



# Acting Today For Tomorrow

**A Policy and Practice Note for  
Climate- and Disaster-Resilient  
Development in the Pacific Islands  
Region, with Supporting Research,  
Analysis, and Case Studies**



**THE WORLD BANK**



**GFDRR**  
Global Facility for Disaster Reduction and Recovery



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## Acknowledgments

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Photo: Olivia Warrick

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## List of Abbreviations

<b>ADB</b>	Asian Development Bank
<b>AusAID</b>	Australian Agency for International Development
<b>CARICOM</b>	Caribbean Community and Common Market
<b>CBA</b>	community-based adaptation
<b>CCA</b>	climate change adaptation
<b>CCCCC</b>	Caribbean Community Climate Change Centre
<b>CIM</b>	Coastal Infrastructure Management
<b>CPEIR</b>	Climate Public Expenditure and Institutional Review
<b>CROP</b>	Council of Regional Organisations in the Pacific
<b>DCCEE</b>	Department of Climate Change and Energy Efficiency
<b>DRM</b>	disaster risk management
<b>DRR</b>	disaster risk reduction
<b>EU</b>	European Union
<b>EU-ACP</b>	European Union-African, Caribbean, and Pacific
<b>FAO</b>	Food and Agriculture Organization
<b>FFA</b>	Forum Fisheries Agency
<b>FSPI</b>	Foundation of the Peoples of the South Pacific International
<b>GEF</b>	Global Environment Facility
<b>GFDRR</b>	Global Facility for Disaster Reduction and Recovery
<b>GDP</b>	gross domestic product
<b>HFA</b>	Hyogo Framework for Action
<b>ICAO</b>	International Civil Aviation Organization
<b>IFRC</b>	International Federation of Red Cross and Red Crescent
<b>IISD</b>	International Institute for Sustainable Development
<b>IUCN</b>	International Union for Conservation of Nature
<b>JCS</b>	Joint Country Strategy
<b>JNAP</b>	Joint National Action Plan
<b>KAP</b>	Kiribati Adaptation Program
<b>MCDEM</b>	Ministry of Civil Defence and Emergency Management
<b>MDG</b>	Millennium Development Goal
<b>M&amp;E</b>	monitoring and evaluation
<b>MFEM</b>	Ministry of Finance and Economic Management
<b>NAP</b>	National Action Plan
<b>NAPA</b>	National Adaptation Programme of Action
<b>NCSA</b>	National Capacity Self-Assessment

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<b>NDMO</b>	National Disaster Management Office
<b>NGO</b>	nongovernmental organization
<b>NZ-MFAT</b>	New Zealand Ministry of Foreign Affairs and Trade
<b>PACC</b>	Pacific Adaptation to Climate Change
<b>PACE-SD</b>	Pacific Centre for Environment and Sustainable Development
<b>PASO</b>	Pacific Aviation Safety Office
<b>PCCR</b>	Pacific Climate Change Roundtable
<b>PCRAFI</b>	Pacific Catastrophe Risk Assessment and Financing Initiative
<b>PIANGO</b>	Pacific Islands Association of Nongovernmental Organisations
<b>PICT</b>	Pacific island country and territory
<b>PIDP</b>	Pacific Islands Development Programme
<b>PIFACC</b>	Pacific Islands Framework for Action on Climate Change
<b>PIFS</b>	Pacific Islands Forum Secretariat
<b>PMU</b>	project management unit
<b>PPA</b>	Pacific Power Association
<b>PPN</b>	Policy and Practice Note
<b>PRSM</b>	Pacific Region Support Mechanism
<b>RFA</b>	Pacific Disaster Risk Reduction and Disaster Management Framework for Action
<b>SEI</b>	Stockholm Environment Institute
<b>SOPAC</b>	Pacific Islands Applied Geoscience Commission
<b>SPC</b>	Secretariat of the Pacific Community
<b>SPREP</b>	Secretariat of the Pacific Regional Environment Programme
<b>SPTO</b>	South Pacific Tourism Organisation
<b>UNISDR</b>	United Nations International Strategy for Disaster Reduction
<b>UNDP</b>	United Nations Development Programme
<b>UNEP</b>	United Nations Environment Programme
<b>UNESCAP</b>	United Nations Economic and Social Commission for Asia and the Pacific
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>USP</b>	University of the South Pacific
<b>VMGD</b>	Vanuatu Meteorological and Geohazards Division
<b>VRA</b>	Vulnerability Reduction Assessment
<b>WB</b>	World Bank
<b>WHO</b>	World Health Organization

## Executive Summary

Pacific island countries continue to be among the most vulnerable in the world: they combine high exposure to frequent and damaging natural hazards with low capacity to manage the resulting risks. Their vulnerability is exacerbated by poorly planned socioeconomic development, which has increased exposure and disaster losses, and by climate change, which has increased the magnitude of cyclones, droughts, and flooding.

Changes in how disasters and other extreme events in the Pacific are managed could significantly lessen the region's vulnerability. Currently, inefficient management of risks negates development gains and incurs large costs for national and local governments. Progress in reducing vulnerability has been retarded in part because of fundamental problems with coordination and cooperation among relevant actors at all levels. The policy frameworks, governments, regional organizations, and donor and development institutions responsible for carrying out disaster risk reduction (DRR) and climate change adaptation (CCA) often work in isolation from one another—and in isolation from the actors involved in socioeconomic development planning and implementation. Progress has also suffered because elected officials, as well as donors and other development partners, tend to support immediate-term relief following a disaster rather than investing in DRR and CCA initiatives, which have less visibility but would in the long run represent a far more efficient use of resources.

Merely managing the symptoms of disasters and climate change, as Pacific island countries and territories (PICTs) commonly do, is inefficient, expensive, and not sustainable. A better approach would address the causes of vulnerability and work to promote climate- and disaster-resilient development. Such an approach is achievable if certain changes are made: risk considerations must be integrated in the formulation and implementation of social and economic development policies and plans; political authority, leadership, and accountability must be more robust and effective; and coordination and cooperation among actors must be increased.

“Acting Today for Tomorrow” provides case studies, data, and analysis from the Pacific region to make a case for climate- and disaster-resilient development as being the most appropriate way to address the above challenges. It outlines what the consequences are of not acting today to reduce risk, what important lessons have emerged from the last decade, and what must be done to move toward resilient development in Pacific island countries. The document is intended for an audience of practitioners and policymakers at all levels across all relevant sectors. Its analysis and recommendations are meant to inform DRR and CCA planning across a range of institutions.

Section 3 of the document, “Supporting Research, Analysis, and Case Studies,” was produced to accompany a short Policy and Practice Note (PPN) for climate- and disaster-resilient development, issued in June 2012. The PPN, available as a 22-page, freestanding document (and reproduced in this document as section 2), contains concise recommendations aimed at high-level policymakers and decision makers within countries, regional organizations, donors, and development partner organizations. Given the audience, the Policy and Practice Note focuses on answering a limited number of key questions and communicating critical messages. Section 3, longer and more detailed,

contains the evidence, including case studies and lessons that underpinned preparation of the PPN.

Both the analysis contained in section 3 and the PPN presented in section 2 grow out of extensive consultations with countries, regional organizations, and donors and other development partners. The recommendations made in both sections are intended to inform key regional, national, and subnational climate and disaster risk policies and strategies. In particular, they should inform the joint Roadmap towards a Post 2015 Integrated Regional Strategy for Disaster Risk Management and Climate Change Adaptation and Mitigation, as well as an implementation strategy for integrating DRR and CCA across the World Bank's development operations in the Pacific.

**The consequences of not acting today.** If countries and donors do not act now to reduce PICTs' extremely high vulnerability—above all, if development planning does not begin to assess hazard risks and integrate risk considerations—the consequences are likely to be serious indeed. Simply put, a “business as usual” approach focused on immediate disaster relief rather than long-term DRR and CCA will increase economic and human losses, slow economic growth, and delay or even set back progress toward Millennium Development Goals.

**Lessons of the last decade.** Over the last decade, some important lessons have emerged about what works, and what does not work, to reduce vulnerability. It is clear now that project-based DRR and CCA initiatives with relatively short time frames encourage fragmented efforts, inhibit carryover across initiatives, and ultimately do little to reduce underlying vulnerability in a lasting way. It is also clear that weak coordination and partnership between institutions involved with implementing DRR, CCA, and development limit the impact of these interventions, and that the institutional rigidity of donor organizations makes cooperation and partnership more difficult. Finally, experience shows that reducing vulnerability requires stronger political leadership, end-user-friendly information, and improved monitoring and evaluation. These will ensure that DRR and CCA considerations are mainstreamed in development plans and included in budgets, that well-designed DRR and CCA initiatives are delivered efficiently, and that leaders make informed decisions.

**The way forward: Overcoming remaining barriers and fostering resilient development.** The lessons of the past decade teach us that climate- and disaster-resilient development is possible if

- risk considerations are grounded in development;
- political authority, leadership, and accountability are robust and effective; and
- coordination and partnerships are strong.

*To ground risk considerations in development*, governments and partners should, among other key initiatives, ensure that climate and disaster data are easy to access and inform the selection of priority investments and development programs. They should also give



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**Pacific island countries continue to be among the most vulnerable in the world: they combine high exposure to frequent and damaging natural hazards with low capacity to manage the resulting risks.**

precedence to development initiatives that reduce vulnerability and adapt existing tools (such as land use plans, building codes, and environmental regulations) to achieve higher resilience to all hazards.

*To achieve robust and effective political authority, leadership, and accountability* for more resilient development, governments should anchor coordination of DRR and CCA in a high-level central ministry/body both at national and regional levels and ensure that leaders are knowledgeable about disaster and climate risk management. They should build on existing mechanisms such as strategic and corporate planning and budgetary processes, as well as proactively include communities, provincial governments, and central governments in the design and implementation of disaster- and climate-resilient investments.

*To promote strong coordination and partnerships*, countries and development partners need mutual trust, respect, and flexibility. With good working relationships, each partner's comparative advantage is optimized, adequate resourcing is ensured, and knowledge and implementation capacity are shared efficiently. Better cooperation between governments and donors would allow alignment of funding sources for CCA, DRR, and development, which would in turn promote flexible financing arrangements and allow current and anticipated risks to be addressed.

# 1 Introduction

Over the last 10 years, it has become increasingly evident that reducing vulnerability at local and national levels requires integrating disaster risk reduction (DRR) and climate change adaptation (CCA) into development planning and processes. This message was clearly articulated in the 2006 World Bank Policy Note “Not If But When—Adapting to Natural Hazards in the Pacific Islands Region.” While some progress has been made since that document appeared, substantial obstacles to resilient development have persisted, and the need to integrate DRR and CCA into development planning and processes remains just as urgent today. This fact formed the impetus to reexamine both the obstacles to resilient development and the recommendations for overcoming them. The result was a Policy and Practice Note (PPN) entitled “Acting Today for Tomorrow: A Policy and Practice Note for Climate- and Disaster-Resilient Development in the Pacific Islands Region” and published in June 2012.

The PPN, which appears in its entirety below (section 2), is a knowledge product developed for and by policymakers, decision makers, and practitioners in the region. The PPN draws on evidence from lessons learned and good-practice examples contributed by DRR, CCA, and development stakeholders from national governments, regional organizations, donors, development partners, and civil society. This evidence is detailed following the PPN within the section entitled “Supporting Research, Analysis, and Case Studies (section 3).

During 2011, as it began work on the PPN, the World Bank facilitated extensive consultations with stakeholders at various locations around the region. Individuals who made significant contributions to the development of the PPN are listed in appendix 1. A dedicated session at the Pacific Platform for Disaster Risk Management, held in August 2011, provided significant inputs to the PPN. The list of participants and a summary of the inputs are provided in appendix 2.

The PPN builds on the content of existing and emerging regional policy and action frameworks, in particular the Pacific Plan (2005), the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005–2015, and the Pacific Islands Framework for Action on Climate Change 2006–2015. The PPN will contribute to the Roadmap towards a Post 2015 Integrated Regional Strategy for Disaster Risk Management and Climate Change Adaptation and Mitigation, an initiative for harmonization of regional services and support to Pacific Island countries and territories (PICTs).

