



United Nations
International Strategy for Disaster Reduction



GFDRR
Global Facility for Disaster Reduction and Recovery



Disaster Risk Reduction & Climate Change Adaptation in the Pacific

An Institutional and Policy Analysis



Disaster Risk Reduction & Climate Change Adaptation in the Pacific



United Nations
International Strategy for Disaster Reduction



GFDRR
Global Facility for Disaster Reduction and Recovery



Acknowledgements

The perceptive guidance and timely assistance provided by Ms Angelika Planitz, UNISDR Sub-Regional Office for the Pacific, and Ms Asenaca Ravuvu, UNDP Multi-Country Office Fiji, are gratefully acknowledged. Many others gave their time and knowledge freely, but special thanks must go to disaster management and climate change officials in the Cook Islands, Fiji, Palau and Vanuatu. This report has been enriched by their contributions. Many officials with similar responsibilities in other Pacific island countries have also shared their knowledge and experience, as have those working in regional and international organisations in the Pacific.

The following individuals and organisations provided valuable feedback on a draft of this report, as well as relevant information: the Applied Geoscience and Technology Division of the Secretariat of the Pacific Community, Ms Monifa Fiu, Ms Anna Gero, Dr Padma Lal, Dr Netatua Pelesikoti, and Ms Emma Wong.

This study is a collaborative effort by the United Nations International Strategy for Disaster Reduction (UNISDR) secretariat and the United Nations Development Programme (UNDP), with resources from the Global Facility for Disaster Reduction and Recovery (GFDRR) and the Global Environment Facility (GEF).

Copyright © UNISDR Asia and Pacific 2012

ISBN: 978 – 982 – 533 -001 -1

Financial support from UNDP and the Global Facility for Disaster Reduction and Recovery (GFDRR) is gratefully acknowledged. GFDRR is a partnership between Australia, Canada, Denmark, the European Commission, Italy, Japan, Luxemburg, Norway, Spain, Sweden, Switzerland, the United Kingdom and the World Bank.

Disclaimer: The information and opinions expressed in this publication do not necessarily reflect the policies of the UNISDR secretariat and UNDP.

Author: John E. Hay, the University of the South Pacific, Rarotonga

Editing: Dhakshy Sooriyakumaran, UNISDR and Kate Watson-Horoi, consultant

Design and Layout: Oceanic Communication Ltd

Printed by: Oceanic Communication Ltd

Citation: UNISDR, UNDP, 2012: Disaster Risk Reduction and Climate Change Adaptation in the Pacific: An Institutional and Policy Analysis. Suva, Fiji: UNISDR, UNDP, 76pp.

Front cover photos: UNISDR Pacific/Laura Niskanen/2011

John Hay, 2010

Executive Summary

As experience with both disaster risk reduction (DRR) and climate change adaptation (CCA) grows, there is increasing recognition that these two fields share a common focus: reducing the vulnerability of communities and contributing to sustainable development. The high level of climate-related risks in the Pacific, make DRR and CCA key policy goals. The objective of this study is to provide an analysis of the current level of integration of DRR and CCA in the region, with an emphasis on the policy and institutional environment. The report outlines some of the barriers to integration and makes recommendations on how they can be addressed. The analysis presented includes seven Pacific island countries (Cook Islands, Federated States of Micronesia, Fiji, Palau, Samoa, Tonga and Vanuatu), however, a more detailed analysis was undertaken of only four of those countries (the Cook Islands, Fiji, Palau and Vanuatu).

What is DRR?

DRR is the concept and practice of reducing disaster risks through analysis and management of their causal factors. It reduces exposure to hazards, lessens the vulnerability of people and assets, improves management of the land and environment and preparedness for adverse events (UNISDR, 2009). In the Pacific, DRR is considered to be one of two components that make up disaster risk management, the other being disaster management

What is CCA?

CCA is defined by the United Nations Framework Convention on Climate Change (UNFCCC) as “adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects that moderate harm and exploit beneficial opportunities. This can include: (a) adapting development to gradual changes in average temperature, sea level and precipitation; and (b) reducing and managing the risks associated with more frequent, severe and unpredictable extreme weather events” (UNISDR, 2010).

The Need for More DRR and CCA

There is strong evidence, both globally and in the Pacific, of an increase in the observed frequency and intensity of weather and climate-related hazards. In addition to this, the Intergovernmental Panel for Climate Change (IPCC) anticipates that, in the short to medium term, many impacts of climate change may manifest themselves through changes

in the frequency, intensity or duration of extreme weather events.

Climate change poses a threat to the achievement of the Millennium Development Goals (MDGs). The recent Global Assessment Report on Disaster Risk Reduction (ISDR, 2009) shows that mortality and economic loss risk are heavily concentrated in developing countries and disproportionately affect those living in poverty. The report calls for an urgent paradigm shift in DRR.

In the Pacific, as elsewhere, global climate change and disasters have their greatest impact at the local level. Studies show that the accumulated impacts of small and medium disasters may be equivalent to, or exceed, those of large disasters. Increases in the frequency of these lower-intensity hazards have a major impact on poverty.

Regional Synthesis of Analysis

The countries analysed are typical in terms of the current low level of integration of DRR and CCA. While there may be institutional arrangements that suggest some progress with integration at the national policy and institutional levels, the practical reality is that little is happening on the ground at the operational level. The progress made includes the following:

- Tonga is clearly the lead example of integration of DRR and CCA, having developed an integrated plan for Disaster Risk Management (DRM) and climate change (including the reduction of greenhouse gas emissions).

- Vanuatu decided to co-locate the National Disaster Management Office (NDMO) and Meteorological Services (where the Climate Change Unit is located). There is also a plan to have the National Advisory Committee on Climate Change take on responsibility for DRM.
- The Federated States of Micronesia (FSM) has undertaken integration initiatives from a common institutional platform for DRR and CCA, the Office of Environment and Emergency Management. FSM has also developed a Joint National Action Plan for DRR and CCA (JNAP).
- Fiji has taken a forward looking approach to the preparation of the Second National Communication and plans for a JNAP for DRR and CCA.
- The Cook Islands is in the final stages of preparing a Joint National Action Plan (JNAP) for DRM and CCA. Recently, the NAP Advisory Committee and the National Climate Change Country Team (NCCCT) were merged to form a strengthened NCCCT. A Climate Change Coordination Unit has been established in the Office of the Prime Minister near the Emergency Management Unit.

In the case of Tonga, it is interesting to note that these developments occurred without any substantive institutional reorganisation. A key lesson is that effective integration of CCA and DRM is based on the knowledge and commitment of individuals at the national level and on the ability of the responsible government agencies to work together closely.

Practical Lessons Learned

Rationale for integration of DRR and CCA:

- Easing the burden of programming development assistance.
- Minimising duplication of effort and redundancies.
- Reducing potential conflicts in policy development.
- Making efficient use of scarce resources, and
- The increasing recognition, especially at community level, that there is little practical difference between the two.

Barriers to integration of DRR and CCA:

- Capacity constraints of PICs (related to lack of coordination, communication, political will, insufficient funds and absence of expertise).
- Separate global and regional frameworks for CCA and DRR.

- Perceptions of development practitioners that DRR and CCA are not valuable; and
- Difficulty quantifying the benefits of DRR and CCA.

Approaches to address barriers and facilitate integration:

- Improved access to practical weather and climate change information.
- Strong enabling environment and enhanced communication to practitioners in other fields and to the broader public.
- More emphasis on bottom-up approaches; and
- Information support for decision-making (both scientific and economic).

Community Level Integration of DRR and CCA

The greatest potential for harmonizing DRR and CCA in PICs is at the community level. Community-based adaptation (CBA), ecosystem-based adaptation and community-based DRM (CBDRM) are powerful approaches for

transcending the unproductive distinction between CCA and DRR that still pervades policies and planning at national and regional levels in parts of the Pacific. A key feature of community initiatives is that they often occur in a policy vacuum, with little national budget support. Due to the weak linkages at the policy level, governments are missing out on opportunities to ensure that the national-level enabling environment is supportive of the efforts at community level. This is an important gap that needs to be addressed across the region.

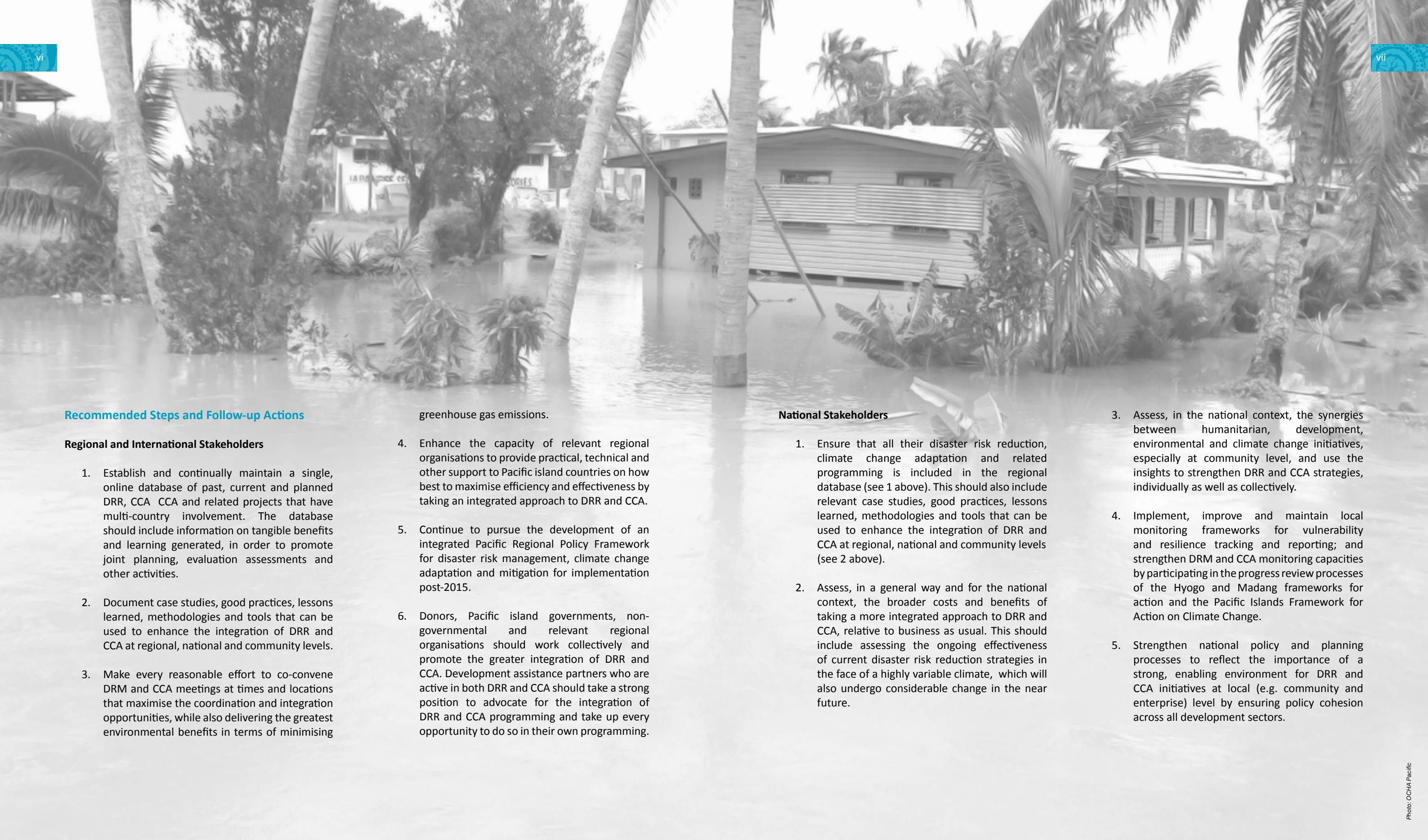
Priority Areas for Future Development of Guidance Notes and Other Tools

- Guidance to national and local government on strengthening the enabling environment to support greater integration of DRR and CCA at both national and local levels.
- Making the economic case for increased integration of DRR and CCA, especially at community level.

- Strengthen inclusive approaches in DRM and CCA policy setting, planning and implementation at all levels; these should foster multi-stakeholder involvement and equal participation of groups who are often excluded, such as women, children and youth, and people with disabilities.
- Preparation and dissemination of Pacific case studies on coordination and harmonization of DRR and CCA, with a focus on work at community level and on the enabling environment.
- Development of a Self-Assessment Tool that assists DRR and CCA practitioners in evaluating progress on the integration of DRR and CCA into policy making, programming, institutional arrangements and the delivery of practical outcomes for target beneficiaries. This includes guidance on the application of the tool and awareness-raising to encourage its uptake.



Photo: OCHA Pacific



Recommended Steps and Follow-up Actions

Regional and International Stakeholders

- 1. Establish and continually maintain a single, online database of past, current and planned DRR, CCA and related projects that have multi-country involvement. The database should include information on tangible benefits and learning generated, in order to promote joint planning, evaluation assessments and other activities.
- 2. Document case studies, good practices, lessons learned, methodologies and tools that can be used to enhance the integration of DRR and CCA at regional, national and community levels.
- 3. Make every reasonable effort to co-convene DRM and CCA meetings at times and locations that maximise the coordination and integration opportunities, while also delivering the greatest environmental benefits in terms of minimising

greenhouse gas emissions.

- 4. Enhance the capacity of relevant regional organisations to provide practical, technical and other support to Pacific island countries on how best to maximise efficiency and effectiveness by taking an integrated approach to DRR and CCA.
- 5. Continue to pursue the development of an integrated Pacific Regional Policy Framework for disaster risk management, climate change adaptation and mitigation for implementation post-2015.
- 6. Donors, Pacific island governments, non-governmental and relevant regional organisations should work collectively and promote the greater integration of DRR and CCA. Development assistance partners who are active in both DRR and CCA should take a strong position to advocate for the integration of DRR and CCA programming and take up every opportunity to do so in their own programming.

National Stakeholders

- 1. Ensure that all their disaster risk reduction, climate change adaptation and related programming is included in the regional database (see 1 above). This should also include relevant case studies, good practices, lessons learned, methodologies and tools that can be used to enhance the integration of DRR and CCA at regional, national and community levels (see 2 above).
- 2. Assess, in a general way and for the national context, the broader costs and benefits of taking a more integrated approach to DRR and CCA, relative to business as usual. This should include assessing the ongoing effectiveness of current disaster risk reduction strategies in the face of a highly variable climate, which will also undergo considerable change in the near future.

- 3. Assess, in the national context, the synergies between humanitarian, development, environmental and climate change initiatives, especially at community level, and use the insights to strengthen DRR and CCA strategies, individually as well as collectively.
- 4. Implement, improve and maintain local monitoring frameworks for vulnerability and resilience tracking and reporting; and strengthen DRM and CCA monitoring capacities by participating in the progress review processes of the Hyogo and Madang frameworks for action and the Pacific Islands Framework for Action on Climate Change.
- 5. Strengthen national policy and planning processes to reflect the importance of a strong, enabling environment for DRR and CCA initiatives at local (e.g. community and enterprise) level by ensuring policy cohesion across all development sectors.

Acronyms

ACP	African, Caribbean and Pacific Group of States	MSHMP	Multi-stakeholder Hazard Mitigation Plan
ADB	Asian Development Bank	NACCC	National Advisory Council on Climate Change
AusAID	Australian Agency for International Development	NCCCT	National Climate Change Country Team
CBA	Community-based Adaptation	NAP	National Action Plan
CBDRM	Community-based Disaster Risk Management	NAPA	National Adaptation Programme of Action
CCA	Climate Change Adaptation	NDC	National Disaster Committee or Council
CCCCC	Caribbean Community Climate Change Centre	NDMO	National Disaster Management Office
CCCPir	Coping with Climate Change in the Pacific Island Region	NDRMF	National Disaster Risk Management Framework
CCG	Central Control Group	NEC	National Emergency Committee
CDEMA	Caribbean Disaster Emergency Management Agency	NEMO	National Emergency Management Office
CDMCHC	Comprehensive Disaster Management Coordination and Harmonization Council	NESAF	National Environmental Strategic Action Framework
CHARM	Comprehensive Hazard and Risk Management	NGO	Non-governmental Organisation
COP	Conference of Parties	MNRE	Ministry of Natural Resources and Environment
CRP	Comprehensive Reform Programme	NSDS	National Sustainable Development Strategy
CSO	Civil Society Organisation	NSPF	National Sustainable Planning Framework
CVCA	Climate Vulnerability and Capacity Assessment	NTF	National Task Force
DAC	Development Advisory Committee	NZAID	New Zealand Agency for International Development
DEC	Department of Environment and Conservation	OEEM	Office of Environment and Emergency Management
DEC	Disaster Executive Council (Palau)	OFDA	Office of U.S. Foreign Disaster Assistance
DM	Disaster Management	PAA	Priorities and Action Agenda
DPCC	Development Partners for Climate Change	PACC	Pacific Adaptation to Climate Change (Project)
CRMI	Caribbean Risk Management Initiative	PACE-SD	Pacific Centre for the Environment and Sustainable Development
DRM	Disaster Risk Management	PCCR	Pacific Climate Change Roundtable
DRR	Disaster Risk Reduction	PDRMPN	Pacific Disaster Risk Management Partnership Network
EDF	European Development Fund	PIC	Pacific Island Country
EIA	Environmental Impact Assessment	PICCAP	Pacific Islands Climate Change Assistance Programme
EMCI	Emergency Management Cook Islands	PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
EU	European Union	PIFACC	Pacific Islands Framework for Action on Climate Change
FSM	Federated States of Micronesia	PNDMP	Palau National Development Master Plan
FSPI	Foundation of the Peoples of the South Pacific International	PNG	Papua New Guinea
GCCA	Global Climate Change Alliance	PPCR	Pilot Program for Climate Resilience
GEF	Global Environment Facility	PDRMP	Pacific Islands Disaster Risk Management Program
GFDRR	Global Facility for Disaster Reduction and Recovery	SDC	Sustainable Development Council
GFG	Governance for Growth	SDP	Strategic Development Plan
GIZ	Deutsche Gesellschaft fuer International Zusammenarbeit	SEEDS	Sustainable Economic and Empowerment Development Strategy
HMSC	Hazard Management Sub-committee	SOPAC	Applied Geosciences and Technology Division
IFRC	International Federation of Red Cross and Red Crescent Societies	SPC	Secretariat of the Pacific Community
IDP	Infrastructure Development Plan	SPREP	The Pacific Regional Environment Programme
IPCC	Intergovernmental Panel for Climate Change	UN	United Nations
ISDR	International Strategy for Disaster Reduction	UNDAF	United Nations Development Assistance Framework
JNAP	Joint National Action Plan for DRM and CCA	UNDP	United Nations Development Programme
LDC	Least Developed Country	UNFCCC	United Nations Framework Convention on Climate Change
LLRMA	Local Level Risk Management Approach	UNISDR	United Nations International Strategy for Disaster Reduction secretariat
LMMA	Locally Managed Marine Area	USAID	United States Agency for International Development
MDG	Millennium Development Goal	VCA	Vulnerability and Capacity Assessment
MECC	Ministry of Environment and Climate Change		



Contents

Acknowledgments.....i

Executive Summary.....ii

Acronyms.....viii

Contents.....x

1. Introduction.....1

1.1 About this Report.....2

1.2 What is Disaster Risk Reduction?.....3

1.3 What is Climate Change Adaptation?.....3

1.4 Recognising the Difference between DRR and CCA.....4

1.5 Exploiting the Synergies.....5

2. The Need for More DRR and CCA.....6

2.1 The Present is Not an Indication of the Future – The Need for Action.....7

2.2 An Integrated Approach to DRR and CCA can Help Protect Development Gains.....7

2.3 An Integrated Approach is Needed at the Local Level.....9

3. Regional and International Frameworks.....10

3.1 Regional Frameworks.....11

3.2 International Frameworks.....12

3.3 Funding Arrangements of DRR and CCA.....14

4. Lessons Learned from the Analysis.....17

4.1 Practical Reasons for Greater Integration.....18

4.2 Barriers to the Greater Integration of DRR and CCA.....18

4.3 Good Practices to Facilitate Integration of DRR and CCA.....19

4.4 Tools to Facilitate Integration of DRR and CCA.....20

4.5 Entry Points.....22

4.6 Lessons from the Caribbean.....22

5. National Institutional and Policy Analyses.....24

5.1 Synthesis of National Analyses.....25

5.2 Cook Islands.....26

5.3 Federated States of Micronesia.....29

5.4 Fiji.....32

5.5 Palau.....36

5.6 Samoa.....39

5.7 Tonga.....43

5.8 Vanuatu.....46

6. Climate Change Interventions Supported by the UNDP.....50

6.1 Cook Islands.....50

6.2 Fiji.....51

6.3 Palau.....53

6.4 Vanuatu.....54

7. Recommendations.....56

7.1 Priority Areas for Future Development of Guidance Notes and Other Tools.....57

7.2 Recommended Steps and Follow-up Actions57

8. References.....59

9. Annexes.....63

Annex A – Study Methodology.....64

Annex B – Selection of Focus Countries.....67

1. Introduction

Photo: UNISDR/Angelika Planitz/2010

1.1 About this Report

The high level of climate-related risks in the Pacific region and the likelihood that these will increase substantially in the future, make disaster risk reduction (DRR) and climate change adaptation (CCA) key policy goals.

The main objective of this study is to provide an analysis of the current level of integration of DRR and CCA in the region, with an emphasis on the policy and institutional environment. The report outlines some of the challenges and barriers to integration, evolving good practice towards integration and provides recommendations for regional and national stakeholders for further action.

This report also explores how and why the fields of DRR and CCA have developed in parallel globally as well as in the Pacific, rather than being more integrated. As experience with both DRR and CCA grows, there is increasing recognition that these two fields share a common focus: reducing the vulnerability of communities and contributing to sustainable development. In light of this, many governments, including those in Pacific island countries (PICs), have started taking action to integrate DRR and CCA into their development and poverty alleviation policies, plans and activities.

The analysis presented includes seven PICs (Cook Islands, Federated States of Micronesia, Fiji, Palau, Samoa, Tonga and Vanuatu), however, a more detailed analysis was

undertaken of only four of those countries (Cook Islands, Fiji, Palau and Vanuatu). The four focus countries were selected in order to highlight a wide range of approaches and progress in implementing CCA and DRR, as well as varying levels of vulnerability. In addition, the selected countries cover the main sub-regions and a good cross section of political systems and institutional arrangements found in the Pacific. The criteria for the selection of focus countries is provided in Annex B.

The bulk of the analysis was undertaken in early 2010. The findings were updated in 2011, prior to publishing in 2012, in order to reflect major new developments at regional and national levels.

The methodology utilised to undertake the analyses comprised the following key elements: (1) a review of the main regional and national policy and project documents, (2) a stakeholder network analysis identifying key national and regional organisations engaged in country-level DRR and CCA, (3) a review of experiences with DRR and CCA project implementation, and (4) an overview of climate change programmes undertaken with UNDP support in the identified focus countries over the last 10 years.

The analysis also produced an annotated bibliography on DRR and CCA literature relevant for the Pacific region. The bibliography is not included in this report and is available as a separate publication. Further detail on the study methodology is provided in Annex A.

1.2 What is Disaster Risk Reduction?

DRR is the concept and practice of reducing disaster risks through analysis and management of the causal factors of disasters. It leads to reduced exposure to hazards, lessening of vulnerability of people and assets, effective

management of land and the environment and improved preparedness for adverse events (UNISDR, 2009). In the Pacific, DRR is considered to be one of two components that make up disaster risk management (DRM); the other being disaster management (DM). This is depicted in Figure 1 below.

