with DEC and Development actors at various levels within Government (Development Partners), NGOs who provide DEC assistance and support to the region as well as directly to PICTs. Donors (such as ADB, AusAID, China, EU, AFD, GEF, GIZ, JICA, Korea, NZAID, Taiwan ROC, USAID and the World Bank) provide financial resources for DEC initiatives regionally as well as directly to PICTs through their bilateral agreements. All of these actors have multiple roles, responsibilities and comparative advantages and coordination is essential, but challenging, and often unsuccessful Donor round tables, aid coordination divisions in central agencies, and civil society support programmes can help at national levels. Regional organisations have taken the initiative to establish mechanisms to facilitate regional coordination, collaboration and coherence between PICTs in the implementation of disaster risk, climate change and environment priorities. Coordination and cooperation is still challenging, but there are some successful examples such as joint team work between SPC and SPREP, and development partner coordination and collaboration in Solomon Islands to support the development of Choiseul Province.

C. Modalities and Financing of DEC Initiatives

487. Currently, DEC implementation is largely donor funded and donor driven through a proliferation of discrete projects with short timeframes, which fragments efforts, and dampens the will to cooperate, partner or to jointly programme. Together these impede the holistic approach required to achieve resilient development. Currently, PICs are faced with a diversity and complexity of climate funding and sources through bilateral, multilateral and regional arrangements, and global funds such as the Climate Investment Fund. There is a need to align funding sources for DEC and development and encourage stronger coordination and cooperation within and between donors.

488. Australia and other donors use regional modalities to deliver both regionally and bilaterally. Regional programs are valuable where they provide regional public goods and services such as the provision of specialised technical skills and services (e.g. public health and education; DEC related science and technology reducing uncertainty of disaster and climate risk projections), and managing shared natural resources, such as for fisheries. Sharing best practice and lessons and, promoting region-wide standards and norms. The bilateral Joint Country Strategy (JCS) agreements between SPC and PICT members guide the provision of SPC's delivery of regional public goods and services and specialised technical assistance, based on PICT national development priorities and SPC's capacity and comparative technical advantage. They offer opportunities to integrate disaster and climate risk considerations for more resilient results and outcomes. There are cases where sub-regional and multi-country initiatives may benefit from delivery by regional or multilateral modalities depending on their relevant capacity, capability and comparative technical advantage. Multi-country modalities enable PICs with limited absorptive capacity to address a particular, common issue, such as establishing an early warning system, to pool national and bilateral resources and sharing expertise to deliver national public goods.

III. Management of DEC Risks to Development

489. Recent international and regional analytical studies provide policy, institutional and practical analysis as well as strategic guidance and recommendations to PICs, regional organisations and donors and development partners on the integration of disaster risk reduction and climate change adaptation to advance sustainable, resilient development, reduce poverty and promote human security. As well, SPREP and SPC have recently published the Pacific Environment and Climate Change Outlook and the Implementation of the Hyogo Framework for Action and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005-2015 – Regional Synthesis Progress Report from 2009 to 2013. These review and analyse progress by countries and as a region, against agreed priorities under regional and national DEC policies and plans and within the wider context of sustainable development.

490. As most regional and national DEC priorities and needs are largely addressed using overseas development assistance, or targeted environment and climate funds, they tend to be project-based and remain by and large supply-driven. The growing proliferation of DEC projects, continue to cause difficulties with coordination, cooperation and coherence and have prompted several initiatives that seek to improve information exchange (e.g. the DRR Project Portal for Asia Pacific, the Pacific Climate Change Projects Database, and the Pacific Environment Information Network. In addition, regional agencies such as SPC and SPREP have developed a summary matrix of their DRM and Climate Change support activities.

491. Several recent initiatives offer important contributions to how the management of DEC risks to development might be approached in the future. For example, the SPC study of the vulnerability of tropical Pacific fisheries and aquaculture to climate change have improved PICs and regional understanding of future impacts and opportunities of climate change on their food and economic security and, the livelihoods and health of their peoples. This is illustrated the value and crucial importance of: (i) using decision support tools such as demographic, disaster risk and climate risk projections to inform and shape future regional and national sector- and development-wide policies and plans; (ii) having access to sound science-based evidence to inform downstream practice decisions; (iii) integrating DEC risk resilient considerations as an underpinning imperative of development and sector-wide policies, plans and practices; and (iv) examining the potential implications of DEC risks on other key sectors. A similar climate change impact study on the agriculture and agro-forestry sectors is underway and others could also be considered.