Rather than discussing the entire range of challenges to integration, the PPN distills evidence in the region in order to identify the major barriers to progress, the steps that have been taken to overcome them, and the actions still required. Given that the target audience of the PPN is high-level policymakers and decision makers in PICTs, and decision makers in regional, donor, and development partner organizations, the PPN is concise. It focuses on answering a limited number of key questions and communicating critical messages, and leaves the evidence, case studies, and lessons that underpinned its preparation to section 3.



Photo: The World Bank

## 2 A Policy and Practice Note for Climate- and Disaster- Resilient Development in the Pacific Islands Region

This section contains the key messages and recommendations presented in the PPN. The PPN was launched at a high-level dialogue on climate- and disaster-resilient development held in Suva, Fiji, in June 2012. Cohosted by the World Bank, Secretariat of the Pacific Community (SPC), and Secretariat of the Pacific Regional Environment Program (SPREP), the dialogue was attended by representatives of Pacific island country governments and by members of the Council of Regional Organisations in the Pacific (CROP), including CROP CEOs (see appendix 3 for CROP agencies and their roles). It was also attended by donors, development partners, and civil society organizations. The objective was to bring together relevant stakeholders and actors to discuss actions that could serve as catalysts for change within an organization in order to advance climate- and disaster-resilient development in the Pacific at local, national, and regional levels. The messages contained in the PPN underpinned and guided the discussions. Several clear priorities for increasing consideration of risk in development, improving coordination and partnerships, and enhancing political leadership for DRR and CCA emerged from the discussions and are listed in appendix 4.

# 2.1 The Consequences of Not Acting Today



## Key Messages

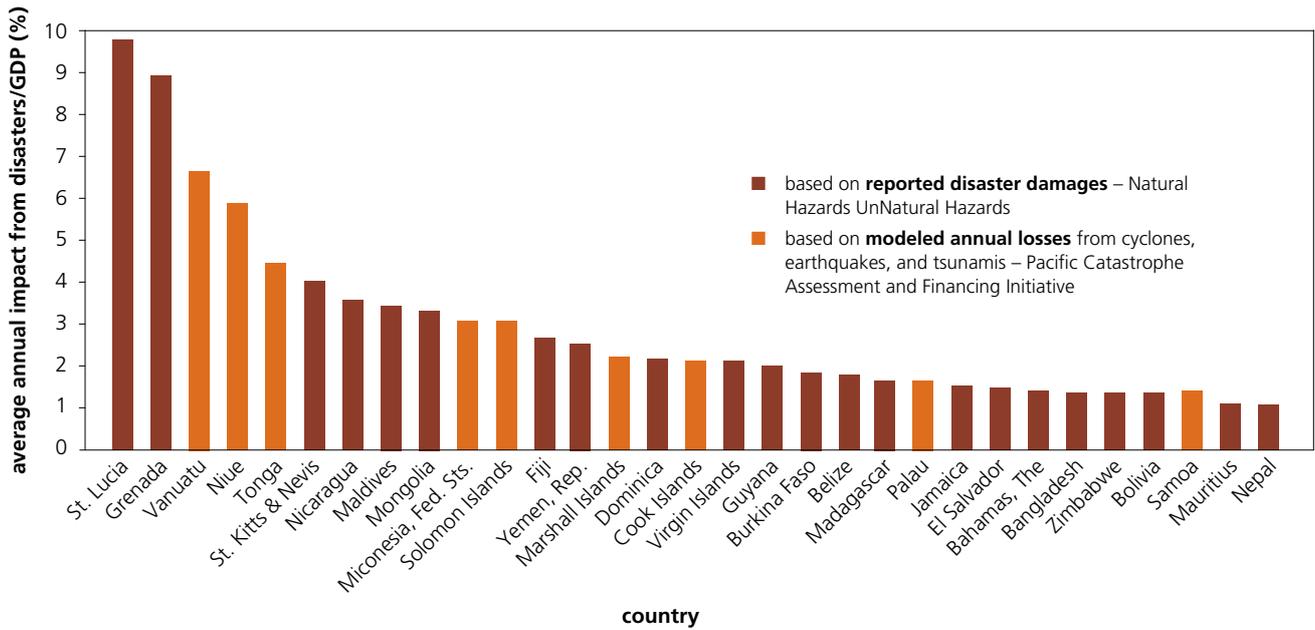
1. Unless development planning in Pacific island countries focuses on the need to assess hazard risks, these countries will remain among the most vulnerable in the world.
2. A “business as usual” approach to managing risks—one that focuses more on disaster relief than on long-term disaster risk reduction and climate change adaptation—will result in increased economic and human losses from extreme events.
3. A “business as usual” approach will slow economic growth and delay or even set back progress toward Millennium Development Goals.
4. The vulnerability of the poor and other marginalized groups will increase unless attention is paid to slow-onset and low-intensity climate and weather events as well as to extreme events.

Photo: The World Bank/Michael Bonte-Grapentin

**Although Pacific island countries are among the most vulnerable in the world to natural hazards, development planning has not sufficiently focused on the need to assess hazard risks.**

Of the 20 countries with the highest average annual disaster losses scaled by gross domestic product (GDP), 8 are Pacific island countries: Vanuatu, Niue, Tonga, the Federated States of Micronesia, the Solomon Islands, Fiji, the Marshall Islands, and the Cook Islands (figure 1).

The Pacific is experiencing the mounting consequences of an unfortunate combination of circumstances, in which poorly planned and implemented socioeconomic development initiatives increase already significant exposure to extreme weather and climate events.



**Figure 1. Average annual impacts from disasters as a percentage of GDP**

Sources: Reported disaster impacts are from World Bank and United Nations, *Natural Hazards, Unnatural Disasters: The Economics of Effective Prevention* (Washington, DC: International Bank for Reconstruction and Development and World Bank, 2010); modeled annual disaster impacts

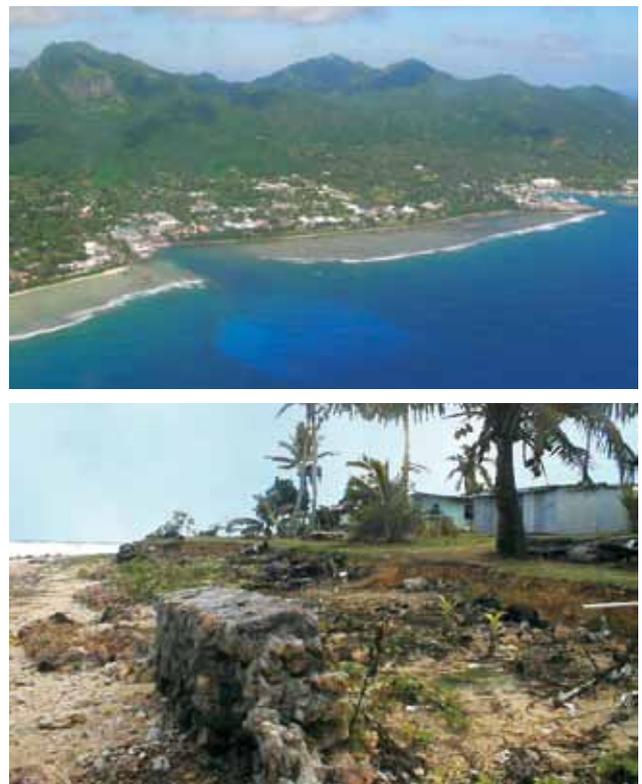
are from World Bank, *Pacific Catastrophe Risk Assessment and Financing Initiative, Risk Assessment—Summary Report* (Washington, DC: World Bank, forthcoming).

For example:

- In many Pacific Island Countries and Territories (PICTs), infrastructure and other assets are increasingly concentrated dangerously close to the coast, rather than being more dispersed and set back from exposed shorelines (figure 2a).
- Seawalls constructed on the island of Moturiki, Fiji, have generally exacerbated the shoreline erosion they were designed to reduce, and removing the previously cleared mangrove fringe as soon as it shows signs of regrowth has prolonged the heightened vulnerability arising from clearance (figure 2b).<sup>1</sup>

The already high frequency of some extreme weather and climate events may be increasing in the Pacific.<sup>2,3</sup> These increases are likely to continue because of global warming, although the precise nature of the relationship between global warming and extreme event increases remains uncertain.<sup>4</sup>

Nothing can be done about the extreme events themselves, at least in the short term. But as



**Figure 2 (a) Upper:** Most infrastructure related to government, commerce, and transportation continues to be concentrated on the highly vulnerable north coast of Rarotonga, Cook Islands (photo courtesy of Helen Henry); **(b) Lower:** Remains of a typical rural seawall in Fiji. The original seawall remained intact for 18 months, then collapsed; it was subsequently partially rebuilt and then collapsed again (photo courtesy of Patrick Nunn).

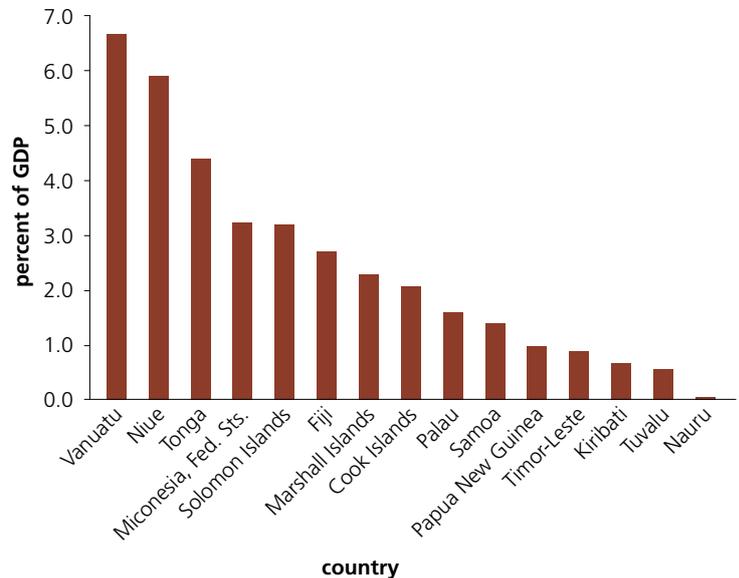
this document will show, changes to the way development policy is planned and carried out in the region would reduce such events' consequences.

**Economic and human losses from extreme events are enormous and will increase under a “business as usual” approach.**

Since 1950 extreme events have affected approximately 9.2 million people in the Pacific region: they have caused 9,811 reported deaths and damage of around US\$3.2 billion, with tropical cyclones the major cause for this loss and damage. Figure 3 shows annual average economic losses suffered by Pacific island countries as a result of damage caused by tropical cyclones, earthquakes, and tsunamis.<sup>5</sup>

In the last decade, some PICTs have experienced natural disaster losses that in any single year have approached and in cases even exceeded their GDP. Examples include the 2007 earthquake and tsunami in the Solomon Islands, which caused losses of around 90 percent of the 2006 recurrent government budget;<sup>6</sup> the 2004 Cyclone Heta on Niue, where immediate losses amounted to over five times the 2003 GDP;<sup>7</sup> and the 2009 Fiji floods, which affected Nadi, Ba, and the entire sugar belt area and which caused losses of F\$350 million.<sup>8</sup>

The total value of infrastructure, buildings, and cash crops considered at some level of risk is estimated at over **US\$112 billion** (table 1). Inaction could prove extremely expensive and will only grow more expensive in the future.



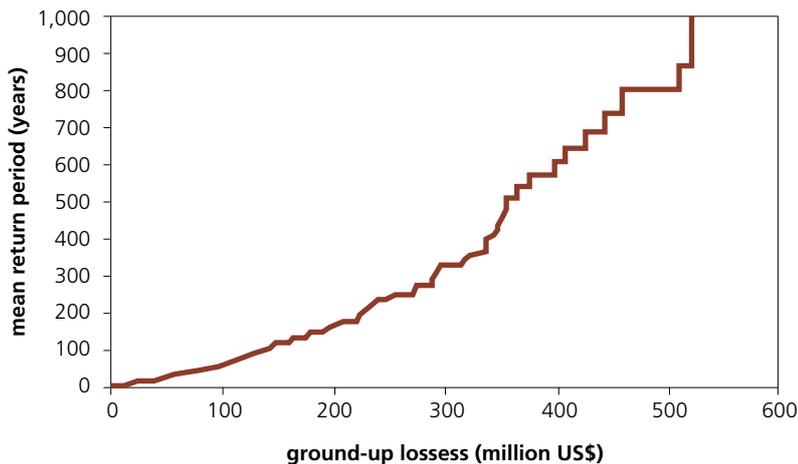
**Figure 3. Economic losses due to tropical cyclones, earthquakes, and tsunami.**

Source: World Bank, Pacific Catastrophe Risk Assessment and Financing Initiative, Risk Assessment—Summary Report (Washington, DC: World Bank, forthcoming).