Figure 1: Disaster risk management and its components

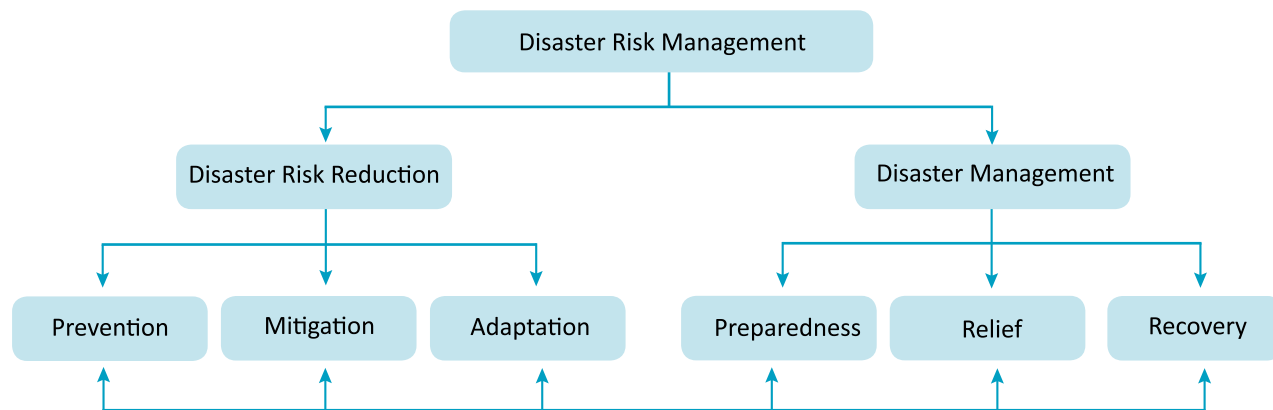


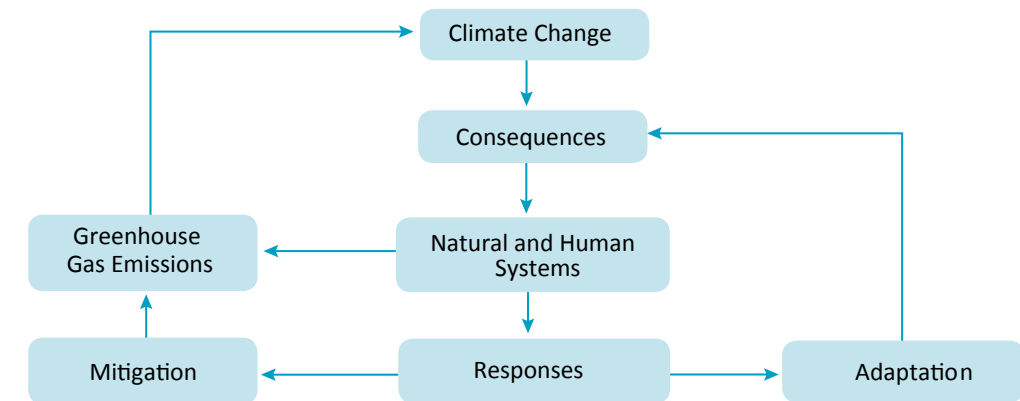
Figure 1 shows that CCA is an integral component of DRR. The diagram highlights that all components of DRM are linked. For example, disaster recovery should include elements of DRR and CCA.

The frameworks relevant to DRR in the Pacific include the internationally agreed Hyogo Framework for Action: Building the Resilience of Nations and Communities to Disasters: 2005 - 2015 (the Hyogo Framework), and the Pacific Regional Disaster Reduction and Disaster Management Framework for Action: 2005 - 2015 (the Madang Framework). These frameworks outline a broad-based vision of DRR, encompassing governance, risk assessment and early warning, knowledge and education, underlying risk factors in the context of development and disaster preparedness and response. This vision is also applicable to the future threats presented by climate change related extreme events.

1.3 What is Climate Change Adaptation?

CCA is an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (IPCC, 2007). It forms one of the two major categories of response to climate change; the other being mitigation (see Figure 2). At the global level, the need for CCA is recognised in the United Nations Framework Convention on Climate Change (UNFCCC). This also acknowledges the need for international assistance to developing countries for implementing CCA. At the Pacific regional level, the Pacific Framework for Action on Climate Change (PIFACC) and its associated Action Plan, provides policy guidance on how Pacific island countries (PICs) can best address climate change.

Figure 2: Adaptation and other responses to climate change



1.4 Recognising the Difference between DRR and CCA

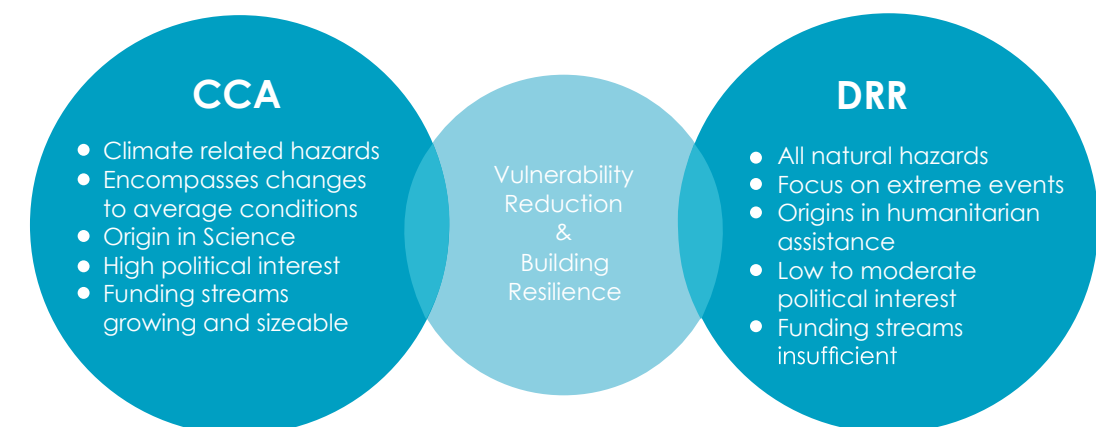
Essentially, DRR has focused on addressing existing risks related to all categories of hazards. Therefore, DRR looks at risks more broadly than just those related to climate. There are several geophysical hazards (e.g. earthquakes, volcanic eruptions, tsunamis) that are unrelated to climate change, at least in the short to medium term. For this reason, there can never be a total convergence of DRR and CCA.

While DRR expands beyond weather and climate-related disasters, adaptation includes not only climate extremes,

but also the more slowly evolving risks posed by systematic trends such as increasing mean temperatures and sea levels. However, in the Pacific, weather and climate-related hazards underpin the majority of disasters.

DRR has a comprehensive range of established tools and practices at both national and local levels. CCA is a younger discipline in comparison to DRR. As a result, CCA has relatively less developed tools, institutional frameworks, political processes, and information - sharing arrangements. Thus, while there are clear synergies that must be exploited, there are also some mutually exclusive elements that need to be addressed separately.

Figure 3: DRR and CCA - Commonalities and differences (Source: Modified from Venton and La Trobe, 2008)



1.5 Exploiting the Synergies

The common focus of CCA and DRR is reducing vulnerability and enhancing the resilience of societies to weather and climate hazards. Concepts common to the disciplines of DRR and CCA include:

- **Resilience:** A resilient community is well-placed to manage hazards to minimise their effects and/or to recover quickly from any negative impacts. Resilience varies greatly for different groups within a community. Building resilience at community level involves: (1) income generation and diversification to reduce risk, (2) functional formal and informal institutions, cooperatives, and associations at local level that are linked to national and global counterparts, (3) greater understanding of markets, and (4) a functioning civil society and building trust between people and elected officials (GFDRR, 2009).
- **Risk management approach:** An excellent opportunity for integration of DRR and CCA arises from the fact that both communities of practice pursue a risk management approach. The ultimate goal of risk management is to provide a sound basis for making decisions on whether risks are acceptable or intolerable. It also assists in obtaining reliable information on how existing risks can be dealt with most appropriately. The risk management approach is used widely amongst other disciplines (e.g. infrastructure, business management, natural resource management).
- **“No-regrets” actions:** No-regrets policies and actions are those that are beneficial to implement whether or not the consequences of climate change or a disaster turn out as expected.

- **Mainstreaming:** Mainstreaming refers to the integration of policies and measures that address DRR and CCA into ongoing sectoral planning and management (Klein, 2009). Societies need to be able to adapt to both extreme events/disasters, as well as the slower and incremental consequences of climate change. Mainstreaming of DRR has been inhibited due to the fact that large, sudden-onset catastrophes have dominated the attention of the disaster management community, particularly the humanitarian sector. Mainstreaming of climate change is aided by the broad scope of adaptation, which provides a mechanism for reducing the unhelpful dichotomy between the humanitarian and developmental approaches. However, development practitioners tend to ignore both sudden and gradual-onset catastrophes, often seeing them more as interruptions to development. This gap is decreasing as development thinking recognises that risk is at the centre of the human dimensions of poverty and development. This reinforces the need to embrace a risk management approach, where all risks, including those related to climate change and disasters, are considered.

DRR provides many tried and tested tools for addressing risk. There is enormous potential for value adding if adaptation efforts draw on the regional platforms, and other DRR tools and experiences within and outside the Hyogo Framework. Many of the experiences gained by the disaster management community over the years can inform the development of climate-related policy. Thus, rather than implement CCA separately, there is some benefit in recognising that climate change is magnifying existing disaster risk levels and bringing a range of newly emerging risks. This highlights the need to reflect emerging risks and hazards by revising and strengthening tools for disaster risk assessments and DRR measures.



2. The Need for More DRR and CCA

2.1 The Present is Not an Indication of the Future – The Need for Action

There is strong evidence¹, both globally and in the Pacific², that there is an increase in the observed frequency and intensity of weather and climate-related hazards (see Box 1). In addition to this, the IPCC anticipates that, in the short to medium term, many impacts of climate change may manifest themselves through a change in the frequency, intensity or duration of extreme events (IPCC, 2007). Thus, while responses to climate change may initially have been framed by a longer-term outlook, there is now as much emphasis on the present and immediate future. Similarly, the DRM community is moving rapidly from looking only at historic and current risk, to considering future risks.

Population growth and relocation, often into more at-risk areas, have contributed to an overall trend of more people being affected by disasters. On the other hand, Hay and Mimura (2010) present evidence that major investments in disaster preparedness and response in recent decades in the Pacific islands region have resulted in fewer fatalities per disaster. Particularly in the present decade, the numbers of people affected by disasters and the economic losses per disaster have been consistently low (Hay and Mimura, 2010). However, the reduced economic and social consequences of the extreme events experienced in the 2000s may be due to the anomalous nature of that decade. This is likely associated with the decade being dominated by La Niña conditions, during which cyclone frequency is low for much of the Pacific (Kuleshov et al., 2008). Climate projections suggest that, as a result of global warming, conditions in the Pacific will become increasingly El Niño-like. For this reason, Hay and Mimura (2010) warn that cyclone frequencies and intensities are likely to increase for much of the Pacific.

2.2 An Integrated Approach to DRR and CCA can Help Protect Development Gains

The effects of climate change are magnifying the risk of disasters. These will place additional burdens on humanitarian and development systems at all levels. Climate change, including an increase in extreme weather and climate events, poses a threat to food

security through erratic rainfall patterns and decreasing crop yields. Furthermore, adverse climate change impacts on natural systems and resources, infrastructure and labour productivity may lead to reduced economic growth and increasing poverty. These effects threaten the achievement of MDG 1 (Eradicate extreme poverty and hunger). Loss of livelihood and assets, displacement and migration may lead to reduced access to education opportunities, thus hampering the realisation of MDG 2 (Achieve universal primary education). The depletion of natural resources and decreasing agricultural productivity may place additional burdens on women's health. The reduced time for decision-making processes and income-generating activities and the resultant negative effects on gender equality and women's empowerment will impact on MDG 3 (Promote gender equality and empower women). Increased incidence of vector-borne diseases, heat-related mortality and declining quantity and quality of drinking water will lead to adverse health effects threatening the achievement of MDGs 4, 5, 6 and 7³. In general terms, the realisation of MDG 7 may be jeopardized through climate change negatively impacting on the quality and productivity of natural resources and ecosystems, possibly irreversibly. Climate change, a global phenomenon, calls for a collective response in the form of global partnerships as stipulated in MDG 8 (Develop a global partnership for development).

The 2009 Global Assessment Report on Disaster Risk Reduction (ISDR, 2009) focuses on the nexus between disaster risk and poverty in a context of global climate change. The study shows that both mortality and economic loss risk are heavily concentrated in developing countries and disproportionately affect those in poverty. The report shows how climate change will magnify the uneven social and territorial distribution of risk, further amplifying poverty, and calls for an urgent paradigm shift in DRR. Current progress in implementing the Hyogo Framework is failing to address the underlying drivers of risk and the translation of disaster impacts into poverty outcomes. It notes that efforts to reduce disaster risk, reduce poverty and adapt to climate change are poorly coordinated. A key challenge identified by the report is to link and focus the policy and governance frameworks for DRR, poverty reduction and CCA in a way that can bring these local and sectoral approaches into the mainstream.

¹ IPCC, 2007; McMullen and Jabbour, 2009; Richardson et al., 2009; and Webster et al., 2005.

² Hay and Mimura, 2010.

³ MDG 4 – Reduce child mortality; MDG 5 – Improve maternal health; MDG 6 – Combat HIV/AIDS, malaria and other diseases; MDG 7 – Ensure environmental sustainability.

Box 1 - Flooding in Fiji: The Intersection of Natural Disasters and Climate Change

The January 2009 floods in Fiji were reported as the worst in the history of the country since the 1931 floods (Lal et al., 2009). Many parts of the country were affected by a number of consecutive flood events that spread over several days. The floods affected areas from western Viti Levu, where the impact was greatest, to the Northern and Central divisions of Fiji. With extensive rainfall experienced for over a week and a few areas receiving more than 45cm of rain in a day, most of the low-lying areas in the country had been under water for days and in places experienced flood levels of 3-5 metres. The 2009 floods were assessed by the Fiji Meteorological Service to be a one-in-50-year event.

The total economic cost of the January floods in the sugar belt through damage to infrastructure and losses to growers and millers was estimated to be about FJD24 million. Additionally, humanitarian costs of about FJD5 million were incurred.

Hay (2006) provides reports on an analysis of the long-term (1946 to 2005) daily rainfall record for Nadi, along with projections to 2100 for Viti Levu. The latter are based on the output of four global climate models. The return periods for a daily rainfall of at least 40 cm are as follows:

- Calculated from observed data for 1946 to 1965: 190 years
- Calculated from observed data for 1966 to 1985: 185 years
- Calculated from observed data for 1986 to 2005: 46 years
- Based on projections for 2086 to 2100: 25 years

The Meteorological Service's estimate that the 45 cm rainfall was a one-in-50-year event is consistent with the above results, based on the most recent 15 years of record. Clearly, such events are becoming much more common, at least in the more recent decades. Had the event occurred in middle of the last century, it would have been a one-in-200-year event. Importantly, by 2100, the same daily rainfall might well represent a one-in-25-year event.

The findings of Lal et al. (2009) and Hay (2006) together highlight the need to reduce current levels of disaster risk. This is the best preparation for the increase in risk likely to occur over the remainder of the current century.

2.3 An Integrated Approach is Needed at the Local Level

In the Pacific, as elsewhere, global climate change and disasters have their greatest impact at the local level. The Global Assessment Report (ISDR, 2009) highlights the emergence of a trend in Asia and Latin America of extensive disaster risk affecting wide areas and manifested as frequent, relatively low-intensity, losses. Databases for 1970 to 2007 from a sample of 12 Asian and Latin American countries contained information on a total of 126,620 disaster loss reports aggregated at the local government level. The findings show that wide regions are exposed to more frequently occurring low-intensity losses. The impacts of these widespread, low-intensity events affect a large number of people and are likely to involve damage to housing and local infrastructure, rather than major mortality or destruction of economic assets.

These findings are corroborated for the Pacific by the work of Lal et al. (2009). They document that between 1970 and 2007, Fiji reported a total of 124 disasters, affecting almost all parts of the country. Tropical cyclones

accounted for 50 per cent of the events, followed by floods (33 per cent) and earthquakes (8 per cent). In order to reflect the fact that events considered to be disasters in Fiji may be viewed as small by global standards, Lal et al. modified the definition of 'extensive' disasters from that used in the study by ISDR (2009). Such disasters were defined as those that caused five fatalities or fewer or that generated losses of FJD 5 million or less. Based on this criterion, 60 per cent of reported disaster events in Fiji could be considered to be 'extensive' when considering fatalities, or 26 per cent of events could be considered extensive when considering costs. The analyses showed that the accumulated impacts of these small and medium disasters may be equivalent to or exceed those of large disasters. Data on many lesser events is not collected systematically in PICs and is sometimes not collected at all. In general, the occurrences of small disease outbreaks, local flash floods and land degradation are usually invisible to the media and often to policy makers as well. Increases in the frequency of these lower intensity hazards have a large impact on poverty. The most important capacities for addressing such risks are within communities and local organisation.



3. Regional and International Frameworks

3.1 Regional Frameworks

The Pacific Islands Framework for Action on Climate Change 2006-2015 (PIFACC) was endorsed by Pacific leaders at the 36th Pacific Islands Forum held in 2005. The 2006-2015 time frame of the Framework is consistent with the time frames of the Millennium Declaration, the Johannesburg Plan of Implementation and the subsequent work of the UN Commission on Sustainable Development. In 2005, a Pacific Islands Climate Change Roundtable (PCCR) meeting was convened to review the framework. One outcome of the review was the development of an action plan for the implementation of the framework. In 2008, the Pacific Regional Environment Programme (SPREP) was called upon to convene regular meetings of the PCCR. The Development Partners for Climate Change (DPCC), comprising bilateral and multilateral donor agencies and related agencies located in Suva, also meet regularly to facilitate coordination of activities in the Pacific related to climate change.

The Pacific Islands Disaster Risk Reduction and Disaster Management Framework for Action 2005–2015 (Madang Framework) reflects the increased national and regional commitment to an ‘all hazards’ approach to DRR and disaster management in support of sustainable development. These commitments are from the Pacific Forum Leaders decision in Madang 1995 and the Auckland Declaration in 2004 of the Pacific Islands Forum Special Leader’s Retreat. The framework contributes to the implementation of the Mauritius Strategy and the Hyogo Framework. Guided by this framework, the SPC Applied Geoscience and Technology Division (SPC/SOPAC) provides technical/policy advice and support to strengthen disaster risk management practices in PICs. SPC/SOPAC is also the facilitator of the Pacific DRM Partnership Network, which is an open-ended partnership of regional and international organisations with an interest in supporting the implementation of the Madang Framework. The Pacific Platform for DRM is the main gathering for the DRM community in the Pacific, comprising representatives from national, regional, international and civil society organisations, the private sector and academia. The platform is co-convened by SPC/SOPAC and the UNISDR secretariat, in collaboration with members of the Pacific DRM Partnership Network.

It provides an opportunity to provide policy guidance, exchange information, evaluate progress in DRM and strengthen the coordination of key actors. The Pacific Humanitarian Team (PHT), which is coordinated by UNOCHA, supports Pacific island countries by providing timely, consistent and coordinated disaster response.

Many of the key actors are involved in implementing both DRM and CCA. The two frameworks have common linkages with the Pacific Plan for Strengthening Regional Cooperation and Integration. However, at the level of implementation, there is still considerable separation. Until recently, there has been some disconnect between SPC/SOPAC and SPREP in relation to assisting countries to address climate-related risks. The two frameworks, and the associated differences in the mandates of these two regional organisations, mean that major opportunities to build resilience on the ground in the Pacific have been missed. The Pacific Plan has done little to help bridge the gap. Recent developments and growing awareness of the synergies between DRM and CCA have provided a more favourable environment for increased coordination and cooperation between the two organisations.

Increased integration of DRM and CCA in the Pacific will require improved functionality of the PCCR and the Pacific Platform for DRM. Hay (2009a) highlights the view that the focus of the PCCR should be to act as a monitoring and evaluation mechanism for the PIFACC, and serve as a coordinating body for activities under the framework. The study also noted the need for greater regional coordination in implementing not only the PIFACC, but also the Madang Framework. As highlighted in Table 1, there are many commonalities between the two frameworks. These should be exploited in a more considered and comprehensive manner. At the 2011 Pacific Platform for DRM, progress was initiated towards the development of an integrated regional policy framework for DRM, climate change adaptation and mitigation. A draft roadmap for the development of the framework (the Roadmap) was tabled and recommended for endorsement by the SPC and SPREP governing councils. It is hoped that the integrated framework will, if endorsed, provide a firm policy foundation for increased coordination.

Table 1: Comparison of Priorities of the Madang Framework and the PIFACC

Madang Framework	PIFACC
Theme 1: Governance - organisational, institutional, policy and decision-making frameworks	Principle 2: Governance and decision-making
	Principle 2: Partnerships and cooperation
Theme 2: Knowledge, information, public awareness and education	Principle 6: Education, training and awareness
Theme 3 Analysis and evaluation of hazards, vulnerabilities and elements at risk	Principle 3: Improving our understanding of climate change
Theme 4: Planning for effective preparedness, response and recovery	
Theme 5: Effective, integrated and people-focused early warning systems	Principle 1: Implementing adaptation measures
Theme 6: Reduction of underlying risk factors	Principle 1: Implementing adaptation measures
	Principle 5: Contributing to global greenhouse gas reduction

The timing and locations of the PCCR and Pacific Platform meetings are generally determined by the availability of funding, often related to an offer from a country to host a meeting. A more desirable approach would be to hold the PCCR and Pacific Platform meetings at the same location and with reasonable overlap in terms of timing. This proposal has been included in the Roadmap. It will provide the opportunity for a small number of joint sessions and the convening of joint working groups. Even more benefits would arise if these meetings were held back-to-back with another event that is linked to a climate

or disaster risk management theme. The PCCR meets bi-annually while the Pacific Platform meets annually.

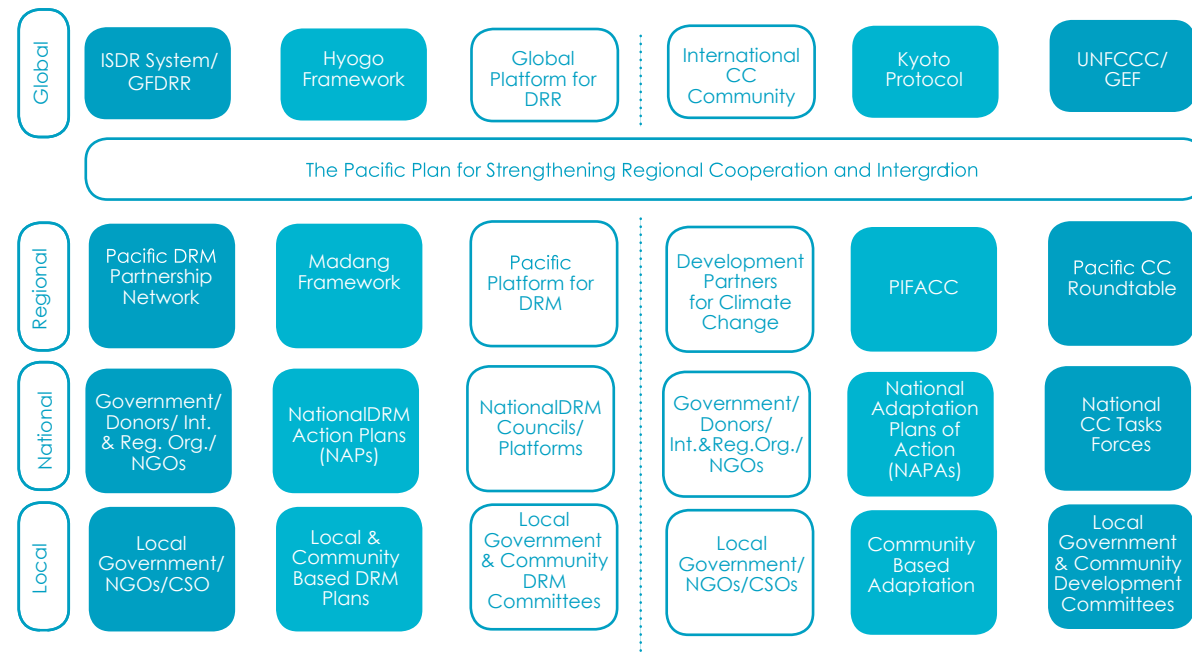
3.2 International Frameworks

The separation in the implementation of DRR and CCA has its origins at the international level as depicted in Figure 4. The Hyogo Framework, which was endorsed by 168 governments, is promoted by the ISDR system⁴ of partners. The objectives, work programmes and institutional structures of many DRM initiatives in the

⁴ The ISDR system comprises numerous organisations, UN Member States, intergovernmental and non-governmental organisations, financial institutions, technical bodies and civil society.



Figure 4: Comparison of DRR and CCA organisational and operational structures, from global through to community levels ²



Pacific are strongly guided by the Hyogo Framework and the Madang Framework. A similar situation exists for climate change initiatives in the Pacific, with these being influenced by UNFCCC processes and funding (through the Global Environmental Fund) and to a lesser extent, by the PIFACC. All PICs are parties to the UNFCCC. The two-track approach at the global and regional levels has resulted in distinctive policy, funding and institutional arrangements at national and local levels, which have made it difficult to achieve convergence at a practical level (see Figure 4).

Policy and institutional separation has also favoured the development of separate funding streams and distinctive assessment methodologies for climate and disaster risk assessment. Even separate guidelines for mainstreaming DRM and CC into national development have been developed, supported respectively by SPC/SOPAC and SPREP, further complicating integration. This separation is evident both globally and regionally in the Pacific.

The clear separation depicted in Figure 4, however, has started to become increasingly amorphous over the past few years. Efforts at global level to bring convergence and gain synergies between CCA and DRR were spearheaded by the UNISDR and UNFCCC secretariats and the IPCC. All have highlighted the desirability of the two streams working together in a more coordinated and harmonized way. The major milestones include the recognition by the UN Framework Convention on Climate Change in Bali (2007) of the importance of disaster risk reduction for reducing the adverse impacts of climate change. The Bali Action Plan calls for enhanced action to consider risk management and risk reduction strategies as a means to address losses and damages from the impacts of climate change. Most recently, the Cancun Adaptation Framework (2010) invites parties to enhance adaptation through strengthening their disaster risk reduction strategies.

