Appraisal Mission:

"Managing the Impact of climate change on land resources in the Pacific"

Working paper 2

Roles and Responsibilities of Relevant Actors on Climate Change in the Pacific

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Roles and Responsibilities of Relevant Actors on Climate Change in the Pacific

1. Introduction

An important objective of the appraisal mission was to scope out the roles and responsibilities of the various organisations and institutions active in the Pacific region, particularly with regard to climate change. The landscape of relevant actors is very broad and varied, ranging from national governmental and non-governmental organisations to numerous regional and national organisations to also include various donor agencies, which all assume different responisibilities and work at different levels of policy or programme development and implementation. In order to grasp the structure and functionality of the organisational set-sup and gain an understanding of the respective roles with regards to designing and implementing measures related to both climate change mitigation and adaptation, a number of discussions with experts and representatives of those organisations was necessary.

This working paper provides an overview of relevant actors in the region and their potential role in implementing the proposed GTZ project "Managing the impact of climate change on land resources in the Pacific". The paper further gives insight into regional plans and strategies, either in place or currently under development, and highlights relevant linkages of the GTZ projects with their objectives, as consitency will need to be ensured.

During the appraisal mission, a number of agencies have been informed and consulted about the proposed GTZ project. Where this applies (and can already be determined at this stage), the reasoning for selecting organisations to contribute to the implementation of the GTZ process on the basis of their comparative advantage is outlined and their possible role defined.

2. Overview of the insitutional set-up in the Pacific Region

Various regional organisations were set up to give greater weight to the economically and demographically small PICs at the international level, and to facilitate exchange of knowledge and experience, thereby ensuring greater coordination among countries facing similar problems.

2.1 Council of Regional Organisations in the Pacific (CROP)

The Council of Regional Organisations in the Pacific (CROP) is an ad-hoc committee composed of the heads of the following Pacific Island intergovernmental organisations, and permanently chaired by the Forum Secretariat:

- Pacific Islands Forum
- Secretariat of the Pacific Community (SPC)
- South Pacific Regional Environment Programme (SPREP)
- South Pacific Applied Geosciences Commission (SOPAC)
- University of the South Pacific (USP)
- South Pacific Tourism Organisation
- Forum Fisheries Agency
- Pacific Islands Development Programme
- Fiji School of Medicine
- South Pacific Board for Educational Assessment.

The purpose of CROP, according to its charter, is to discuss and coordinate the work-programmes and policies of the different regional agencies to avoid either duplication or gaps in the provision of services to member countries. At the highest level, this is done by the heads of

organisations who meet twice a year. In addition, a series of inter-organisational working groups on the following thematic areas has been set up for the same purpose:

- Marine Sector
- Rio+10 (multisectoral preparation for World Summit on Sustainable Development)
- Sustainable Development
- Health and Population
- Information, Communications and Technology
- Land-based Resources
- Tourism
- Private Sector & Trade
- Human Resources Development
- Development Approaches to Peace, Stability and Security.

The following sections do not intent to discuss all CROP agencies but only those directly relevant in the context of the GTZ project.

2.2 Pacific Islands Forum Secretariat (PIFS)

Founded in August 1971, the Pacific Islands Forum is the region's premier political and economic policy organisation. It is serviced by the Forum Secretariat and was set up to represent the interests of its member countries and to enhance cooperation between them. An inter-governmental organisation, the Forum brings together the independent and self-governing states of the Pacific in an annual leaders' summit to discuss and develop collective responses to regional challenges. The Forum comprises 16 independent and self-governing states in the Pacific: Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

There are no formal rules to govern the operations or the conduct of its meetings. The agenda is based on reports from the Secretariat and related regional organisations and committees, as well as other issues that members may wish to raise. Decisions by the Leaders are reached by consensus and are outlined in a Forum Communiqué, from which policies are developed and a work programme is prepared.

The proposed GTZ project would be consistent with and contribute to the Forum's objectives as laid out in the Forum Communique of the 38th Pacific Leaders' Forum, which was held in Tonga on 16-17 October 2007 (see Box 1). Climate change was also identified by leaders as one of the priority areas for attention under the Pacific Plan.

Box 1. **References to climate change in the Forum Communiqué of the 38th Pacific Leaders' Forum**

9. Leaders reiterated their deep concern over the serious and growing threat posed by climate change to the economic, social and environmental well being of Pacific Island Countries, their communities, peoples and cultures. They noted that they have been calling on the international community to take concerted action to reduce emissions of greenhouse gases into the atmosphere since 1990. Recent events and major international reports such as the Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report show unequivocally that climate change is occurring and that it is very likely caused by human actions. Adaptation to climate change is now an inevitable requirement, as the Earth begins responding to greenhouse gases already emitted.

10. Leaders recognised the special concerns and interests of Forum small low lying island countries on the adverse implications of climate change, in particular sea level rise.

11. Leaders welcomed the guidance from the IPCC that it is physically and economically feasible

to mitigate climate change and that with concerted international support, adaptation can also succeed. Conversely, without serious action, the global economy and the fragile resources of the Pacific will be severely affected.

12. Leaders called on the international community to reach agreement urgently on an effective global response to deliver on the ultimate objective of the UNFCCC to avoid dangerous levels of interference with the climate system, including further commitments in the future by all major greenhouse gas emitters to reduce greenhouse gas emissions; and to increase and mobilise financial and technical resources to support adaptation efforts in developing countries. They recognised that climate change is a long-term international challenge and that an effective international response would require a resolute and concerted international effort, including effective action in particular by the world's major greenhouse gas emitting countries to reduce their emissions and by all countries to adapt to the changes that climate change will bring.

13. Leaders committed to actively and constructively participate in the UNFCCC meeting in Bali in December 2007, and agreed to work at that meeting towards the launch of negotiations on a comprehensive post-2012 framework to tackle climate change. To that end, Leaders welcomed the positive outcomes of the APEC 2007 meeting in Sydney in promoting more effective international responses to climate change.

Source: Pacific Islands Forum (2007).

2.1 Secretariat of the Pacific Community (SPC)

Founded in 1947 as the South Pacific Commission, the Secretariat of the Pacific Community (SPC) is the oldest, the only bilingual (English and French) and most broad-ranging regional organisation, in terms of both membership and sectoral focus. It covers all 22 countries and territories of the Pacific. The organisation's current work programme focuses on the following sectors:

- Land Resources
- Agriculture and Forestry
- Marine Resources
- Coastal and Oceanic Fisheries, Maritime
- Social Resources
- Community Education, Culture, Women and Youth
- Demography/Population and Statistics
- Information and Communication Technology, Media Production and Training
- Public Health.

The organisation works in partnership with its members, other organisations and donors to deliver priority work programmes to member countries and territories. SPC's work programmes aim to develop technical assistance; professional, scientific and research support; and planning and management capability building. Its current Corporate Plan covers the period 2007–2009. SPC's national and territorial contact points are with departments of health, agriculture, women & youth, forestry, fisheries, statistics, ports & maritime, etc. Its highest governing council contains, but is not restricted to, Foreign Affairs Ministers.

Land resources development (including agriculture and forestry) issues are incorporated into the Pacific Plan by Forum Leaders with particular emphasis on atoll agriculture. Thus, policy issues on agriculture and forestry are the responsibility of the Pacific Islands Forum Secretariat. However the technical and scientific issues relating to the management of land resources are embedded in the Strategic Plan of the Land Resources Division of SPC. A number of issues give SPC comparative advantage in integrating climate change issues into its operations, including:

- 60 years of experience in implementing projects, programmes and activities in the region;
- Well-established institutional framework and with the impending and/or planned regional institutional framework.
- Capacity both in-country and at the regional levels.
- LRD is focused on land resources with socio-economic, political and cultural dimensions including issues relating to land management (land, agriculture and forestry).
- LRD has had a long association and cooperation with GTZ on forestry and land management issues in the Pacific islands region.
- Programme delivery through decentralization of SPC operations providing "presence on the ground' in 17 countries and territories of the region.
- Integration/mainstreaming of climate change issues, concerns and impacts will be into and across all SPC programmes, especially through LRD.
- Plan to have a Climate Change Coordinator appointed by middle of 2008 to coordinate climate change activities within the operations of the SPC and with national governments, and other regional and international organisations.
- Areas where climate change issues will be integrated will be agriculture, forestry, fisheries and marine resources, human settlements and human health, pests and diseases, oceans and waters where SPC has experience.