**Table 1. Asset replacement costs and economic losses due to tropical cyclone, earthquake, and tsunami**

Country	Assets replacement cost US\$ million	Annual average economic losses		Losses from 100-Year event	
		US\$ million	% GDP	US\$ million	% GDP
Cook Islands	1,422	4.9	2.0	103.0	42.2
Fiji	22,175	79.1	2.6	844.8	28.1
Micronesia, Fed. Sts.	2,048	8.3	2.9	150.7	52.4
Kiribati	1,182	0.3	0.2	4.0	2.6
Marshall Islands	1,696	3.1	2.0	67.4	43.3
Nauru	453	0.00	0.00	0.00	0.00
Niue	249	0.9	5.8	22.7	143.4
Palau	1,501	2.7	1.6	46.7	27.5
Papua New Guinea	49,209	85.0	0.9	794.9	8.4
Samoa	2,611	9.9	1.7	152.9	27.0
Solomon Islands	3,491	20.5	3.0	280.6	41.4
Timor-Leste	20,145	5.9	0.8	143.7	20.5
Tonga	2,817	15.5	4.3	225.3	63.0
Tuvalu	270	0.2	0.8	4.8	15.1
Vanuatu	3,334	47.9	6.6	370.1	50.8
<b>TOTAL</b>	<b>112,602</b>	<b>284.2</b>		<b>3211.6</b>	

Source: World Bank, Pacific Catastrophe Risk Assessment and Financing Initiative, Country Risk Profiles (Washington, DC: World Bank, 2011).



**Figure 4. Relationship between the frequency of an extreme event (as defined by the mean return period) and the resulting losses. Data are for Samoa.**

Source: World Bank, *Pacific Catastrophe Risk Assessment and Financing Initiative*, Country Risk Profile: Samoa (Washington, DC: World Bank, 2011).

The case of Samoa provides a striking example of how losses can escalate rapidly due to extreme events and the effects of climate change (figure 4). Though the precise influence of climate change on weather variability and extreme events remains uncertain, a World Bank study of CCA in Samoa drew two inferences. The first is that the severity—and perhaps the frequency—of El Niño Southern Oscillation droughts is likely to increase. The second is that the severity (wind speeds) of major cyclones may increase, while the return period for the most damaging cyclones may fall, leading to a significant increase in the average damage caused by cyclones that hit Samoa.<sup>9</sup> A macroeconomic model of the interactions between climate and the Samoan economy suggests that, without additional adaptation, the present value of the climate change–induced damage to the economy through 2050 could be between US\$104 and US\$212 million. This is equivalent to between 0.6 and 1.3 percent of the present value of Samoan GDP over the same period. Importantly, the model assumes that sound development policies will be in place and implemented to minimize the impact of existing weather risks and other natural hazards, along with those from climate change.

It is also important to consider the more direct human consequences of extreme events. Between 1970 and 2007, Fiji experienced 41 documented flood events, which affected at least 220,000 people and killed 88.<sup>10</sup> The tsunami that wreaked havoc on Samoa in September 2009 resulted in 155 deaths, the destruction of the homes of some 5,300 people (2.5 percent of the population) and several coastal villages, and the loss of 20 percent of hotel rooms (which could seriously harm the livelihoods of those in the tourism industry).

Significantly, this devastation prompted almost no national budget adjustment in Samoa, mainly because donors stepped in with assistance amounting

to around 12 percent of Samoa’s GDP. The extent to which governments tend to count on donors to offset direct economic losses after a disaster—and the implications of this expectation for efforts to address the region’s vulnerability—are discussed below. It is worth noting here that the tsunami recovery plan, which was founded on the principle of “build back better,” does provide a coherent response to both tsunami risks and climate change. It is estimated to cost just over US\$100 million, shared between the public sector and donor assistance.

#### **Lower-intensity natural hazards and climate effects also cause social and economic hardship in the Pacific.**

In many Pacific countries, the accumulated impacts of small and medium-size events are equivalent to, or exceed, those of single large disasters. Low-intensity events are typically more widespread, affecting a comparatively large number of people. They are also likely to involve damage to housing, land, and local infrastructure, rather than major mortality or destruction of economic assets.<sup>11</sup> As the poor and other vulnerable, marginalized groups tend to live in more hazard-prone areas,<sup>12</sup> increases in the frequency of these lower-intensity hazards have a large impact on poverty. Even PICTs such as Kiribati, which are situated outside the region of tropical cyclone occurrence and hence experience relatively low economic losses as a result of cyclones (table 1), are nevertheless considered highly vulnerable to the impacts of climate change.

Data on low-intensity events are not collected systematically in many PICTs and are sometimes not collected at all. Conducting a cost-benefit analysis of efforts to address drought risks in Tuvalu, for example, was thwarted by the lack of data on the economic and social consequences of its previous droughts.

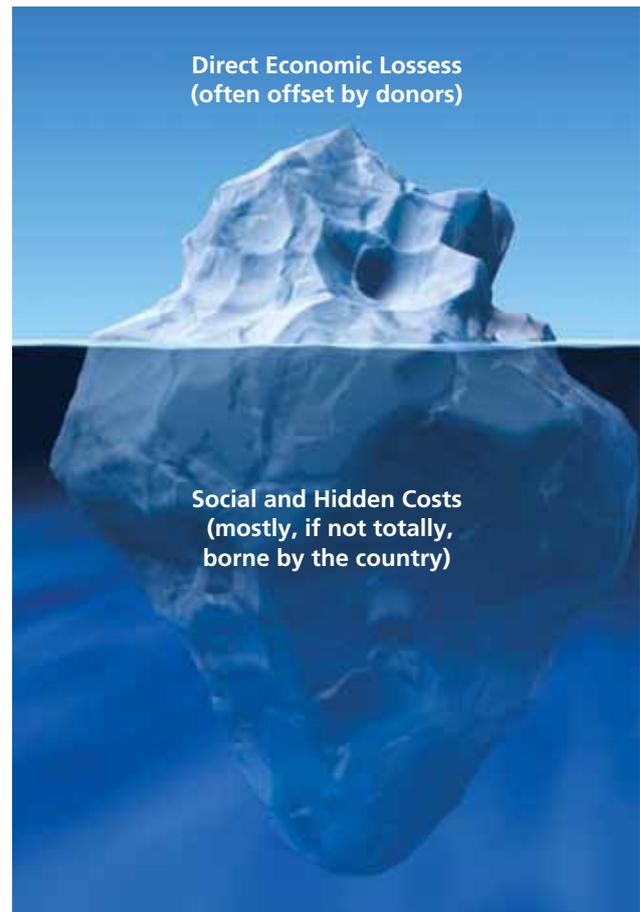
**Disaster- and climate-related losses are managed inefficiently: the focus by elected officials and donors on immediate relief tends to discourage investment in long-term DRR and CCA efforts, which in turn slows economic growth and progress toward Millennium Development Goals.**

The social and economic consequences of natural disasters and climate change fall into two broad categories (figure 5). In the Pacific, the two sets of consequences are managed differently from one another—and often inefficiently:

- **Direct economic losses.** Evidence shows that currently, although the amount of these losses is known and their effect anticipated, direct economic losses are largely offset by donors and other development partners. This was the case for recent cyclones, flooding, and tsunami affecting some PICTs. This arrangement reduces a country's incentive to be proactive and invest its own resources in DRR and CCA initiatives designed to avoid or reduce these losses. It also means that donors are spending large amounts of money on relief and recovery, rather than on sustainable development.
- **Social and other hidden costs.** While losses such as injuries and deaths are well documented, this is not true for some other significant social costs, such as increased illness, work and school days lost, and assistance of volunteers. Nor is there good documentation of smaller and indirect economic losses, including loss of subsistence crops, reduced transport links, and reduced access to services. Opportunity costs, too, are rarely documented. Examples of these include loss of income due to the decline in tourism following an extreme event, and the unwillingness of rural communities to grow cash crops because of frequent damage by cyclones and flooding. All these costs, whether documented or hidden, are generally an internal burden on a country. If they are large, they can manifest as a significant slowdown in economic growth, and they can also set back development more broadly, including achievement of Millennium Development Goals (MDGs).

**Acting today to reduce the consequences of future extreme events can be cost-effective.**

Benefit-cost analyses suggest that investing in DRR and CCA is sound policy. Collecting weather and climate data and generating forecasts, for example, is costly, but the benefits can be considerable: weather-related



**Figure 5.** Countries tend to focus on direct economic losses, many of which are offset by donors; social and hidden costs are often larger if their impact on the national economy is taken into account. These costs are seldom offset by donors.

information and forecasts help farmers decide when to plant, sow, fertilize, and harvest; guide tourism operators in which activities to schedule; and enable electric utilities to anticipate and respond to demand fluctuations. Benefit-cost ratios as high as 44 have already been demonstrated in the Pacific:

- A benefit-cost ratio of at least 2 was found as a consequence of reduced repair and maintenance costs over the nominal 50-year life of the main road in Kosrae. The lower costs resulted from investments by the State of Kosrae in climate-proofing a new 6.6 kilometer section of the road.<sup>13</sup>
- Benefit-cost ratios of between 1 and 44 were found for several community-based adaptation initiatives designed to alleviate flooding in Fiji and Samoa.<sup>14</sup>

An overall consequence of not acting today to reduce disaster risks and the threat of climate change will be further delays in achieving MDGs or—worse—backsliding from goals that have already been achieved. Table 2 summarizes the sensitivities of

**Table 2. Links between the Millennium Development Goals and climate change and disasters in the Pacific**

Goal	Sensitivity of goal to climate change and disasters	PICTs' MDG performance		Potential for CCA and DRR to improve performance
		Number of countries		
		On track	Off track	
<b>Goal 1:</b> Eradicate extreme poverty and hunger	H	2	6	H
<b>Goal 2:</b> Achieve universal primary education	M	7	2	M
<b>Goal 3:</b> Promote gender equality and empower women	M	3	3	M
<b>Goal 4:</b> Reduce child mortality	M	9	3	M
<b>Goal 5:</b> Improve maternal health	M	7	7	M
<b>Goal 6:</b> Combat HIV/AIDS, malaria, and other diseases	M	5	1	H
<b>Goal 7:</b> Ensure environmental sustainability	H	5	5	H
<b>Goal 8:</b> Develop a global partnership for development	H	6	1	H

Source: Pacific Islands Forum Secretariat (PIFS), Pacific Regional MDGs Tracking Report (Suva: PIFS, 2011), and authors.

Note: H = high; M = medium. A grade of "low" was available but not given. PICTs' MDG performance above is based on two of four progress classifications used by PIFS: 'On track' and 'off track'. It does not report 'mixed' progress or where there is 'insufficient information' to assess progress. For this reason the totals are not always the same.