In the Pacific region, the push for integration originated within selected Pacific island countries that have started to develop Joint National Action Plans or Policies for DRM and CC. The growing demands for an appropriate regional policy in support of national integration efforts, echoed by the recommendations of the 2010 Mid-term Reviews of the Hyogo Framework and Madang Framework for Action, were eventually taken up. They culminated in the recent discussions on the proposed roadmap for the development of an integrated regional framework for DRM and CC in the Pacific post-2015. Also, in terms of risk assessment, an integrated methodology for climate change, disaster risk management and sustainable development is currently being piloted on a regional scale in the Pacific under the auspices of the Pacific Centre for Environment and Sustainable Development (PACE-SD).

3.3 Funding Arrangements of DRR and CCA⁶

There are disparate funding systems for DRR and CCA at global, regional and national levels, mirroring the policy and institutional separation. One of the funding sources for risk reduction and recovery is the Global Facility for Disaster Reduction and Recovery (GFDRR), which is a partnership between the World Bank, donor countries and the United Nations International Strategy for Disaster Reduction (UNISDR). Whilst it is increasingly incorporating climate change elements, it has traditionally had a DRM focus. Supporting the implementation of the HFA, it provides technical and financial assistance in high- risk, low- income countries to mainstream DRR into national development strategies. A major source of funding for climate change in the Pacific is the Global Environment Facility, which is the funding mechanism of the UNFCCC. It provides USD250 million in funding for adaptation and mitigation activities in developing countries. Another fund for climate change is the Pilot Program for Climate Resilience (PPCR). This multi-donor trust fund provides incentives for scaled-up action and transformational change in integrating climate resilience into national development planning, consistent with poverty reduction goals. The separation of funding mechanisms can serve to reinforce the divide between DRR and CCA.

Often different types of funding are comingled into one project or programme. The following section summarises the key projects of the major funding bodies, Asian Development Bank (ADB), Australian Agency for International Development (AusAID), European Union (EU), Deutsche Gesellschaft fuer International Zusammenarbeit (GIZ), United Nations (UN), and the United States Agency for International Development (USAID)/The Office of US Foreign Disaster Assistance (OFDA), World Bank:

- ADB:** The main ways in which the ADB has supported integrated DRR and CCA is through country partnership strategies and projects that address both disaster and climate risks. For example, ADB funded the development of a risk screening tool that can be used to assess risks during project design. ADB has also supported regional initiatives. For example, ADB, in partnership with UNISDR, supports a DRM investment tracking project in Asia and the Pacific. ADB established an Integration DRM Trust Fund to further catalyse integrated investment.
- AusAID:** AusAID is one the main bilateral donor agencies in the Pacific region. It has funded some key regional initiatives, including the Pacific Enhanced Humanitarian Response Initiative (PEHRI). The initiative was a three-year programme (2007–2010), which consisted of seven projects implemented across 14 Pacific island countries. The programme represents part of Australia's commitment to supporting Pacific island countries to achieve the objectives of the Madang Framework. It aimed to increase indigenous capacity and disaster preparedness. One of the key initiatives funded under PEHRI is the "Strengthening Pacific Disaster Risk Management (DRM) through the AusAID National Action Plan (NAP) Facility". The project assists 14 PICs in developing DRM NAPs and is implemented through SPC/SOPAC. Other DRR initiatives funded by AusAID include Pacific Tsunami Capacity Assessments and disaster preparedness projects in Fiji and Tuvalu. In relation to climate change adaptation, funding has largely been

channelled through AusAID's International Climate Change Adaptation Initiative (ICCAI). Some examples of projects funded under the ICCAI include the Pacific Climate Change Science Program and the PPCR. The Pacific Climate Change Science Program aims to help PICs gain a better understanding of current and future changes in climate. In 2010, AusAID announced that additional funding would become available under the ICCAI over the next five years (to June 2013).

- **EU:** The EU primarily funds climate change initiatives through the Global Climate Change Alliance (GCCA). Through this, the EU has supported training workshops, conferences, research and community-based adaptation projects in a number of PICs. At the GCCA Pacific Regional Conference in Vanuatu (March, 2011), new climate change-related programmes in the Pacific were presented by the EU. These included a new allocation for Samoa; a humanitarian aid allocation to support disaster preparedness; a contribution to support a Regional Programme on Disaster Risk Reduction; as well as an allocation to enhance the integrated management of coastal, terrestrial and marine environments. The EU also has a separate strategy for supporting disaster risk reduction in developing countries. One significant initiative is the 9th European Development Fund (EDF) between the African, Caribbean and Pacific Group of States (ACP) secretariat and the (EU) to develop a Natural Disaster Facility. The EU and ACP Secretariat developed a Contribution Agreement with SOPAC in May 2009. The four-year facility has been established to help Pacific ACP states build their resilience to the long-term impact of disasters through the strengthening of regional and national DRR and disaster management activities. The facility will support the development and implementation of DRM National Action Plans consistent with the Madang Framework. Future support through the EDF is likely to be forthcoming for the Pacific.
- **GIZ:** GIZ supports the project, "Coping with climate change in the Pacific Island Region (CCCP-IR)" programme. The project aims to strengthen the capacities of Pacific island countries and regional

organisations to cope with the impacts of climate change. The SPC/GIZ programme commenced in 2009 working with Fiji, Tonga and Vanuatu. Since then, it has expanded to another nine PICs (Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tuvalu). The programme duration has been extended to 2015. The project's components include: working with SPC and SPREP to strengthen regional advisory and management capacity, mainstreaming climate considerations, implementing adaptation and mitigation measures, sustainable tourism, sustainable energy management and climate change education. The project enables greater collaboration between regional agencies and CCA projects.

- **UN:** The UN funds a wide range of DRR and CCA initiatives in the Pacific through the United Nations Development Assistance Framework (UNDAF) and specific agency programmes. The UN Trust Fund for Human Security is funding a three-year initiative in Vanuatu called "Community resilience and coping with climate change and disasters (2010 – 2012)". The project involves eight UN agencies and multiple regional/national partners and is one of the few integrated projects that address the adverse effects of both climate change and disasters. It works with 12 communities and six provincial councils on concrete initiatives for food and water security. Also through the GEF, the UN is supporting a number of adaptation interventions at the community level, such as the Pacific Islands Adaptation to Climate Change (PACC) programme. The project is implemented in collaboration with SPREP and supports 13 island states to build resilience to climate change.
- **USAID/OFDA:** USAID/OFDA integrates DRR programmes in disaster response to meet emergency humanitarian needs while mitigating the impact of disasters. One example of a Pacific project funded by USAID/OFDA is the Pacific Islands Disaster Risk Management Program Phase 2 (PDRMP-2). Implemented by The Asia Foundation (TAF), the three-year PDRMP-2 programme (2010–2013) aims to improve the capacity and performance of local and

national disaster management agencies, develop and adapt training materials relevant to the region, and strengthen the capacity of South Pacific nations to organise and conduct disaster management courses.

- **World Bank:** The World Bank is involved in funding CCA and DRR policy, strategy and knowledge products and investing in infrastructure. Some examples of the diverse range of projects that have recently been funded by the World Bank include: the Samoa and Tonga Post Disaster Needs Assessment and Reconstruction; the Fiji Flood Management Technical Assistance; Kiribati Adaptation projects, the Samoa Coastal Infrastructure Management Plans; the Kiribati, PNG and Samoa Road Rehabilitation projects; and the development of a regional policy and practice note on CCA and DRM to enhance donor collaboration and harmonization.
- Another significant project, undertaken through a partnership between the World Bank, ADB and SPC/SOPAC, is the **Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI)**. PCRAFI aims to provide the PICs with risk modelling and assessment tools to enhance disaster risk reduction and to help countries better understand their exposure to natural hazards. Eight national exposure databases for the Cook Islands, Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu, were consolidated into a regional database encompassing

risk, hazard, and vulnerability data. PCRAFI also aims to engage in a dialogue with the PICs on integrated financial solutions to reduce their vulnerability to disasters and climate change.

A major issue related to CCA funding in the Pacific is the administrative burden on PICs. In order to address this, the PPCR meeting in 2009 called for a study to consider the feasibility of establishing a Pacific Regional Climate Change Fund or funding modality, including assessing the need for a technical backstopping and facilitation mechanism. It is hoped that the study will identify ways to harmonise donor assistance. Also the Pacific Islands Forum Secretariat has recently commissioned a report titled "Options Paper – Improving access to and management of Climate Change Resources". The paper was prepared in anticipation of the significantly increased flows of resources to come into the region as a result of commitments made at the UNFCCC Conference of Parties (COP) 15. It provides information and an assessment of options related to improved access to and management of climate change resources for PICs. It also outlines a number of good practices, approaches and issues to be considered and was tabled at the 2011 Pacific Islands Forum (PIFS, 2011). Another recent analysis on innovative approaches that could strengthen Pacific islands' access to climate finance and improve outcomes for vulnerable communities is provided in the 'Policy Brief - Turning the Tide: Improving Access to Climate Financing in the Pacific' (Lowy Institute, 2011).

4. Lessons Learned from the Analysis

Photo: UNICEF Pacific/Giacomo Pirozzi/2006

This section provides a summary of the main lessons learned from the institutional and policy analysis of the DRR and CCA contexts in PICs. They have been grouped as follows: practical reasons for greater integration; barriers to greater integration; good practices that facilitate integration; tools for integration; and successful entry points for integration. Lessons from the experiences of the Caribbean region on their path to DRM/CCA integration are also provided. Detailed descriptions of the DRM and CC institutional and policy arrangements in the Cook Islands, Fiji, FSM, Palau, Samoa, Tonga and Vanuatu can be found in section 5 of this report.

4.1 Practical Reasons for Greater Integration

For capacity-constrained national entities, giving priority to mainstreaming and integrating DRR and CCA processes can help ease the burden of programming development assistance. This requires that finance and planning ministries are committed to ensuring policy coherence in national planning through budget processes and aid coordination. The result will be increased absorptive capacity and the ability to make efficient and effective use of external assistance provided. Other practical reasons for integration of DRR and CCA include: minimising duplication of effort and redundancies; reducing potential conflicts in policy development; making efficient use of scarce financial, human and other resources; and the recognition that, especially at community level, there is little practical difference between DRM and CC.

4.2 Barriers to the Greater Integration of DRR and CCA

The following outlines the key barriers to greater integration of DRR and CCA that have been identified:

Capacity Constraints of PICs

PICs face significant capacity constraints. These relate to: weak coordination between levels of government, poor communication between governments and local communities, political will, funding gaps and low levels of expertise or know-how.

Separate regional frameworks for DRR and CCA

DRR and CCA have two separate and well-established regional frameworks in the Pacific. These are supported by their associated international agreements and institutions. The regional frameworks and their related international agreements have given rise to separate

regional and national institutional arrangements, policies and action plans. Also, the main regional coordination bodies have evolved separately from each other; for example, the Pacific Platform for DRM and the PCCR. This separation has generated some resistance to change. In addition, the regional frameworks have not been able to adequately coordinate the efforts of the many individual government agencies and development partners. As previously mentioned, there has been progress made towards the development of an integrated regional policy framework for DRM, climate change adaptation and mitigation. The framework, if endorsed, will be implemented after 2015. It is hoped that the framework will provide a firm policy foundation for improved coordination and coherence across DRM and CCA interventions.

Perceptions of Development Practitioners that DRR and CCA are not Valuable

A widely held view amongst many development practitioners is that increased emphasis on DRR and CCA does not add value to their work, even when an integrated approach is taken. This is because Pacific communities and ecosystems have a high inherent resilience and a long history of coping with extreme events and variability. Such views ignore the growing vulnerability of both human and natural systems due to an increasing number of stresses. Many of the stresses are expected to escalate in the foreseeable future. Development practitioners need to become more aware of the hazards that communities may face in the future.

Difficulty Quantifying Benefits of DRR and CCA

To promote DRR and CCA, the case needs to be made in economic terms. Despite the fact that prevention is more cost effective, disaster response and recovery wins sympathy and immediate response nationally and from across the world. Political interest in natural hazards is at its highest during and shortly after a disaster — when it is too late. Although a commitment to “build back better” can help salvage some of the lost opportunities, funding for prevention measures and preparedness is hard to come by when there has not been a devastating cyclone or prolonged drought. Quantifying the benefits of a particular initiative to reduce climate- and disaster related risks is very challenging. For example, it is difficult to measure in economic terms the human suffering avoided by the allocation of an additional 10 per cent to a budget to make a hospital disaster-resilient or climate-proof.

This becomes even more complex at the community level where a subsistence economy dominates. Whilst efforts have begun to close this gap, it remains an important challenge.

Lack of Access to Useable Weather and Climate Change Information

Effective communication between different development actors is a prerequisite to coordination of DRR and CCA. One impediment to this is the way in which weather and climate information is packaged, delivered and presented. Often it is not immediately useable in everyday decision-making that shapes the lives, livelihoods and responses of the general public. Packaging and communicating information in the local context and vernacular is a vital precondition for more successful integration of DRR and CCA.

4.3 Good Practices to Facilitate Integration of DRR and CCA

The following section presents good practices that can contribute to the greater integration of CCA and DRR in policy, planning and implementation. They include: fostering a strong enabling environment; placing greater emphasis on bottom-up approaches to DRR and CCA; increasing accessibility to information for decision-making; and enhancing communication.

A Strong Enabling Environment

The enabling environment plays a critical role in achieving a more integrated implementation of CCA and DRR. At national level, it is governments' responsibility to ensure a strong enabling environment which is of critical importance in particular to communities as this is where most CCA and DRR activities are focused. Communities will see more value in pursuing an integrated approach if it is already reflected in national and sectoral development policies and plans. For the integration of DRR and CCA, it is preferable to have a single government agency responsible for both. It is also best located within an influential ministry that is adequately supported, financially and in other ways. Governments and their development partners play an important role in ensuring that communities are equipped with the requisite knowledge, skills and technologies. Government officials need to develop a supportive and productive rapport with community leaders in order to achieve a timely and efficient flow

of information and assistance. Ensuring a strong, enabling environment is an effective way of addressing many of the above mentioned barriers to integration. It is particularly relevant to capacity constraints and overcoming the global and regional policy vacuum.

Information to Support Decision-making

A critical aspect of effective decision-making is access to relevant hazard information. Thus national meteorological and hydrological services have an important role to play in providing access to reliable and long-term natural resource data. Also rigorous economic studies and advice are needed to advocate for prevention and adaptation measures at national (or sub-national) levels, where budgets are actually set. Governments need to ensure that relevant scientific institutions are well funded and that hazards remain on the agenda at all times. Finance ministries need to be shown that the costs of DRR and CCA, while appearing large, are actually much lower than the damages that will be suffered without adaptation (Stern, 2007). The shared development, use and maintenance of a comprehensive national (and regional) database on past, current and planned DRR and CCA activities can also facilitate the implementation of integrated approaches. However, these databases need to be kept up to date and to be highly accessible to all relevant parties, both within and outside government. Ensuring the availability of reliable and credible information on existing risk levels and the costs and benefits of DRR/CCA will be particularly useful in addressing the abovementioned barrier to integration.

More Emphasis on Bottom-up Community-based Approaches

In addition to strengthening the enabling environment, there needs to be a greater emphasis on bottom-up initiatives such as CBA, CBDRM and ecosystem-based adaptation projects. Such community-based initiatives have demonstrated considerable success in the Pacific. Recent experience with both CBDRM and CBA (refer to Box 2) have highlighted that people-centred strategies are more cost-effective for reducing weather and climate-related risks and can be more equitable than large-scale structural measures. People-centred strategies are more likely to provide a robust defence against a number of stresses, not just those related to extreme events. CBA and CBDRM will be effective only if communities, civil society (including private sector and

Box 2 - Examples of Community-based Adaptation

Vaiusu Village, Samoa: In Samoa, approaches to village disaster preparedness are designed to manage climate-related and other natural hazards simultaneously. Funding provided under the GEF Small Grants Programme helped Vaiusu village to improve the mangrove ecosystem biodiversity for both food security and to protect the community from storm surges. The mangrove was the most highly degraded mangrove area in Samoa. The project involved replanting the mangrove area along the whole of Vaiusu Bay as part of a large restoration project, which also covered neighbouring villages.

Korotarase Village, Fiji: Korotarase is a village located on low-lying swampy land alongside a river and beach on Fiji's northern island of Vanua Levu. In partnership with five other Fijian villages, the people of Korotarase have established an innovative programme of community climate adaptation. In March 2007, heavy upstream rainfall and a king tide from the ocean led to the village being flooded. The flood greatly increased erosion along the riverbank, and some houses and the community hall are now at risk of collapsing into the river. The problems are increasing because sedimentation from upstream logging operations is changing the river's path. The villagers are working to climate-proof their homes and communities in preparation for future impacts caused by tidal surges, coastal erosion or flooding after cyclones. They are trialling salt-resistant varieties of staple foods such as taro, planting mangroves, native grasses and other trees in order to halt coastal erosion. They are also protecting fresh water wells from salt-water intrusion and relocating homes and community buildings away from vulnerable coastlines. The initiative is coordinated by the Institute for Applied Science at the University of the South Pacific in Suva.

academia) and governments work in real partnership. These partnerships ensure that resources and skills are pooled, thus optimising outcomes. Strengthening institutions at local and central government level and the sharing of information and experiences through district and national-level networks also contribute to the up-scaling of project outcomes. Developing these partnerships requires significant investment in capacity-building and resourcing of local government. There is, however, a need for resources to follow the delegation of any responsibilities to local level. To achieve this, new funding models and incentive structures need to be explored. Local monitoring frameworks for vulnerability

and resilience-tracking and reporting will also be required.

Increased accountability of both government and NGOs, vis-à-vis communities and donors, is critical to long-term effectiveness. This can only be achieved by improving both transparency (i.e. giving an account of decisions and risk information) and responsiveness (i.e. taking into account communities' perspectives). An effective way to increase transparency and responsiveness is to establish a local independent monitoring function for development plans and budgets that include DRR and CCA. The monitoring body should have strong participation from at-risk groups

and civil society at large. Placing a greater emphasis on bottom-up and comprehensive, community based approaches will be particularly useful in overcoming barriers linked to capacity constraints and will help to inform national and regional policy development.

Enhanced communication

It is important that knowledge and understanding of DRR and CCA is transferred beyond the directly related specialist and academic circles. Experts in DRR and CCA need to raise awareness, using a language that their counterparts in infrastructure, finance, agriculture and other line ministries understand. There is also an urgent need for cooperation between social and natural scientists. Whilst there is a tendency to place less emphasis on social sciences, it is human behaviour and activities that control vulnerability and can turn hazards into risks, resulting in major disasters. DRR and CCA specialists need not only explain risks to other development actors, but also propose practical responses. Enhanced communication amongst different sectors and disciplines will allow for the identification and exploitation of the co-benefits between CCA, DRM, development and environment protection and other areas. Consequently, communication across disciplines and sectors will help address the barrier linked to a lack of understanding of the synergies in DRR and CCA and the benefits of integration.

4.4 Tools to Facilitate Integration of DRR and CCA

There are a number of tools that lend themselves to pursuing a more integrated approach to DRR and CCA. They include: risk management; vulnerability and capacity assessment; gender-sensitive approaches to DRR and CCA; and climate risk insurance.

Risk management

An excellent opportunity for integration of DRR and CCA arises from the fact that both communities of practice pursue a risk management approach. The ultimate goal of risk management is to provide a sound basis for making decisions on whether risk are acceptable or intolerable. It also assists in obtaining reliable information on how existing risks can be dealt with most appropriately and whether solutions are affordable. In many instances current levels of risk are already unacceptably high. The risk management approach is relevant to a large range of

applications, from disaster preparedness and mitigation, to broader adaptive activities related to livelihoods, natural resources management and human security. A risk-based approach also facilitates objective and quantitative methods such as cost-benefit analyses that evaluate the incremental costs and benefits of various interventions.

Vulnerability and Capacity Assessment

In the Pacific, the current separation of CCA and DRM has resulted in the use of separate tools to assess climate and other risks. More integrated approaches have been developed. One example of this is the previously mentioned pilot by PACE-SD. Another example is the Vulnerability and Capacity Assessment (VCA), originally developed by the International Federation of Red Cross and Red Crescent Societies (IFRC) to help communities assess and address the risks they face. CARE has developed the Climate Vulnerability and Capacity Analysis (CVCA) methodology, based on a framework of “enabling factors” for CBA (Dazé et al., 2009). CARE’s approach to CCA and DRR is grounded in the knowledge that people must be empowered to transform and secure their rights and livelihoods. It also recognises the critical role that institutions and public policies play in shaping people’s adaptive capacity. By combining local knowledge with scientific data, the process builds people’s understanding of risks and adaptation strategies. The results provide a solid foundation for the identification of practical strategies to facilitate community-based adaptation and DRM.

Multi-stakeholder Participation to Ensure Gender-sensitive and Inclusive Responses to DRR and CCA

Experiences from the Pacific (see, for example, Lane and McNaught, 2009) clearly show that efforts to generate gender-sensitive responses to climate change and disaster risks are more successful when they involve a wide range of partners. These multi-stakeholder approaches to community engagement must be well coordinated. Success also depends on recognising that men and women of the Pacific are not only victims of climate-related and other geophysical hazards, but active agents. Through their own gendered knowledge and actions, they can exacerbate or minimise the likely impacts of weather and climate extremes (Lane and McNaught, 2009).

Climate Risk Insurance

When linked with effective DRR strategies, climate risk insurance can be a useful component of a comprehensive risk reduction strategy. Insurance solutions can support effective adaptation only where they are implemented with measures to reduce disaster risk and increase societal resilience. Insurance alone will be neither sufficient nor sustainable to help small island countries manage the impacts of climate change.

4.5 Entry Points

Few et al. (2006) states that a key step in demonstrating the successful integration of DRR and CCA is to find relevant entry points. Environmental and health impact assessments are effective entry points for inter-sectoral cooperation on DRR and CCA as they are typically high policy priorities. Assessments and activities designed to enhance food, water and human security also provide useful entry points. These are all sensitive to climate change and are usually important dimensions of disaster risk management. These entry points can also be used to show how benefits can be linked to current vulnerabilities and to high-level policy goals (e.g. poverty reduction targets and MDGs). Other relevant entry points include:

- Engineering design studies for infrastructure;
- Visioning activities at community to national level;
- Multi-hazard risk assessments such as development of integrated coastal management plans;
- Local government strategic planning;
- Eco-system-based planning;
- Mid-term and final reviews of projects;
- Preparing work programmes of high-level national coordinating institutions;
- Preparation of integrated national policies, legislation or progressive development strategies;
- Development of capacity building strategies, including both top-down and bottom-up strategies such as those designed to strengthen community capacity for promoting integration of DRR-CCA into development at the local level; and

- Sourcing funding (internal or external) for projects designed to reduce vulnerabilities and enhance resilience.

4.6 Lessons from the Caribbean

Caribbean countries and communities are facing increasing threats, similar to those in the Pacific Region. In the Caribbean, there is increasing awareness of the need to develop sustainable linkages between DRM and climate change. This has resulted in new linkages between the Caribbean Disaster Emergency Management Agency (CDEMA), the Caribbean Community Secretariat and the Caribbean Development Bank. Since coping measures for climate variability and extremes already exist in the Caribbean, as in the Pacific, adaptation to future climate change focuses on identifying gaps in the current capacity for addressing climate variability and extremes.

In 2009, the Caribbean Community Climate Change Centre (CCCC) prepared the Regional Framework for Achieving Development Resilient to Climate Change. The strategic vision driving the regional strategy is a “regional society and economy that is resilient to a changing climate”. The framework is underpinned by a series of principles, namely:

- An integrated approach is important in minimising the use and costs of limited technical, administrative and financial resources; in reducing any potential conflicts in policy development; and in promoting coordination among all stakeholder groups;
- Stakeholder involvement and participation must be effectively coordinated so as to minimise duplication of effort and conflict;
- Investing in proactive resilience-building for a changing climate can significantly limit the immediate losses and future cost of recovery from climate events;
- An enabling environment for the adoption of appropriate technologies and practices is necessary to ensure that national, regional, and international commitments with respect to climate change are fulfilled;
- Effective collaboration with civil society and other regional and international state actors and organisations;

- Reducing the singular and cumulative impacts of disasters can alleviate development challenges; and
- Access to information and transparency in planning and implementation.

The framework envisages that the financing of disaster risk reduction initiatives will be treated as a development priority within the budgeting process. It calls for all government entities to advance the goals and objectives of the framework by ensuring that DRR is taken into account in the design of development programmes and projects.