SPC-LRD's goal is derived from SPC's corporate vision: To improve food security, increase trade and assist the Pacific Community to be more prosperous and healthy and manage their agricultural and forest resources in a sustainable way. In its Strategic Plan 2005–2008, LRD is committed to work in collaboration with its stakeholders — Pacific Island countries and territories (PICTs), donor partners, and national, regional and international agricultural organisations to achieve its two objectives:

i) sustainable management of integrated forest and agricultural systems

ii) improved biosecurity and trade facilitation.

LRD places particular emphasis on an integrated and participatory approach to the development of sustainable agriculture and forestry. The division's assistance has become more targeted to provide effective solutions to meet the different needs of PICTs. To be more effective in delivering its services, LRD is increasingly adopting a decentralised approach to extension, coordinated at the country level by staff within national agricultural systems. LRD will be innovative in identifying donor partners and moving towards multi-project and multi-donor resourcing of its work.

LRD will continue to strengthen PICTs' capacity in plant protection, crop improvement, animal health and production, and sustainable forestry management and development. At the same time, LRD will develop capacity in new initiatives such as policy analysis and advice and support for agricultural science, technology and innovations.

Within the limits of available resources, LRD will deal with current and emerging challenges facing member countries and territories in the agriculture and forestry sectors. For example, PICTs' need for developing appropriate downstream agro-processing industries rather than concentrating on the export of fresh produce will be addressed. This need makes the presence within LRD of a strong agricultural marketing advice capacity. There are land use issues in PICTs that affect agricultural development and natural resource management, and LRD will work to help PICTs strengthen their capacity in addressing these issues.

Crop production also presents particular challenges in the areas of soil fertility improvement, mitigating water shortages in production systems and improving the utility and effectiveness of agriculture laboratories of PICTs and of relevant regional agencies.

In the area of forestry, emphasis will be on strengthening PICTs' capacity to implement sustainable forest management and develop appropriate policies, strategies and legislation.

In the livestock sector, a major effort will be made to reverse the tendency in countries and donor partners to assign generally low priority to its development, despite consumption of livestock products increasing at a substantial rate.

Animal diseases, particularly zoonoses (those that pass from animals to humans), are a significant emerging public health concern for the Pacific.

LRD will continue to work to strengthen its partnerships with other regional and international organisations, including FAO, PIFS, ACIAR, GTZ, USP, ADAP and SPREP, and to avoid duplication and add value to the efforts of each agency. AusAID, NZAID, French AID and EU are LRD's traditional donor partners and have contributed significantly to the development of agriculture and forestry in the region.

2.3 Secretariat of the Pacific Regional Environment Programme (SPREP)

The Pacific Regional Environment Programme (SPREP) is the Pacific region's major intergovernmental organisation charged with protecting and managing the environment and natural resources. It is serviced by the Secretariat of the Pacific Regional Environmet Programme. 21 Pacific countries are members of the SPREP, while four countries with direct interest in the region are associated[1]. The goal of SPREP is to foster cooperation in the Pacific Islands region and to provide assistance to countries' efforts to protect the environment and ensure sustainable development. SPREP members have identified five main focal areas to guide the strategic direction for the work on climate change:

1. strengthening meteorological services,
2. understanding climate change, variability and sea level rise,
3. developing frameworks for analysing climate change impacts and vulnerability, as well as climate change adaptation and mitigation activities,
4. enhancing the development of climate change policies, and identifying and securing funding, and
5. facilitating the phase-out of ozone-depleting substances.

SPREP projects designed to achieve these goals are listed in Table 1.

Table 1. **SPREP programmes to support climate change activities**

Focal area	Programme	Project objectives	Donors/ Period
(1) Strengthening meteorological services	Pacific Islands-Global Climate Observing System (PI-GCOS) programme	1. Continually advocate the importance of GCOS observing systems to policy applications on the part of national governments and other interested users (e.g. social, cultural and economic implications). 2. Fully support and operate all identified GCOS stations in the region by 2005 and according to best practices by 2008. 3. Work with the AOPC to re-examine the spatial-distribution, criteria and coverage of GSN and GUAN stations in the region	

[1] France, Japan, United States of America,

		by 2003 and adjust the networks as appropriate by 2005. 4. Respond to the September 1999 WMO request for the provision of historical GSN and GUAN (when requested), metadata and data by 2003, and to rescue all existing climate data for the region by 2005 fully archive quality controlled climate data in digital form for the Pacific region by 2008. 5. Establish a permanent GCOS infrastructure by the end of 2002 with professional capacity within the region as appropriate (e.g. National GCOS Coordinator, Regional or National Climate Centres, etc.)	
(2) Understanding climate change, variability and sea level rise	ARMS	1. Enhance transboundary management mechanisms. 2. Enhance conservation and sustainable use of coastal and watershed resources. 3. Enable the conservation and sustainable yield of ocean living resources. 4. Maximise regional benefits from lessons learned through community-based participation and to catalyse donor participation.	GEF February 2000 - December 2006
(3) Vulnerability, adaptation and mitigation	Capacity Building for the Development of Adaptation Measures in Pacific Island Countries (CBDAMPIC)	Develop and implement a capacity building programme to increase the capability of four Pacific Island countries (Cook Islands, Fiji, Samoa, Vanuatu) to reduce climate-related risks at the national and community level. Main project outcomes: 1. Mainstreaming of adaptation to climate change into the normal processes of national and sectoral planning and budgeting. 2. Increase the capacity of communities to adapt to climate-related risks and reduce vulnerabilities.	CIDA January 2002 - March 2005
	Pacific Islands Renewable Energy Programme (PIREP)	Preparation of a regional approach to removing barriers to the development and commercialisation of RE systems in the PICs that influences country efforts to reduce the long-term growth of greenhouse gas (GHG) emissions from fossil fuel uses, especially diesel. The purpose of the project is the acceleration of the adoption and commercialisation of feasible and applicable renewable technologies (RETs).	GEF/UNDP May 2003 - Dec 2005 (extended to August 2006)
(4) Policy development on climate change	No project	Enhance the development of climate change policy in PICs internationally, regionally and nationally, and identify and secure funding	
(5) Ozone-depleting substances	Pacific Ozone Depleting Substances (ODS) Project	1. Strengthen institutions by establishing National Compliance Centres in all core and additional countries of the Regional Strategy. 2. Establish national controls (regulations, licensing and monitoring systems) on the import of ozone depleting substances. 3. Build capacity through training programmes on "good practices in refrigeration" (for refrigeration technicians) and on "control of ODS imports" (for customs officers).	Montreal Protocol's Multilateral Fund Secretariat, including the bilateral contribution from the Government of Australia October 2002 -

SPREP is the lead intergovernmental environmental agency for the Pacific island countries. It has had long association and experience with managing and coordinating successful GEF-funded and UNDP-supported regional/multi-country projects. PACC project will be managed and coordinated through SPREP's Pacific Futures Programme, as part of its strategic programme on Climate change, Climate Variability and Sea-Level Rise within the framework of SPREP's programmatic approach.

SPREP is also the intergovernmental organisation in the Pacific which has a regional mandate for climate change interventions and houses the only regional Climate Change, Climate Variability and Sea-Level Rise programme among the CROP agencies. One of the key instruments that this programme manages is the Pacific Islands Framework for Action on Climate Change, Climate Variability and Sea-Level Rise 2006-2015 (PIFACC), which has been endorsed by SPREP Meeting and Pacific Islands Forum Leaders Meeting in 2004.

SPREP has many years of experience as a GEF executing agency on several major regional environment projects including biodiversity and climate change. With respect to climate change projects, the Pacific Islands Climate Change Assistance Programme (PICCAP) was executed by SPREP between 1997 and 2001 to the amount of US$4.5 million (including US$1 million for the EA Phase II). SPREP also executed a South Pacific Biodiversity Conservation Programme (SPBCP) and the Strategic Action Programme for International Waters of the Pacific Small islands Developing States (SAP). SPREP is currently completing arrangements to launch a recently approved GEF-funded and UNDP-supported programme on Pacific Islands Greenhouse Gas Abatement and Renewable Energy Project which it had designed under the Pacific Islands Renewable Energy Project (PIREP).

In the context of this project, SPREP will cooperate closely with SPC-LRD on the Pacific-German Cooperation on Climate Change project in respect of adaptation to climate change in land resources management including agriculture and food security and sustinable forest management. Cooperation between SPREP and SPC-LRD will be paramount especially in implementation of adaptation activities within agriculture and food security sectors of the PACC project in Fiji, Papua New Guinea and Solomon Islands.