MDG performance to climate change and disasters. Significantly, performance in the Pacific is poorest for MDG 1 (to eradicate extreme poverty and hunger). MDG 1 is judged to be the goal most adversely affected by climate change and disasters. CCA and DRR can do much to reduce this sensitivity and hence ensure that efforts made by countries and their partners to reduce poverty and hunger are not counteracted. The level of achievement is somewhat better for MDG 6 (to combat HIV/AIDS, malaria, and other diseases). Nevertheless, in the Pacific region

there are 6.7 million cases of acute diarrhea every year. Of these cases, 2,800 result in death, mostly among children under age five.<sup>15</sup>

The root causes of failure to achieve the MDG targets, including poor governance, weak institutional arrangements, shortages in human and financial resources, lack of political will and stability, poor accountability and transparency, and inadequate natural resources management, decrease the resilience of PICTs and communities to climate

# 2.2 The Lessons of the Last Decade



Photo: Cyril Jazbec

## Key Messages

1. Project-based DRR and CCA initiatives with relatively short time frames encourage fragmented efforts, inhibit carryover across initiatives, and ultimately do little to reduce underlying vulnerability in a lasting way.
2. Weak coordination and partnership between institutions involved with DRR, CCA, and development limit the impact of interventions, and the institutional rigidity of donor organizations can make cooperation and partnership even more difficult.
3. Reducing vulnerability requires stronger political leadership, improved monitoring and evaluation, and end-user-friendly information; these will ensure that DRR and CCA considerations are mainstreamed in development plans and included in budgets, that well-designed DRR and CCA initiatives are delivered efficiently, and that leaders make informed decisions.

### Progress in addressing underlying vulnerability in the Pacific has thus far had limited impact on climate-resilient development.

In the last decade some progress has been made in implementing DRR and CCA measures on the ground. Among key achievements are these:

- Investment in DRR and CCA has grown.
- Institutions involved in DRR and CCA have been strengthened.
- Integration of DRR and CCA policies and plans has increased, evident in the Joint National Action Plans (JNAPs) for DRR and CCA.
- Some mainstreaming of DRR and CCA has occurred at the sector level.

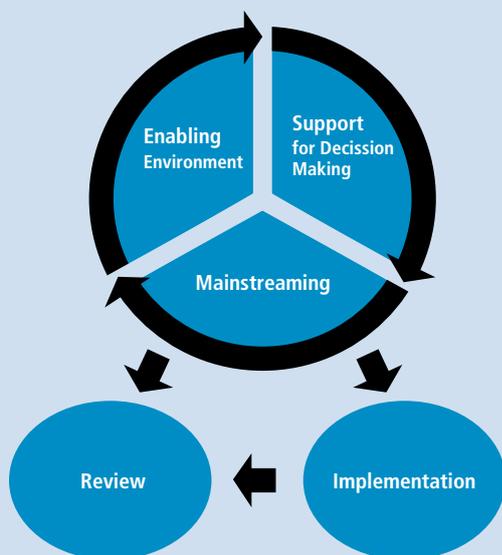
- Implementation of DRR and CCA initiatives has increased at the community level.
- Comprehensive data sets and tools that assess disaster, climate, and fiscal risk have been developed or identified.

It remains true, however, that progress has had limited impact. This section discusses the achievements and lessons of the last decade to understand why more progress has not been made, and to identify solid foundations on which to build and move forward. Underpinning the discussion throughout is the five-part framework articulated in the 2006 Policy Note “Not If, But When” (box 1).

**Box 1. A framework for effective management of disaster and climate risks**



Five elements (figure 6) make up the framework for effective management of disaster and climate risks: 1) an enabling environment at all levels; 2) support for decision making (through increased public awareness, targeted information, and relevant tools and training); 3) mainstreaming of CCA and DRR initiatives in key economic and social planning processes; 4) implementation of initiatives; and 5) ongoing review of initiatives to ensure that goals are being met and that lessons learned are documented.



**Figure 6. Five key components of a framework for effectively managing disaster and climate risks.**

Source: Adapted from World Bank, "Not If, But When: Adapting to Natural Hazards in the Pacific Islands Region," Policy Note, East Asia and Pacific Region, 2006, <http://siteresources.worldbank.org/INTPACIFICISLANDS/Resources/Natural-Hazards-report.pdf>.

change and natural disasters. Thus climate change and natural disasters will further impede progress toward the MDGs.

**A project-based approach to DRR and CCA encourages fragmented efforts and impedes progress.**

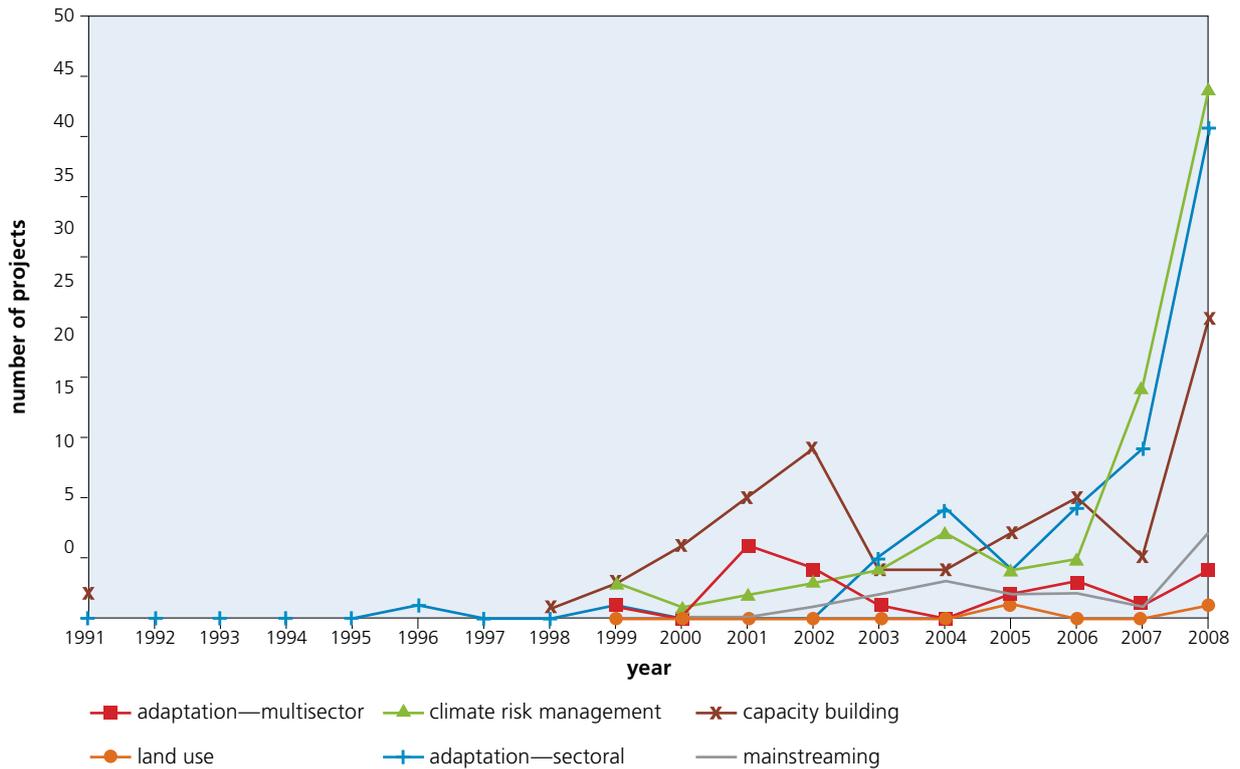
DRR and CCA initiatives in the Pacific commenced in the late 1990s; the number of projects being implemented has increased significantly since 2007 (figure 7).

This increase has not translated into greater progress toward reducing vulnerability, however. A key problem is that current interventions are typically project based. This means that initiatives tend to have short time frames and that there is little carryover from one project to the next. It also means that projects are generally identified as either DRR or CCA, when—given the overlap in what the two types of interventions seek to achieve—the two should be seen as part of a continuum from hazard focused to development focused (figure 8). Consolidating and streamlining the many discrete projects would encourage progress and discourage fragmentation of effort.

**Weak coordination and partnership between institutions involved with DRR, CCA, and development limit the impact of interventions; donor organizations' institutional rigidity contributes to this problem by making cooperation and partnership more difficult.**

A second key reason that CCA and DRR efforts have not had more impact is that organizational links and cooperation among the various projects and programs are too limited, both at the national and at the regional level. Joint programming of CCA and DRR activities by donors and implementing agencies is not widespread. The lack of strong links risks duplication, limits learning, and makes it difficult to achieve the holistic and multisectoral response that resilient development requires.

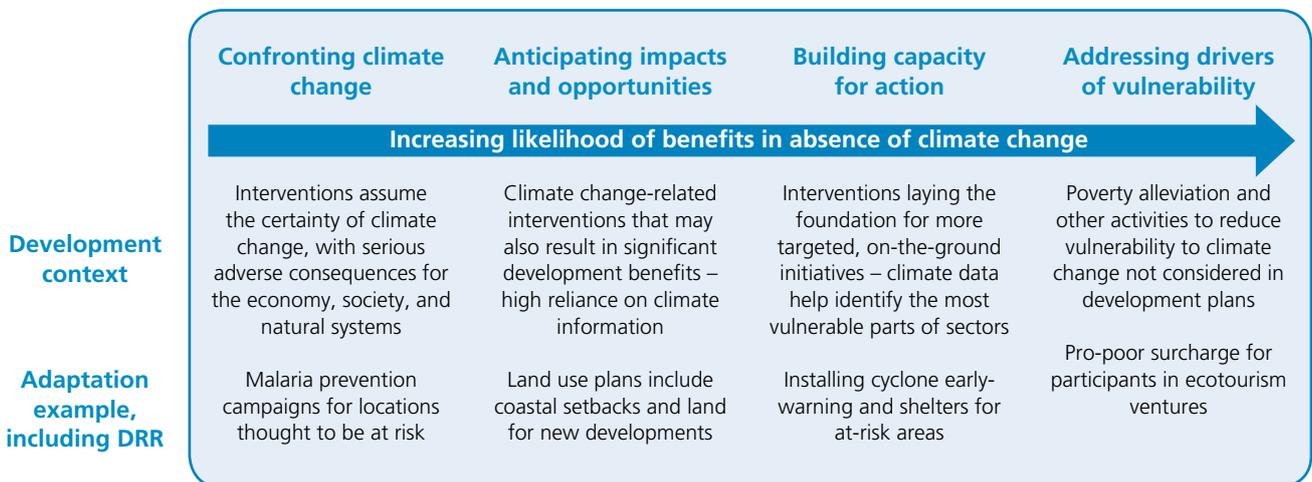
Donor funding requirements also contribute to this problem. For example, rigid criteria and agency-specific reporting requirements discourage alignment and integration as funds are often earmarked separately and specifically for either DRR or CCA or development. The disjointed global processes of the United Nations Framework Convention on Climate Change for CCA and the Hyogo Framework for Action (HFA) for DRR force and perpetuate this division.



**Figure 7. Number of CCA and DRR projects implemented in PICTs, 1991–2008.**

Source: Adapted from J. E. Hay, *Assessment of Implementation of the Pacific Islands Framework for Action on Climate Change (PIFACC). Report to the Secretariat for the Pacific Regional Environment Programme (SPREP)* (Apia, Samoa, 2009).

Note: some trend lines do not start in 1991 since most CCA and DRR projects began implementation following 1998



**Figure 8. Responses to climate change, from development focused (left) to climate change focused (right), with illustrative examples.**

Source: Adapted from S. Becken and J. E. Hay, *Climate Change and Tourism: From Policy to Practice* (UK: Routledge/Taylor and Francis, 2012).

Donors’ institutional rigidity also reinforces “silo effects” in government institutional structures and approaches, and perpetuates fragmentation and duplication of effort. Because donors may prefer high-visibility projects, their assistance is often concentrated on funding “hard” measures, such as

coastal protection projects and water tanks. They tend to focus less on ensuring support of “softer” measures, such as institutional strengthening and ecosystem-based solutions, or on the longer-term, ongoing capacity building required for country ownership and implementation of DRR and CCA.

### Why is progress toward reducing vulnerability inadequate?

1. **Initiatives are project based.** Short time frames and rigid categorization (as either DRR or CCA) mean little carryover from one project to the next.
2. **Links between projects and programs, both at the national and regional levels, are limited.** Joint programming of CCA and DRR activities by donors and implementing agencies is not widespread. The lack of strong links risks duplication, limiting learning, and makes it difficult to achieve the holistic and multisectoral response that resilient development requires.