492. The Choiseul Integrated Climate Change Adaptation Programme (CICCAP) is being jointly programmed by several donors) and development partners⁴⁵ and has the support of both National and Choiseul Provincial Governments. It is developing an integrated 'ridge-to-reef' ecosystem-based adaptive management approach for future climate and disaster resilient development of Choiseul Province. Careful examination of the capacity and commitment of National and Choiseul Provincial Governments to integrate CICCAP into their planning and budget processes at the end of project funding and, to replicate the CICCAP approach in other provinces of Solomon Islands will need to be carefully examined. The applicability for other PICs would also need careful consideration. At the local level there are many organisations, including international NGOs, who are supporting selected communities across the region to carry out vulnerability and needs assessments (VNAs) and develop community-based adaptive management (CBAM) plans to manage and adapt to CC.

493. Applied science-based initiatives have also made important contributions to improving understanding and approaches to managing and mitigating DEC risks to development as PCRAFI, PCCSP, PACCSAP, SPSLCMP, and Capacity Assessments to SOPAC Member Countries to Respond to Tsunamis Warnings have been able to demonstrate. The important next steps will be to develop

⁴⁵ SPC/GIZ CCC PIR, USAID, ICCAI (AusAID and DCCEE) and TNC

various user-specific and user friendly applications from the data and information products and services that have already been generated.

494. In the Pacific region the most important determinants of abilities to manage DEC risks to development are communication and relationships, with both informal and formal mechanisms being essential. Capacity (including human, financial and technical), leadership, management and governance structures, and risk perceptions are also highly influential. As Pacific island bureaucracies are generally small in size and numbers, responsibility and capacity will often rest with individuals rather than organisations. As a result, leadership, trust, informal networks and relationships have a strong influence on the effectiveness of organisations and the broader management system.

A. Modalities and Comparative Advantage

495. There are a number of modalities for delivering assistance, with each having its place and comparative advantage. A key requirement is to ensure the modality used in a specific instance aligns with the need(s) being addressed and with the absorptive capacity of the beneficiary, be it a community, country, multiple countries or the region as a whole. As elaborated below, some needs are best addressed through direct bi-lateral support of national and sub-national initiatives to manage DEC risks to development, while other national and sub-national needs are best addressed through regional and sub-regional initiatives. In addition, needs related to the management of DEC risks to regional public goods, and provision of regionally relevant technical and related services, are most appropriately addressed using regional modalities. Regional and multi-country modalities can be used to support national delivery, but only when they have a comparative advantage – managing a regional public good, and providing economies of scale, respectively (Table 1 below).

496. Australia works with a variety of partners to deliver its assistance to the Pacific region, including “Whole of Government” partners such as CSIRO and BOM, national and local governments, multilateral development banks such as the Asian Development Bank and the World Bank, regional and international intergovernmental organisations, non-governmental and civil society organisations, and the private sector. Again, all have their comparative advantages.

Table 1. Comparative Advantages of Modalities

Modality	Comparative Advantages	Examples
Bi-lateral Assistance	<ul style="list-style-type: none"> • Direct relationship with recipient country, including to work sub-nationally; • Strong alignment with national and sub-national priorities and systems • Ability to deliver sub-nationally, using a variety of partners • High programme coherence • Opportunities for more effective engagement in the future 	<ul style="list-style-type: none"> • Partnership for Development • Sector wide approach • Direct budget support • Tied/Sector budget support
Multi-country Assistance	<ul style="list-style-type: none"> • Financial efficiencies • Administrative efficiencies • Pooling/sharing specialised technical expertise and assistance • Facilitates identification and sharing of lessons and good practices • South-South cooperation 	<ul style="list-style-type: none"> • Research for Development Alliance • Multi-country Climate Change Support Program • Australia–Pacific Technical College • EU multi-country programmes (North REP and EDF9 B-envelope DRR)
Regional Assistance	<ul style="list-style-type: none"> • Management of regional public good • Specialised scientific and technical expertise • All parties have equitable access to benefits • Comprehensive source of lessons and good practices • Continuity and sustainability of results and outcomes 	<ul style="list-style-type: none"> • Support for the operation and activities of Pacific regional organisations • Regional Infrastructure Facility (PRIF)
Global Assistance	<ul style="list-style-type: none"> • Management of global public good • Far-reaching source of lessons and good practices 	<ul style="list-style-type: none"> • Climate Investment Funds (CIF) • Global Environment Facility (GFDRR)