The CCCCC and CDEMA and other regional institutions are strategic partners in charting an integrated approach to DRR and CCA. In addition to this, the Caribbean has a novel governance mechanism in the form of the

Comprehensive Disaster Management Coordination and Harmonisation Council (CDMCHC). The CDMCHC provides the overall management and technical guidance needed to ensure that the implementation of comprehensive disaster management activities within and between countries and across different sectors, is coordinated and harmonized. Climate change is recognised as a cross-cutting theme in comprehensive disaster management.

The Caribbean Development Bank's 2009 Disaster Management Strategy and Operational Guidelines are an excellent example of regional stakeholder organisations mainstreaming an integrated approach into their operations. The strategy directly references the region's Enhanced Comprehensive Disaster Management Strategy and Framework. An important theme of the guidelines is harmonised donor interventions. In keeping with this, the Caribbean Development Bank offers proactive assistance for integrated DRR and CCA work.



5. National Institutional and Policy Analyses

5.1 Synthesis of National Analyses

Institutional and policy analyses related to DRR and CCA were undertaken in seven countries, i.e. Cook Islands, Federated States of Micronesia, Fiji, Palau, Samoa, Tonga, Vanuatu. This comprised desk reviews and country visits to the four focus countries: Cook Islands, Fiji, Palau, and Vanuatu.

The analysis considered both national and sub-national levels and assessed the institutional and policy arrangements in terms of: country context; level of mainstreaming of DRR and CCA in development planning processes; national policies for DRR and CCA and how they have been translated into programmes at national and local level; institutional arrangements for DRR and CCA; and the extent to which DRR/CCA policies and institutions have been integrated and the drivers and barriers for such integration.

The seven countries analysed are typical of the low level of integration of DRR and CCA at the policy, institutional and operational levels. While there may be institutional and other arrangements that suggest some level of integration, the practical reality on the ground often does not yet reflect these. Some progress that has been made includes the following:

- Tonga is clearly the lead example of integration of DRR and CCA, having developed an integrated plan for DRM and climate change (including reduction of greenhouse gas emissions).
- Palau's National Action Plan (NAP) for DRM suggests greater engagement with and involvement of the climate change community.
- Vanuatu decided to co-locate the NDMO and Meteorological Services (where the Climate Change Unit is located). There is also a plan to have the highly effective National Advisory Committee on Climate Change take on responsibility for DRM.
- FSM has undertaken its integration initiatives from a common institutional platform, i.e. the Office of Environment and Emergency Management, which has responsibility for both DRM and climate change policies and work programmes. FSM has also developed a Joint National Action Plan (JNAP) for DRR and CCA.

- Fiji has taken a forward looking approach to the preparation of the Second National Communication and plans for a JNAP for DRR and CCA.
- The Cook Islands is in the final stages of preparing a Joint National Action Plan (JNAP) for DRM and CCA. Recently the NAP Advisory Committee and the National Climate Change Country Team (NCCCT) were merged to form a strengthened NCCCT. A Climate Change Coordination Unit has been established in the Office of the Prime Minister near the Emergency Management Unit.

In the case of Tonga, it is interesting to note that these developments have occurred without any substantive institutional reorganisation. A key lesson is that effective integration of CCA and DRM is based on the knowledge and commitment of individuals at the national level and on the ability of the responsible government agencies to work together closely.

The key issue that arose in relation to the institutional aspects of DRR is that, despite the robust national plans for DRM that exist, they often fall down in practice. Many become operational only when there is a disaster. There is often poor communication between the various levels, especially between communities and provincial/district/island agencies. Typically, the level of resourcing decreases with separation from the national government and distance from the capital.

Historically and even currently in many PICs, climate change is considered to be an environmental issue. As a result, the Ministry for Environment (or equivalent) is mandated to be the lead agency for climate change.

The greatest potential for harmonizing DRR and CCA in PICs is at community level. For individuals, families and villages who want to improve their livelihoods, it is largely immaterial if an event is classified as a disaster or attributed to longer-term climate change. Community-based adaptation (CBA), ecosystem-based adaptation and community-based DRM (CBDRM) are powerful approaches for transcending the unproductive distinction between CCA and DRR that pervades policies and planning at national and regional levels in the Pacific.

The past decade has seen rapid growth in CBA. In the Pacific, CBA was initially facilitated by non-governmental organisations (NGOs). More recently, donors have helped progress CBA even further by providing funding direct to

communities or through NGOs and government agencies. This is a policy and institutional challenge, since for many decades, the emphasis has been on building capacity at national level through top-down processes driven by donors.

A key feature of these locally-focussed, on-the-ground CCA initiatives is that they are largely occurring in a policy vacuum and with little national budgetary support. Due to the weak or missing linkages at the policy level, governments are missing out on opportunities to ensure that the national-level enabling environment is supportive of the adaptation efforts at the community level. This is an important gap that needs to be addressed across the region.

In the Pacific, NGOs are increasingly filling this gap. Most governments have failed to provide the funding and other assistance needed to manage community-owned natural resources in an adequate manner. However, it is critical to ensure that the efforts of NGOs are aligned to national priorities. Otherwise these projects will suffer the same fate as donor projects conducted in isolation – the outcomes and benefits will not be sustained.

5.2 Cook Islands

Cook Islands - Country Context

The Cook Islands is highly vulnerable to disasters. Recent years have seen an increase in both intensity and frequency of extreme weather and climate events. In 2005, five cyclones in a span of two months caused over NZD10 million damage. The Cook Islands National Sustainable Development Strategy (NSDS) acknowledges that such incidents undermine the country's resilience to further disasters and impede development. Establishing effective national disaster preparedness, awareness and response systems to enhance resilience to natural and manmade disasters is paramount. There are also increasing concerns about the introduction of pests and diseases including the possible occurrence of pandemics. The NSDS advocates that an all hazards approach to national disasters requires advocacy to minimise and manage residual risk to guarantee rapid recovery. A National Disaster Risk Reduction and Disaster Management plan, policies and legislation have been

This issue is also relevant for CBDRM in the Pacific. However, DRM can draw on a long-standing history and experience with more formalised policies and plans, both at the regional and national level. The Madang Framework recognises that public awareness and education and incorporating traditional knowledge will enhance individual and community resilience. However, this top-down, policy driven approach has problems delivering DRM outcomes at the local level. For example, Vanuatu's recent national progress report on the implementation of the Hyogo Framework (Government of Vanuatu, 2009) stated that, although government commitment has been attained, achievements are neither comprehensive nor substantial. Rather, Vanuatu relies a great deal on partnerships with non-governmental actors, civil society and other community groups for its community relief, rehabilitation and recovery work. Thus, as with CCA at the local level, governments have a heavy reliance on partnerships with NGOs and civil society groups, in part, because of a greater ability to reach the more remote communities. Again, there is a relative lack of coordination that only comes through strong institutional frameworks. This can result in isolated and short-term efforts that do not deliver the full potential of DRR benefits.

adopted to provide support to Emergency Management Cook Islands (EMCI) programmes in collaboration with other relevant stakeholders. These collaborative efforts require strengthening to ensure their success.

Cook Islands - Mainstreaming of DRR and CCA

- **National:** The 2007-2010 National Sustainable Development Strategy (NSDS) has resilience as a goal, allowing for an integrated approach to CCA/DRR. The NSDS acknowledges that investment in infrastructure, as called for in the Infrastructure Management Plan, requires effective management structures to ensure sustainability. This includes a guarantee of budgeting for future maintenance costs and also climate and disaster-proofing infrastructure as a safeguard against the impact of weather-related and other hazards. A key strategic target is "establishing a coordinated and effective national disaster risk reduction and disaster management system for all hazards". The National Plan of Action for Disaster Risk Reduction and Disaster Management (also known

as the “Disaster Risk Management Arrangement”) was implemented in 2007, putting in effect the 2005 Cook Island National Disaster Risk Management Policy. The National Environment Strategic Action Framework (NESAF) includes a strategy dealing specifically with adaptation. It proposes a number of immediate, short-term and medium-term actions to strengthen capacity and resilience. The new NSDS for 2011-2015 is currently under review. It will have an increased focus on resilience building, DRR and CCA.

- **Local:** Goal Six of the 2007-2010 NSDS is on safe and resilient communities. Little in the NSDS related specifically to enhancing community resilience to disasters and climate change. However, many planned actions will do this indirectly. A target in the NSDS is to have at least five CBA projects by 2010. Several cyclone-damaged harbours and airports in the Outer Islands have been prioritised for reconstruction and upgrade. Construction of cyclone shelters on atolls in the Northern Group islands is also a key priority.

Cook Islands - DRR Policies and Plans

- **National:** A National Action Plan (NAP) for DRM was endorsed in 2009. Work is under way to develop a Joint National Action Plan (JNAP) for DRM and CCA to be completed by the end of 2011. The JNAP will facilitate the inclusion of CCA and DRR in the national and sectoral budget process. In May 2011, the Cook Islands Cabinet also committed to the establishment of a Disaster Emergency Trust Fund by pledging USD264,000 from the existing Reserve Trust Fund to initiate the fund. However, DRM has yet to be widely accepted as a national priority in order to obtain more adequate budget allocations. The reality is that there are other pressing priorities (infrastructure, education, health, water and sanitation, etc.) competing for the same pool of Government funding and sometimes disasters draw resources away from DRR towards emergency response. The JNAP calls for DRM plans for each Government agency. This is still in progress.
- **Local:** Ecosystem-based community resilience-building projects are being implemented. The JNAP includes activities at community level in Rarotonga and Outer Islands to develop and strengthen DRR programmes and activities. This includes identifying priority hazards, measures to deal with them and

incorporating these into the respective plans and budgets. Another proposed activity is to provide training to Outer Island councils for sustainable planning processes including planning for climate change.

Cook Islands - CCA Policies and Plans

- **National:** A National Adaptation Plan (similar to a NAPA) was completed in 2009, funded by Italy. Many projects have already been implemented, including the PACC project. Water, waste and sanitation projects all include aspects of CCA. The NSDS calls for implementation of priority actions related to climate change that are relevant to land, coastal zone, freshwater and marine resources.
- **Local:** Government works closely with NGOs and the Cook Islands Red Cross to undertake assessments, raise awareness and implement adaptation measures. Capacity and vulnerability assessments have been conducted in seven of the inhabited islands. There are plans in place to complete assessments in all other inhabited islands. Ecosystem-based management plans are being developed for each pearl farming community.

Cook Islands - Institutional arrangements for DRR and CCA

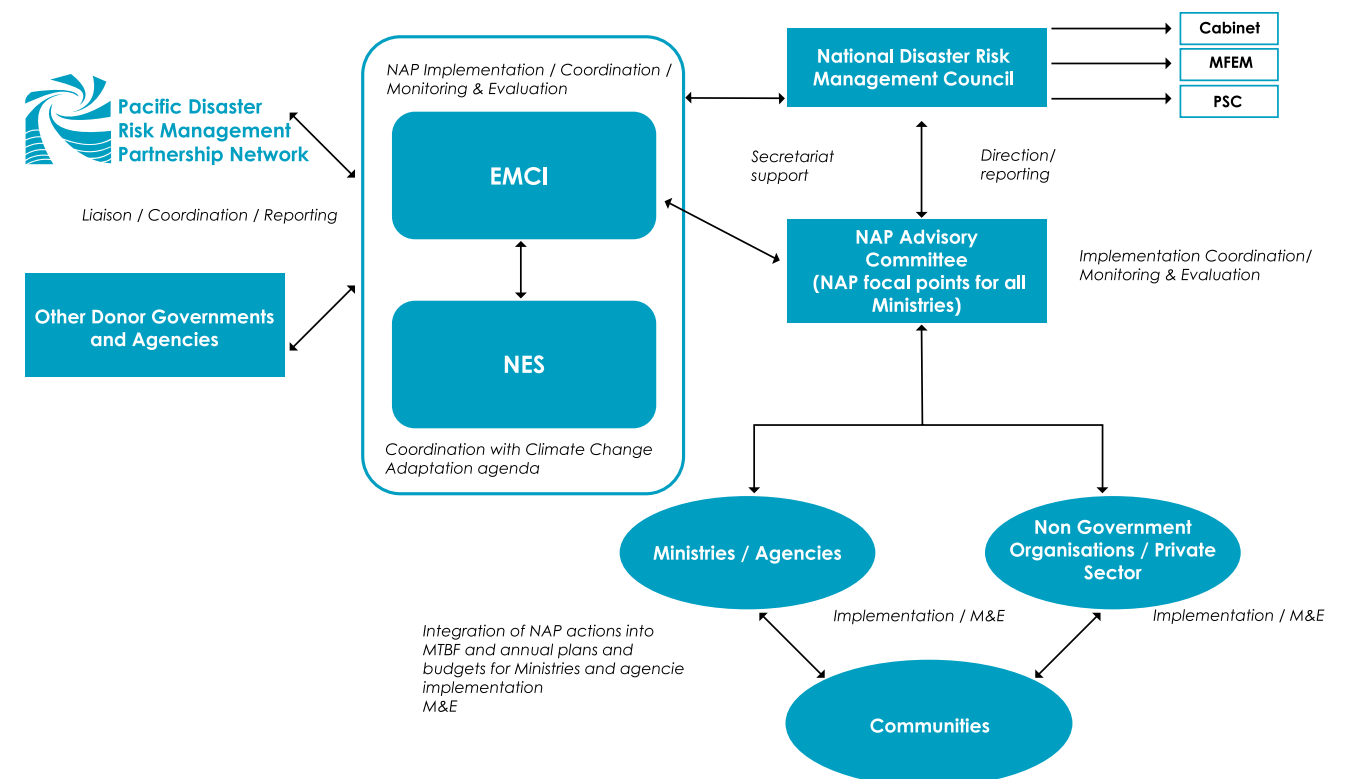
- **DRR:** The focal agency is Emergency Management Cook Islands (EMCI). Although progress is slow, there is increasingly effective engagement of other agencies in DRR activities, guided by the JNAP.
- **CCA:** The operational focal agency for climate change has been the National Environment Service (NES), which made good progress with engaging a wide range of stakeholders by convening the National Climate Change Country Team (NCCCT). A new climate change focal point position has recently been established under the Office of the Prime Minister and will commence in October 2011. The focal point will be the basis for a new climate change unit to be set up and will support Government in identifying and initiating the most feasible financing and implementation strategies for the JNAP. See Figure 5 for an overview of DRM and CCA implementation arrangements.

Cook Islands - Level of Integration of DRR/CCA policies and institutions

The resilience goal in the NSDS facilitates an integrated approach to DRR and CCA. The Infrastructure Master Plan is also a way to advance both DRR and CCA in a coordinated manner. The strategy and action plans prepared under the National Capacity Self-Assessment take an integrated approach to DRR and CCA. The institutional arrangements for DRR in the Cook Islands (Figure 5) acknowledge the synergies with CCA. The JNAP and its implementation programme are seen as instruments and mechanisms to be used by the Cook Islands to ensure the minimisation of overlaps between the two national priority programmes of DRR and CCA. To facilitate this, the NES, as the mandated national agency for the coordination of the national CCA programme, provides the direct link for this programme

to Emergency Management Cook Islands and to the NAP Advisory Committee. The NES is responsible for ensuring that the existing and planned CCA initiatives are made known to EMCI and to the NAP Advisory Committee in order to enhance the implementation of both CCA and DRR. If the new JNAP is successful in facilitating greater coordination and cooperation, the Cook Islands will be able to realise better gains through reduction of overlaps and more efficient use of national resources. A proposal has been submitted to the UNFCCC Adaptation Fund seeking support for many areas prioritised under the JNAP, with a focus on community based DRM and CCA. The main driver for integration is the knowledge of high vulnerability to extreme events, especially cyclones, and likely exacerbation by climate change. A key barrier is the current institutional arrangements and the difficulty of gaining actual practical benefits from these arrangements.

Figure 5: Conceptual Diagram of DRM and CCA NAP implementation arrangements in the Cook Islands
(Source: Emergency Management Cook Islands)



5.3 Federated States of Micronesia

FSM - Country Context

As a country of many hundred atolls, Federated States of Micronesia (FSM) is particularly vulnerable to climate change and severe weather events, such as cyclones, tsunamis and tidal surges. The low-lying atolls are the most vulnerable, but high islands are subject to coastal erosion, especially where urbanisation is occurring. Future climate change could have serious consequences for FSM's marine eco-system and coastal areas. Designing and implementing policies and programmes to address future climate events is an ongoing priority for FSM.

The sea-level rise is an impending threat to FSM. The FSM Strategic Development Plan (SDP) addresses climate change by: raising awareness of climate change among the general population, developing coastal management plans in all four states and developing ways to “climate proof” facilities and structure that support social and other services. One of the strategic goals stated in the Plan is “Mainstreaming environmental considerations, including climate change, in national policy and planning as well as in all economic development activities”. DRR is not explicitly mentioned in the SDP.

Safe water and sanitation are among the most pressing concerns for the population of FSM. These needs are most difficult to meet on the dry, low-lying atolls. Where septic tanks are used, they are often poorly constructed and prone to overflowing during heavy rains. Much sewage, along with animal waste, finds its way to the sea or lagoon, damaging the coastal ecology.

Similar to Palau, FSM negotiated a “Compact of Free Association” with the United States upon independence. The compact provided for annual grants from the U.S. to support the economic and social development of the islands, including disaster risk management. The first compact agreement ran from 1986 to 2002 and was amended in 2003. An amended compact was agreed upon which included major changes in the way U.S. assistance is delivered. The SDP time frame is based on the duration of the current compact.

FSM - Mainstreaming of DRR and CCA

The mainstreaming of DRR and CCA issues in development processes are facilitated by the strong leadership role at the executive level of the national government and

throughout all its tiers of governance structures. The bold commitment by President Emmanuel Mori, through the issuance of the December 2009 Executive Order, is a demonstration of his strong leadership on climate change issues. It is a commitment to ensuring that the looming threats are fully understood and effectively addressed at all levels through an integrated approach.

The Nationwide Climate Change Policy of 2009 outlines the integration of climate change into other policies, strategies and action plans including disaster preparedness and mitigation. It is further noted that this will be done in the FSM Strategic Development Plan/Infrastructure Development Plan (SDP/IDP) and will extend to other sectors as necessary.

The Climate Adaptation Program in the Pacific (CLIMAP) was the first Technical Assistance on climate adaptation being piloted by the ADB in the Pacific Department. The goal of the programme is mainstreaming climate adaptation through risk reduction into development planning and management in selected PICs and ADB operations.

The project found examples where climate change adaptation has been mainstreamed into development processes, including: Climate proofing a coastal community in Pohnpei, a road infrastructure project in Kosrae, as well as the infrastructure, human health and environment components of the National Strategic Development Plan.

Mainstreaming into development processes of both DRR and CCA was also assisted by the establishment of an effective coordination mechanism at the national level to manage fundraising and coordinating the implementation of climate change activities. The decision by the President to revamp the 1995 President's Council on Environmental Management and Sustainable Development (or Sustainable Development Council (SDC) chaired by the Vice President was timely. Through Presidential Order No. 14, an interdepartmental council was established, comprising representatives from Fisheries, Agriculture, Tourism and units of the Department of Economic Affairs, the Department of Finance and Administration, Department of Justice, Department of Foreign Affairs, the Department of Health, Education and Social Affairs, the Department of Transportation, Communication & Infrastructure, the National Oceanic and Resource Management Authority (NORMA) and the Office of Disaster Control.

Representatives of the Nature Conservancy and the Conservation Society of Pohnpei also sit on the advisory council. The functions and purpose of the SDC are inter alia to advise and make recommendations to the President on matters affecting environmental management and sustainable development. Unfortunately, the SDC has not been very active since inception and its reactivation will improve the coordination of sustainable development, including climate change. The intention is to provide more functions to the council, and as a result, properly coordinate capacity assessments and flows of financial assistance into the FSM.

FSM - DRR Policies and Plans

Since 1986, 13 Presidential Disaster Declarations were issued supporting the need for long-term and cost-effective means of reducing the impact of natural and environmental disasters in the FSM. In September 2005, the Government, in collaboration with all national, state and relevant US agencies, completed a Multi-State Multi-Hazard Mitigation Plan (2005-2009) for the country. The forerunner to this plan is the US federal legislation called the Disaster Mitigation Act of 2000 (DMA 2000). The DMA 2000 reinforces the importance of mitigation and planning for disasters before they occur, stressing in particular, a comprehensive and enhanced mitigation plan.

The plan was put together to meet US requirements and thus make the FSM eligible for funding and technical assistance from US federal and hazard mitigation programmes. In addition, it carries the following objectives:

- Enhance public awareness and understanding of disasters that threaten public health, safety and welfare, economic vitality and the operational capability of important institutions;
- Create a decision tool for management by providing information for all key stakeholders and organisation to take action;
- Promote compliance to US Federal Laws to benefit from corresponding grants;

- Enhance local policies for hazard mitigation capability.

The President of the FSM formally adopted the plan on 22nd June 2005. With inputs and recommendations from numerous stakeholders, it provides a comprehensive description and commitment of the country to reduce the impacts of disasters. The Governors of the four FSM States similarly endorsed the plan, which is reviewable every three years. Its first review date was in September 2008.

FSM - CCA Policies and Plans

The Nationwide Climate Change Policy was adopted by FSM in 2009. Its focus is to mitigate climate change, especially at the international level, and adaptation at the national, state and community levels, to reduce the country's vulnerability to climate change adverse impacts. On adaptation, the policy requires the following measures:

- All development agencies in FSM to take into account projected climatic changes in the design and implementation as stipulated in the FSM Strategic Development Plan/Infrastructure Development Plan (SDP/IDP);
- Use of ecosystem-based approaches where applicable;
- Encouraging and strengthening the application of traditional knowledge on conservation practices and other relevant areas; and
- Developing and implementing appropriate strategies to improve food production and other relevant sectors.

FSM - Institutional arrangements for DRR and CCA

- **DRR:** The Office of Environment and Emergency Management is the focal point for DRR issues in the FSM.
- **CCA:** The Nationwide Climate Change Policy identifies the following sectors to be responsible to implement climate change adaptation actions:

- Environment (Office of Environment and Emergency Management, OEEM)
- Infrastructure (Department of Transportation, Communication and Infrastructure, DTCI)
- Disaster Management (OEEM)
- Water Resources (DTCI)
- Transportation (DTCI)
- Agriculture/Forestry including Food Security (Department of Resources and Development, DRD)
- Marine/Coastal Resources and Pelagic Fisheries (DRD and National Oceanic and Resource Management Authority, NORMA)
- Health (Department of Health and Social Affairs, DHSA)
- Education (Department of Education) Tourism (DRD)
- Gender (DHSA)
- Weather Service (Office of the President)

FSM - Level of integration of DRR/CCA policies and institutions

Through consultations, the Office of Environment and Emergency Management (OEEM) confirmed the need for the development and implementation of a Joint Disaster Risk Management and Climate Change Adaptation National Action Plan in order to maximise the benefits of

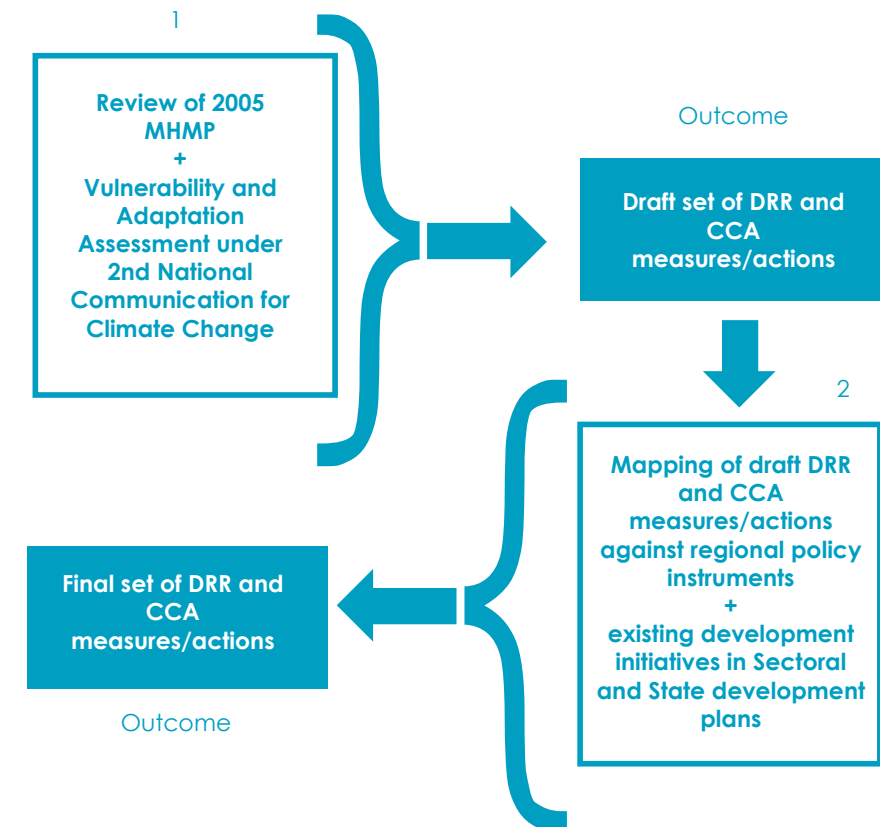
investing its limited financial and human resources. The intention was for the plan to combine existing and future DRM and CCA efforts that should be integrated given the similarity in focus each presents.