Currently, DRR, CCA, and development largely operate as three distinct communities of practice in the Pacific. The last five years have seen the appearance of a plethora of DRR, CCA, and development sector policy and planning instruments at national and regional levels. This includes three regional policies for DRR, CCA, and national development as well as National Action Plans for Disaster Risk Management (NAPs) and National Adaptation Programmes of Action (NAPAs). A more recent initiative is Joint National Action Plans for DRR and CCA (JNAPs). These policy instruments have been influenced by various guidelines produced in the Pacific for mainstreaming DRR and CCA into development. While each initiative is well intended and reflects substantial thought and effort, greater cooperation among the three communities (DRR, CCA, and development) and greater integration of their instruments would undoubtedly use available resources more efficiently and produce more effective and lasting improvements.

**Improved coordination and alignment between existing DRR and CCA institutions, and greater involvement by relevant ministries (in particular Finance and Economic Planning), would make CCA and DRR into economy-wide and development-wide issues and would facilitate effective whole-of-government and regional approaches.**

Improved coordination and alignment between DRR and CCA institutions and planning instruments is

crucial. It is now occurring in some PICTs such as the Cook Islands, Tonga, Vanuatu, Tuvalu, the Marshall Islands, and Niue. Other countries are poised to prepare joint DRR/CCA national action plans. However, DRR and CCA considerations are rarely incorporated into economic or physical planning. To date, central ministries such as Finance and Economic Planning have not played a principal role in DRR and CCA, which is problematic given their mandate for overseeing and coordinating national development, financing, and aid effectiveness. Improved coordination is needed to allow technical line ministries involved in DRR and CCA to concentrate more on the services that they are mandated, and have the capacity and comparative advantage, to deliver.

At the regional level there have been recent expressions of intent to integrate DRR and CCA through the implementation of a joint Roadmap towards a Post 2015 Integrated Regional Strategy for Disaster Risk Management and Climate Change Adaptation and Mitigation. This approach would go a long way to redress the current arrangements, which mandate that DRR and CCA be facilitated separately by the Secretariat of the Pacific Community (SPC) and Secretariat of the Pacific Regional Environment Programme (SPREP), respectively. However, the integration of DRR and CCA within regional economic development, which is in the remit of the Pacific Islands Forum Secretariat (PIFS), is less advanced.

### A recent institutional policy analysis of CCA and DRR, in the Pacific came to these conclusions:

1. Few regional institutions in the Pacific would be capable of providing tangible support to national and local DRR and CCA efforts in the absence of donor assistance.
2. Institutional fragmentation is resulting in considerable inefficiencies in the use of the limited financial and other resources.
3. Most PICT governments and administrations are structured along sectoral lines, which makes it difficult for them to address the intersectoral and integrated approaches that are needed to make development climate resilient.

*Source: United Nations International Strategy for Disaster Reduction (UNISDR) and United Nations Development Programme (UNDP), *Disaster Risk Reduction and Climate Change Adaptation in the Pacific: An Institutional and Policy Analysis* (Suva, Fiji: UNISDR and UNDP, 2012).*

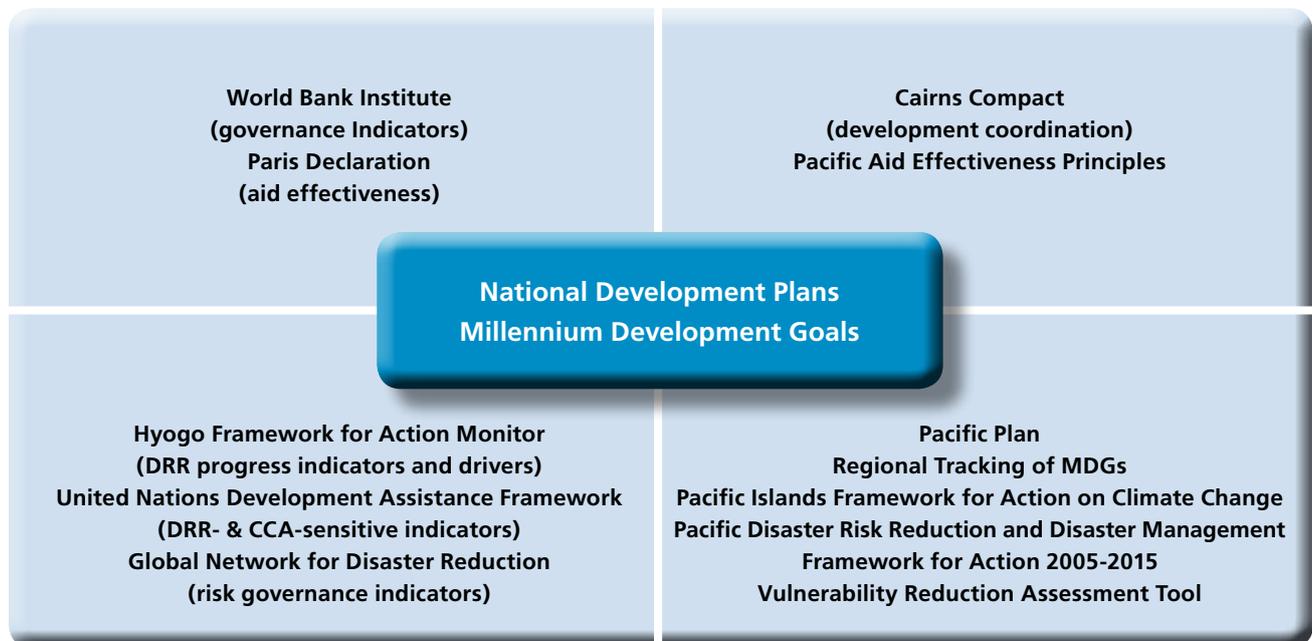
The need for greater coordination and coherence extends to other DRR, CCA, and development actors such as international financing institutions, multilateral and bilateral development partners, alliances and networks, nongovernmental organizations (NGOs), and civil society organizations. Effective coordination is of particular importance given the critical issue of limited absorptive capacity in PICTs and their communities, a fact that NGOs in the Pacific are beginning to recognize. Some have established coordination positions within their organizations, and there is some movement toward forming consortiums between NGOs. Donors have made less progress in coordinating financing for DRR and CCA, although some initiatives aimed at coordination have been established, such as the Development Partners for Climate Change meetings organized by the United Nations Development Programme (UNDP). Progress has also been made in other sectors, for example in the Pacific Regional Infrastructure Facility, which facilitates donor coordination in the infrastructure sector.

**Stronger political leadership would facilitate needed inclusion of DRR and CCA considerations in national and subnational budgetary processes.**

A substantial number of NAPs and NAPAs now say they consider DRR and CCA an integral part of devel-

opment planning and implementation, and recognize its importance in national development strategies and in relevant sector policies and plans. There has been considerable progress in addressing *some* priorities in *some* NAPs and NAPAs; and *some* countries, such as the Cook Islands and Papua New Guinea, have included *some* consideration of CCA and DRR in budgetary processes. However, most NAPs, NAPAs, and JNAPs fall short of their intended mainstreaming function in that budgetary allocations at the sector level generally do not reflect DRR and CCA.

Stronger political authority and leadership is necessary to root DRR and CCA in regional debates on development and economy. Because DRR and CCA lack political visibility at the regional level, PICTS cannot reap the full benefits that would accrue from mainstreaming DRR and CCA across the regional development agenda. The PIFS has recently taken a lead advisory role to PICTs in the important matter of accessing and managing climate change financing, but it does not yet have the support it would need to take on the role of raising the political visibility of DRR and CCA at the regional level in order to promote resilient development. It is worth looking to DRR/CCA practice in other regions, such as risk governance and risk financing in the Caribbean, to identify approaches and options that could hold merit for the Pacific islands region.



**Figure 9.** Selected development, DRR, and CCA monitoring, evaluation, and reporting instruments that have been prepared for use at international, regional, and local levels; these offer starting points for designing an appropriate approach to measuring progress of integrated CCA and DRR in development.

**End-user-friendly information is necessary for informed leadership and sound decision making as well as for the technical design and delivery of resilient development initiatives.**

Appropriate, rigorous, and targeted information can help avoid maladaptation. Over the last five years considerable advances have been made in the development of comprehensive databases and tools that assess disaster, climate, and fiscal risk. These include the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), the Pacific Sea Level and Climate Monitoring Project, and the Pacific Climate Change Science Programme. To avoid maladaptation, these programs need to develop products and applications that are directly targeted to the needs of end-users in PICTs.

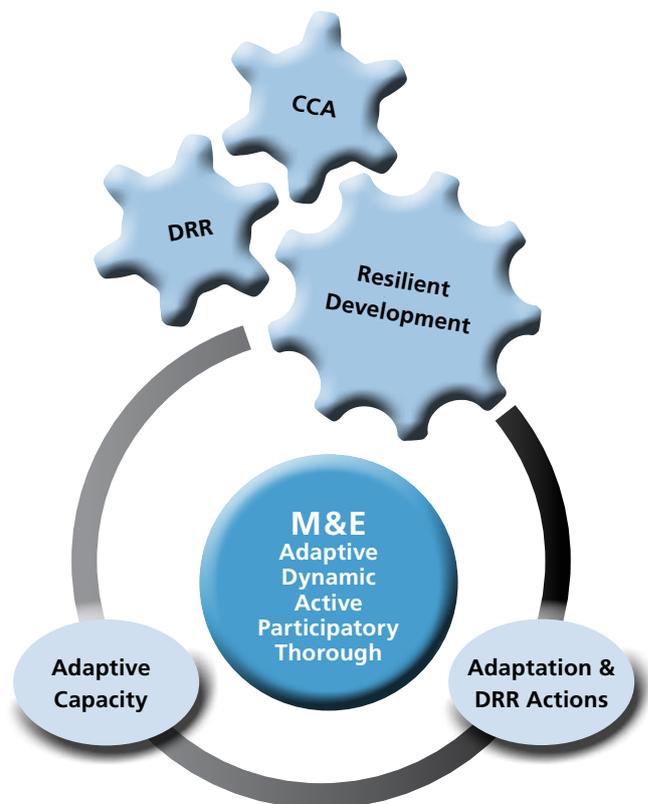
Considerable progress has been made in developing and applying approaches and tools to support integrated DRR and CCA decision making at the community level in the Pacific. Increasingly, disaster and climate risk information is being provided to communities in a way that is relevant to socioeconomic, livelihood, and cultural contexts and complementary to indigenous knowledge. Accessibility of appropriate information products and services is vital, since communities are at the front line of disaster and climate change impacts. Recent increases in coordination between NGOs should help to encourage tools' consistency and quality.

**Improved monitoring and evaluation is essential to enhance the capacity of organizations and leaders to make better DRR, CCA, and development decisions in the future.**

Several current monitoring and evaluation frameworks provide solid starting points for approaches to measuring progress in achieving resilient development (figure 9). The long-term intended outcome of CCA and DRR is reduced vulnerability. Thus many of the existing monitoring and evaluation frameworks for

development contain highly relevant proxy indicators of resilient development. However, many of the existing national or regional development and sector policies and frameworks focus on monitoring and evaluating inputs and outputs, rather than outcomes and the longer-term impacts that are much more relevant to measuring results and effectiveness.

Experience to date with monitoring and evaluation frameworks for CCA and DRR shows that there is a need to incorporate both qualitative and quantitative indicators that embrace principles of flexibility, learning, and participation (figure 10).



**Figure 10. A conceptual monitoring and evaluation (M&E) approach that measures progress at the CCA-DRR-development interface and incorporates principles of flexibility, learning, and participation.**

Source: Authors.

# 2.3 The Way Forward: Overcoming Remaining Barriers



Photo: Simpson Abraham, FSM PACC Project

## Key Messages

Critical barriers to achieving climate- and disaster-resilient development can be overcome if

- risk considerations are grounded in development;
- political authority, leadership, and accountability are robust and effective; and
- coordination and partnerships are strong.

Pacific regional DRR and CCA reports and reviews published over the past decade discuss a litany of recurring challenges that obstruct efforts both to integrate DRR and CCA initiatives and to incorporate DRR and CCA considerations at all levels of development. The barriers discussed in this section are the main obstacles to addressing these ongoing challenges. Until these barriers are overcome and the three key requirements for resilient development (figure 11) are met, resilient development will remain out of reach for most countries and their people, with progress limited and results patchy at best, and with vulnerability increased at worst.