2.4 Pacific Islands Applied Geoscience Commission (SOPAC)

The Pacific Islands Applied Geoscience Commission (SOPAC) is an inter-governmental, regional organisation set up to assist its member countries' efforts in promoting sustainable development. SOPAC member countries are Australia, Cook Islands, Federated States of Micronesia, Fiji Islands, Guam, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. American Samoa, French Polynesia, Tokelau and New Caledonia are associate members. SOPAC's directly supports its member countries by providing basic geological knowledge. Indirect support is provided through improvements in land and ocean use, leading to improved health through water and sanitation provision, wealth generation through the development of mineral resources, hazard and disaster management and sustainable development by taking into account the geo-environmental impacts of development.

SOPAC is funded by member-country contributions and supported by the following donors: Australia, Fiji Islands, Canada, France, Ireland, Japan, New Zealand, Office of US Foreign Disaster Assistance, Taiwan, the United Kingdom, the Commonwealth Secretariat, the

European Union, and certain UN agencies. Its work is carried out through its Secretariat, based in Suva, Fiji. The work programme is reviewed annually by the Governing Council assisted by Secretariat representatives, a Technical Advisory Group (TAG), and a Science, Technology and Resources Network (STAR).

SOPAC operates three key programmes:

1. the Ocean and Islands Programme, an integrated programme focused on research, development and management of non-living resources in ocean and island systems, addresses issues relating to seabed resources, energy, maritime boundary delimitation and monitoring of ocean processes;
2. the Community Lifelines Programme, a diversified programme that strengthens national capacities in energy, water and sanitation, information and communications technologies; and
3. the Community Risk Programme, a comprehensive programme aimed at reduction of community vulnerability through improved hazard assessment and risk management.

SOPAC could contribute to the GTZ project through its work on the water sector and its programme on Intergated Water Resources Management (IWRM) and through its coastal management activities. Kiribati and Tonga where water and land use planning are paramount under the GTZ project could benefit from cooperation with SOPAC's key programme areas, as outlined above.

2.5 University of South Pacific (USP)

The University of South Pacific (USP) is a major player in the field of climate change as it conducts research on topics related to climate change mitigation and adaptation, and is directly involved in implementing various projects on the ground. For example, supported by AusAID and the World Bank, USP is currently collaborating with SOPAC and SPREP to implement the South Pacific Vulnerability and Adaptation Initiative. This initiative, which is consistent with the objectives of the Pacific Island Framework for Action on Climate Change, Climate Variability and Sea Level Rise, aims at enabling PICs to adapt to the future impact of climate change, climate variability and sea-level rise. It pursues these objectives by strengthening regional collaboration between relevant multilateral and regional technical agencies and other bilateral donors, and enlisting the support of key government, community and private stakeholders. Initiated in 2002, the South Pacific Vulnerability and Adaptation Initiative is expected to be completed in 2008. Unfortuntely, this programme has not been implemented.

The START (Global Change SysTem for Analysis Research and Training) Oceania Secretariat is based with the Pacific Centre for Environment and Sustainable Development (PACE-SD) at the USP. Its main objective is to create a sense of ownership about the regional aspects of global change problems through awareness building among stakeholders. In this context, it is particularly concerned with the impacts of climate variability and change, as well as sustainable natural resource management. A second goal is the dissemination of information on global change related activities and the promotion of research-based capacity building. START Oceania Secretariat and PACE-SD are currently collaborating on the following adaptation-related projects, funded by the Asia Pacific Network for Global Change Research (ANP):

- *Climate Change Adaptation and Variability:* This project on community-based climate change adaptation commenced in July 2006. It is aimed at enhancing the adaptive capacity of rural communities in Fiji. Further collaborators are the Institute of Applied Science (IAS) at the USP and the Environment Ministry of Fiji.
- *Community Relocation Project:* This project, which examined the implications of community relocation as an adaptation option in PICs, commenced in late 2005 with

participation from Fiji, Kiribati, New Zealand, Niue, Papua New Guinea, Solomon Islands, US, and Vanuatu. The project included three main components: (1) a detailed survey of existing literature on the occurrence of environmental extremes and community relocation in Pacific Island communities; (2) participatory community-based research and fieldwork in the village of Biausevu in southern Viti Levu (the largest island in Fiji), which was to be relocated; and (3) a regional workshop in which participants discussed national experiences and/or expectations of community relocation, the results of the community based research were shared, and some exercises based on hypothetical scenarios were conducted (APN, 2007).

Training/capacity building at different levels:

- *community level*: e.g. project involving 6 villages with a focus on coastal and water resources (selection of villages: open application, then screening by USP, e.g. with regards to already existing/ongoing natural resource management; water and coastal resources as identified in NCs). New methodology developed to implement adaptation at community level: "Integrated Assessment and Action Methodology". Implementation of soft measures first, hard measures (infrastructure) later. Communities are empowered to continue actions, which is, inter alia, supported and monitored by and through a community liaison officer who is put in place. Key lessons: develop a solid analysis of what is at hand; view actions through a cc lens: what is exacerbated by cc?
- *institutional level:* short-term in-country trainings (1-2 weeks) with broad target groups: experts, government officials, media, community-level (e.g. NGOs); people trained in Fiji became trainers in Samoa, Kiribati etc.;
- *university level*: long-term training (1 semester; before: 2 semesters with post-graduate certificate): targeting graduate-level students and beyond ("mature entry" for people with work experience); both distance education and face-to-face (e.g. field trips, climate modelling)

The Centre for Env and SD has an advisory committee through which it collaborates with SPC and other regional organisations. The Centre is uniquely positioned in that it deals with cross-cutting, multi-disciplinary environmental approaches. Collaboration with SOPAC, Ministries, other organisations (e.g. CSIRO).

USP's contribution to GTZ project (comparative advantage) in the provision of training and capacity-building on land management, vulnerability assessments, prioritisation and evaluation of adaptation strategies, measures and policies, models/techniques for scenario generation; and on targeted research on issues pertaining to land resources management.

3. Overview of regional initiatives supporting climate change adaptation (and mitigation)

3.1 The Pacific Plan for Strengthening Regional Cooperation and Integration

In October 2005, Pacific leaders have endorsed the "Pacific Plan", which aims at strengthening cooperation between the sovereign countries of the region to enhance national capacities in order to better support their people. It identifies areas of cooperation which will help the countries to derive greater benefits from sharing scarce resources and aligning their policies. The Plan is seen as a "living document" aimed at guiding the long-term development of the Pacific region. Existing plans and policies will be invigorated and new ones developed to promote progress in the areas of economic growth, sustainable development, good governance, and security. Regional policies and plans for sustainable development, for example, address natural disasters, climate change and variability, water resource management, fisheries and ocean resources, biodiversity and conservation, as well as waste management.

Table 2 provides an overview of the status of activities, being implemented under the sustainable development pillar of the Pacific Plan, that contribute to climate change adaptation or mitigation.

Table 2. **Pacific Plan implementation strategy: climate change-related initiatives**

Strategic objectives	Initiatives for the first three years (2006-2008)	Milestones	Status		
			Implemented	Agreed in principle	Further analysis required
5. Improved natural resource and environmental management	5.1 Develop and implement National Sustainable Development Strategies (NSDS), using appropriate cross-cutting and Pacific relevant indicators.	• National Sustainable Development Strategies developed and implemented for all member countries by the end of 2008. • Progress reports in 2006 and 2007.	√		
	5.2 Develop and implement national and regional conservation and management measures for the sustainable utilisation of fisheries resources.	• Progress reports in 2006 and 2007.	√		
	5.4 Implement the Pacific Islands Energy Policy and associated Strategic Action Plan to provide available, reliable, affordable, and environmentally sound energy for the sustainable development of all Pacific island communities	• Regional energy policies and plans implemented by the end of 2008, with progress reports in 2006 and 2007.	√		
	5.5 Develop and implement the Pacific Regional Action Plan on Sustainable Water Management	• Progress reports in 2007 and 2008.	√		
	5.6 Continue development of adaptation and mitigation efforts linked to the Pacific Climate Change Framework 2006-2015 and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2006-2015; including public awareness, capacity building and improving governance, risk and vulnerability assessments, and, should a genuine need arise, consideration of measures to address population dislocation.	• Adaptation and mitigation proposals developed and submitted to the 2006 Forum.		√	
	5.7 Facilitate international financing for sustainable development biodiversity and environment protection and climate change in the Pacific including through the Global Environment Facility	• Progress reports in 2006 and 2007.	√		

Members of the Pacific Plan Action Committee include

- the following countries:

  Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu;

- the following CROP (Council of Regional Organisations in the Pacific) agencies:

  Forum Fisheries Agency (FFA), Pacific Islands Forum Secretariat (PIFS), South Pacific Board for Educational Assessment (SPBEA), Secretariat of the Pacific Community (SPC), South Pacific Applied Geoscience Commission (SOPAC), South Pacific Regional Environment Programme (SPREP), South Pacific Travel, and the University of the South Pacific (USP);

In addition, the following countries have an observer status:

France, French Polynesia, Guam, New Caledonia, and the US.