Impetus for the development of the plan was initially an informal request by the Government to SPC/SOPAC for assistance in implementing its Multi-State Hazard Mitigation Plan 2005 (MHMP). The FSM had decided to seek support for implementing the MHMP despite the trend of other Pacific island countries to develop and implement National Action Plans for DRM consistent with the Madang Framework. FSM was not keen to develop yet another action plan and preferred to obtain support to address the various measures that were already encapsulated in the MHMP. The MHMP was developed following an extensive process of consultation across all states in FSM and involved stakeholders within and outside Government. It was led by the OEEM and used a process similar to the typical NAP process as developed by the Pacific DRM Partnership Network (SOPAC, 2010c).

The 2005 MHMP was due for review in 2008, but did not eventuate. Given the recent efforts underway by the OEEM and other Government stakeholders in relation to climate change (specifically the 2nd National Communication), it would be prudent for the Government to identify both climate change and disaster risk management actions and capture these in a single strategic action plan. The OEEM has embraced the concept of a Joint NAP that addresses CCA and DRM. The resulting work programme is illustrated diagrammatically in Figure 6.

As a result of these efforts, the FSM Nationwide Climate Change Policy 2009 was approved by the President in late 2009. It identifies that the first step for implementing the policy is to integrate climate change into other policies, strategies and action plans, including disaster preparedness and mitigation.

Figure 6: Diagram of the work flow pursued by FSM to prepare a NAP for climate change adaptation and disaster risk management in an integrated manner (Source: SOPAC, 2010c)



5.4 Fiji

Fiji - Country Context

Over the last decade, damage caused by tropical cyclones has been estimated at about USD500 million and more than 100 lives have been lost. Tropical Cyclone Ami, which struck the northern and eastern regions in 2003, caused social and economic losses of more than FJD100 million (Lal et al., 2009). The floods in April 2004 caused damage estimated at more than FJD30 million (Lal et al., 2009). As a result of these and other disasters, a risk management approach underpins Government efforts in disaster risk reduction, with a strong emphasis on greater community self-reliance. The heavy dependence

on Government handouts after recent disasters, coupled with high rehabilitation costs, has disrupted planned capital expenditure programmes. To address this problem, in 2004 the Government established a National Disaster Relief and Rehabilitation Fund, with a FJD2 million budget.

The integration of risk management into the development planning and decision-making process initially used the Comprehensive Hazard and Risk Management (CHARM) approach. This approach has helped to make a significant contribution towards disaster risk reduction. Essentially it places strong emphasis on the analysis, evaluation and management of hazards, vulnerabilities and elements at risk.

Fiji - Mainstreaming of DRR and CCA

- **National:** The People's Charter for Change, Peace and Progress outlines the need for Fiji to be environmentally sustainable. Fiji's Strategic Development Plan (SDP) 2007-2011 recognised the need to develop response plans and early warning systems for floods and other natural hazards. It also urged the mainstreaming of disaster risk reduction into sectoral development plans, policies and programmes, noting this is crucial for sustainable development and community resilience. The Sustainable Economic and Empowerment Development Strategy (SEEDS) 2008-2010, adopted in 2007 by the Government, proposes integrating disaster risk reduction into political decisions and states that Government efforts are underpinned by a "risk management approach". However, no particular strategy is included to address the issue.

The SDP acknowledges that climate change is a central challenge to governments of small island states such as Fiji and is considered to be a major "environmental problem". The 2005 Environment Management Act has the potential to provide legislative support for CCA efforts, but does not explicitly state this statutory authority. In December 2007, the Climate Change Policy Paper adopted in 2007 committed the Government to addressing governance issues, integration policies, data collection and capacity building. It provided a policy framework for climate change. It did not list targets or provide budget and action plans. As a result, it failed to have any significant impact. A new Climate Change Policy has been released in October 2011. This is expected to provide a greater level of guidance to organisations/agencies implementing climate change programmes.

- **Local:** The SDP notes that the disaster management legislations and plans should include a focus on community capacity building and aim to reduce dependency. It also notes the invaluable support provided by NGOs during emergency relief operations. The SDP and the SEEDS are silent on the need to mainstream CCA for planning and related processes at the local level.

Fiji - DRR Policies and Plans

- **National:** The key policy and planning instruments for disaster risk management are the National Disaster

Risk Management Act and supporting regulations, the National Disaster Risk Management Plan, the National Disaster Risk Management Policy and the Hazard Contingency Plans and Agency Support Plans. These call for a safer and more resilient Fiji, using an all hazards approach – both natural and human-caused. The focus is disaster risk management and not just disaster management. Agencies are encouraged to incorporate hazard assessment into planning and budgeting processes. The National DRM Plan includes mainstreaming risk management into national development planning, as well as budget processes and identification of potential donors. Risk reduction is an obligatory requirement for all development policies and proposals, overseen by a national working group. Risk management is mainstreamed into sectoral policies, plans and programmes, the national capital budget template and in the Ministry of Provincial Development Capital Budget Program Working Guide as an appraisal tool. The NDMO is establishing public siren tsunami warning systems in the capital city, Suva, with bill boards on evacuation routes erected around the city. This is part of a broader goal to develop an all-hazard, integrated, people-focused Early Warning System, including a flood Early Warning System. The National Disaster Relief Fund is overseen by the National Disaster Committee (Cabinet Sub-Committee). An allocation of FJD2 million has been provided in the National Disaster Management budget since 2004. Educational and training programmes in DM are conducted at various levels. In the past, building codes were used on a voluntary basis as informal guidelines since there is no institution regulating and monitoring their implementation. The Building Code is being reviewed and enforcement enhanced. Recently, the Government provided new housing assistance to rural and village areas. This was designed to meet National Building Code standards. The National Housing Policy (2011) recognises climate change as a key problem for the housing sector, but has only little mention of disaster risks. There is no evidence that land use regulations have been updated to incorporate DRR and CCA dimensions (World Bank, 2009).

- **Local:** Instruments for DRM in Fiji include Community Support Plans. Fiji has adopted the integrated Local Level Risk Management Approach (LLRMA) to reducing flood and other risks. DRR at the local level is more likely to be sustainable when projects start by

addressing local development issues and integrating risk management into existing development initiatives. LLRM supports communities to manage and reduce disaster risk as well as foresee and control the emergence of new risks (such as those related to climate change). This is done through work on local governance, and community planning and preparedness, as well as through individual participation and motivation. Once risk-sensitive development proposals are prepared, District Officers at the local government level submit them through the National Disaster Management Office. An Emergency Management Volunteer Service has been established. Volunteers are provided with community-based training, including initial damage assessment and community-based DRM. Structures extend as far down as village and settlement level. The aim is to eliminate dependency and complacency, strengthen community self-reliance and to motivate and encourage community participation in DRM programmes and activities. River bank erosion, landslide and flooding risk reduction and mitigation projects are being implemented.

Fiji - CCA Policies and Plans

- **National:** A climate change policy paper developed in 2004 identified constraints to climate change developments and outlined the benefits of having a climate change policy. The resulting policy was approved by Cabinet in 2007. The view of the SDP was that climate change is an environment issue. However, the Department (now Ministry) of Environment focuses on environment impact assessment, waste management, pollution control, conservation, environmental information and education. In 2010, Fiji reactivated its climate change country team in order to prepare a revised climate change policy, prepare the Second National Communication and oversee implementation of climate change projects. Unfortunately, these projects have been isolated from each other, with few synergies. Climate change-related policies are incorporated in various sectoral policies of Government. Fiji is active in assessing the linkages between climate change and biodiversity conservation.
- **Local:** Many communities using the Locally Managed Marine Area (LMMA) model have found practical solutions to emerging problems by reviving traditional knowledge, which can then be combined

with modern tools. To decide the best combination, communities use an adaptive management approach. While LMMAs initially focused on food security issues and resource depletion, Fijian communities are learning important lessons about managing the impacts of climate change. Other examples of local projects are Climate Witness Programmes (in Kabara and Tikina Wai), building coastal resilience to climate change (also in Tikina Wai) and strengthening community marine resources management practices through ecosystem-based management and design.

Fiji - Institutional arrangements for DRR and CCA

- **DRR:** Overall coordination of the National Disaster Management Plan and the Disaster Management Act is the responsibility of the National Disaster Management Council. The National Disaster Management Office serves the Council. It has been transferred from the Ministry of Provincial Development and Multi-Ethnic Affairs to the Ministry of Defence, National Security and Immigration and Disaster Management. The office has the role of promoting DRR through all Government sectors. As a sign of increased commitment to this effort, it has increased the number of staff. As the minister in charge of disaster management and the National Disaster Management Office, the Minister of Defence also chairs the Council (see Figure 7).
- **CCA:** The National Environment Council coordinates the formulation of environment-related policies and strategies. It was created under the 2005 Environment Management Act. Climate change issues are primarily the responsibility of the Department (now Ministry) of Environment. The Ministry of Foreign Affairs and External Trade is the political focal point for climate change, particularly on issues related to international conventions and obligations. In 1999, the Fiji Climate Change Country Team was formed to implement the Pacific Islands Climate Change Assistance Program (PICCAP). PICCAP was a multi-country regional enabling activity project funded by the GEF, implemented by UNDP and executed by SPREP to assist participating countries to prepare their initial communications under the UNFCCC. With the ending of PICCAP, the team became inactive. As noted above, it is now being reactivated. The Fiji Meteorological Service is arguably the best-resourced technical agency operating in the region, although with a minimal staffing level. The Hydrology

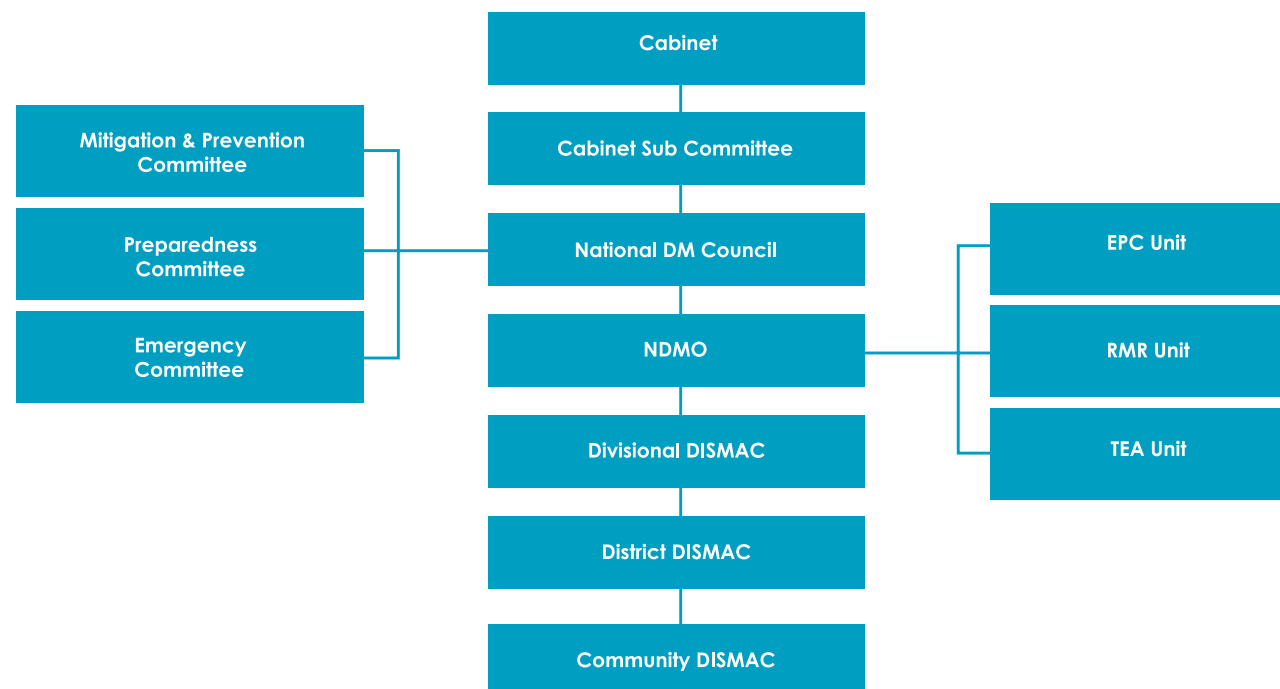
and Mineral Resources Department, responsible for monitoring landslides and other geological hazards, has fewer resources at its disposal. These and other line agencies are pursuing DRR and CCA activities, although it is largely on a site-specific and project basis. Donor initiatives or regional programmes often drive these DRR and CCA projects.

Fiji - Level of integration of DRR/CCA policies and institutions

To date, there has been little integration of DRR and CCA initiatives at national level. There is more effective integration at community level through the use of tools such as the Vulnerability and Capacity Assessment (VCA). Fiji is in the process of developing a Joint National Action Plan (JNAP) for DRR and CCA. Significantly, the re-establishment of Fiji's Climate Change Country Team and the use of that team to take the lead in preparing Fiji's Second National Communication, is providing an

opportunity to advocate and implement more effective integration. However, there is still a widely held view in Government that disaster risk reduction and climate change are disaster management and environmental issues, respectively. As a result, effective DRR and CCA implementation may prove problematic without the pro-active involvement of, and leadership from, the Ministry of Finance and Planning. In addition, while the policy frameworks are reasonably strong, especially for DRR, their implementation through the institutional frameworks and the commitment of others requires further strengthening. Greater project funding alone is not a viable solution for enhancing integrated DRR and CCA efforts. To a large degree, minimal investments in DRR and CCA projects in Fiji could be attributed to the prevailing political and economic situation. Without appropriate assistance, Fiji will not be able to train staff or have the resources to formulate and implement joint DRR and CCA initiatives (World Bank, 2009). Currently, there is limited research and technical

Figure 7: Institutional arrangement for disaster risk management in Fiji (Source: Fiji NDMO, 2008)



expertise on ecosystem- and community-based DRR and CCA protocols, methodologies and practices. There are also limited cross-sectoral planning opportunities and planning forum at the national level.

5.5 Palau

Palau - Country Context

Palau, like many other PICs, is particularly vulnerable to the effects of disasters, including those where the consequences are exacerbated by climate change. Over the past 40 years, Palau has experienced disasters such as typhoons or tropical storms, droughts, and the collapse of the Koror-Babeldaob Bridge. Historically, such disasters have seriously affected Palau's major assets and infrastructures, inhibiting progress on national sustainable development and diverting the national budget for recovery purposes. In many instances, natural hazards have compounded the effects of human-induced hazards. An example of this is a typhoon impacting on a solid waste disposal system, causing environmental damage.

Palau - Mainstreaming of DRR

- National/Local:** The national development priorities of the Republic of Palau are outlined in the 2020 Palau National Master Development Plan (PNMDP). The vision of Palau's National Disaster Risk Management Framework (NDRMF) is safe, resilient and prepared communities in Palau. The NDRMF promotes integrated planning and collaboration for disaster management and DRR across and within all levels of Government, departments, sectors and communities. The NDRMF calls for all national development programmes and projects to be subject to the formal risk management process of risk identification, risk analysis and risk evaluation and that appropriate risk management solutions be applied to the evaluated risks. At the national level, this requires that DRR programmes and activities be incorporated into the various types of corporate and business plans and budgets. The link between national development processes and disaster risk management is illustrated in Figure 8. DRR is the role of individual agencies that are mandated and responsible for development planning and implementation. The Bureau of Budget & Planning, part of the Ministry of Finance, is the

national mechanism to confirm that DRR has been considered in national development programmes. This occurs either through development projects or through sectoral plans.

Palau - Mainstreaming of CCA

- National:** As a signatory to the UNFCCC, the Government is generally committed to climate change adaptation principles and activities. However, there is a key gap in the Government's understanding of the anticipated impacts of climate on overall economic development, livelihood security, food security and infrastructure resilience. There is no actual adaptation mainstreaming in Government policies and actions, nor within private sector and NGO communities. There is a discrepancy between a lack of climate mainstreaming by Government, and an increasing awareness of climate vulnerability and risk in civil society (ADB, 2009b).
- Local:** There is a notable gap between the Government's centralized climate change agenda, overseen by the Office of Environmental Response and Coordination. There is limited engagement and consultations with Palau's decentralized and very active environmental NGO networks and private sector tourism industry.

Palau - DRR Policies and Plans

- National:** Preparation of the NDRMF was completed in early 2010 and is supported by an Implementation Plan. The NDRMF was recently approved at the executive level. The framework treats disaster risk management as a sustainable development issue and thus is a critical consideration in the development planning and decision-making processes. The framework focuses on all types of hazards, human-induced and natural. The framework establishes a mechanism for effective control, coordination, decision-making, accountability and organisation arrangements for all aspects of disaster management and DRR. It describes the organisational arrangements that maximise the use of available resources to strengthen mitigation, preparedness, response and relief and recovery planning based on an 'all-hazards' basis.

- **Local:** As called for by the NDRMF, state-level disaster risk reduction programmes and activities are being incorporated into the respective local government plans and budgets. At the community level, DRR programmes and activities are being developed and incorporated into programmes that address community development and coping mechanisms in times of disasters. Relevant traditional knowledge and practices are being included in all national, state and community DRR plans.

Palau - CCA Policies and Plans

- **National:** Palau's First National Communication to the UNFCCC was completed in 2002. It proposed several vulnerability and adaptation strategies and actions, as did other assessment documents produced subsequently. Palau's Second National Communication has been completed, but cannot be made available until it is approved. Despite these initiatives, overall, there is a surprising lack of understanding about adaptation to climate change and only a few isolated, donor-driven projects. The one notable exception is the Palau national component of the PACC project.
- **Local:** Palau's states have special responsibilities for environmental protection, resource management, land-use planning, health and welfare. Thus they could be expected to play a major role in implementing adaptation to climate change. However, apart from Koror, the States lack significant administrative and operation systems independent of the national government. Moreover, traditional governance systems are embedded in the country's modern governance structures. For these reasons, implementation of adaptation initiatives has not proceeded at a pace that might have been expected.

Palau - Institutional arrangements for DRR and CCA

- **DRR:** The institutional structure for implementation of the NDRMF is shown in Figure 9. The NDRMF provides for a tiered level of response to emergencies and disaster management. The highest tier is the Disaster Executive Council (DEC), and the second is that of the National Emergency Committee (NEC). Within the NEC is the Central Control Group (CCG). The membership of the CCG is situational and the Coordinator of the National Emergency Management Office (NEMO), as the National Disaster Coordinator,

selects initial responding members during the response phase of a disaster. The tier which represents on-site management of emergency or disaster events is the Incident Command Post. The DEC is chaired by the President. All ministers are members of the DEC. The NEMO provides secretariat support to the DEC. The NEC is normally chaired by the Vice-President. The NEC comprises representatives of relevant ministries, bureaus, divisions and agencies, including the Office of Environmental Response and Coordination, which has oversight of climate change. The NEMO provides secretariat support to the NEC. A central mechanism to ensure the incorporation of DRM in development planning and decision-making is the Hazard Mitigation Subcommittee (HMSC) of the National Emergency Committee (NEC). The NEC provides the drive for integration of disaster risk management considerations for socio-economic and environmental risks into development planning, resource allocation and decision-making. The Hazard Mitigation Committee is a subcommittee of the NEC that is responsible (with the support of the NEMO) for providing advice and support to the NEC on matters relating to DRR priorities. The HMSC is a smaller group taken from all agencies that are responsible for various aspects of DRR, including the Office of Environmental Response and Coordination.

- **CCA:** The Office of Environmental Response and Coordination was established in 2001 with a mandate to ensure compliance with Palau's obligations under the UN conventions on climate change, biodiversity, ozone and desertification. It also facilitates a coordinated approach to Palau's national-level response to environmental degradation, protection and rehabilitation of natural habitat. The office has established a working group, comprising 16 State Focal Points, national Government offices, NGOs, the private sector and traditional leaders, to engage stakeholders on climate change and environmental matters. The office also has responsibility to monitor progress on climate change.

Palau - Level of integration of DRR/CCA policies and institutions

- The NDRMF is intended to establish the platform from which sector policies, plans and programmes can be developed. The NDRMF is also intended to complement the various efforts already being undertaken across various sectors in relation to DRR

and DM, by providing a new national institutional and governance framework. The NDRMF introduces roles, responsibilities and powers that are required of various agencies in addition to any other roles, responsibilities and powers they may have under other plans, mandates or legislation. The intention is that the NDRMF also be supported by agency response plans, community plans, hazard-

specific contingency plans and standard operating procedures. The Implementation Plan for the NDRMF identifies priorities, including those that complement some existing initiatives across a range of sectors. This includes the initiative to address issues of climate change adaptation and mitigation as being spearheaded by the Office for Environmental Coordination and Response.

Figure 8: Palau's policy framework for disaster risk management (Source: Implementation Plan for Palau's NDRMF)

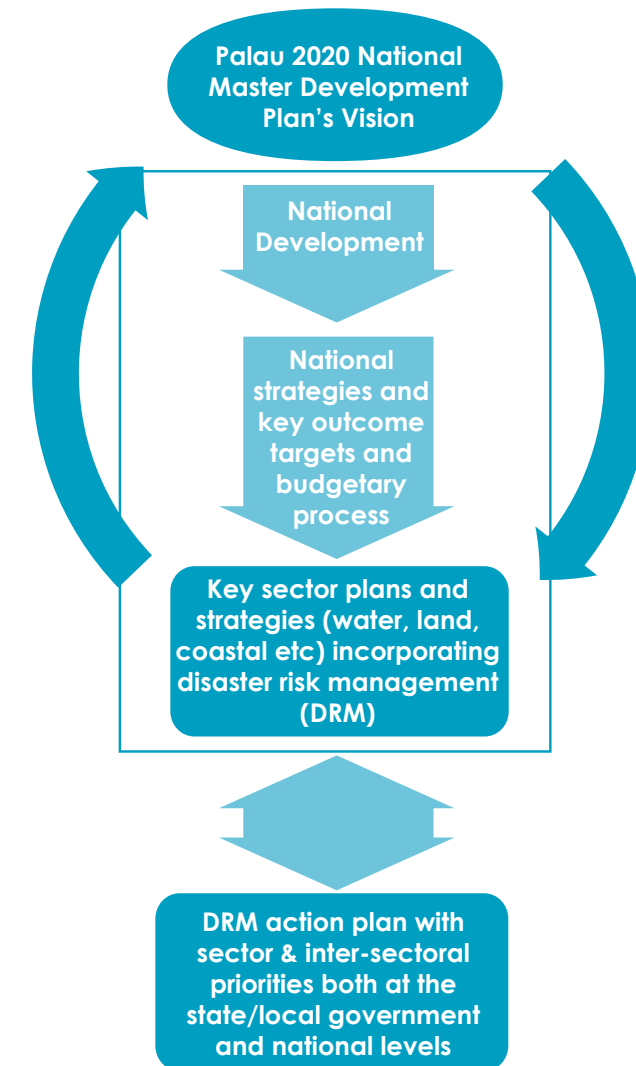
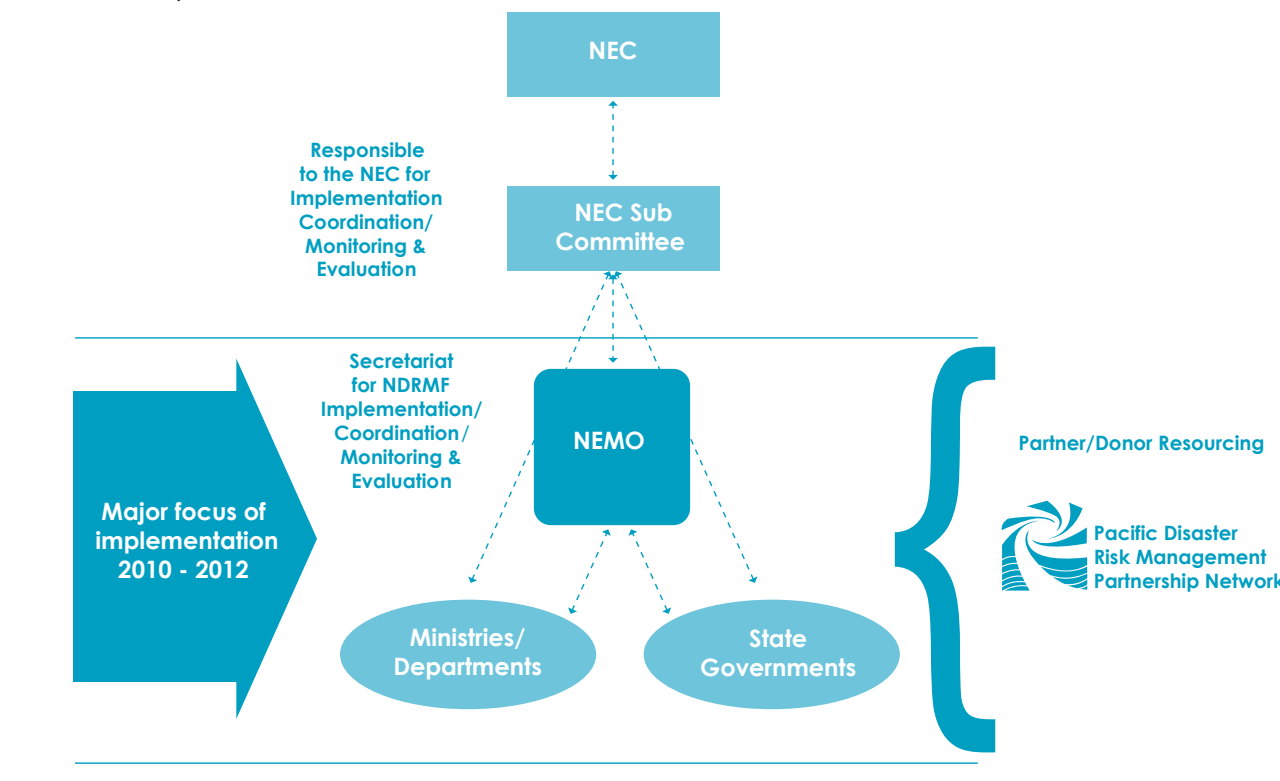


Figure 9: Institutional structure of Palau's National Disaster Risk Management Framework (Source: Implementation Plan for Palau's NDRMF)



5.6 Samoa

Samoa - Country Context⁷

Samoa is vulnerable to the effects of climate change and various natural hazards such as tropical cyclones, flooding, earthquakes, tsunamis, landslides, and coastal erosion.