**Figure 11.** Key requirements for climate- and disaster-resilient development.

Source: Authors.

**Resilient development requires grounding risk considerations in development.**

Current governance arrangements at the regional level, and in most countries, do not easily facilitate the integration of risk considerations into development. The separate institutional, legal, and policy frameworks for CCA and DRR are counterproductive. These frameworks also have weak and often tenuous links with the development sectors. Both these separations serve to diffuse efforts to integrate DRR and CCA and to mainstream them in development planning and processes. It is easy for the very case for integration and mainstreaming to get lost amid these separations. And without agreement among relevant actors that integration and mainstreaming are needed, it becomes difficult to add one more priority to a development agenda that is already crowded, complex, and competitive.

Separation also encourages inefficiency, since it tends to encourage planning, financing, programming, and implementing of stand-alone DRR and CCA projects at all levels. These self-contained initiatives are able to only nibble away at the periphery of DRR and CCA and are not fully integrated into development-planning, budgetary, and other processes.

At the highest levels, both the overarching Pacific Plan and national development policy frameworks need to commit political authority and commensurate levels of resources to a focus on the underlying drivers of disaster risk. Failure to do so will almost certainly winnow away any development gains thus far. Efforts

should concentrate on integrating risk considerations in development and ensuring meaningful integration of DRR and CCA interventions that focus on risk-sensitive development outcomes. An “outcomes focus” would help clarify the roles and responsibilities of various key actors and stakeholders based on their comparative advantages, and determine who should be involved in the delivery of DRR, CCA, and development outcomes. This clearer division of labor would facilitate appropriate institutional arrangements and provide lasting benefits. Important instruments and tools for this focus on outcomes are land use planning, building codes, environmental impact assessment, catchment and coastal zone management, and integrated water resources management.

**Resilient development requires sustained and robust political authority, leadership, and accountability.**

The political and economic imperatives for DRR and CCA are clear. Over the last decade PICTs have recognized these imperatives at international, regional, and national meetings. In spite of these public political commitments, in many PICTs the sustained effort needed to address DRR and CCA remains elusive. Short electoral timelines do little to encourage politicians to “invest today for a safer tomorrow.”<sup>16</sup> Only when they face a major disaster event within their term of office do politicians tend to focus on resilient development.

Donors, too, have little incentive to concentrate their efforts on long-term resilient development; responding to disasters irrespective of a country’s efforts in DRR and CCA is highly visible and has high short-term impact. Donors and other actors are missing the opportunity arising from disasters to highlight the benefits of DRR. In the case of CCA, moreover, the high profile of climate change provides significant opportunity to mobilize political and financial resources for risk-smart development investment and to enhance and build resilience.

But without the strong will and commitment of leaders at all levels to make DRR and CCA a national development priority, DRR and CCA will remain invisible at the highest political levels. With strong leadership, politicians will be expected to include DRR and CCA considerations in development and be held accountable for the results.

Currently, leadership responsibility for DRR and CCA policy rests mainly with Departments of Disaster Management or Departments of Environment, or

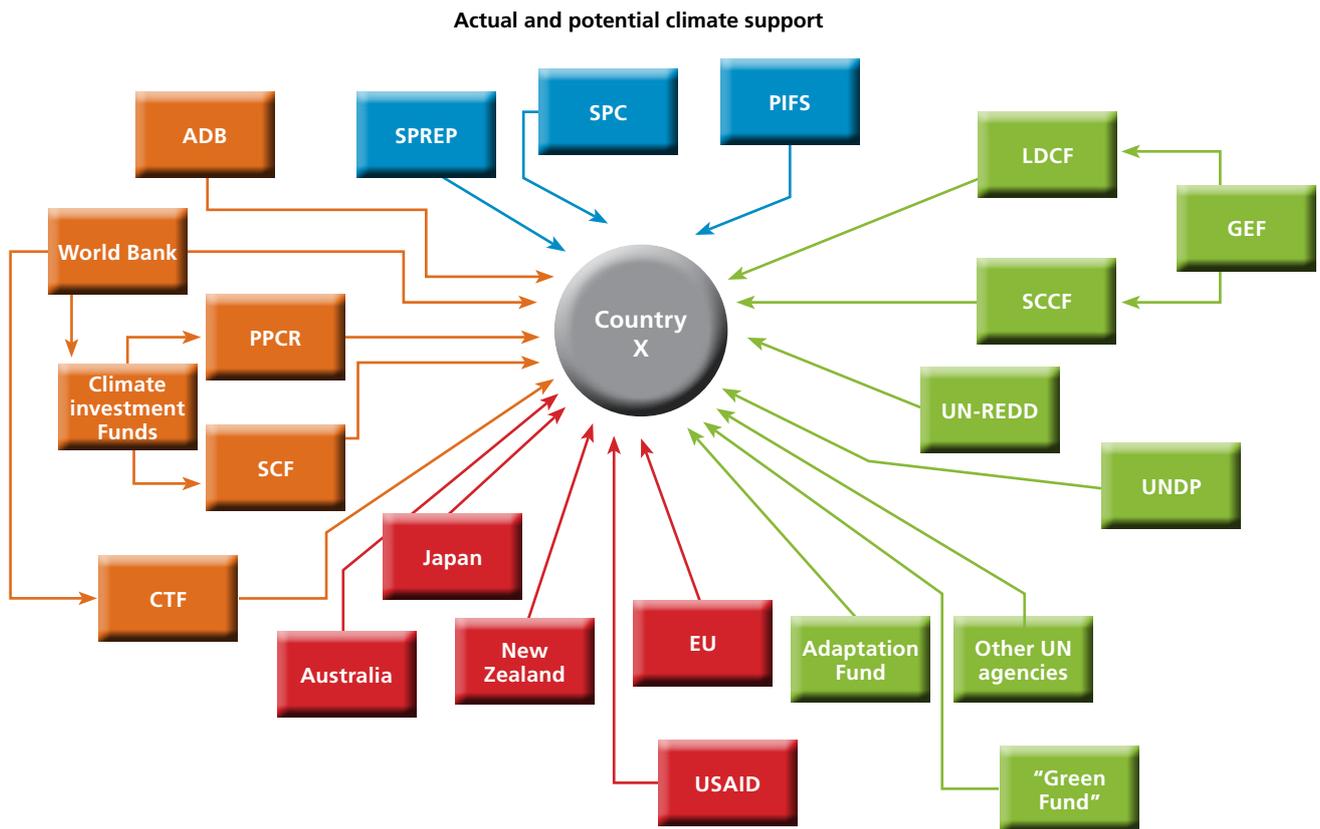
within relatively peripheral ministries. Thus the ability to ensure DRR and CCA policy coherence across and between development sectors, and to influence the shaping of development investment and multisector approaches, is limited. DRR and CCA anchored in the heart of the planning process within a central ministry such as Finance and Economic Planning, and strongly backed by the Office of the President/Prime Minister, would ensure political visibility for and responsible implementation of resilient development.

**Resilient development requires strong coordination and partnerships.**

The multitude and diversity of stakeholders, partners, and financing sources in the fields of DRR, CCA, and development often overwhelm the absorptive capacity of countries. This complexity for DRR and CCA is illustrated in figure 12.

Donors, development partners (including NGOs), and regional organizations need to coordinate their work to ensure efficient and appropriate use of resources, harmonize and simplify approaches to reduce the burden on countries’ systems and capacity, and be more responsive to the needs and priorities of countries. An appropriate transparent consultative mechanism to ensure this type of coordination and cooperation has yet to be achieved, however. To maximize the efficient allocation of available resources and achieve effective coordination and implementation, a balance is needed between regional capacity, national capacity, local capacity, and capacity substitution. Where appropriate, budget support may be a viable option to address the capacity challenge.

Effective mechanisms are currently lacking for linking local priorities with national strategies for DRR, CCA, and development. A stronger collaborative partnership between NGOs, government, and donors is needed to ensure available resources are appropriately allocated to respond to local-level priorities. Significantly, individuals, families, and communities tend not to differentiate between CCA, poverty alleviation, or DRR interventions. Rather, they focus on the impact on their security and well-being. An enabling environment is required that encourages inclusion of community representatives in decision making and implementation efforts. Building capacity at subnational levels is fundamental to an effective enabling environment.



**Figure 12. The diversity and complexity of climate funding and support sources to a typical Pacific Island Country**

Source: Courtesy of Toily Kurbanov, Deputy Resident Representative, UNDP, Fiji.

Note: Orange boxes indicate support from multilateral development banks; green boxes indicate support from other multilateral sources; red boxes indicate support from bilateral sources; and blue boxes indicate support from regional organizations. ADB = Asian Development Bank, CTF = Clean Technology Fund, EU = European Union, GEF = Global Environment Facility, ICCAI = International Climate Change Adaptation Initiative, JICA = Japanese International Cooperation Agency, LDCF = Least Developed Country Fund, MDGF = Millennium Development Goals Achievement Fund, PCR = Pilot Programme for Climate Resilience, SCCF = Special Climate Change Fund, SCF = Strategic Climate Fund, UNDP = United Nations Development Programme, UN-REDD = United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation, USAID = United States Agency for International Development.

# 2.4 Fostering Resilient Development



Photo: John Hay

This section offers practical guidance on achieving more-resilient development and on addressing the underlying causes of vulnerability, poverty, and limited access to financial and other resources. It recommends specific steps for attaining each of the three requirements for resilient development identified in the previous section.

**Resilient development requires grounding risk considerations in development.**

#### **PRACTICAL STEPS:**

1. Strengthen support to relevant institutions to ensure that DRR and CCA are coordinated at all levels.
2. Focus on outcomes rather than inputs to clarify the roles and responsibilities of key actors and stakeholders and to assign them based on comparative advantages.
3. Make mainstreaming of climate and disaster risk considerations in development planning and processes a priority.
4. Ensure that climate and disaster data are easy to access, meet the needs of end-users, and inform the selection of appropriate DRR and CCA measures.
5. Proactively identify development initiatives that address the drivers of risk and seek to strengthen resilience; screen initiatives to ensure that benefits would not be jeopardized by changing weather and climatic conditions or by an extreme natural hazard event.
6. Adapt existing instruments and tools—such as land use plans, building codes, environmental impact assessments, etc.—to achieve high levels of resilience to all hazards.

**Resilient development requires robust and effective political authority, leadership, and accountability.**

#### **PRACTICAL STEPS:**

1. Anchor high-level coordination of DRR and CCA in a central ministry with a high level of political authority such as Finance and Economic Planning.
2. Secure political leadership and accountability at the regional level by providing support to PIFS, the region's preeminent political agency.
3. Make full use of existing mechanisms, such as strategic and corporate planning, budgetary processes and performance management, harmonizing DRR and CCA financing, and exploring financial assistance mechanisms, to increase pre-disaster and climate risk investment.
4. When planning and implementing on-the-ground DRR and CCA initiatives, use established inclusive and participatory best practice, adapted to local context, to help close gaps between communities, provincial governments, and central governments.
5. Make sure leaders have the knowledge, skills, and awareness to make sound decisions about disaster and climate risk management.



Photo: Thinkstock.com

## **Resilient development requires strong coordination and partnerships.**

### **PRACTICAL STEPS:**

1. Divide labor among regional institutions so they assume suitable roles; for instance, coordination responsibility could be anchored in the PIFS, which oversees regional development, cooperation, and integration; and DRR and CCA services could be handled by SPC and SPREP, which have the mandate, capacity, and comparative advantage to deliver them.
2. Align funding sources for CCA, DRR, and development to encourage stronger coordination and cooperation within donor organizations as well as between donors.
3. Use strong and transparent consultation and coordination mechanisms to facilitate sharing of data, good practices, and lessons learned.
4. Encourage an atmosphere of trust, respect, and flexibility among actors to promote coordinated and effective CCA and DRR efforts and to ensure appropriate levels of resourcing, access to information and local knowledge, and capacity support.
5. Promote joint planning, programming, and implementation of DRR and CCA interventions by PICTS and their development partners in ways that make optimum use of the comparative advantages of each.
6. Provide flexible financing arrangements that address both current and anticipated risks and deliver both shorter- and longer-term benefits.