3.2 Pacific Island Framework for Action on Climate Change 2006-2015 (PIFACC)

The Pacific Island Framework for Action on Climate Change 2006-2015 was approved by leaders of the Pacific Islands in June 2005. It serves as a regional platform for deepening and broadening regional cooperation on addressing climate change. The goal of the Framework is to "[e]nsure Pacific island people build their capacity to be resilient to the risks and impacts of climate change". In order to achieve this goal, six principles have been identified in the Framework along with their expected outcomes (see Table 3):

Table 3. **Framework principles and expected outcomes by 2015**

Principles	Expected outcomes by 2015
Principle 1: Implementing adaptation measures	1.1 Adaptation measures to the adverse effects of climate change developed and implemented at all levels. 1.2 Identification of vulnerable priority areas/sectors and appropriate adaptation measures using available and appropriate information recognizing that such information may be incomplete. 1.3 Adaptation measures in vulnerable priority areas supported by existing data sets and traditional knowledge, or new data developed in some instances as necessary. 1.4 Appropriate adaptation measures integrated into national/sectoral sustainable development strategies or their equivalent and linked to the budgeting process.
Principle 2: Governance and decision making	2.1 Climate change considerations mainstreamed into national policies, planning processes, plans and decision-making at all levels and across all sectors. 2.2 Partnerships and organizational arrangements between government agencies, private sector, civil society, community and other stakeholders strengthened. 2.3 CROP agency partnerships coordinated, harmonized and strengthened to ensure country and outcome focused delivery of services. 2.4 Good governance by all stakeholders in climate change activities management at regional, national and local levels strengthened.
Principle 3: Improving our understanding of climate change	3.1 Existing meteorological, hydrological, oceanographic and terrestrial institutional capacity including data collection systems sustained and upgraded. 3.2 Technical data sets integrated with relevant climatic, environmental, social and economic information and data sets, and traditional knowledge for risk management. 3.3 Analytical frameworks, models and tools for projections of regional climate change and variability, risk assessment and management strengthened. 3.4 Development, strengthen where necessary datasets and information required to underpin, strengthen and monitor vulnerable priority areas, sectors and adaptation measures.
Principle 4: Education, training and awareness	4.1 Strengthened human capacity to monitor and assess environmental, social and economic risks and effects of climate change. 4.2 Strengthened human capacity to identify, analyse and implement cost effective adaptation measures as well as greenhouse gas reduction measures and creation of a pool of informed resource persons conversant with development of practical steps in adaptation tools and methods. 4.3 Strengthened human capacity to identify and integrate economic, scientific and traditional knowledge into adaptation and greenhouse gas reduction practices. 4.4 Better informed public on climate change issues.
Principle 5: Contributing to global greenhouse gas reduction	5.1 Energy efficiency actions and cost effective technologies promoted and implemented. 5.2 Cost effective renewable energy technologies and local sources promoted, shared and implemented. 5.3 Commitments met on ozone depleting substances. 5.4 Clean Development Mechanism initiatives developed and implemented, where appropriate.
Principle 6: Partnerships and cooperation	6.1 Existing and emerging international partnerships for the Pacific islands region on climate change and related issues strengthened and established. 6.2 Enhanced coordination of regional action on climate change issues. 6.3 Climate change related assistance from development

	partners coordinated and harmonized to maximize benefits to PICTs'. 6.4 Access by PICTs' to secure increased resources from funding mechanisms related to climate change instruments optimized. 6.5 Promote significant international support through advocacy for further reduction in greenhouse gases and securing resources for adaptation.

Source: Pacific Islands Framework for Action on Climate Change 2006-2015 (2005).

In the Framework, Pacific Island leaders state that "[i]t will require more focused and substantially increased effort, by PICTs and appropriate support from their regional organisations and the international community." The PIFACC is currently being translated into an Action Plan under the guidance of the Secretariat of the Pacific Regional Environment Programme (SPREP). The Pacific Climate Change Roundtable (PCCR) has been re-invigorated to guide and monitor implementation of the Framework, evaluate progress and address existing gaps, and ensure appropriate coordination. The PCCR is to meet at least once a year, and to review and improve the Action Plan every three years. Financial contributions from PICTs, CROP agencies and international donors and financial institutions are critical for the successful implementation of the Action Plan.

The "Action Plan for the Implementation of the Pacific Islands Framework for Action on Climate Change 2006-2015" is currently being circulated as a draft version for discussion, comments and revision. It provides "a menu of options for action on climate change" that should help implement the Framework by guiding actions that allow for meeting the key outcomes of the principles outlined in the Framework (see Table 3). This menu of options, presented in Table 4, contains actions to be taken on both national and regional levels.

Table 4. **National and regional level actions on climate change under the Action Plan**

Framework outcomes to be achieved (by principle)	**Actions to be taken at national level**	**Actions to be taken at regional level (by regional organisations and international partners)**
Principle 1: Implementing adaptation measures	• Protect coral reefs from bleaching • Promote sustainable harvesting of in-shore fisheries • Establish integrated coastal management adaptation measures to increase the resilience of coastal systems • Promote mangrove protection • Protect and conserve freshwater resources and promote watershed management • Diversify subsistence crops, promoting agro-forestry, encouraging sustainable practices and developing economic opportunities in agriculture, and breeding and protection of more tolerant crops and cultivars • Conserve and protect biological diversity • Protect human health from climate change related diseases • Formulate appropriate building and zoning codes • Take account of social and gender impacts of climate change and prepare remedial actions	• Assist with the design, financing and development of national adaptation measures, such as those referred to above • Provide capacity building training for the implementation of national adaptation measures • Promote regional adaptation projects that involve local communities and promote livelihoods • Facilitate regional exchange on best practices and lessons learned from adaptation activities that can be replicated within the Pacific Islands context • Assist in accessing adaptation funds and the development of proposals

Principle 2: Governance and decision making	• Promote adaptation action at the national policy level (top-down) and at the community level (bottom-up) • Mainstream adaptation into socio-economic planning, policies and regulations, environmental planning and sectoral plans, and develop country specific national sustainable development strategies or their equivalent, incorporating adaptation considerations of risks and effects to climate change as well as applicable traditional knowledge practices • Identify, assess, prepare and implement integrated adaptation measures and responses to climate change impacts • Promote close links between National Disaster Management Units, Meteorology and Climate Change teams • Mandate risk assessment requirements as part of project appraisals, including Environmental Impact Assessment for all major infrastructure and economic development projects • Adapt, develop and implement community based project development and appraisal process though community vulnerability assessments (incorporating economic, social and environment impact assessment) with a focus on livelihoods • Identify, assess and implement suitable regulatory and incentive based strategies and instruments to climate proof communities and physical infrastructure.	• Develop decision-making processes for prioritisation and resource allocation at the national level to reflect effects of climate change • Document best practices in the formulation of national sustainable development strategies • Guide the adoption of appropriate risk management processes, including economic and social assessment of options, prioritisation and decision-making process, scientific and technical assessment • Support capacity building in the region for the skills required under national action above • Integrate links between all regional centres compiling data on sea level rise • Support PICTs in identifying, assessing and implementing regulatory and incentive based approaches and instruments suitable to their social, political and economic context • Support PICTs in developing and implementing legislations and support informal institutions in climate proofing communities and infrastructure • Provide technical assistance to build the capacities of PICTs for the integration of comprehensive risk management into sustainable development planning • Support PICTs in completing needs assessments that may be required to access additional funds
Principle 3: Improving our understanding of climate change	• Enhance existing institutional capacity of national meteorological, hydrological and oceanographic services • Develop national data policies on how institutional capacity to sustain observational collection systems, networks and technical data sets, and convert existing climate data into digital form • Install affordable and user friendly observation and application systems for local communities • Maintain and enhance basic instrumentation (in-situ measurements and instrumentation systems such as satellites, ARGO floats) needed for weather, hydrological, terrestrial and oceanographic forecasting and prediction	• Improve paleoclimatic understanding of the Pacific • Facilitate implementation of the PI-GCOS Implementation Plan and of the Meteorological Services Needs Analysis Projects • Develop other relevant global observation systems for action in the Pacific and promote regional mechanisms that focuses on synergies and efficient delivery of these regional plans • Implement activities listed for national action above • Establish a Regional Clearing House on Climate Change Information and promote improvements in telecommunications capacity across the region • Provide relevant documentation on climate change and extreme events, and monitoring and characterisation of the impacts of sea level rise and storm surges • Facilitate assistance for the maintenance of meteorological equipment to ensure ongoing reliable data at the national level