The 2009 tsunami and the cyclones in the early nineties resulted in loss of life and significant loss of property and infrastructure. Livelihoods and food security concerns persist until today. There is also increasing concern over displacement of communities, particularly those from rural areas. The country is now faced with the enormous challenge of not only rebuilding food security in affected areas, but also building robust structures and institutions and introducing more sustainable natural resource management practices.

Climate Change is having a significant impact on all aspects of life in Samoa. Key vulnerabilities resulting from climate change for Samoa include:

- Water scarcity (including impacts of flooding, drought and saline intrusion on fresh water lenses);
- Biodiversity (impacts of changing rainfall patterns and increasing extreme weather events);
- Food Security;
- Health (changes in patterns of water and vector-borne diseases); and
- Infrastructure (due to coastal erosion and impacts from extreme wind events).

⁷ UN, 2011: Samoa Common Country Assessment, United Nations, Apia, Samoa, 24pp.

Of particular concern is the impact on vulnerable groups such as families residing in low-lying coastal areas, small farmers, youth and children. Vector-borne diseases and acute respiratory infections, decreased access to safe drinking water, salt water intrusion, threats to food security and changes to nutrition are but a few of the concerns that will have long-lasting implications for society.

Samoa - Mainstreaming of DRR and CCA

- **DRR:** A number of national action plans have components that relate to DRR, such as health sector plans, agriculture sector plans and the Strategy for the Development of Samoa (SDS). The SDS includes 'environmental sustainability and disaster risk reduction' as one of its seven national goals.
- **CCA:** Samoa was one of 10 countries of the Pacific that participated in the Pacific Islands Climate change Assistance Programme (PICCAP) from 1997 to 2001. Samoa prepared its initial national communication and submitted it to the COP in November 1999. The GEF-funded PICCAP project assisted countries to consider the policy implications of these studies and integrate them into each country's development plans as part of a broader climate change response strategy.

Samoa - DRR Policies and Plans⁸

The main DRR policy document in Samoa is the Samoa National Disaster Management Plan. In addition, Samoa's National Action Plan for Combating Desertification relates to DRR actions in the context of sustainable land management.

The Disaster and Emergency Management Act 2007 represents a significant achievement for Samoa as the Act clearly indicates a shift from the erstwhile relief oriented approach to a more comprehensive risk management approach. The Act supports a DRM framework which separates governance from management, mainstreams risk reduction to build on organisational strengths and places responsibility with affected communities whilst supporting them with a coordinated multi-agency approach at national level.

⁸ Government of Samoa, 2011.

Key legislative documents which support DRR include the Lands, Surveys and Environment Act 1989, which seeks to safeguard Samoa's biodiversity and is relevant in the context of risk minimisation and response; the Planning and Urban Management Act 2004, a principal planning law that makes comprehensive provision in relation to sustainable management plans and to development planning assessments; the Ministry of Works Act 2002 which provides limited powers relating to planning and urban management and comprehensive provision made for building regulations; the Agriculture, Forests and Fisheries Ordinance 1959, with implications for emergency response and reducing the risk of emergencies arising in relation to conservation, management of the environment and quarantine matters; the Ministry of Health Act 2006 which makes provisions for the Ministry of Health to have primary responsibility for public health in Samoa; Business Licenses Act 1998 which has the authority to prohibit certain business activities that could have implication for increasing the risks of disasters; and the Fire and Emergency Services Act 2007 requires enforcement of fire risk abatement and requires fire hazard monitoring and suppression systems are in place for all building development.

Within the legislative frameworks DRM considerations are addressed at varying levels in the different sector plans, e.g., Health Sector Plan (2007-2015), Water for Life Sector Plan (2008-2010) and Education Sector Plan (2006-2015).

Samoa - CCA Policies and Plans

Samoa has already prepared its NAPA and its national capacity needs relating to the implementation of the UNFCCC. NAPA and its related processes have helped Samoa identify its urgent and immediate needs for adaptation to climate change in priority areas, some of which are being developed further as projects to be implemented with funding support from the Least Developed Countries Fund. The country has recently begun its programme of activities relating to the preparation of its second national communication with funding support from the GEF.

A number of climate change programmes, projects and activities have been carried out in Samoa since the entry into force of the UNFCCC. In addition to

the PICCAP project, the second major climate change programme implemented in Samoa was part of a project titled Capacity-building for Development of Adaptation Measures in Pacific Island Countries (CBDAMPIC). This project was funded by the Canadian International Development Agency through its Climate Change Development Fund. It enabled Samoa to implement adaptation measures at community level related to water supply as well as strengthening of protective infrastructure (seawall) in coastal zones affected by sea level rise, coastal erosion and flooding from storm surges.

Climate change is no longer an issue of the future in Samoa, as extreme climate-related events are already taking their toll in climate-sensitive sectors. In response to this, funding support was provided by the Government of Australia to improve and strengthen capacities and capabilities across various sectors to adapt to the adverse impacts of climate change consistent with sustainable development policies.

Samoa - Institutional arrangements for DRR and CCA

- **DRR:** Key ministries involved in disaster risk management are the Ministry of Natural Resources and Environment (MNRE), Ministry of Works, Transport and Infrastructure (MWTI) and the Ministry of Agriculture and Fisheries (MAF). DRM is coordinated by MNRE. Coordination and collaboration between ministries has improved in recent years, however, this could be enhanced in order to maximise the use of resources and skills available through nationally or donor-funded projects. The Disaster Advisory Committee (DAC) has the overall responsibility to coordinate preparedness measures for all hazards. The Meteorology Division of the MNRE is responsible for monitoring and warning dissemination for all natural hazards to the media, the NDMO and the DAC (NDMP 2006). The NDMO is a section of the Meteorology Division of the MNRE. The Meteorological Division also works in collaboration with the mobile service providers to send text messages to the selected members of villages, the private sector, government and international and regional organisations.
- **CCA:** National-level climate change policies and plans were one of several outputs of the first Pacific regional project funded by the GEF, the PICCAP project. Implemented between 1997 and 2001, the project was designed to assist 10 PICs (Cook Islands,

Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Samoa, Solomon Islands, Tuvalu, and Vanuatu) to meet their national reporting requirements under the UNFCCC. It was funded by the GEF, implemented by UNDP and executed by the Pacific Regional Environment Programme (SPREP).

The national activities included undertaking studies on the possible impacts of climate change, identifying adaptation options and preparing National Communications under the Kyoto Protocol and related implementation strategies. In addition, the project assisted countries to consider the policy implications of these studies and integrate them into each country's development plans as part of a broader climate change response strategy.

One of the enduring legacies of these activities is the Climate Change Country Team. In many countries, it has since evolved into a wider and more influential national coordinating and technical support mechanism, often covering activities related to all the multi-lateral environmental agreements. In most PICs, the Country Team still plays a lead role at national level with respect to: (i) overseeing analytical studies on climate change issues; (ii) drafting national implementation strategies and/or national communications; (iii) coordinating and implementing national workshops and conferences; and (iv) preparing project proposals.

The important role played by the Country Team, or its equivalent, is illustrated by the institutional arrangements in Samoa for CCA and other climate change-related activities (Figure 10). It is an important coordinating as well as policy-relevant technical mechanism for a whole-of-country approach to climate change. The Ministry of Finance coordinates the flow of, and accountability of financial resources. The Ministry of Foreign Affairs coordinates the interactions with the UNFCCC and other international and regional institutions. The MNRE is the operational focal point for the UNFCCC.

Samoa - Level of integration of DRR/CCA policies and institutions

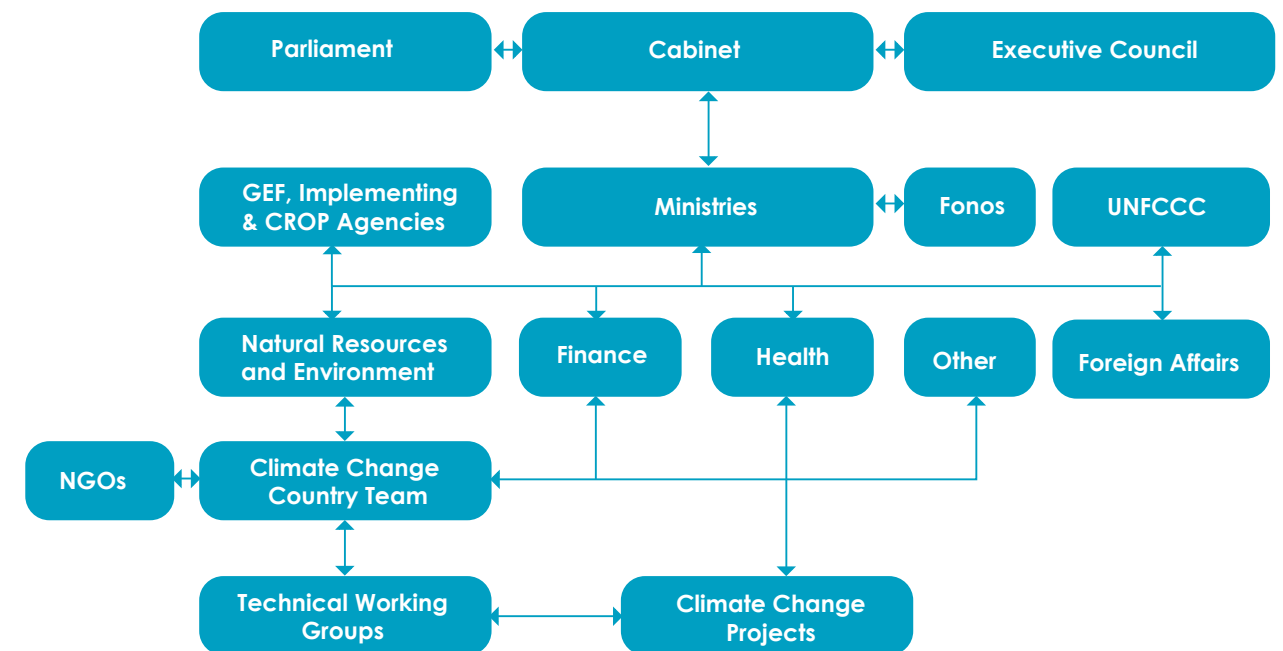
The Government approved the Samoa Disaster and Emergency Management Act of 2007 and the National Disaster Management Plan as the framework for implementing disaster risk management. The plan

identifies the practical application of disaster risk reduction in a cross-sectoral manner, facilitating the coordination of the Government, private sector, Red Cross and other NGOs, financial institutions, academic institutions, faith-based organisations and local communities, in line with their mandated roles. This clarity in roles at the national level has also enabled suitable approaches at the community level. All 329 village communities, Government and private schools have completed, or are in the process of completing, their own disaster management plans under the guidance of the NDMO and DAC.

A cross-sectoral approach has facilitated harmonization of risk reduction and climate change adaptation. In its

nation-wide disaster management planning, Samoa has strategically addressed risk reduction and adaptation as complementary issues that must be addressed together at both national and community levels. Instead of starting from scratch, the Samoan NAPA shares implementation priorities and activities with the National Disaster Management Plan. The fact that responsibility for both policy areas - disaster risk management and climate change adaptation - resides in the same Ministry has materially assisted in this process. In addition, by involving the private sector, the approach explored the interdependencies between the public and private sectors and how the sharing of resources and skills could improve the outcomes for all.

Figure 10: Institutional arrangements for CCA and other climate-related activities in Samoa



5.7 Tonga

Tonga – Country Context⁹

Tonga is exposed to a range of natural and climate-related hazards. Tonga's climate pattern is greatly affected by El Niños, which have resulted in serious drought events (in 1983, 1998 and 2006). This has had a significant impact on food security and economic performance. Considerable Government resources have been spent on shipping water to outer islands, diverting resources from socio-economic development. Tonga also experiences occasionally heavy rainfall causing flooding in low-lying areas.

Since the 1960s, five major tropical cyclones and related storm surges have severely affected Tonga. These events caused severe damage to crops, food supply, infrastructure, housing, tourism and other service sectors.

Tonga is also at risk from seismic hazards. A major event was reported in 1977 of 7.1 magnitude and volcanic eruptions and tsunamis occurred. The Niuatoputapu tsunami in 2009 reached a maximum height of 16.9m on the southeast coast, causing damage to human settlements and the environment and killing nine people.

Extreme weather events and climate change will lead to an increase in vector-borne diseases and acute respiratory infections, decreased access to safe drinking water and threats to food and security. The groups most vulnerable to the impacts of disasters and climate change include children, widows, single mothers, and populations on outer islands. Increased natural disasters and displacement also puts children's access to education and protection at risk.

Tonga - Mainstreaming of DRR and CCA

- **DRR/CCA:** The National Strategic Planning Framework (NSPF) 2011-2014, released in early 2009, supersedes Tonga's Strategic Development Plan 8 2006/07 – 2008/09. It takes a longer term view of 5-10 years, in recognition of the long lead-time required to provide long-lasting economic and social development outcomes. The NSPF has a strong focus on climate change, with one of the seven

primary objectives being "Integrating environmental sustainability and climate change into all planning and executing of programs". However, under this objective, the framework highlights the significant challenge posed by extreme events (caused by both climate-related and geophysical hazards). It also states Government will seek to develop a framework for multi-hazard risk management. One of the four key enabling themes in the NSPF is to "Ensure a more coordinated whole-of-government approach to donor funding", which will also contribute towards the greater mainstreaming and integration of DRR and CCA.

Tonga - DRR Policies and Plans

The National Disaster Management Plan focuses on a comprehensive disaster management strategy that clearly identifies and documents the essential organisational and procedural ingredients for effective mitigation, preparedness, response, and recovery.

The aim of the plan is to detail the Government policy and management strategies for the design, development and implementation of effective disaster management programmes and activities, as well as the operational procedures for effective response to designated high-risk hazards. The basic concept of the plan is based on the effective utilisation and coordination of Government, NGOs, private industries and donor resources in support of disaster management programming.

The plan includes a number of essential elements, including:

- An effective organisational structure;
- Effective management systems for programme activities;
- A mechanism to facilitate exchange of information, and discussion of programme issues;
- A broad organisational involvement in programme activities; and
- A broad base of commitment for programme activities, including the incorporation of disaster management into national budget considerations.

Tonga – CCA Policies and Plans

Although Tonga is not an LDC, it is currently preparing a NAPA as a component of its Second National Communication Report. Apart from this, Tonga also completed its First National Communication Report. One component of this report is the vulnerability assessment component, which specifically focuses on the assessment of the adverse impacts of climate change on vulnerable sectors in Tonga. The other component of the report is on adaptation. Tonga also established a climate change policy in 2004, as part of the PICCAP project. It had close links to the relevant regional frameworks, including the PIFACC, and supported implementation of the National Sustainable Planning Framework.

Tonga – Institutional arrangements for DRR and CCA

- **DRR:** The National Emergency Management Office, through the National Emergency Management Plan and the Emergency Management Act 2007, is responsible for the coordination of DRM capacity building activities in Tonga (SOPAC, 2009b). The Cabinet, chaired by the Prime Minister, forms the National Disaster Council (NDC), with overall authority and responsibility for disaster management programmes and activities, including response issues. The Minister for Works and Disaster Relief Activities has specific responsibility for disaster management programmes and activities. The National Disaster Management Committee (NDMC) is responsible to the NDC for guiding and supporting the development and implementation of the Kingdom's disaster management programmes. The committee also provides resource support and technical advice to the Central Control Group (CCG) during disaster response operations. Through its meetings, the NDMC will review and discuss disaster management plans and related programmes proposed by the NDMO and ensure the commitment of their respective departments and organisations. The NDMC membership comprises 22 sectors and departments and is chaired by the Minister of Works and Disaster Relief Activities.
- **CCA:** The Ministry of Environment and Climate Change (MECC) is the National Focal Point for all climate change projects funded by the GEF, UNDP and UNEP. The Climate Change Division within the MECC has overall responsibility for the management

of climate change activities. The Climate Change Cabinet Committee is a high-level committee with the MECC as the secretariat. This committee is chaired by the Minister of MECC, with the National Environment Coordination Committee acting as the advisory body. Committee members are departmental heads from government agencies, NGOs, statutory board and private sectors. There is also a Technical Working Group, whose members are national experts from various government agencies and NGOs. The working group is responsible for the implementation of project work at the technical level. This group is chaired by the Director of MECC. Finally, there is a Management Unit, which is responsible for the overall management of climate change projects in Tonga.

Tonga - Level of integration of DRR/CCA policies and institutions

Tonga has demonstrated commendable leadership in planning and implementing integrated approaches to DRM and CCA. As a result of many stakeholders recognising the similarity in focus of DRM and CCA, and the limited capacity in-country to address both issues, the Tongan National Emergency Management Office requested SPC/SOPAC to assist in the preparation of a Joint National Action Plan (JNAP) for DRM and CCA, which was endorsed by the Minister for the Environment and Climate Change. Officials in that Ministry have committed themselves to lead the JNAP preparation and implementation processes, jointly with staff of the National Emergency Management Office.

Therefore, rather than follow the original intention to prepare separate planning documents for CCA and DRM, i.e. a NAPA (overseen by the Ministry of Environment and Climate Change) and a DRM NAP (overseen by the National Emergency Management Office), the decision was made to prepare a joint plan. It was prepared by the Task Force for Disaster Risk Management and Climate Change Adaptation, with the benefit of a substantial reduction in the time and effort spent on consultations due to the joint approach. The Task Force is also responsible for implementation.

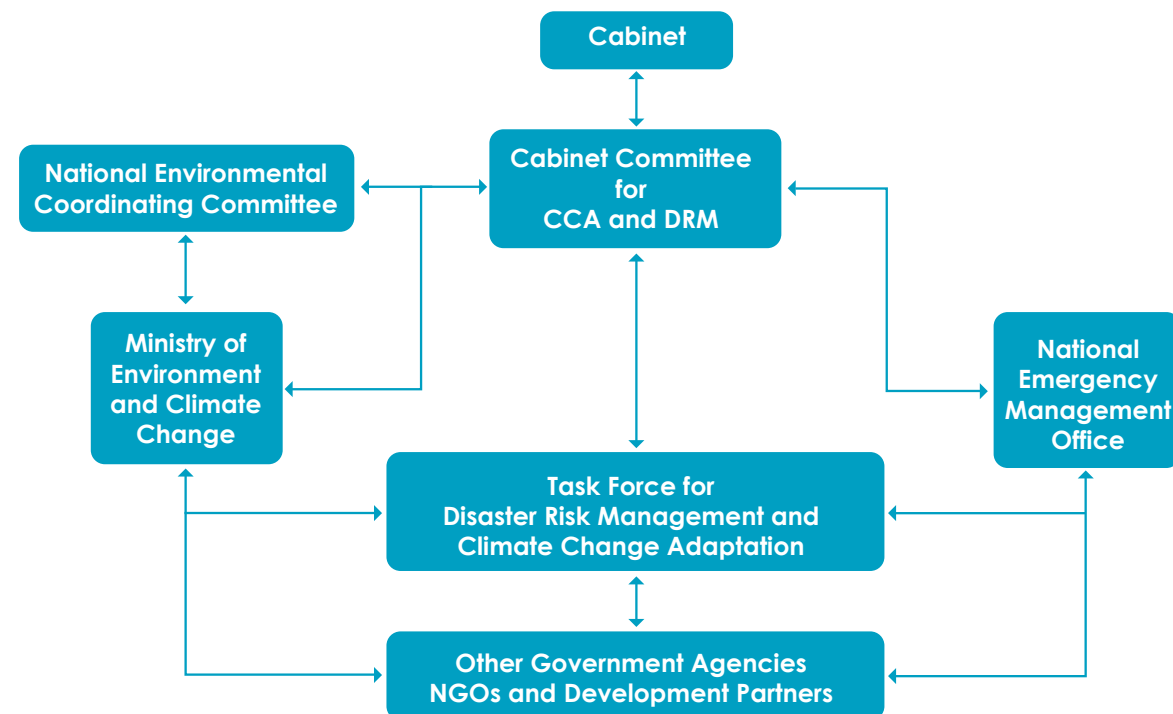
The vision of the JNAP is 'safe, secure and resilient communities to climate change impacts and disaster risks'. The plan has six goals, namely:

⁹ UN, 2011: *Tonga Common Country Assessment*, United Nations, Suva, Fiji, 12pp.

1. Improved good governance for climate change adaptation and disaster risk management (mainstreaming, decision making, organisational and institutional policy frameworks);
2. Enhanced technical knowledge base, information, education and understanding of climate change adaptation and effective disaster risk management;
3. Analysis and assessments of vulnerability to climate change impacts and disaster risks;
4. Enhanced community preparedness and resilience to impacts of all disasters;
5. Technically reliable, economically affordable and environmentally sound energy to support the sustainable development of the kingdom; and
6. Strong partnerships, cooperation and collaboration within Government agencies and with civil societies and NGOs.

Goal 5 is noteworthy in that it relates to the reduction of greenhouse gas emissions (“mitigation”), rather than to CCA or DRM. Thus the joint plan has integrated both adaptation and mitigation and merged the three major categories of response to climate change. For Goals 1 to 3, there is full integration of CCA and DRM. As an example, the two objectives under Goal 1 are to develop an enabling policy and capacity to strengthen planning and decision-making processes with the incorporation of relevant climate change and disaster risk management considerations and to strengthen institutional arrangements and capacity for climate change and disaster risk management in Vava’u, Haápai, Éua and in the Niuas. As is to be expected, the integration of DRM and CCA planning and implementation in Tonga has resulted in revision and strengthening of the institutional arrangements. Figure 11 provides details of the new institutional arrangements.

Figure 11: Institutional arrangements for implementation of Tonga’s Disaster Risk Management and Climate Change Adaptation National Action Plan



5.8 Vanuatu

Vanuatu - Country Context: Vanuatu ranks as one of the countries with the highest exposure to multiple hazards, according to the World Bank’s Natural Disaster Hotspot study. Vanuatu is geographically located in the “ring of fire” and the “cyclone belt” of the Pacific. Almost 81 per cent of its land mass and 76 per cent of its population is vulnerable to two or more hazards, including volcanic eruptions, cyclones, earthquakes, droughts, tsunamis, storm surge, flooding and landslides. Since 1939, a total of 124 tropical cyclones have affected Vanuatu. Over six decades since 1939, the number of tropical cyclones in Vanuatu has increased significantly. Vanuatu has a UN Least Developed Country (LDC) status despite a per capita GDP above the LDC threshold.

In 1997, Vanuatu initiated its Comprehensive Reform Program (CRP), a major development initiative in response to fiscal fragility, political instability, economic stagnation, inefficient public administration and social service. The Government’s medium-term strategy for development is outlined in the Priorities Action Agenda (PAA) 2005-2016. The PAA recognises Vanuatu’s vulnerability to disasters and states that “the emphasis in disaster management has been on making communities aware of the need for preparedness and promoting the renewal of traditional knowledge of mitigation and preparedness”. The priorities and approach it establishes are consistent with those in the CRP, with an overall objective of linking policy and planning. The priorities include primary sector development, covering natural resources and the environment. The Government used the priority areas in the PAA as a starting point for the development of a four-year strategy ‘Planning Long, Acting Short: Action Agenda for 2009-2012’. In 2007, the Governance for Growth (GFG) programme was launched as a response to the need to implement meaningful reform.