B. Bilateral, Multi-country and Regional

497. Based on this and other key findings, the situation analyses and Needs Assessment identified: (i) needs to be addressed through bilateral country support, multi-country programs, and regional and sub-regional initiatives to improve the efficiency and effectiveness of national and sub-national initiatives to manage DEC risks; and(ii) needs best delivered as regional public goods and (technical and related) services.

498. The foregoing sections have highlighted the:

- frequent occurrence of a wide range of natural hazards in the Pacific islands region;
- high exposure to those hazards for Pacific island countries and communities, including their natural and human capital and assets;
- enabling environment for managing the resulting risks, which has strengthened considerably in recent years, but many aspects still need further strengthening if DEC risks to development are to be managed more successfully; and
- recent and current efforts to manage DEC risks to development have shown few tangible results, largely due poorly planned and implemented socioeconomic development initiatives increasing the already significant exposure to natural hazards such as cyclones, flooding, earthquakes and tsunami.

Needs best addressed through bilateral and multi-country support programs

499. In the Pacific region the most important determinants of abilities to manage DEC risks to development are communication and relationships, with both informal and formal mechanisms being essential. Capacity (including human, financial and technical), leadership, management and

governance structures, and risk perceptions are also highly influential. As Pacific island bureaucracies are generally small in size and numbers, responsibility and capacity will often rest with individuals rather than organisations. As a result, leadership, trust, informal networks and relationships have a strong influence on the effectiveness of organisations and the broader management system.

500. **A Stronger Enabling Environment**, prompting countries to positively respond to the benefits of integrating DRR and CCA initiatives, where appropriate, and to making development outcomes more resilient.

501. **Most Policies and Plans** need to ensure development is sustainable, but few draw specific and practical linkages between DRR and CCA and, in turn, with development.

502. **Institutions** – need for institutional strengthening, to address such issues as poor coordination between NDMO/Environment/Climate Change offices/departments/units and other central and line ministries brought about by limited capacity and unclear roles and responsibilities.

503. **Human Resources**. Countries need to retain adequate numbers of people with the requisite knowledge and skills if they are to convert the potential benefits of institutional and other improvements into reality.

504. **Financial Resources**. Globally, at COP 15 countries agreed that as much as US\$30 billion for 2010-2012 and USD 100 billion by 2020 would be mobilized to assist developing countries to cover the costs of managing climate risks through mitigation and adaptation. But the funds committed are much lower than the estimated amount required, and countries are not fully benefitting from funding that was agreed at COP 15, due to complexities, delays and effectiveness of accessing climate funding and the failure of donors to fully deliver on pledges. Trust funds can be an effective way to accumulate, preserve, grow, and mobilise capital for development, but well established governance structures must be in place.

505. **Improved Decision Support**. Increasing the uptake and application of information requires ready access to, and effective use of, relevant decision support tools, such as benefit-cost analysis. More progress is also required characterising the linkages between changes in climate and consequences in terms of food and water security, human health and the longevity of infrastructure, for example.

506. **Indigenous knowledge (IK)**. Internationally, IK is recognised as being invaluable for developing adaptation and natural resource management strategies that address change.

507. **Managing in the Face of Uncertainty**. A major challenge facing policy makers, planners and decision makers is how to manage DEC and development in the face of considerable uncertainty. Policy makers, planners and decision makers must work with many other sources of uncertainty, including future changes in local and global pressures on socio-economic systems, and how these systems will respond. These key players at both national and sub-national levels require practical guidance and ready access to user friendly tools, such as simulation software tools, in order to develop their knowledge and skills in adaptive management of DEC and development.

508. **CCA and DRR Considerations Mainstreamed**. CCA and DRR responses need to be across many levels of organisational scale, albeit with more action locally, and in all forms from incremental adjustments to practice, to transformational changes in thinking. There are challenges in determining what types of activities should be mainstreamed quickly as opposed to those that need continued specialised attention. Mainstreaming of climate change considerations is difficult if institutions lacked the ability to develop strategic visions relating to climate change.