		and satellite/remote sensing with in-situ monitoring
Principle 4: Education, training and awareness	• Appoint national focal points for UNFCCC Article 6 (Education, training and awareness) and complete the needs assessment under this article for appropriate community level training, development of curriculum for all level and translation of education material into local languages for advocacy and awareness purposes • Enhance human capacity to observe, predict and monitor climate change and climate variability, and enhance use of climate prediction by National Meteorological Services staff and potential users in climate sensitive industries • Strengthen the expertise of local staff for the effective management and coordination of climate change activities • Disseminate information and tools about climate change, variability and extreme events and issues related to economic and social implications to policy makers, landowners, private sector, the general public and outer island and remote communities • Develop public awareness programmes related to health risks of climate change • Incorporate climate change adaptation into public awareness programmes on conservation of biodiversity • Establish exchange, secondment and mentoring programs for training of personnel • Develop and implement training programmes focused on climate change, for scientific, technical and managerial personnel and for the media • Enhance and maintain national climate change country teams and a list of national climate change experts • Conduct inventory and map coastal and near shore resources and processes (e.g. beaches, soils, biodiversity), including baseline inventories against changes which can be monitored and coordinated, as well as inventory/ assessments of highly vulnerable priority areas and sectors	• Develop and maintain regional expertise for research and development focused on climate change, climate variability and sea level rise • Develop a directory of regional and national organisations and individuals, with a view to building active networks in the implementation of climate change activities • Providing resources to facilitate the capacity development of PICTs working on climate change and climate variability related issues through intra-regional cooperation and training • Conduct regional workshops to prepare for climate change negotiations • Set up and support regional scholarship funds, mentoring programs and expert training in support of national actions outlined above • Establish Regional Climate Change Centre of excellence to provide information advice, training, networking and linkages to ongoing research at USP and other tertiary institutions
Principle 5: Contributing to global greenhouse gas reduction	• Adopt voluntary national GHG or renewable energy and energy efficiency targets, including through national standards for equipment and installations • Implement findings of the national assessments of renewable energy resources potential and identify energy efficiency opportunities and GHG reduction equivalents • Develop and maintain data on inventories of GHG emissions and	• Conduct a regional review of existing energy and climate change-related legislation, plans and policies to ensure effective utilisation of feasible renewable energy and energy efficiency technologies and applications for mitigating GHG • Disseminate reports on the technical and financial sustainability of existing renewable energy and energy efficiency projects in mitigating GHG, provide technical assistance to improve their

	sinks • Implement no regrets energy efficiency projects • Develop and implement CDM related policies and legislation, such as designating a Designated National Authority for approving CDM projects • Develop renewable energy and energy efficiency projects under the CDM • Build the capacity of local businesses and financing institutions to understand and respond to local renewable energy and energy efficiency opportunities • Develop initiatives to support biofuels, sustainable transport, cost effective use of energy and sustain National Compliance Centers (NCCs) established under the Montreal Protocol to comply with obligations in a climate sensitive manner	performance and disseminate good practices and lessons learnt • Assist with securing resources from international and global financial facilities to support both local and regional initiatives towards effective mitigation of GHG through renewable energy and energy efficiency initiatives • Establish a regional CDM function through the Climate Change Centre of excellence referred to above in providing information and advice on CDM project activities, and for bundling of projects across the region • Provide technical support to update or complete Greenhouse Gas Inventories in accordance with requirements for second national communications • Assist PICTs in sustaining ODS National Compliance Centers and compliance with national Montreal Protocol obligations
Principle 6: Partnerships and cooperation	• Seek to promote increased bilateral and international partnerships from traditional and non-traditional partners to address national climate change issues and to secure funding • Seek access to financial and technical assistance available under the NAPA's, Second National Communications, Special Climate Change Fund, GEF Adaptation Pilot funds, Clean Development Mechanism Adaptation Fund, UNDP Small Grants Scheme etc. • Participate actively in the development and implementation of the Nairobi Work Programme on Impacts, Vulnerability and Adaptation • Seek the support of the private sector in national climate change initiatives and in particular the CDM • Prepare national reports on action taken to implement the Pacific Islands Framework for Action on Climate Change and this action plan • Provide high level and consistent national representation to climate change negotiations meetings	• Promote joint climate change projects between international organisations, education and research institutions and PICTs • Establish a network of PICT climate change teams and professionals through the Climate Change Centre referred to above • Assist PICTs in convening regular Pacific Climate Change Roundtable Meetings to promote the Framework and this Action Plan • Assist PICTs in updating the regional climate change matrix to be developed for consideration at Roundtable meetings • Assist PICTs in implementing the Nairobi Work Programme on Impacts, Vulnerability and Adaptation as well as other related activities • Facilitate the involvement of international and regional private enterprises in climate change activities at the national and regional level, including through CDM activities • Facilitate national access to climate change funds such as those referred to above through technical support and mobilise additional financing for the region • Maintain high level advocacy on the climate change challenges faced by PICTs through partnerships within CROP, the Alliance of Small Island States and the GEF Council constituency, and to continue to provide relevant briefings to international meetings on climate change

Source: Adapted from SPREP (2006).

3.3 LRD Strategic Plan

The Strategic Plan for SPC Land Resources Division (LRD) sets out the direction of the division over the next four years (2005 to 2008). It follows and supersedes the 2001–2004 Strategic Plan of the Agriculture Programme and the 2001–2005 Strategic Plan of the Forestry Programme. It recognises the achievement of several objectives contained in the earlier documents, as well as current and emerging regional priorities in the agriculture and forestry sectors. The plan reflects the recent organisational restructure, which brought together the previously separate Agriculture and Forestry programmes under the umbrella of an integrated Land Resources Division. While based in Suva, LRD has a number of staff located beyond the Fiji Islands. As one of SPC's three divisions (the others being Marine Resources and Social Resources), LRD covers the two broad sectors of agriculture and forestry. Main work programme areas include sustainable agricultural systems, plant protection, conservation and use of plant genetic resources, animal health and production, agroforestry, and sustainable forestry and land management. The division has approximately 65 staff and an annual budget of approximately CFP 750 million (USD 7.5 million).

4. Donor involvement and programmes in the region: Examples of programmes and projects contributing to climate change adaptation

4.1 Pacific Adaptation to Climate Change project (PACC)

The Pacific Adaptation to Climate Change project (PACC) is a UNDP/GEF supported regional project for 11 PICs: Cook Islands, Federated States of Micronesia, Samoa, Vanuatu, Fiji, Papua New Guinea, Solomon Islands, Nauru, Niue, Tonga, and Tuvalu. It was jointly requested by Pacific Leaders and Environment Ministers, and constitutes an umbrella of nationally driven and implemented adaptation pilots. GEF assistance will be targeted at improving adaptive capacity to address climate change concerns at the national level and, together with individual country co-financing, finance the implementation of pilots that reduce vulnerability to climate impacts which countries themselves have identified on the basis of nationally and scientifically endorsed assessments. The objective of the PACC, based on national consultations with experts on climate change impacts in the 11 participating countries, is to "enhance the capacity of participating countries to adapt to climate change, including variability, in selected key development sectors". The following outcomes will be secured:

- Enhanced adaptive capacity of key economic sectors such as the coastal sector (in the Cook Islands, Federated States of Micronesia, Samoa and Vanuatu), agriculture and food security sector (in Fiji, Papua New Guinea and Solomon Islands) and the water sector (in Nauru, Niue, Tonga and Tuvalu);
- National policies and programmes in above economic sectors integrate adaptation to climate change priorities; and
- Regional cooperation promoted between participating countries to share lessons learned and promote innovation in mainstreaming adaptation to climate change adaptation.

PACC is currently awaiting a funding decision by the GEF on the basis of related climate change projects being included in the GEF-Pacific Alliance for Sustainability (GEF-PAS). Annex 2 contains an overview of specific activities being planned for PACC participating countries that are target countries of the GTZ appraisal mission: Vanuatu, Fiji, Solomon Islands, and Tonga.