Vanuatu - Mainstreaming of DRR

- **National:** Disaster risk management is integrated in the PAA. In 2006, Vanuatu was the first PIC to begin the integration of disaster risk management as a part of national planning. A key priority and strategy is to prepare a Port Vila development plan, which mainstreams climate change and DRR measures. The National Disaster Act (2000) focuses primarily on preparedness and response arrangements for disasters. While the Act includes a definition of

prevention, it is not specific about requirements and powers for addressing prevention measures.

- **Local:** A key priority and strategy in the PAA is developing and implementing risk reduction programmes in communities. Vanuatu is the only Pacific island country recipient of the USD 65.69 million Millennium Challenge Corporation funds. The fund focuses on overcoming transport infrastructure constraints to poverty reduction and economic growth, specifically for rural areas.

Vanuatu - Mainstreaming of CCA

- **National:** Vanuatu’s NAPA was adopted by Government in 2007. This determines eligibility to apply for funding for implementation under the LDC Fund, which is managed by the GEF. Vanuatu has also prepared a discussion paper – Climate Change Policy and Implementation Strategy. Its purpose is to provide a summary of climate change development in Vanuatu, including future areas that the Government and other stakeholders need to address. It also intended to highlight issues that had been identified in the First National Communication that may form the basis for a climate change policy. The paper proposes a preliminary climate change policy framework for consultation purposes. The policy framework highlights the commitment of Government, through the Environment and Meteorology Departments and other Government ministries, civil society and the private sector to mainstreaming climate change issues at the national and community level.
- **Local:** The policy framework highlights a commitment to proactively identify vulnerable communities, areas and assets at risk. There is also a commitment to develop adaptation options that are appropriate, cost-effective and culturally sensitive in order to increase resilience. It also states that effective provincial participation in the climate change process must be ensured, with existing systems being used as the basis for local authority participation.

Vanuatu - DRR Policies and Plans

- **National:** A Disaster Risk Management Framework and arrangements flow chart was adopted by the Government in early 2007 as the basis for developing new legislation, a new disaster management plan

and new Government organisational arrangements. The framework was also part of the commitment made to streamlining and cooperation when the NAP was first designed, and as a result, the Vanuatu Meteorological and Geohazards Department (VMGD) and NDMO are now housed together in a new complex, fully funded by the Vanuatu Government. In addition, a National Water Strategy Plan has been prepared, proposing risk assessments and vulnerability mapping. This work has commenced, but there is very little capacity to undertake it. The biggest impediment to the development of risk and vulnerability assessments and maps is a lack of climatic, hydrological and geophysical data.

- **Local:** Both the NAP and its Implementation Plan include provisions for extending disaster risk management to the provinces. However, lack of funding prevents implementation of the NAP. Provinces are, in theory, also mandated to prepare their own disaster plans, which should be approved by the NDMO Director, reviewed annually and updated as needed. Yet the lack of action on the NAP has prevented the creation of provincial action plans. Provincial authorities are responsible for coordinating responses under the guidance of the NDMO and NDC. Each village should have a disaster management committee, which coordinates response at the local level, works in consultation with the provincial level and is responsible for local-level damage and loss assessments. Most volunteer organisations or agencies that assist civil society organisations and/or rural communities to implement DRR are involved on a voluntary basis, with this as their secondary activity. Their primary focus is on service delivery and technical assistance across all the provinces of Vanuatu. The situation is improving as a result of the recent expansion of the Foundation of the Peoples of the South Pacific International (FSPI) into Vanuatu. FSPI is a network of non-governmental organisations in the South Pacific that is engaging communities in participatory methods of problem identification, risk analysis and action planning in Vanuatu. The initiative is for the development of a people-centred early warning system and community based DRR and DRM plans or for safer village plans. These will be documented through participatory research and wide dissemination of the traditional and modern vulnerability reduction methods, social conditions and skills that contribute to community resilience in PICs. The objective is for communities to be

empowered to organise themselves for and manage disasters and to build risk reduction measures into their daily development activities. Also, the projects are intended to improve linkages with key stakeholders at both national and regional levels to promote sustainability of community activities and to spread advocacy for community based vulnerability reduction.

Vanuatu - CCA Policies and Plans

- **National:** In accordance with the UNFCCC and the Kyoto Protocol, the Government resources much of the national adaptation costs on assistance from the Convention process and from bilateral and multilateral assistance of developed countries and major gas emitters. Vanuatu's NAPA identifies four priority sector areas: agriculture and food security; sustainable tourism development; community based marine resource management; and sustainable forestry management. The EU announced mid 2008 that the Vanuatu NAPA qualified for funding under its Global Climate Change Alliance, with co-financing by the World Bank totalling VT 800 million. The project, "Enhancing Coastal and Marine Ecosystems Resilience to Climate Change Impacts through Strengthened Coastal Governance and Conservation measures", is being executed by SPREP. GIZ contributed Euro 1.4 million in funding to a project focusing on sustainable agro-forestry management as a means of building resilience to climate change. The project is being executed by SPC.
- **Local:** The main output of the Vanuatu Climate Change Adaptation Project is a rainwater harvesting project on the island of Aniwa in the southern province of Tafea. The Vanuatu component of the PACC project focuses on climate-proofing coastal infrastructure with Epi Island as the pilot site.

Vanuatu - Institutional arrangements for DRR and CCA

- **DRR:** A number of ministries and agencies participate in disaster risk management, including Vanuatu's Meteorological Department, which is responsible for day-to-day weather forecasting, cyclone and tsunami warnings and long-term seasonal forecasting. The Agriculture Department is also involved in disaster response. The National Advisory Committee of Climate Change (NACCC) assists in raising awareness on DRR through its climate change core team. The

Ministry of Lands and Natural Resources incorporates risk reduction into land, water and energy planning. Disaster risk management is housed in the Ministry of Internal Affairs. This Ministry coordinates responses between provincial authorities and supports the National Task Force (NTF) for Disaster Risk Reduction and Disaster Management. The NTF comprises representatives of departments with a role in disaster risk management and is co-chaired by the Director of the Meteorological Service and the NDMO. The NTF takes a proactive as well as reactive approach – thus it does not meet solely in response to disaster events. The National Disaster Committee (NDC), established by the National Disaster Act, is tasked with developing the country's disaster risk reduction policy and strategy. It is made up of representatives of relevant Government agencies and three NGO representatives. The NDMO is its secretariat, tasked with implementing the strategies and policies of the NDC. However, the NDMO has no powers to require other agencies to act on any identified prevention measures. The NDC coordinates response and recovery activities including coordination with donors.

- **CCA:** Climate change activities are coordinated by the National Advisory Council on Climate Change (NACCC), which is essentially the only body that is formally recognised by the Vanuatu Council of Ministers to implement a Multilateral Environmental Agreement for the Government. The NACCC is made up of department heads, including the NDMO Director, and chaired by the Director of the Meteorological Service. The Director of the Meteorological Services is co-chair of the National

Task Force for Disaster Risk Reduction and Disaster Risk Management. The Climate Change Unit in the Department of Meteorological Services functions as the Secretariat of the NACCC. There is a plan for the NACCC to establish a National Group of Experts to do research on environmental change issues affecting the country, particularly on climate change, and periodically report to the NACCC on its findings.

Vanuatu - Level of integration of DRR/CCA policies and institutions

Vanuatu was the first PIC to complete both a NAP for DRM and a National Adaptation Program of Action (NAPA). The National Task Force for DRR and DM is co-chaired by the Director of the Meteorological Service (who has overall responsibility for the Government's climate change activities) and the NDMO Director; a key priority and strategy in the PAA is to prepare a Port Vila development plan which mainstreams climate change and disaster risk reduction measures. Vanuatu is currently in the process of launching a National Land Use Planning and Zoning policy, which will include land use zoning maps and vulnerable area mapping, addressing both DRR and CCA. The lack of understanding of climate change and variability issues and DRR in the higher echelons of governance is still a major constraint leading to the lack of a coordinated approach to addressing climate-related risks. Financial and human constraints are a major concern to line departments, such as both Meteorology and Environment, which currently depend largely on donor assistance to fund on-going activities at the national and community level.



6. Climate Change Interventions Supported by UNDP

Photo: UNICEF Pacific/Giacomo Pirozzi/2006

The aim of this overview is to provide a summary of how national climate change priorities have been addressed by the four focus countries of this study (Cook Islands, Fiji, Palau and Vanuatu) with the assistance of the United Nations Development Programme (UNDP). The UNDP implemented 80 projects in the Pacific under its climate change portfolio between 1991 and 2009. These had a total value of USD62.5 million. The majority of projects, by far, had a renewable/sustainable energy focus (31 projects), with the next most common categories being adaptation (22 projects) and capacity building (22 projects). Somewhat understandably, the adaptation

projects focussed on the coastal sector (seven projects) and interestingly also disaster risk reduction (six projects). The above analysis is totally input focussed, due to the nature of the databases that have been compiled by international and regional agencies. In order to provide some insight into the outputs and outcomes of these activities, more detailed analyses needed to be conducted. This represents a major constraint on the analysis. A summary of the findings is provided in the following table.

6.1 Cook Islands

Table 2 : Overview of Climate Change Interventions Supported by UNDP in Cook Islands

Number of Projects			
Support / Collaboration	Adaptation	Land Management	Mitigation
6	7	0	4
UNDP supported the integration of MDGs into the National Sustainable Development Plan 2007-2010, preparation of which was also supported by UNDP. National and community-based programmes have been developed and implemented in environment and energy for sustainable development. Flexibility and responsiveness were demonstrated during times of disasters. The GEF Small Grants Programme implemented by UNDP has demonstrated the critical role communities can play in delivering sound environmental management. UNDP has helped build upon and scale up community-based activities that include CCA and DRR. Country specific assistance includes the Second National Communications enabling activity, the national capacity self-assessment, technical assistance to increase the utilisation of renewable energy technologies in the Cook Islands energy supply, the Rarotonga wind resource assessment and capacity building for sustainable land management. UNDP has also provided coordinated and gender-sensitive policy and technical advice to address challenges such as disasters and climate change. Community-based environmental management and DRR have been strengthened. Assistance has also been provided to help the country and communities to deal with their environmental, energy and related challenges. With UNDP support, community resilience and capacities have been increased to deal with disasters and other challenges. Preparation of the National Action Plan for Disaster Risk Management was supported by UNDP.			



6.2 Fiji

Table 3: Overview of Climate Change Interventions Supported by UNDP in Fiji

Number of Projects			
Support / Collaboration	Adaptation	Land Management	Mitigation
8	11	1	11

Since ratifying the UNFCCC, policies adopted in successive development plans, prepared with UNDP support, have recognised the critical importance of managing the environment and natural resources to ensure social and economic prosperity in the present and for the future. The implementation of these policies, however, has not been adequately supported with the required budget.

UNDP has supported development of legislation for container deposit and sustainable solid waste management in Suva. The aim of the assistance is to help establish a sustainable recycling system in Fiji. This is a pilot study for implementation in other municipalities of Fiji. Container Deposit Legislation puts in place a system of deposits and refunds to give a financial incentive to consumers and industries to recycle containers, complementing the existing regulations passed by Cabinet. The assistance will also help establish a solid waste management facility and associated collection arrangement within Suva, increase public awareness of environmental degradation due to waste, prevent further degradation of the environment within the Suva City Council area, reduce the volume of waste being disposed of and hence, extend the life of the Naboro Landfill, generate employment, inclusive of women, and increase the capacity of the local City Council to handle solid waste management issues.

Fiji's Draft National Action Plan on Combating Desertification was completed in 2006. The development and approval in 2006 of the National Energy Policy by Cabinet provides a common framework for both the public and private sector to work towards the optimum utilisation of energy resources for the overall growth and development of the Fiji economy.

Country specific assistance provided by UNDP includes recovery following severe floods in western, central and northern divisions. UNDP proposes to use its TRAC 3 funding to provide support and contribute to Government efforts to undertake technical needs assessments following the disaster and to help formulate a transitional recovery plan.

UNDP has given assistance to help Fiji develop the capacity to monitor, evaluate and communicate climate change adaptation. Benefits of the ongoing community-based climate change adaptation initiative includes strengthening of the monitoring, evaluation and communications component. The assistance supports efforts towards internalizing climate change adaptation within rural communities of Fiji and enabling the replication of best practices from the six pilot sites to other rural communities through mobilized resources using cost-sharing arrangements with UNDP, or parallel funding.

Other assistance includes promoting sustainability of renewable energy technologies and renewable energy service companies, Fiji bio-fuels, piloting climate change adaptation to protect human health and capacity building for sustainable land management. The overall objective of the last area of assistance is to minimise land degradation and improve agricultural productivity through better land use planning, sustainable land management technology transfer and promotions through increased awareness and training.

Support has also been provided for UNFCCC-enabling activities and a national capacity self-assessment. The latter project assessed Fiji's capacity to address global and local environmental issues and to plan for implementing key activities to achieve capacity building needs identified through a country-driven consultative process that takes into account Fiji's obligations under the three global conventions on biodiversity, climate change and desertification/land degradation. The findings provide national decision-makers and funding agencies with essential information about Fiji's specific capacity needs to meet its international environmental obligations.

UNDP has provided assistance to review Fiji's MDG Reporting process and use the findings to improve the next round of process, contents, quality and utility of Fiji's National MDG Report 2009. The second National MDG Report will allow Fiji to review its progress to date and what it needs from 2010 onwards to achieve its 2015 MDG targets.

The Fiji National HIV/AIDS Spending Assessment, funded by UNDP, provides a more systematic approach to HIV resource management, monitoring and expenditure-tracking through the introduction of a National Aids Spending Assessment. This is a comprehensive and systematic resource-tracking methodology used to determine the flow of resources intended to respond to HIV and AIDS in a given country.

The National Initiative on Civic Education has also been supported by UNDP. The major objective is to create an informed, responsible and active citizenry through information, advocacy and awareness-raising amongst the adult population of the principles and institutions of democratic governance in Fiji. It also facilitates the participation of people in public policy development through empowerment and organisation of public debates, discussions, and consultations.

The Human and Civic Education in Schools project is being implemented with UNDP assistance. It will help in the development of a human rights and civic education curricula; develop relevant teaching and learning resources and train teachers for teaching of the new curricula.

6.3 Palau

Table 4: Overview of Climate Change Interventions Supported by UNDP in Palau

Number of Projects			
Support / Collaboration	Adaptation	Land Management	Mitigation
6	7	0	9

UNDP has provided country-specific support for two projects, capacity building for sustainable land management and sustainable economic development through renewable energy applications. All other support has been through multi-country or regional projects.

UNDP has assisted Palau to prepare and implement sectoral and national plans and sustainable development strategies aligned with the MDGs and linked to national budgets. National statistical information systems and databases have been established, strengthened (to support information systems), upgraded and harmonized. They focus on demographic disaggregated data and poverty indicators.

UNDP has also helped Palau to improve the capacity of the Parliament of Palau as well as strengthen its systems to enable the efficient and effective performance of oversight, accountability, legislative, representative functions and roles. This includes improved capacity for equitable representation and participatory democracy through civic and human rights education.

Increased use of feasible renewable energy technologies has also occurred as a result of UNDP assistance. This has included establishing a national policy and programme for renewable energy, increasing investments in renewable energy at the utility level and increasing application of renewable energy at household and village levels.

UNDP has assisted Palau in developing the capacity of Government officials to be able to carry out projects that will help eradicate land-induced poverty, especially in rural development agendas. The assistance is also directed at enhancing the National Action Plan for Sustainable Land Management and completing a medium-term National Investment Plan and its coordinated Mobilization Plan.

6.4 Vanuatu

Table 5: Overview of Climate Change Interventions Supported by UNDP in Vanuatu

Number of Projects			
Support / Collaboration	Adaptation	Land Management	Mitigation
6	7	0	7

UNDP was one of the sources of support for preparation of the DRM National Action Plan for Vanuatu. UNDP also assisted Vanuatu by assessing current capacities and needs for DRR and helped to build DRR and DM into the Priorities and Action Agenda (PAA). In 2005, the Government, recognising that the current PAA does not fully address disaster risk reduction and disaster management issues and challenges, requested the UNDP and other development partners to help develop a supplementary PAA on DRR and DM to complement the current PAA, 2005-2007. The draft supplementary PAA focuses on an additional strategic priority of 'Safety, Security and Resilience' of Vanuatu. DRR and DM considerations also need to be reflected in the national Vision, Medium-Term Strategic Framework and the Strategic Priorities. The necessary changes are included in this supplementary PAA, together with a detailed strategic priority on 'safety, security and resilience'¹⁰.

The Building Resilient Communities Towards Effective Governance Project, supported by UNDP, assists Vanuatu to have an effective and inclusive governance system, creating accountability to communities for performance by Government, with particular focus on the provision of essential services. These include: DRM strengthening; local participation in decision-making, involving traditional leaders and chiefs, church, women, youth, and indigenous communities; facilitated access to information and communications technologies by communities to enable civil society- particularly the poor and disadvantaged - to participate fully in discussions that affect their lives; promoting better understanding, peace and stability, as well as improved coordination and central-provincial-community linkages for better service delivery to populations in greatest hardship, particularly in isolated rural/island communities.

UNDP has assisted Vanuatu to prepare both its First and Second National Communications to the UNFCCC. All signatories to the UN Framework Convention on Climate Change (UNFCCC) are required to prepare a National Communication comprising three major elements: a national greenhouse gas inventory, abatement analysis, and vulnerability and adaptation assessments.

UNDP's MDG support aims to support Vanuatu in the country's achievement of the MDGs through MDG-based planning and costing and targeted capacity building and updating of its National MDG Report in 2010. This includes scoping, initiating and maturing; and focus on the review/development of national development planning and budgetary processes and the links to sector strategies; prioritisation of activities and budget allocation; better linking of aid coordination and management with national priorities; and strengthening information systems for monitoring the effectiveness of national planning and budget implementation at the national, sectoral and local levels; as well as monitoring and reporting. The programme of support would be led by the Government and facilitated by UNDP in coordination with other organisations of the United Nations system and development partners.

The Sustainable Land Management Project, also supported by UNDP, will strengthen local and national capacity for sustainable land management, including completion of a National Action Plan for combating

¹⁰ Note: The PAA has gone through another revision process in 2011 since this overview of UNDP support was prepared.

land degradation; capacity building and strengthening legislative and policy frameworks; mainstreaming into national development strategies and policies; and the development of a Medium-Term Investment Plan and its Resource Mobilization. The project is collecting, acquiring and generating land resources information and raising the awareness of land administrators and users of better land use management technologies through research, technology transfer, training, generation and compilation of reliable data. The project is strengthening and reinforcing institutional capability, providing a basis for comprehensive national land use planning and initiating practical on-farm sustainable land management technologies.

UNDP supports sustainable energy interventions, with emphasis on improving cooking and lighting conditions, health, financial savings and community participation. Key activities include site survey and awareness-raising (quantity of livestock, current cooking and lighting conditions, health-related cases, household income, promotion of renewable resources, project benefits) and the purchase of equipment and materials, construction (installation of at least one bio-gas digester, animal shed, piping methane gas distributor) and commissioning (testing of system).

The Vanuatu Solid Waste Management Project, supported by UNDP, aims to establish a sustainable recycling system in Vanuatu and raise the environmental awareness of ni-Vanuatu. The initial phases of the project evaluate the logistics, costs and feasibility of establishing solid waste management facilities in Port Villa and Luganville in Vanuatu.

Trade integration and capacity building is being supported by UNDP. This project is to facilitate institutional reform, address policy and national capacity needs in the context of evolving trade reforms and poverty and human development needs in and to strengthen the delivery mechanisms of services and functions of the Cooperatives Department in all provinces, in particular those of microfinance and entrepreneurship development. The project also aims to improve the trade facilitation role of the Customs department through legislative reforms and enhanced space capabilities.

The Biodiversity Project supported by UNDP focuses on strengthening local resource management initiatives by traditional landholders, chiefs and their communities and to strengthen local, provincial and national capacity to support local biodiversity conservation activities. The work refines strategies to enable Vanuatu to achieve biodiversity conservation objectives given traditional land and resource ownership.

7. Recommendations

This section identifies priority areas for future consideration and also provides a summary of recommendations for national, regional and international stakeholders.

7.1 Priority Areas for Future Development of Guidance Notes and Other Tools

The following are identified as areas of disaster risk reduction and climate change adaptation practice in the Pacific region that would benefit from the preparation of additional guidance notes and other tools, such as:

- Guidance to national and local government on strengthening the enabling environment to support greater integration of DRR and CCA at national and local levels.
- Making the economic case for increased integration of DRR and CCA, especially at community level.
- Strengthening inclusive approaches in DRM/CCA policy setting, planning and implementation at all levels that foster multi-stakeholder involvement and equal participation of groups who are often excluded, such as women, children and youth, or people with disabilities.
- Preparation and dissemination of Pacific case studies on coordination and harmonization of disaster risk reduction and climate change adaptation, with a focus on work at community level and on the enabling environment for DRR and CCA.
- Development of a Self-Assessment Tool that assists DRR and CCA practitioners to evaluate progress on the integration of DRR and CCA into policy making, programming, institutional arrangements and delivery of practical outcomes for target beneficiaries. This includes guidance on the application of the tool, and training and awareness workshops to encourage uptake.

7.2 Recommended Steps and Follow-up Actions

The following provides an overview of recommended steps and actions that have been derived from the institutional and policy analysis for immediate follow-up by international, regional and national stakeholders.

Regional and International Stakeholders

1. Establish and continually maintain a single, online database of past, current and planned DRR, CCA and related projects that have multi-country involvement. The database should include information on tangible benefits and learning generated in order to promote joint planning, evaluation assessments and other activities.
2. Establish and continually maintain an online database of Pacific-focussed case studies, good practices, lessons learned, methodologies and tools that can be used to enhance the integration of DRR and CCA at regional, national and community levels. The database should include all relevant materials and information, such as documents, contacts and a meeting calendar.
3. Make every reasonable effort to co-convene DRM and CCA meetings at times and locations that maximise the coordination and integration opportunities, while also delivering the greatest environmental benefits in terms of minimizing greenhouse gas emissions.
4. Develop the capacity of relevant regional organisations to provide practical technical and other support to Pacific island countries on how best to maximise efficiency and effectiveness by taking an integrated approach to disaster risk reduction and climate change adaptation.
5. Continue to pursue the development of an integrated Pacific Regional Policy Framework for DRM, CCA and mitigation for implementation post-2015.
6. Donors, Pacific island governments, non-governmental and relevant regional organisations should work collectively and promote the greater integration of DRR and CCA. Development assistance partners who are active in both DRR and CCA should take a strong position to advocate for the integration of disaster risk reduction and climate change adaptation programming and ensure they take up every opportunity to do so in their own programming.

National Stakeholders

1. Ensure that all their DRR, CCA and related programming is included in the regional database (see 1 above). This should also include relevant case studies, good practices, lessons learned, methodologies and tools that can be used to enhance the integration of DRR and CCA at regional, national and community levels (see 2 above);
2. Each country should assess, in a general way and for the national context, the broader costs and benefits of taking a more integrated approach to DRR and CCA, relative to business as usual. This should include assessing the ongoing effectiveness of current disaster risk reduction strategies in the face of a highly variable climate, which may also undergo considerable change in the near future.

3. Each country should assess, in the national context, the synergies between humanitarian, development, environmental and climate change, especially at community level, and use the insights to strengthen DRR and climate change adaptation strategies, individually as well as collectively.
4. Implement, improve and maintain local monitoring frameworks for vulnerability and resilience-tracking and reporting; and strengthen DRM and CCA monitoring capacities by participating in progress review processes of the Hyogo and Madang Frameworks.
5. Strengthen national policy and planning processes to reflect the importance of a strong, enabling environment for DRR and CCA initiatives at local (e.g. community and enterprise) levels by ensuring policy cohesion across all development sectors.

8. References

ADB, 2009a: Mainstreaming Climate Change in ADB Operations: Climate Change Implementation Plan for the Pacific (2009–2015), Asian Development Bank, Mandaluyong City, Philippines, 137pp.

ADB, 2009b: Climate Change and Adaptation Road Map. Palau Country Partnership Strategy (2009–2013), Asian Development Bank, Mandaluyong City, Philippines, 8pp.

Austral Foundation, 2007: Review and Analysis of Fiji's Conservation Sector, Austral Foundation, Auckland, 82pp.

Caribbean Community Climate Change Centre, 2009: Climate Change and the Caribbean: A Regional Framework For Achieving Development Resilient to Climate Change (2009-2015), 41pp.