## Notes

- 1 These seemed reasonable initiatives when they were undertaken but have ultimately proved harmful. See P. D. Nunn, "Responding to the Challenges of Climate Change in the Pacific Islands: Management and Technological Imperatives," *Climate Research* 40, no. 2–3 (2009): 211–31.
- 2 J. E. Hay and N. Mimura, "The Changing Nature of Extreme Weather and Climate Events: Risks to Sustainable Development," *Geomatics, Natural Hazards and Risk* 1, no. 1 (2010): 1–16.
- 3 Australian Bureau of Meteorology and CSIRO, *Climate Change in the Pacific: Scientific Assessment and New Research*, Vol. 1: Regional Overview; Vol. 2: Country Reports, 2011, <http://www.cawcr.gov.au/projects/PCCSP/publications.html>.
- 4 *Ibid.*
- 5 Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) currently comprises data sets, information, and risk models for the following hazards: tropical cyclones, earthquakes, and tsunami.
- 6 Asian Development Bank, "Solomon Islands: Strengthening Disaster Recovery Planning and Coordination," Project Number 41105, Rehabilitation and Reconstruction Programme, Asian Development Bank, 2007.
- 7 Pacific Islands Forum Secretariat, "Economic Costs of Natural Disasters in the Pacific Islands Region and Measures to Address Them," Out of Session Paper, Forum Economic Ministers' Meeting, Rarotonga, Cook Islands, October 27–28, 2009.
- 8 Pacific Islands Applied Geoscience Commission (SOPAC), "Socioeconomic Flood Impact Assessment in Nadi and Ba, Fiji," SOPAC, Suva, Fiji, no date.
- 9 World Bank, *Economics of Adaptation to Climate Change: Samoa* (Washington, DC: World Bank Group, 2010).
- 10 P. N. Lal, R. Singh, and P. Holland, *Relationship between Natural Disasters and Poverty: A Fiji Case Study*. SOPAC Miscellaneous Report 678 (Suva, Fiji: SOPAC, 2009).
- 11 United Nations International Strategy for Disaster Reduction (UNISDR) and United Nations Development Programme (UNDP), *Disaster Risk Reduction and Climate Change Adaptation in the Pacific: An Institutional and Policy Analysis* (Suva, Fiji: UNISDR and UNDP, 2012).
- 12 *Ibid.*
- 13 Asian Development Bank, *Climate Proofing: A Risk-Based Approach to Adaptation* (Manila: Asian Development Bank, 2006).
- 14 O. Chadburn, J. Ocharan, K. Kenst, and C. Cabot Venton, "Cost Benefit Analysis for Community Based Climate and Disaster Risk Management: Synthesis," Tearfund and Oxfam America, 2010, [http://www.preventionweb.net/files/14851\\_FinalCBASynthesisReportAugust2010.pdf](http://www.preventionweb.net/files/14851_FinalCBASynthesisReportAugust2010.pdf).
- 15 World Health Organization (WHO) and Pacific Islands Applied Geoscience Commission (SOPAC), *Sanitation, Hygiene and Drinking-Water in the Pacific Island Countries: Converting Commitment into Action* (Suva, Fiji: WHO and SOPAC, 2008).
- 16 This was the slogan for the 2009 and 2011 Global Platforms for Disaster Risk Reduction.



Photo: The World Bank

## 3 Supporting Research, Analysis, and Case Studies

This section contains the research, analysis, and case studies that have been used to inform and support preparation of the Policy and Practice Note (PPN). The key messages and recommendations contained in the PPN are a distillation of the myriad challenges, lessons learned, good practices, and needs in the region. The information presented in this section is based on an extensive literature review and on comprehensive consultations with stakeholders in the region.

### 3.1 What Are the Consequences of Not Acting Today?

**An overall consequence of not acting to reduce disaster risks and the threat of climate change will be further delays in achieving national Millennium Development Goals (MDGs)—or even backsliding from those goals that have already been achieved.**

Examples of how natural disasters and climate change–related hazards can impact progress toward the MDGs are provided in table 3.1.

**Acting today to reduce the consequences of future extreme events can be cost-effective.**

The most significant driver of increasing economic losses due to climate variability and extreme events is poorly planned socioeconomic development. Case studies 1 to 3 below provide examples of how investments in climate change adaptation (CCA) and disaster risk reduction (DRR) measures in the context of development will reduce costs in the longer term. Case study 1 exemplifies the benefits of climate-proofing infrastructure, while case study 2 illustrates the cost-effectiveness of investments in nonstructural measures. Case study 3 highlights the importance of economic data to enable effective cost-benefit analyses.

**Table 3.1. Disasters, climate change, and the MDGs**

MDG	Influence of Disasters and Climate Change	Adaptation and Disaster Risk Reduction
<b>Goal 1:</b> Eradicate extreme poverty and hunger	Droughts, wind storms, floods, and coastal inundation destroy livelihoods and reduce food production, as does coral bleaching; extreme high temperatures hasten spoiling of stored food; poverty and malnutrition are exacerbated by increased failures of subsistence crops and in high food prices; livelihood assets and income of poor people are reduced.	Improve food and nutrition security, water security, health status, livelihood security, income diversification. Enhance resilience and preparedness to cope with uncertain and extreme events to strengthen adaptive capacity.
<b>Goal 2:</b> Achieve universal primary education	Adverse weather conditions and increased incidence of diseases reduce school attendance of children, especially girls; education infrastructure is at increased risk from damage due to extreme weather conditions.	Improve skills to increase ability to sustainably manage ecosystems, change vocations, or move locations, thereby reducing vulnerability; increase awareness of climate-health links to reduce incidence of water- and vector-borne diseases; ensure design and upgrading of education infrastructure is climate- and disaster-proofed.
<b>Goal 3:</b> Promote gender equality and empower women	Women represent a large percentage of the poor, experience gender inequity, and are faced with increasing vulnerabilities as the climate changes; because of their economic and social roles (e.g., reduced livelihood assets, increased workload, health issues, reduced time to participate in decision making), and heavy reliance on the natural resource base for income-generating activities, levels of mortality for women and girls are often higher in natural disasters; the incidence of physical, emotional, and sexual violence often rises in the wake of these events.	Enhance capacity of women to deal with added economic and social risks and stresses from climate change; make increased use of the knowledge, skills, and influence of women in efforts to cope with climate change and reduce the emissions that cause it; reduce the time spent by women on providing access to drinking water and other basic tasks; create additional employment and income-generating activities for women.
<b>Goal 4:</b> Reduce child mortality	Infant mortality rates are affected largely through influence of climate change on infectious diseases; other key factors are food shortages and extreme and damaging weather events; access to potable water is often reduced	Improve access to health services to enhance the resilience of children; strengthen quarantine regulations and border surveillance.
<b>Goal 5:</b> Improve maternal health	Pregnant and lactating women, are highly vulnerable to health threats such as infectious diseases and noninfectious health effects, including heat waves; levels of physical, emotional, and sexual violence often rise in the aftermath of a disaster; health care and proper hygiene are often inadequate in shelters.	Improve access to health services to enhance the resilience of mothers and infants to the health effects of climate change; improve food and water security and access to health services to improve adaptive capacity; increase use of cleaner fuels at the household level to decrease the incidence of respiratory illnesses among women and children.
<b>Goal 6:</b> Combat HIV/AIDS, malaria, and other diseases	Many prevalent human diseases are linked to climate fluctuations, including cardiovascular mortality and respiratory illnesses due to heat waves, altered transmission of infectious diseases (e.g., malaria), health issues related to water access and sanitation, and malnutrition from crop failures; climate change leads to displacement, making social, environmental, and health conditions unbearable, increasing risk of HIV infection, and disrupting treatment and care services; populations most vulnerable to HIV infections, especially marginalized groups, are more adversely affected in emergency	Enhance capacity to prevent and deal with epidemics in order to increase resilience to climate change. Examples of interventions include improving public health infrastructure, developing more-tolerant crop strains, increasing freshwater storage capacity and provision of safe sanitation service, creating early-warning systems, and bolstering disease surveillance. Improve integration of AIDS treatment and care programs as part of national disaster preparedness strategies; strengthen health systems to integrate service provision in emergency

*continues*

Table 3.1. (cont.)

MDG	Influence of Disasters and Climate Change	Adaptation and Disaster Risk Reduction
<b>Goal 6:</b> Combat HIV/AIDS, malaria, and other diseases	situations; rapid-onset disasters place people, especially women and girls, at risk of HIV infections; in the immediate aftermath of climate-induced emergencies access to prevention services is disrupted and comprehensive AIDS treatment, care, and support services are not readily available and accessible.	situations; enhance integration of food security, health security, and resilience to cope with risks from uncertain and extreme events in order to improve adaptive capacity.
<b>Goal 7:</b> Ensure environmental sustainability	Climate change will degrade the quality and productivity of ecosystems and living natural resources; resilience of many ecosystems is unlikely to withstand a combination of climate change and associated disturbances such as flooding, drought, wildfire, insects, and ocean acidification, along with other pressures such as land-use change, pollution, and overexploitation of resources. Ecosystem services such as water, food, and firewood will be severely impacted in many developing countries.	Recognize role of healthy ecosystems and sustainably managed natural resources in adaptation to the effects of climate change and for disaster risk reduction in areas such as water resources management, forestry, and land management; avoid maladaptation such as reforestation with high-water-use trees or initiatives that undermine progress toward gender equity; use fiscal instruments and standards to incentivize resource efficiency.
<b>Goal 8:</b> Develop a global partnership for development	Climate change is both a global and cross-cutting issue; climate change impacts, especially those related to extreme events, will often exceed the coping capacity of the affected country; thus international cooperation is required to address the causes of climate change, as well as to ensure comprehensive and effective responses to its consequences.	Build partnerships with actors internationally and nationally, including those in the private sector and civil society, to ensure awareness raising, knowledge sharing, capacity building, technology transfer, and financing for adaptation and disaster risk reduction. Offer access to international climate change adaptation and disaster risk reduction funds to help developing countries enhance their resilience.

Source: Authors' compilation.

### Case Study 1: Enhancing the Climate Resilience of a New Road in Kosrae, Federated States of Micronesia



Photo: Simpson Abraham, FSM PACC Project

Kosrae's Infrastructure Development Plan includes completion of the circumferential road, in which there is currently a 16 km gap. Under the Compact of Free Association, the United States has allocated US\$1,000,000 for this project. The drainage works for the original road design (both built and yet-to-be built sections) were based on an hourly rainfall of 178 mm, intended to be the hourly rainfall with a return period of 25 years. Subsequent analysis of more reliable data indicated that an hourly rainfall with a return period of 25 years is currently 190 mm. But global climate model projections show that, as a consequence of climate change, by 2050 the hourly rainfall with a 25-year return period will have increased to 250 mm.

The Government of the State of Kosrae accepted a subsequent recommendation that the design of the road be modified so the drainage works could accommodate an hourly rainfall of 250 mm. A new "climate-proof" design for the road was prepared and costed by State employees. The incremental cost of climate-proofing the road design and construction for a yet-to-be built 6.6 km section of road is approximately US\$500,000. While the capital cost of this road would therefore be higher than if the road was constructed to the original design, the accumulated costs, including repairs and maintenance, would be lower after only about 15 years. This is due to lower repair and maintenance costs for the climate-proofed road. The internal rate of return was found to be 11 percent.

A 3.2 km portion of the road section has ready been constructed, including the drainage works. The design for these was also based on an hourly rainfall of 178 mm for a 25-year recurrence interval. Analyses show that it is more costly to climate-proof retroactively—US\$776,184 for a 3.2 km section of existing road (US\$243,000 per km) as opposed to US\$511,000 to climate-proof 6.6 km of new road (US\$77,000 per km). But a cost-benefit analysis revealed that the retroactive climate-proofing is still a cost-effective investment, with an internal rate of return of 13 percent.

The Governments of the Federated States of Micronesia and the State Government of Kosrae have secured funding for the incremental costs of climate-proofing the road. The funds will be made available under the Pacific Adaptation to Climate Change project.

Source: ADB 2006.