4.2 GEF Pacific Alliance for Sustainability (GEF-PAS)

In September 2007, the GEF announced to commit 100 million USD to the GEF Pacific Alliance for Sustainability (PAS) programme in the Pacific over a three-year period. In response to national priorities PAS will focus on biodiversity, climate change, international waters, and

other cross-cutting issues integrated across sectors, such as land and water management. Under PAS, climate change is to be tackled by a two-pronged approach, addressing both mitigation and adaptation issues. The main focus of the programme, however, will be on adaptation. "Adaptation funding from the GEF, including the climate change adaptation funds, will support the Pacific small island countries' work to identify and implement suitable adaptation measures, including the integration of adaptation into core development sectors such as agriculture and food security, access to drinking and irrigation water, health, and disaster risk management" (Barbut, 2007). With help of the programme, a process to climate proof critical infrastructure in PICs will be established and climate-related risks shall become an integral part of national strategic planning. The implementation of the programme is scheduled to begin in 2008/9. Investments under the PAS will be demand-driven and represent national, sub-regional and regional priorities (Wedderburn, 2007).

4.3 Pacific Islands Climate Change Assistance Programme (PICCAP)

Inaugurated in 1997, the Pacific Islands Climate Change Assistance Programme (PICCAP) is a GEF/UNDP project that involves 10 PICs: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Samoa, Solomon Islands, Tuvalu and Vanuatu. Being coordinated and executed by SPREP, PICCAP is designed to strengthen the participating countries' capacities in terms of training, institutional strengthening and planning activities in order to meet the reporting commitments, i.e. National Communications, under the UNFCCC. Within the context of PICCAP, however, some adaptation-related activities were also carried out, such as the vulnerability and adaptation assessment training that was provided to PICs. A model subsequently designed by Waikato University, New Zealand and the University of the South Pacific, Fiji allowed participants to make predictions on climate change impacts on vulnerable areas. Vulnerability assessments highlighted the following key sectors which have been affected by climate change and sea-level rise: coastal zone and coral reefs; agriculture and food security; marine resources; water resources; and biodiversity. Some examples of the effects included a decline in fruit crops production and low export sales due to drought and low rainfall in previous years, and loss of agricultural land due to intrusion of seawater through flooding, inundation, and coastal erosion especially in the atoll islands (SPREP, 2007; New Zealand Climate Change Programme, 2002).

4.4 Climate Change Adaptation Program for the Pacific (CLIMAP)

The Asian Development Bank's "Climate Change Adaptation Program for the Pacific" (CLIMAP) was designed to assist participating PICs to adapt to current and future climate risks. Since 2002, integrating adaptation to climate variability and change into development planning and management under this programme is supported by a "Climate Change Adaptation through Integrated Risk Reduction (CCAIRR)" framework and methodology – a risk-based approach to adaptation and to mainstreaming adaptation. This technical assistance programme has been developed to ensure mainstreaming at two distinct levels: (i) at ADB level, where climate change is to be integrated into ADB strategy, programme and project operations; and (ii) at the country level. CCAIRR has already been tested in two Pacific Island member countries, the Cook Islands and the Federated States of Micronesia. The assessment of risks arising from current climate variability and future climate change is made an integral part of development activities and has in the case study countries been demonstrated by "climate proofing" infrastructure and community development projects. Climate-related risks are already high for island communities, as well as for basic infrastructure. Risks are likely to increase considerably under current climate change scenarios, as well as under observed climate variability and extreme events. CLIMAP studies have shown that for infrastructure projects, it is possible to avoid most of the costs attributable to damage from climate change, and to do so in a cost-effective manner. Climate proofing undertaken at the design stage of the project is one approach to achieve this (ADB, 2002 and 2005).

4.5 Capacity Building for the Development of Adaptation Measures in PICs (CBDAMPIC)

The Canadian-funded Capacity Building for the Development of Adaptation Measures in PICs (CBDAMPIC) project is aimed at integrating longer-term climate change risks into development and resource management planning, thereby improving adaptive capacities and enhancing livelihoods. It recognises a wide range of risks associated with climate change, not only those derived from climate change models/scenarios; focuses on community-based vulnerability assessments adaptation options; engages communities in the processes of improving capacities to deal with climate-related risks; and incorporates adaptation to climate-change risks and related vulnerabilities into existing institutional and decision-making processes, at both the community level and the national planning level.

CBDAMPIC was the first climate change project in the Pacific region to pilot adaptation implementation. It was set out to employ a two tiered "top-down" and "bottom-up" "learning-by-doing" approach to adaptation to climate change. The project promotes climate change adaptation that empowers the local populace to start addressing the adverse effects of climate change using the participatory approach. The project was piloted in 16 communities in 4 PICs (Cook Islands, Fiji, Samoa and Vanuatu) and provides valuable lessons for future work on adaptation in SIDS.

4.6 South Pacific Adaptation and Vulnerability Initiative 2004-2007

The South Pacific Adaptation and Vulnerability Initiative 2004 – 2007, launched and financed by AusAID, is being conducted in cooperation with SPREP, SOPAC, USP and the World Bank. The initiative aimes at enabling PICs to adapt to future impacts of climate change, climate variability and sea-level rise. Consistent with the objectives of the Pacific Island Framework for Action on Climate Change, Climate Variability and Sea Level Rise, the initiative is designed to strengthen regional collaboration between relevant multilateral and regional technical agencies and other bilateral donors, and to enlist the support of key government, community and private stakeholders. With the AU$4 million committed under this initiative, a range of practical adaptation assistance is provided to PICs. For example, AU$1 million in small grants is used for community-level adaptation activities in Samoa, Fiji, Vanuatu, Tonga and the Solomon Islands; another AU$1 million is used to support implementation of Tuvalu's Water and Sanitation Strategy, inter alia, by funding water tanks for Funafuti and a water engineer for 2 years; further funding is being used to improve water security through provision of rainwater tanks, improving food security through crop diversification, and coastal stabilisation through replanting of mangroves; and the remaining funding is supporting a range of other high-priority projects, including research on the impacts of climate change on coastal and pelagic fisheries.

4.7 Pacific Islands Climate Prediction Project

This project is aimed at building the capacity of national meteorological services (NMS) to interpret weather and climate data, using purpose-developed software, and to provide climate prediction support to industry, government and the people of the Pacific. The NMSs are working with private and public sector clients (farmers, water resource managers, public health authorities, tourism industry) to develop long-range forecasts relevant to their planning needs. The project is managed by the Australian Government's Bureau of Meteorology (BOM), who is working in partnership with the NMS of 10 PICs, including PNG. The project is now in its second phase (AU$3 million: 2007-09), bringing total project funding to $5.3 million since the project commenced in 2004.

4.8 South Pacific Sea Level and Climate Monitoring Project (SPSLCMP)

The South Pacific Sea Level and Climate Monitoring Project (SPSLCMP) was established in 1991 in response to concerns raised by Pacific Islands Forum Leaders' regarding the potential impacts of global warming. It has the objective of building a long-term, high-quality data record of sea surface temperature and absolute sea level movements from sensors on 12 islands across the Pacific. Data is used by Pacific countries to better monitor and plan for changes in sea level. The SPSLCMP is managed by the Australian BOM. Geoscience Australia and SOPAC are sub-contracted by BOM to provide technical inputs and regional coordination of communications respectively. The project is currently in its 4th phase (AU$9 million: 2006-2010), bringing total funding committed to the project to AU$32 million (1991-2010). In 2007 AusAID funded an independent strategic review of the SPSLMCP to investigate and advise on the long-term sustainability of the network; the need for infrastructure upgrades; mechanisms for improving coordination with related activities; options for ensuring long-term provision of utilities; and options for future funding and management of the network. The report is currently available for wider stakeholder comment (by 11 January 2007), which will inform AusAID's formal response to the report.

4.9 Further adaptation-related regional initiatives

4.9.1 Pacific Regional Forestry Programme

The Regional Forestry Programme was formally established within the Land Resources Division in January 2000. It is based at the Pacific Islands Forum Secretariat complex in Suva, Fiji, and is headed by an Adviser who is supported by a Programme Secretary. Among its role and responsibilities, the programme provides a focal point for collaboration, coordination and implementation, working together with associate SPC programmes and other regional initiatives, towards strengthening national capacity in promoting sustainable land-use, forest management and utilisation in the region.

Key objectives of the Programme as stated in its Strategic Plan 2001-2004 include:

- Strengthening of national capacity to formulate and implement sound forest policies and practices that achieve sustainable forest management, improved utilisation of timber and non-timber forest products, and conservation of endangered species and biodiversity;
- Promoting the application and adoption of multiple land-use systems such as agroforestry and traditional forest-related knowledge, including non-timber forest products, and appropriated technologies for rural-based communities;
- Promoting community awareness and participation in the management, utlisation and protection of remaining forest, water catchment areas, and littoral forests; and
- Provide focal point for advocacy, collaboration, information dissemination, and resource mobilisation.