509. **More Implementation.** Although many PICs are making progress in addressing underlying risk factors through various policy and planning instruments, such as NAPs and JNAPs, risk considerations are rarely integrated in the formulation and implementation of environmental, social and economic development policies and plans.

510. **Improved Review and Evaluation.** Monitoring and evaluation play a critically important role in managing for results. Managing for results should be an ongoing process, involving constant feedback, learning and improvement. Countries require assistance to improve the quality of their monitoring and evaluation of DEC and development initiatives of outputs and outcomes to ensure that goals are being met and that lessons learned are documented and applied.

Needs Best Addressed through Regional and Sub-regional Interventions or as Regional Public Goods

511. Neighbouring countries in the Pacific often have much in common, including environmental, social and economic circumstances, and systems of governance. This is formally recognized in such alliances as the Melanesian Spearhead Group, the Micronesia Challenge, the “Pacific micro-states” of Nauru, Tuvalu and Kiribati and the Polynesian Leaders Group. Even though most DRR and CCA initiatives must be tailored to local conditions, sub-regional delivery modalities can provide significant opportunities for economies of scale and increased effectiveness for capacity building, programme and project implementation and other assistance. This includes documenting and sharing best practices and lessons. Moreover, often the more technical interventions cannot be delivered feasibly and effectively at national scale given the knowledge, skills and other capacities that exist or can developed within reasonable time frames.

512. **A regional public good** is one which can be provided and shared by the countries of a region, and which provides benefits to individual countries and to the region as a whole. In principle, collective action by governments in the region should deliver benefits across the region which is greater than those which could be generated if the same governments acted alone. Most regional public goods fall into one or more of the following categories, all of which have relevance in the context of climate and disaster resilient development to:

513. **A regional public good** is one which can be provided and shared by the countries of a region, and which provides benefits to individual countries and to the region as a whole. In principle, collective action by governments in the region should deliver benefits across the region that are greater than those which could be generated if the same governments acted alone.

514. Most regional public goods fall into one or more of the following categories, all of which have relevance in the context of climate and disaster resilient development to:

- Knowledge, including the provision of information, scientific research and development, and education and training;
- Infrastructure, which is not in itself a public good but they do provide services which have elements of a public good. For example, harbours, airports and telecommunications systems;
- Environment and natural resources, including pollution management and migratory fish stocks;
- Health, including preventing or eradicating disease, and stopping the spread of epidemics;
- Peace and security, including shared responsibility for providing security in areas of common security concern; and
- Governance, including establishing and implementing shared standards, best practices and policy regimes (Andrews-Speed, 2011).

515. One of the key difficulties in the field of public goods that transcend national boundaries is deciding the level of governance, and hence often the size of region, most suited to providing or managing the good. As noted in Section 3, the Pacific Plan provides three tests that can be used to determine whether a multi-country intervention can add value to a national initiative, namely:

- Market test: if the market is providing a service well, it is unlikely to be a public good, hence intervention at the multi-country level should be minimal;
- Sovereignty test: if the proposed multi-country initiative compromises the degree of effective sovereignty held by national governments it should not be pursued; and
- Subsidiarity test: if national or local governments are providing the service well, intervention at the multi-country level should be minimal.

516. These three tests indicate that, within the six categories outlined above, there are regional public goods that require concerted action and attention to enhance their resilience to natural hazards and climate change. Regional public services have also been identified that can enhance the resilience of development in ways that could not be achieved if PICs acted alone.

517. **Climate Change Mitigation through Improved Energy Efficiency.** One of the many ways to increase energy efficiency is to increase the availability and uptake of energy efficient appliances, and the phasing out of access to and use of inefficient appliances.

518. **Multi-hazard and Climate Early Warning Systems.** A Multi-Hazard Early Warning Systems (MHEWS) has many components including systems for detection and warning (with built in redundancy and back-ups), hazard response plans and standard operating procedures at both national and community levels, and a comprehensive programme for community awareness and preparedness. The Pacific Meteorological Services Needs Analysis Project found that while there is a large range in capacity to maintain networks and provide services, most countries have suffered a decline in resources and capacity over last two to three decades. A serious problem is a lack of resources for ongoing expenditure and the upgrading of basic observations and communications infrastructure is essential for services to be improved, with external assistance being vital.