Dazé, A., Ambrose, K. and C. Ehrhart, 2009: Climate Vulnerability and Capacity Analysis Handbook. CARE International, 52pp.

Few, R., Osbahr, H., Bouwer, L.M., Viner, D. and F. Sperling, 2006: Linking Climate Change Adaptation and Disaster Risk Management for Sustainable Poverty Reduction. Synthesis Report. Report prepared for the Vulnerability and Adaptation Resource Group (VARG), with support from the European Commission. Montgomery Watson Harva (MWH), 28pp.

Gero, A., Meheux, K. and D. Dominey-Howes, 2009: How Local Communities and Global Development Agencies Reduce Vulnerability to Natural Disasters and Climate Change: Examples from the Pacific. Natural Hazards Research Laboratory, University of New South Wales, Sydney, Australia, 22pp.

GFDRR, 2009: Climate Smart Disaster Risk Management. Summary Report, Stockholm Policy Forum on Climate Smart Disaster Risk Management, Stockholm, Sweden. Global Facility for Disaster Reduction and Recovery, Washington, USA, 7pp.

Government of Fiji, 2011: National Progress Report on the Implementation of the Hyogo Framework for Action (2009 – 2011). Government of Fiji, Suva, 44pp.

Government of Samoa, 2011: National Progress Report on the Implementation of the Hyogo Framework for Action (2009 – 2011). Government of Samoa, Apia, Samoa, 40pp.

Government of Vanuatu, 2011: National Progress Report in the Implementation of the Hyogo Framework for Action (2009 – 2011). Government of Vanuatu, Port Vila, 37pp.

Hay, J.E., 2006: Preparing the Renewable Power Sector Development Project. ADB TA - 4764 (FIJ), Asian Development Bank, Mandaluyong City, Philippines, 40pp.

Hay, J.E., 2009a: Implementation of the Pacific Adaptation to Climate Change (PACC) Project: Process, Status and Assessment. Technical Report. Prepared for the Secretariat of the Pacific Regional Environment Programme (SPREP), 48pp.

Hay, J.E., 2009b: Assessment of Implementation of the Pacific Islands Framework for Action on Climate Change (PIFACC). Prepared for the Pacific Climate Change Roundtable and Secretariat of the Pacific Regional Environment Programme (SPREP), 20pp.

International Federation of Red Cross and Red Crescent Societies, 2006: What is VCA? An introduction to Vulnerability and Capacity Assessment. International Federation of Red Cross and Red Crescent Societies, Geneva, Switzerland, 51pp.

IPCC, 2007: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press, New York.

ISDR, 2009: Global Assessment Report on Disaster Risk Reduction. United Nations Secretariat to the International Strategy for Disaster Reduction (ISDR), Geneva, Switzerland.

ISDR, 2010: Local Governments and Disaster Risk Reduction: Good Practices and Lessons Learned, United Nations Secretariat to the International Strategy for Disaster Reduction (ISDR), Geneva, Switzerland, 86pp.

Klein, R., 2009: Impacts, adaptation, vulnerability and development: Key insights and challenges. Stockholm Environment Institute.

Kuleshov, Y., L. Qi, R. Fawcett, and D. Jones, 2008, On tropical cyclone activity in the Southern Hemisphere: Trends and the ENSO connection, *Geophysical Research Letters*, 35, L14S08, doi:10.1029/2007GL032983.

Lal, P.N., Rita, R. and Khatri, N., 2009: Economic Costs of the 2009 Floods in the Fiji Sugar Belt and Policy Implications. IUCN, Gland, Switzerland, 65pp.

Lal, P.N, Singh, R. and Holland, P., 2009: Relationship Between Natural Disasters and Poverty: A Fiji Case Study. SOPAC Miscellaneous Report 678, Fiji.

Lane, R. and McNaught, R., 2009: Building gendered approaches to adaptation in the Pacific. *Gender and Development*, 17(1), pp67-80.

MacLellan, N., 2011: Policy Brief July 2011, Turning the Tide: Improving Access to Climate Financing in the Pacific Islands, Lowy Institute, Sydney, Australia, 15pp.

McMullen, C.P. and Jabbour, J., 2009: Climate Change Science Compendium 2009. United Nations Environment Programme, Nairobi, EarthPrint, 76pp.

Mercer, J., 2010: Disaster risk reduction or climate change adaptation: Are we reinventing the wheel? *Journal of International Development*, 22, 247-264.

Patta, A., Tadross, M., Nussbaumer, P., Asante, K., Metzgere, M., Rafael, H., Goujona, A. and G. Brundrit, 2010: Estimating Least-developed Countries' Vulnerability to Climate-related Extreme Events over the Next 50 years. *PNAS* 107(4), pp1333–1337.

PIFS, 2011: Forum Communiqué - Forty-second Pacific Island Forum, Auckland, New Zealand, 13pp,

Richardson, K. and 12 others, 2009: Synthesis Report: Climate Change - Global Risks, Challenges and Decisions. International Alliance of Research Universities. University of Copenhagen, Denmark, 39 pp.

SOPAC, 2009a: Pacific Disaster Risk Reduction and Disaster Management Framework for Action. Presentation to the Joint Meeting of Regional Meteorological Service Directors and Regional Disaster Managers, Nadi, Fiji.

SOPAC, 2009b: Advocacy Mission for a Joint Disaster Risk Management and Climate Change Adaptation National Action Plan for Tonga. Mission Report prepared by Mosese Sikivou, Netatua Pelesikoti and Noa Tokavou, Pacific Applied Geosciences Commission (SOPAC), 12pp.

SOPAC, 2009c: Planning Process. DRM and CCA National Action Plan for the Federated States of Micronesia. Mission Report prepared by Mosese Sikivou, Pacific Applied Geosciences Commission (SOPAC), 7pp.

SOPAC, 2009d: Implementation of the Hyogo Framework for Action and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015; Report for the period 2007 – 2009. Regional Synthesis Progress Report. SOPAC Miscellaneous Report 674, 52pp.

Stern, N. 2007: The Economics of Climate Change: The Stern Review. Cambridge: Cambridge University Press.

UN, 2011: Samoa Common Country Assessment, United Nations, Apia, Samoa, 24pp.

UN, 2011: Tonga Common Country Assessment, United Nations, Suva, Fiji, 14-16pp.

UNFCCC, 2009: Action Pledges: Making a Difference On The Ground: A Synthesis of Outcomes, Good Practices, Lessons Learned and Future Challenges and Opportunities. The Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate Change, United Nations Framework Convention on Climate Change (UNFCCC), Climate Change Secretariat, Bonn, Germany, 100pp.

UNISDR, 2010: Strengthening Climate Change Adaptation through Disaster Risk Reduction: Briefing Note 3. UNISDR, Geneva, 10pp.

Webster, P.J., Holland, G.J., Curry, J. A. and H.R. Chang, 2005: Changes in Tropical Cyclone Number, Duration and Intensity in a Warming Environment. *Science*, 309, pp1184-1846,

World Bank, 2009: Preparedness, Planning and Prevention: Assessment of National and Regional Efforts to Reduce Natural Disaster and Climate Change Risks in the Pacific. The World Bank, East Asia and the Pacific Region, 78pp.

Annex A – Study Methodology

The analysis methodology comprised the following key elements:

- **Review of existing documents**, studies, research on DRR and CCA integration in the Pacific or elsewhere that are useful for fine-tuning the analysis methodology and data collection process.
- **Analysis of the main regional policy documents** on DRR and CCA in the Pacific: Where do they overlap? Where do they differ? Are there potentials for integration? How appropriate are they for strengthening greater synergies?
- **Analysis of national policy documents** on DRR and CCA in selected focus countries: Where do they overlap? Where do they differ? Are there potentials or signs for integration? To what extent are they linked / mainstreamed into regional development policies?
- **Stakeholder or network analysis** identifying key national and regional institutional and individual partners engaged in country-level DRR/CCA work: What is their contribution to the management of disaster and climate risks? What is the extent/quality of their collaboration and coordination? What are the barriers and opportunities for collaboration and coordination? How are they linked with other development stakeholder sectors? What are their key capacity constraints? What is their understanding/awareness of DRR and CCA and how they are linked (both high-level policy makers and practitioners)?
- **Review of experiences with DRR/CCA project implementation.** What are the experiences with implementing integrated DRR/CCA programmes? What are the challenges and barriers? What are the key factors for success?
- **Overview of climate change project/programmes assessments and reports** undertaken in identified focus countries over the last 10 years with UNDP support.

The analysis methodology utilised the following data collection methods:

- Desk review of key documents;
- Interviews with regional and national stakeholders (also by phone as required);
- Visits to focus countries to carry out interviews, focus group discussions, small workshops, and project site visits;
- Consultation workshop with regional partners in Fiji.

The main activities in undertaking the study were as follows:

- Prepare detailed work plan, travel schedule and list of key informants;
- Identify key documents and carry out desk review;
- Develop detailed analysis methodology and consultation questions;
- Prepare report outline;
- Develop criteria for the selection of four focus countries;
- Liaise with national authorities from selected focus countries;
- Prepare TOR for each focus country to be visited;
- Gather relevant information from key informants;
- Undertake activities in focus countries;
- Prepare draft analysis report;
- Circulate approved draft report for comment;
- Prepare for consultation workshop;
- Conduct consultation workshop; and
- Submit final report.

9. Annexes

The actual stakeholder consultations and data collection were guided by the following key questions:

Step 1 - Key Question:

- To what extent have CCA and DRR interventions supported national priorities, and what are the strategic challenges and gaps?

Step 2 - Key Question:

- Which PICs will provide, through site visits and other means, the most useful experiential and other information on the policies and institutional arrangements, responsibilities and operational services that can strengthen the capacity to address, in a proactive manner, the risks from multiple natural hazards and climate change, across multiple development sectors?

Step 3 - Key Questions:

- To what extent do climate projections inform disaster risk reduction measures in Pacific island countries? How are local climate scenarios developed?
- What standards are they based on?
- How are DRR and CCA policies and plans being implemented at the district and community levels?
- To what extent are DRR/DRM practices integrated into adaptation plans and measures in key vulnerable sectors (e.g. coastal management, water, agriculture, housing, health)?
- To what extent are they linked with and mainstreamed into regional development policies?
- In terms of national policies and projects related to DRR and CCA, what are the overlaps and key differences? Is there potential for greater integration?
- Key questions: What is the current understanding of the similarities and differences between DRR and CCA among policy makers and practitioners in the Pacific?

- Is there potential for greater integration and will this deliver greater synergistic benefits?

Step 4 - Key Questions:

- What are the experiences with implementing integrated DRR/CCA programmes?
- What are the challenges, barriers and existing and emerging opportunities?

What are the key factors for successful integration?

Step 5 - Key Questions:

- What are the key factors for successful integration of DRR and CCA?
- What are the entry points for mainstreaming integrated DRR and CCA into development planning?
- What are the critical aspects of the enabling environment?

Step 6 - Key Question:

- What are the critical steps and actions to strengthen the integration of CCA and DRR at various levels (regional, national, community, sector) in the Pacific?

Step 7 - Key Question:

- What are the critical elements of the case for greater integration of DRR and CCA and the steps for achieving this?

Study Outputs

This study produced the following deliverables:

- Review of relevant documents and reports on DRM and CCA and the preparation of an annotated bibliography that can be used as a reference tool.¹¹
- Criteria for the selection of participating focus countries.
- Local, national and sub-regional institutional and policy maps.

- An analysis of challenges and barriers encountered in bringing about greater integration and implementation of DRM and CCA interventions;
- A set of conclusions that indicates “what defines good CCA that incorporates DRR at the practical level in the Pacific”.

- A set of recommended steps and follow-up action for international, regional and national stakeholders to strengthen the application of disaster risk reduction in climate change adaptation, including suggested priority areas for which guidance notes or other tools could be developed in future.

¹¹ *Note: The annotated bibliography is available as a separate publication.*

Annex B – Selection of Focus Countries

Criteria were developed to help identify the four PICs that would provide the most useful experiential and other information on the policies and institutional arrangements, responsibilities and operational services.

The following table describes the criteria as well as the information sources used.

Criterion	Information Sources	Assessment
Range of experience with local-level implementation of national policies and plans for DRR and CCA	Information sources used include: ● SOPAC, 2009: Implementation of the Hyogo Framework for Action and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015: Report for the Period 2007-2009. Community Risk Programme, Pacific Islands Applied Geoscience Commission (SOPAC), SOPAC Secretariat, Suva, Fiji Islands, 52pp. ● Hay, J.E., 2009: Preparedness, Planning and Prevention: Assessment of National and Regional Efforts to Reduce Natural Disaster and Climate Change Risks in the Pacific. Prepared for the World Bank, 61pp. ● Hay, J.E. and D. Millison, 2009: Climate Change Implementation Plan for the Pacific, 2009-2015. Prepared for the Asian Development Bank, Manila, Philippines, 114pp. ● Hay, J.E., 2009: Assessment of Implementation of the Pacific Islands Framework for Action on Climate Change (PIFACC). The Pacific Regional Environment Programme (SPREP), Apia, Samoa, 20pp.	Fiji - High Samoa - High Kiribati - Moderate to High Cook Islands - Moderate FSM - Moderate Nauru - Low to Moderate Niue - Low to Moderate PNG - Low to moderate Solomon Islands - Low to Moderate Tuvalu - Low to Moderate Vanuatu - Low to Moderate Palau - Low RMI - Low Tonga - Low
Extent to which DRR/DRM practices are integrated into adaptation plans and measures in key vulnerable sectors (e.g. coastal management, water, agriculture, housing, health)	As above	Fiji - High Samoa - High Kiribati - Moderate to High Cook Islands - Moderate FSM - Moderate Nauru - Low to Moderate Niue - Low to Moderate PNG - Low to moderate Solomon Islands - Low to Moderate Tuvalu - Low to Moderate Vanuatu - Low to Moderate Palau - Low RMI - Low Tonga - Low

Criterion	Information Sources	Assessment
UNDP active in implementing climate change interventions that align with and impact on identified national priorities in areas such as sustainable livelihoods, agriculture and food security, disaster risk reduction, planning and management	Information sources used include: ● Hay, J.E., 2009: Assessment of Implementation of the Pacific Islands Framework for Action on Climate Change (PIFACC). The Pacific Regional Environment Programme (SPREP), Apia, Samoa, 20pp. ● Morrell, W, 2009: United Nations Climate Change Scoping Study, Opportunities to Scale Up Climate Change Support to Pacific Island Countries, 9pp.	Samoa - High Tuvalu - Moderate Vanuatu - Moderate Solomon Islands - Moderate Cook Islands - Low Fiji - Moderate FSM - Low Kiribati - Low Nauru - Low Niue - Low Palau - Low PNG - Low RMI - Low Tonga - Low
Current status of linking disaster risk reduction and climate change adaptation at institutional and policy levels	Information sources used include: ● SOPAC, 2009: Implementation of the Hyogo Framework for Action and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005-2015: Report for the Period 2007-2009. Community Risk Programme, Pacific Islands Applied Geoscience Commission (SOPAC), SOPAC Secretariat, Suva, Fiji Islands, 52pp. ● Hay, J.E., 2009: Preparedness, Planning and Prevention: Assessment of National and Regional Efforts to Reduce Natural Disaster and Climate Change Risks in the Pacific. Prepared for the World Bank, 61pp. ● Hay, J.E. and D. Millison, 2009: Climate Change Implementation Plan for the Pacific, 2009-2015. Prepared for the Asian Development Bank, Manila, Philippines, 114pp. ● Hay, J.E., 2009: Assessment of Implementation of the Pacific Islands Framework for Action on Climate Change (PIFACC). The Pacific Regional Environment Programme (SPREP), Apia, Samoa, 20pp.	Fiji - Moderate Samoa - Moderate Vanuatu - Moderate Cook Islands - Low FSM - Low Kiribati - Low Nauru - Low Niue - Low Palau - Low PNG - Low RMI - Low Solomon Islands - Low Tonga - Low Tuvalu - Low

Criterion	Information Sources	Assessment
Existence of institutional and policy maps, including responsibilities, operational services and gaps	Information sources used include: - SOPAC, 2009: Implementation of the Hyogo Framework for Action and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 — 2015: Report for the Period 2007-2009. Community Risk Programme, Pacific Islands Applied Geoscience Commission (SOPAC), SOPAC Secretariat, Suva, Fiji Islands, 52pp. - Hay, J.E., 2009: Preparedness, Planning and Prevention: Assessment of National and Regional Efforts to Reduce Natural Disaster and Climate Change Risks in the Pacific. Prepared for the World Bank, 61pp.	Kiribati - Moderate Samoa - Moderate Cook Islands - Low Fiji - Low FSM - Low Nauru - Low Niue - Low Palau - Low PNG - Low RMI - Low Solomon Islands - Low Tonga - Low Tuvalu - Low Vanuatu - Low
Existence of lessons learned and good practices related to integration of DDR and CCA	Information sources used include: Hay, J.E., 2009: Technical Report. Implementation of the Pacific Adaptation to Climate Change (PACC) Project: Process, Status and Assessment. Prepared for the Pacific Regional Environment Programme (SPREP), December, 2009, 48pp.	Fiji - Moderate Kiribati - Moderate Samoa - Moderate Cook Islands - Low FSM - Low Nauru - Low Niue - Low Palau - Low PNG - Low RMI - Low Solomon Islands - Low Tonga - Low Tuvalu - Low Vanuatu - Low
Understanding of challenges, barriers and gaps	Information sources used include: - Hay, J.E., 2009: Technical Report. Implementation of the Pacific Adaptation to Climate Change (PACC) Project: Process, Status and Assessment. Prepared for the Pacific Regional Environment Programme (SPREP), December, 2009, 48pp. - Hay, J.E., 2009: Preparedness, Planning and Prevention: Assessment of National and Regional Efforts to Reduce Natural Disaster and Climate Change Risks in the Pacific. Prepared for the World Bank, 61pp.	Cook Islands - Moderate Fiji - Moderate FSM - Moderate Palau - Moderate PNG - Moderate Samoa - Moderate Solomon Islands - Moderate Kiribati - Moderate Tuvalu - Moderate Vanuatu - Moderate Nauru - Low Niue - Low RMI - Low Tonga - Low

Criterion	Information Sources	Assessment
Risk and Vulnerability	- Perez, R. and Mimura, N, 2009: The Selection of Countries to Participate in the Focus Program for Climate Resilience (PPCR). Report of the Expert Group to the Subcommittee of the PPCR. - Supplementary Report on Country Risks in the South Pacific Region. Prepared on behalf of the Expert Group for the Focus Programme on Climate Resilience, 13pp. - World Bank, 2009: GFDRR Project, Reducing the Risk of Disasters and Climate Variability in the Pacific Islands: Regional Stocktake, 36pp. - GNS Science, 2009: Pacific Exposure Database Inception Report. ADB TA 6496-REG: Regional Partnerships for Climate Change Adaptation and Disaster Preparedness. GNS Science Consultancy Report 2009/321, December 2009, 88pp.	Cook Islands - High Samoa - High Fiji - High FSM - High Kiribati - High Nauru - High Palau - Moderate to High PNG - Moderate to High RMI - Moderate to High Tonga - High Tuvalu - High Niue - Moderate Solomon Islands - Moderate to High Vanuatu - Moderate to High
Logistic barriers	Flight times, frequency and costs	FSM - High Kiribati - High Nauru - High RMI - High Palau - High PNG - Moderate Tuvalu - High Fiji - Minor Niue - Minor Samoa - Minor Solomon Islands - Minor Tonga - Minor Vanuatu - Minor Cook Islands - None

Based on the above analysis, four focus countries were selected to provide an excellent opportunity to assess a wide range of approaches and progress in implementing CCA and DRR. In addition, they also cover the main sub-regions, political systems and institutional arrangements, as well as a wide spectrum of vulnerability. The following highlights some key features of the selected countries.

Cook Islands

Overall environmental vulnerability is classed as “extreme”. This country contrasts with most other PICs and is one of the few that has recent, more positive experiences with infrastructure projects. The Government has a clear commitment to including risk management in development and planning processes, as well as sustained institutional support for engagement with communities. The Cook Islands is one of two PICs where a risk-based approach to adaptation was initially piloted. This now forms the basis of the new, GEF-funded Pacific Adaptation to Climate Change project. The main island groups of the Southwest Pacific have the lowest incidences of the average number of tropical cyclones per year passing within 555 km over the cyclone season (compared with Vanuatu which has one of the highest). Guidelines for mainstreaming DRR and disaster management developed by PDRMPN were used to produce the National Action Plan (approved in 2009). The Cook Islands is one of five PICS where the World Bank Pacific Catastrophe Risk Financing Initiative has developed a country-specific loss risk profile and assessed the feasibility of catastrophe risk financing and insurance options. The logistic requirements of travelling to the Cook Islands to undertake the study are minimal.

Fiji

Overall environmental vulnerability is classed as “high”. It is one of five PICs identified as being at risk from high sea levels. Fiji is in the tropical cyclone belt and on average, one cyclone passes through Fijian waters each year. Since 1978, several droughts have also had a major impact on economic productivity and subsistence livelihoods. The social and economic implications of weather and climate risks are considerable across all primary production sectors, especially for cash and subsistence agriculture. DRR and CCA policies are currently in place, but the institutional arrangements for implementation are ineffective and lack national

and sector planning and budgetary provisions. To address DRM, the Government of Fiji adopted the Strategic Development Plan 2007-2011, based in large part on the Madang Framework. In 2007, the Interim Fiji Government promulgated the Sustainable Economic and Empowerment Development Strategy (SEEDS) 2008-2010. One key goal of the new policy strategy is to reduce vulnerability to disasters and risks, while promoting sustainable development. Adequate legislative steps have been taken (e.g. redrafting the Disaster Management Act), but are not followed with action. Hazard monitoring and data collection has regressed in the past decade. Existing data and risk information on threats to life, infrastructure and property are not readily accessible across and between sectors, making effective DRR and CCA responses difficult. The logistical requirements of travelling to Fiji to undertake the study are minimal.

Vanuatu

Vanuatu was ranked sixth (the highest ranked PIC) amongst all countries assessed for exposure to multiple hazards in the World Bank’s Natural Disaster Hotspot study. Of the main island groups of the Southwest Pacific, Vanuatu has the highest incidence of the average number of tropical cyclones per year passing within 555 km over the cyclone season. A tropical cyclone hazard model, determining return periods for wind speeds, using a 5,000 event synthetic catalogue, has been developed for Port Vila. Vanuatu is one of three PICs to be recently mapped using airborne radar, which might allow production of higher resolution digital terrain models. In comparison to most PICs, the government has a heightened level of awareness and appreciation of the constraints to sustainable development posed by its particularly high level of exposure to natural hazards. Guidelines for mainstreaming DRR and disaster management developed by PDRMPN were used to produce the National Action Plan (approved in 2007). Vanuatu has also completed a National Adaptation Program of Action. It has made remarkable headway in establishing influential task forces and committees for implementation and cross-sectoral coordination. However, there is a decline in the coverage and reliability of the climate and hydrological data collection networks subsequent to independence. Vanuatu is one of five PICS where the World Bank Pacific Catastrophe Risk Financing Initiative has developed a country-specific loss risk profile and assessed the feasibility

of catastrophe risk financing and insurance options. The logistical requirements of travelling to Vanuatu to undertake the study are minimal.

Palau

Overall environmental vulnerability is classed as “high”. The increasing number of La Nina/El Nino events, drought, and tropical storms has significantly increased the demand for the services and expertise of the National Emergency Management Office (NEMO). The NEMO works closely with the private sector and civil society to ensure that: disaster information is distributed in a timely manner, shelters are equipped and maintained, national water rationing is effectively enforced during times of drought, and the private sector is equipped to respond

to public demand during a crisis. Palau has announced that it will develop an integrated National Action Plan for DRM and CCA, with the support of SPC/SOPAC. Palau is also working on a new disaster plan to replace the existing National Disaster Plan 1999, and to improve DRM. The new plan has been designated as the Palau National Disaster Risk Management Framework 2009. The new disaster plan articulates institutional arrangements at national level to support improved DRM. The new institutional arrangements reflect a growing commitment to national development policies as well as commitments that government has made at a regional level within the Pacific. While travel to Palau for the study presents a number of logistical challenges, these are considerably offset by the ability to include a Micronesian country (that is also at an early stage in integrating CCA and DRM).



United Nations
International Strategy for Disaster Reduction

UNISDR, Sub-Regional Office for the Pacific

c/o UNDP, Private Mail Bag, Suva, Fiji

Tel: +679-3100451

Fax: + 679-3309762

UNISDR, Geneva

Tel: +41-22 917 8908/8907

Fax: +41-22 9178964

Visit our website - www.unisdr.org

Visit the PreventionWeb - www.preventionweb.net

Follow us on Twitter - [www.twitter.com/unisdr](https://twitter.com/unisdr)

Find us on Facebook - www.facebook.com/disaster.reduction