Two projects currently operating under the Programme include:

- AusAID funded Forests and Trees Project;
- SPC/GTZ-Pacific German Regional Forestry Project (see section 4.9.2).

In addition, the Programme also works closely together with other various regional projects, initiatives and organisations in pursuing its goals. It has formal Memorandums of Understanding with the South Pacific Regional Initiatives on Forest Genetic Resources (SPRIG 2) and the Regional Forests Health Surveillance Project. Other collaborators include USDA Forest Service, CIRAD- Forest, USDA Natural Resource Conservation Service, and FAO SAPA. (www.spc.int/forestry/)

4.9.2 SPC/GTZ Pacific-German Regional Forestry Project (PGRFP)

The Pacific-German Regional Forestry Project (PGRFP) is a joint project of the Federal Republic of Germany through GTZ and the SPC through its Land Resources Division. The PGRFP is active in 8 PICs: Fiji, Vanuatu, Solomon Islands, Samoa, Niue, Tonga, Cook Islands and the Federated States of Micronesia. The programme assists its partner countries on four levels of intervention and impact:

1. To improve the enabling regulatory framework, fostering Sustainable Forest Management (SFM) and Sustainable Land Management (SLM), such as supporting the development of regional strategies, national policies (e.g. forestry, land-use), legislation, guidelines and plans.
2. To provide training and other support for resource owners/users and government staff in National Model Areas for community-based natural resources management. This multi-level and multi-sectoral approach facilitates the integration of "in-situ" experience from the field into the policy advisory services of the Project, and vice versa.
3. To effectively participate in international forest policy process (such as the UNFF)
4. To promote awareness for sustainable land use, not only for specific target groups, but also for the general public including children.

4.9.3 Developing Sustainable Agriculture in the Pacific (DSAP) project

The EU-funded Development of Sustainable Agriculture in the Pacific (DSAP) programme was inaugurated with a workshop which was held in Nadi, Fiji, on 24-26 June 2003. The project involves 10 PICs: Fiji, French Polynesia, Kiribati, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and Wallis & Futuna. […] (http://spc.int/dsap/PDFs/01%20-%20Jul03.pdf)

4.9.4 FAO Pacific Food Security project

The current phase of the FAO Pacific Food Security project commenced in May 2004 and will be continued until the end of 2008. Italy has committed US$7 million to the project which supports 26 national projects in 14 PICs and is aimed at enhancing food production and security focusing on supply-related activities as well as strengthening agricultural trade and policy. In agriculture and crop production, support ranges from fruit tree development (Cook Islands and Papua New Guinea), home gardening (Kiribati, Marshall Islands, Nauru and Tuvalu), food processing and value addition (Palau, Solomon Islands and Samoa), rice production (Fiji and Papua New Guinea), disease free banana in the Federated States of Micronesia to post-quarantine activities for the Solomon Islands. Also livestock development is important for income generation and food security of small farmers. The project supports, for example, poultry farming in Fiji, Niue and Samoa; butchery development in Vanuatu; piggery development and production in Niue, Marshall Islands and Tuvalu; and sheep farming in Tonga and Samoa are areas in which the project has assisted numerous Pacific farmer families.

FAO has increasingly recognized the importance of a regional perspective for the particular problems faced by small island countries, underpinning the Organization's rationale for adopting a regional approach to food security in PICs. At the regional level, the project thus provides training on trade facilitation and food safety as well as commodity chain studies for selected commodities in interested countries (www.fao.org/world/regional/rap/news_detail.asp?event_id=36106&year=2007).

4.9.5 WWF South Pacific Programme 'Climate Witness Community Toolkit'

The WWF South Pacific Programme, through work in Kabara in the Lau Group of Fiji islands, developed a methodology called the 'Climate Witness Tool Kit'. This toolkit outlines steps to develop a community-based adaptation strategy to deal with adverse impacts of climate change like reduced rainfall, coastal erosion and coral bleaching which are already being experienced. Central to the process is community participation as it takes their experiences into account, ensures community ownership and long term implementation of the action plan.

Successfully tried and tested in four villages in Kabara, WWF South Pacific shared this internationally renowned methodology with other community-based environment and development organisations in an Application and Training Workshop from October 25 - 27, 2006. Participating organisations included Live and Learn Environment Education, Laje Rotuma, the World Council of Churches in the Pacific, The Department of Fisheries, The Institute of Applied Sciences-University of the South Pacific, Partners in Community Development Fiji, Fiji Council of Social Services, the Macuata Women's Network and the Provincial Offices of Macuata and Lau. The objective of the workshop was to train participants to apply the methods contained within the toolkit in the communities they work in. A broader objective was to encourage the mainstreaming of climate change issues into existing organisational activities. This will strengthen community adaptation to climate change on a national level. Participants agreed to apply the toolkit within their respective community projects in Fiji and develop Climate Change adaptation plans. Eight of the participating organisations are developing a joint proposal to facilitate implementation of the action plans arising out of these communities (WWF, 2005).

4.9.6 Pacific regional climate change adaptation financing facility

Since 2002 a Regional Adaptation Financing Facility was being considered by PICs. This culminated in a AusAID-funded study by SPREP/KVA on the feasibility of establishing such a facility. PICs generally supported this concept but needed additional information. They also considered possible eligibility criteria, structure, potential sources of contributions and governance arrangements.

The Government of Australia has allocated AUD$4 million towards the Regional Adaptation Facility as part of the Vulnerability and Adaptation initiative. However, for reasons not yet clear, such facility was not established.

4.9.7 Pacific Island Adaptation Initiative (2003-2015)

The aim of this initiative is to enable Pacific Island countries to adapt to the future impact of climate change, climate variability and sea-level rise. Consistent with the objectives of the Pacific Island Framework for Action on Climate Change, Climate Variability and Sea Level Rise, the initiative aims to strengthen regional collaboration between relevant multilateral and regional technical agencies and other bilateral donors, and to enlist the support of key government, community and private stakeholders.

Activities for this initiative could include vulnerability studies, pilot projects and institutional strengthening and may catalyse:

a) Mobilisation of additional financing for the region (especially from new donors);

b) Support for improved coordination among donors and beneficiaries;

c) Support for improved coordination between various global and regional organisations involved in climate change and climate adaptation activities;

d) Promotion of rules and guidelines for access and implementation of adaptation funds by Pacific Island Countries.

The initiative was to give particular emphasis to capacity building measures in Pacific Island countries in order to improve their adaptation to climate change, climate variability and sea level rise and their preparedness for disaster response and to seek opportunities to co-finance with other donors and inter-governmental agencies.

The requirement for new approaches to climate adaptation emerged from a high-level meeting of finance, planning and environment ministers and heads of government agencies from the PICs held in Nadi, Fiji, in May 2002, concluded that adaptation to climate change and disaster management were closely linked and needed to be dealt with in the context of wider economic risk management.

The current status of this initiative is not known or clear.

ANNEX 1: OVERVIEW OF GTZ APPRAISAL MISSION TARGET COUNTRIES

Country	Geographic type	LDC	SIDS	SPC member	NAPA	NC	Adaptation priorities	Importance of agricultural sector
Fiji	High islands; a few minor atolls	No	Yes	Yes	No	Yes	Adaptation options identified for the following sectors: coastal resources; water resources; agriculture; health (see NC1).	Fundamental – main employer and net foreign exchange earner; subsistence a significant proportion of GDP
Kiribati	Predominantly atolls	Yes	Y es	Yes	Yes	Yes	Water resource adaptation project; simple well improvement; coastal zone management and resilience enhancement for adaptation; strengthening environmental, climate change information and monitoring; project management Institutional strengthening for NAPA; upgrading of meteorological services; agricultural food crops development; coral reef restoration, monitoring, and stock enhancement; upgrading, restoring, enhancing resilience of coastal defences and causeways; enabling Kiribati effective participation at regional and international forums on climate change (see NAPA).	Considerable. Important for subsistence; copra is important for outer-island cash income and some foreign exchange
Marshall Islands	Atolls	No	Yes	Yes	No	Yes	Adaptation measures need to be taken in the following socio-economic sectors: water resources, coastal resources, agricultural resources, and human health (see NC1).	Limited – some subsistence and income earned from copra
Solomon Islands	High islands; a few atolls	Yes	Yes	Yes	No	Yes	Sectoral adaptation measures: subsistence agriculture; commercial agriculture; coastal environments and systems; human health; water resources; marine resources. Adaptation response measures: development of a national policy framework; capacity building and institutional strengthening; public awareness and education (see NC1).	Fundamental – predominant source of employment; provides a substantial proportion of net export earnings; subsistence is a significant component of GDP
Tonga	High islands; a few small atolls	No	Yes	Yes	No	Yes	Adaptation priority is given to the following sectors: coastal areas, fisheries resources, agriculture and forestry, water resources; health (see NC1).	Fundamental – agriculture has led economic growth recently
Vanuatu	High islands; a few small atolls	Yes	Yes	Yes	No	Yes	Sectoral adaptation opportunities were identified for agriculture; human health; water resources; coastal development; coastal marine environments (see NC1).	Fundamental – predominant source of employment; provides a substantial proportion of net export earnings; subsistence is a significant component of GDP