519. **Climate and Natural Hazard Science, Impacts and Adaptation.** Much of the research and other efforts to strengthen the climate science – impacts – responses system represent a regional public good, since the work is generally addressing the collective needs of many, and generally all, PICs. A major challenge is how to respond directly to new and emerging sectoral needs for informed adaptation planning and implementation. An excellent initiative that could be considered for the Pacific is the AusAID/CSIRO Research for Development Alliance. Established in 2007, it is now in its 3rd phase. The focus of the Alliance is on linking climate science through impacts to adaptation responses, targeting better support to policy or management decision making.

520. **Ocean Resources Management, including Fisheries and Deep Sea Minerals.** The Pacific Ocean provides commercial, cultural, recreational, economic, scientific, conservation and security benefits, as well as sustaining diverse habitats and species of local and global significance. But there are enormous challenges to sustaining these benefits, including pollution, habitat destruction, the unsustainable use of marine resources, natural and human induced hazards and their disaster risk impacts that make such benefits and natural assets increasingly fragile and vulnerable. If the plethora of policy instruments for the sea, biological diversity, DRR, climate change and pollution are to achieve their desired outcomes of maintaining critical coastal and marine ecosystems, and the Pacific Ocean is to continue to deliver economic, social and cultural benefits, more thoughtful and integrated approaches to addressing critical priorities over the development policy spectrum will be needed.

521. **Oceanic and Inshore Fisheries.** The following have been identified as the key needs to address the adverse impacts of climate change of the Pacific off-**shore** fisheries:

- reduce the effects of local stressors on fish habitats by legislating to restore and protect catchment vegetation and prevent direct damage to coral reefs, mangroves, seagrasses and intertidal flats, caused by excess sediments, nutrients, pollution and poor management of waste;
- launch win-win adaptations to address the imminent reductions in the fish available per person for good nutrition, due to predicted population growth in many PICTs, in ways that would not be compromised by climate change; and
- create flexible policy arrangements to ensure continued supplies of fish to the established and proposed processing facilities in the region as the distribution of tuna shifts to the east.

522. **Deep sea mining** is the process relating to the retrieval of mineral resources from and beneath the ocean floor. **Under** the UN Convention on the Law of the Sea which confers sovereign rights to coastal states over the seabed minerals within their exclusive economic zones, as well placing an overriding shared responsibility for the protection and preservation of the marine environment, States interested in pursuing this high-risk venture within their maritime jurisdictions are obliged to elaborate legal regimes to effectively regulate deep sea minerals activities. Significant investments in exploration activities across the Pacific need to be balanced against the risks to the marine environment and the potential impacts on other vital industries, such as fisheries, as little is known about the bio-chemical and physical processes that sustain the ocean's ecosystems.

Table 2. Analysis of the Pacific Partnerships for Development, by Priority Outcome Area and Sector

		SECTORS															TOTAL	
Priority Development Outcomes	Priority Outcome Area	Public Sector Management Systems Finance, Planning, Policy Laws, Regs	Private Sector	Trade	Fisheries	Agri-culture	Forestry	Minerals	Public Assets (Physical)	Utilities ICT, Energy, Water	Trans-port Roads, Air, Sea	Edu-cation	Labour and HRD	Health	Tourism	Disaster Management Reconstruction & Recovery		
	1	Efficient and Effective Public Sector	13	2		1				1	1		1	4				23
	2	Improved Health Outcomes	7							4	2		4	4	9	1		31
	3	Improved TVET Skills and HR Capacity	3	5	1	1	1			1	1	1	6	7	2			29
	4	Improved Infrastructure	5	6	1					3	5	6	1	1	1	1		30
	5	Improved Education	6	1						5	1		8	5			1	27
	6	Improved economic development	2	3												1		6
	7	Improved Private Sector	2	5		3	1	1	1			1					1	15
	8	Improved Development Coordination	2	1														3
	9	Improved Energy, Water and Sanitation		2						1	4		1	1	1			10
	10	ENV Management	2	1			1			1		1	1	1		1		9
	11	Climate Change				1	1				1	1			1			5
	TOTAL	42	26	2	6	4	1	1	16	15	10	22	23	14	4	2	188	