ANNEX 2: SPECIFIC ACTIVITIES UNDER PACC IN INVOLVED GTZ TARGET COUNTRIES: VANUATU, FIJI, TONGA

Vanuatu

The island of Epi is in the Shefa Province of the Vanuatu archipelago. The island population is mostly distributed along the coast with the most populated area on the north eastern coast (Lamen Bay). Epi experiences on average 2.6 cyclones per year. A total of nine tropical cyclones have either directly or indirectly affected the infrastructure on Epi Island since 1941. In the event of extreme events (tropical cyclones, ENSO–related events) it can set the whole economy of Epi and Vanuatu back by 5 years, as much of the funding and assistance is diverted towards national recovery. In the case of Cyclone Ivy in 2004, damage was estimated at a total cost of USD 4.276 million (VT427.6 million).

Cyclone Ivy affected 50,000 people. 90% of water resources; 70% of roads; 60% of health infrastructure; 112 schools and over 80% of food crops were damaged. Epi was one of the rural areas worst hit by the cyclone and as a result, the main road network (main community lifeline) were eroded away. Reef debris deposited over the roads and flooding extending right into village grounds. The island's coastline has receded significantly and as a result several parts of the main roading network in Epi are not functional at present. According to the Public Works Department Report in 2006, the coastline has receded by over 20 meters in the last 20 to 26 years. The road infrastructure plays a vital role in the socio-economic livelihood of the island as it provides links to market access and essential services for the people. A number of sections of the Epi roads urgently require relocation and redesigning to enhance resilience to climate related risks. Vanuatu has committed US$2.9 million to the rebuilding of the main Lamen Bay wharf in Epi and storage houses that would be able to hold produce from the communities to await shipment to Port Vila or other overseas markets.

PACC will assist Vanuatu to increase the resilience of the roading infrastructures in Epi by enabling them to implement roading designs that takes into consideration current and future changes in climate and sea level rise. PACC will provide the opportunity to pilot adaptation interventions that takes an integrated approach ensuring that coastal issues are incorporated into the design of Epi's coastal roads, therefore making it more resilient and also takes into account the current and future resource and human settlement issues.

Indicative activities include:

- Implementing road relocation designs
- Construction of coastal/flood protection systems
- Gravelling and upgrading of road
- Construction of culverts, drainage and outlets
- Establishing set-back zones
- Planting and maintaining buffer zones.

Fiji

PACC will assist Fiji to implement new drainage network designs that would take into account changes in rainfall patterns now and into the future. This will enhance the resilience of high valued economic crops that are planted on these low-lying areas to the current and future impacts of rainfall extremes which lead to flooding or lack of rainfall leading to drought. It is

envisaged that through this assistance, a strengthened and sustainable climate resilient infrastructure design for drainage and flood protection in lowland farming areas is implemented. Agriculture has always been the largest sector in Fiji's economy, accounting for 43% of Fiji's foreign exchange earnings in 1999. It provides 50% of the country's total employment and contributes 19% to Fiji's GDP. The GEF assistance would help the Government of Fiji achieve its food production and food security development programmes as stipulated in its policies.

Indicative activities include:

- Designing drainage schemes able to cope with extreme rainfall regimes (i.e. flooding) associated with climate change;
- Constructing drainage system and outflows for a 50-year flood event
- Protecting arable land and crops from flooding
- Constructing coastal protective structures designed for a 50 year storm event
- Redesigning to account for a 50-year flood event and construct engineered outlet waterways, construction of culvert crossings, gravelling of feeder roads, upgrading/redesigning seawalls, installation of gabion baskets and upgrading of access roads and outfall structures- floodgate and flap gates in each drainage scheme.
- Strengthening networking and information sharing/exchange amongst farmers/stakeholders to develop appropriate measures to address climate change, climate variability and sea-level rise
- Developing a climate change and climate variability database and collecting data on sectors and relevant indicators to monitor and evaluate their impacts.

Tonga

The PACC pilot would be in the upper Hihifo District situated 15 kilometres south east of the capital of Tonga. The water resources are mainly from groundwater sources and supplemented by rainwater. The Hihifo District at the northwestern end of the island relies heavily on groundwater sources for consumption and other needs. Climate change and sea-level rise has had a significant impact on the livelihoods of the communities in Hihifo District which suffer from drought and impacts of saltwater intrusion affecting ground water resources. The mean annual rainfall for the island of Tongatapu is 1,753mm with a mean annual recharge of 524mm to the groundwater or 30% of the total rainfall. During El Nino-Southern Oscillation (ENSO) there is less rainfall as indicated by a monthly mean rainfall of less than 100mm as opposed to monthly mean of 200mm. With less rainfall, there is less recharge and with continued pumping of groundwater and a rise in sea-level leads to saltwater intrusion into the groundwater aquifer.

With a high likelihood of high frequency and more intense ENSO events and sea-level rise, water resources for the whole of Tongatapu will be negatively impacted which in turn will affect the livelihood of communities/villages that depend almost entirely on groundwater resources. Tonga has provided piped water into Hihifo district and residents have played a significant role in the daily operation of water supply in the area. Recently communities and government have improved water supply in a USD 1.5 million programme by building community water tanks for harvesting rainwater.

PACC would assist the communities in Hihifo district increase their resilience to droughts by supporting the villages and government to source new boreholes and an above- ground level reservoir at Kolovai (about 23 meters above sea level). Water from Kolovai reservoir would then be gravity fed to the distribution network of Upper Hihifo district. The current system runs from a couple of bores at Foui which pumps directly into the distribution network without any reservoir and supplies the entire 6 villages all the way to Ha'atafu, the last village in the network. The basic tenet is that the current water infrastructure design is not able to cope with changes in rainfall regimes and sea-level changes leading to saltwater intrusion of the

groundwater thereby affecting potable water for consumption, agricultural production and industry as well as having adverse effects on livelihood of villages. This intervention would be critical particularly in times of droughts as it will contribute towards increasing the storage capacity of water supply for the district including its quality and maintain its sustainable yield to account for periods of extreme events (such as ENSO and tropical cyclones), and to improve sustainable management of water resources. Activities would also include an integrated planning effort involving rural landholders, provincial authorities, and departments of lands, agriculture, forestry, mines, water supply and environment or by legal or administrative restrictions on activities impacting on water catchments.

PACC will focus on enhancing the resilience and adaptive capacity of the communities/villages in Hihifo District by integrating climate change and sea-level rise risks into their water resources management. This will contribute towards increasing the storage capacity of water supply for the district including its quality and maintain its sustainable yield to account for periods of extreme events (such as ENSO and tropical cyclones), and to improve sustainable management of water resources. The government of Tonga has committed US$1,500,000 as co-financing for water resources management and the GEF resources will support activities that will enhance the resilience of communities/villages in Hihifo District to impacts of ENSO-forced drought , sea-level rise, coastal flooding associated with tropical cyclones on water resources.

Indicative activities include:

- Construction of additional village/community water tanks to allow for storage of rainwater
- Climate proofing of existing water reservoirs
- Carry out monthly salinity monitoring of all piezometers to establish drought storage and recharge mechanisms sustaining the freshwater lens
- Improved and sustainable management of water resources in Hihifo District to cope with climate change
- Develop and use climate information for water resources planning
- Develop a water resources use and management response to 3-4 year ENSO occurrence and associated drought
- Develop climate information and database for planning processes
- This could be achieved through integrated planning efforts involving rural landholders, village authorities, and departments of health, lands, agriculture, forestry, water supply and environment or by legal or administrative restrictions on activities impacting on water catchments. Catchment management initiatives would have wider environmental benefits, including reduced erosion and soil loss, maintenance of biodiversity and land productivity.

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