## Case Study 2: Cost-Benefit Analyses of Community-Based Adaptation Interventions in the Pacific

Chadburn et al. (2010) developed and applied a methodology for undertaking a cost-benefit analysis of community-based climate and disaster risk management. For the Pacific, community-based adaptation (CBA) interventions assessed by the Pacific Islands Applied Geoscience Commission (SOPAC) related to flooding in Samoa and Fiji. For Samoa these included floodwalls, a diversion channel, improved flood forecasting, and construction of homes with raised floor levels. Flood hazard maps were created using information from previous floods, and direct and indirect monetary losses calculated, with the distribution of impacts accounted for across sectors. Nonstructural measures were found to be the most economically viable. For an improved forecasting system, the benefit-cost ratios range from 1.92 to 1.72. Raising the floor levels of homes had benefit-cost ratios of 2 to 44, dependent on the type of structure, floor height, and discount rate used in the analysis. Structural interventions were found to be unviable economically, even if nonquantifiable benefits were considered.

The CBA intervention in Fiji was a flood warning system. A survey was used to assess the distributional impacts for a range of sectors, including household, business, government, and donors. All benefit-cost ratios were high (3.7 to 7.3), including for government (1.1 to 2.2). The benefit-cost for one community was infinite, as no costs were borne.

Source: Chadburn et al. 2010; see also Woodruff 2008; and Holland 2008.

**SOPAC**

## Case Study 3: Consequences of Drought, a Slow-Onset Event

Drought is an example of a slow-onset event with significant social and economic consequences. Deo (2011) reports varying increases in the duration and severity of droughts in different parts of Fiji, but laments that the scarcity of economic data inhibits proper diagnosis of the consequences. Hay and Mimura (2010) confirm this underreporting. They show that quantitative information on the economic damages resulting from drought is available for only one of eight droughts reported to have occurred in the Pacific between 1950 and 2009. Drought caused economic damages estimated at US\$30 million when it occurred in the Western Division of Fiji in 1983. More recently, Fiji's "100 year" drought of 1997 and 1998 caused the economy to contract by 4 percent, despite a very strong performance by the tourism, garment, and kava sectors.

Tuvalu regularly faces drought conditions that force its government and development partners to provide emergency water supplies. The most recent drought, which started in July 2011, left some islands with very limited reserves of potable water. Australia, New Zealand, Japan, and the Red Cross responded, providing emergency bottled water and desalination equipment. Recent efforts to undertake a cost-benefit analysis of efforts to address drought risks in Tuvalu have been thwarted by the lack of data on the economic and social consequences of its previous droughts. This is despite in excess of \$A 2 million currently being invested by donors in three projects.

Sources: Deo 2011; Hay and Mimura 2010; Lal 2010.



## 3.2 Lessons of the Last Decade

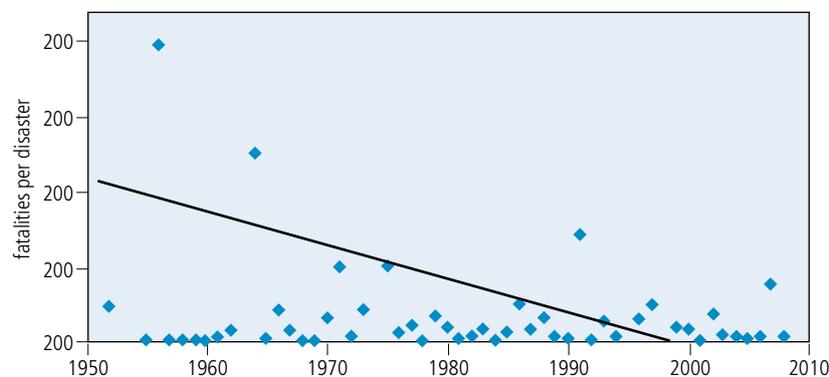
### Progress in addressing underlying vulnerability in the Pacific has thus far had limited impact on climate-resilient development.

Some progress has been made in addressing underlying vulnerability: institutional arrangements and institutions have been strengthened; access to appropriate information has improved; policies and plans are better integrated; on-the-ground DRR and CCA measures have been implemented; and appropriate tools to measure progress have been identified. But it is also clear that a more strategic approach to integrating adaptation and risk reduction measures into development is required in order to scale up efforts and deliver enduring outcomes and impacts.

For the Pacific, as elsewhere, substantial activity and investment in DRR and CCA did not commence until the late 1990s. Almost US\$2 million had been invested by 2008, mostly in the later years (Hay 2009a). Extrapolating the data suggests that current investments amount to at least US\$10 million per year. What difference have these efforts made, and what can be learned from experience?

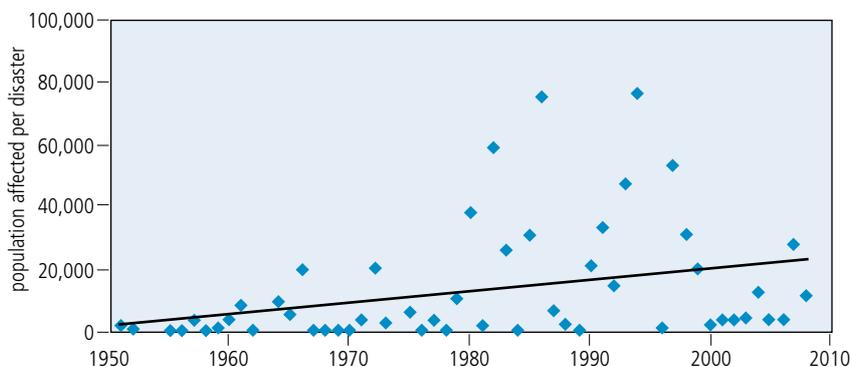
The number of fatalities per disaster has declined since comprehensive record keeping began in the 1950s (figure 3.1). This decline almost certainly reflects the major investments in disaster preparedness and response in the Pacific in recent decades. While some of the change may also be attributed to the substantial decrease in the frequency of tropical cyclones of all strengths since the peak in the 1980s, it is important to note that the frequency of severe (hurricane-strength) cyclones has remained relatively unchanged (Hay and Mimura 2010).

Significantly, the number of people affected by each disaster, and the economic losses per disaster, are still increasing (figures 3.2 and 3.3). These trends are consistent with population growth, development patterns, and (in many



**Figure 3.1.** Number of human fatalities per disaster reported in the Pacific islands region, 1950–2008.

Source: EM-DAT.



**Figure 3.2a.** Population affected in the Pacific islands region, 1950–2008, per disaster.

Source: EM-DAT.

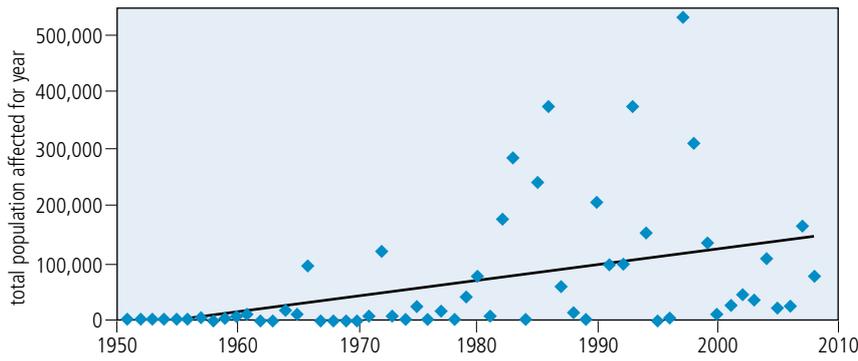


Figure 3.2b. Total population affected in the Pacific islands region, 1950–2008, per year.

Source: EM-DAT.

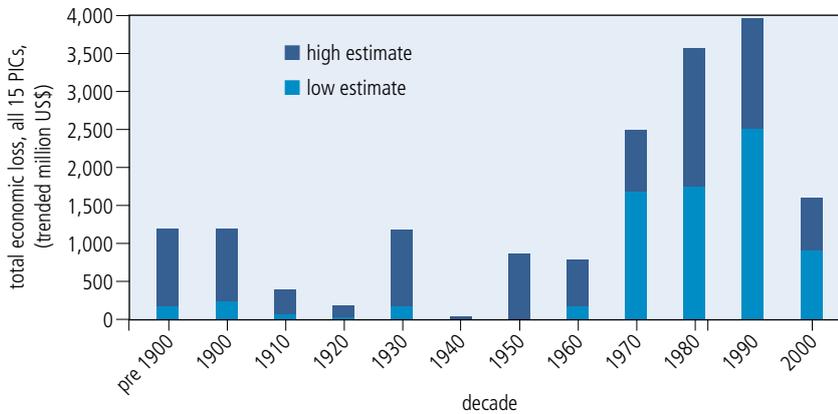


Figure 3.3. Estimated economic losses per decade in the Pacific islands region.

Source: World Bank forthcoming.

cases) people’s relocation to more hazard-prone peri-urban areas. The number of people affected and the economic losses have been consistently lower for the last decade. This is an encouraging sign, though the decline in cyclone numbers for this period must be at least partly responsible.

While such macro analyses are informative, evidence-based learning is greatest when it considers the effectiveness of specific interventions. The 2006 Policy Note “Not If But When” identified five areas where management of natural hazards in the Pacific needed to be improved (figure 3.4): (1) enabling environment, (2) decision support, (3) mainstreaming, (4) implementation, and (5) monitoring and evaluation (M&E). These areas were used to frame an assessment of specific interventions in the past 10 years. Each area is extrapolated below.

**Effectively managing disaster and climate risks requires a better enabling environment.**

If there is to be an adequate foundation and support for tangible DRR and CCA interventions on the

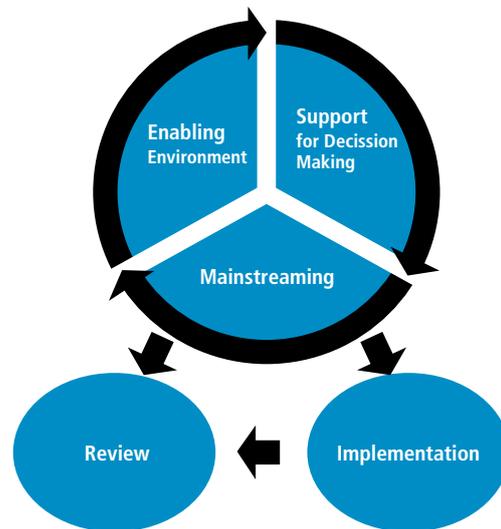


Figure 3.4. Five key components of a framework for effectively managing disaster and climate risks.

Source: Adapted from World Bank 2006.

ground, there must be actions across **macroeconomic policy and national development planning**, as well as institutional and legislative strengthening and human resources development.

Disaster response can be hampered by a lack of immediate liquidity. In order to avoid such difficulties, the government of Vanuatu has established a disaster

relief fund and is now considering expanding the fund to include DRR and CCA (case study 4).

#### Case Study 4: Establishment of Vanuatu's Disaster Relief Fund

In order to ensure that disaster response would not be hampered by a lack of immediate liquidity, the government of Vanuatu has established a disaster relief fund and is now considering expanding the fund to include DRR and CCA. Having such capability is logical given Vanuatu's high ranking in the list of most vulnerable countries, and given the 25 tropical cyclones, 21 volcanic events, 3 severe earthquakes, and 3 damaging gales it has experienced in the past 26 years. Under provisions of the rules and regulations of the Public Finance and Economic Management Act, and specifically the Standing Appropriation for a Declared State of Emergency or a Financial Emergency, Vanuatu operates a VT25 million disaster fund. In addition, up to 1.5 percent of the total national budget can be disbursed to respond to an unforeseen emergency.

The procedure to obtain funds is straightforward, and involves an initial disaster report that identifies, prioritizes, and costs the essential requirements along with a letter of request to disburse the funds. The Department of Finance and Treasury verifies the documents and expedites payment. Under the procedure, VT20 million was disbursed in 2008 as a result of the tropical cyclone. Disbursements of VT110 million in 2009 in response to several disasters and VT99.1 million in 2011 as a result of a cyclone have also been made. In 2011 disbursements totalling VT63.6 million were made. These covered school fee exemptions.

Sources: Cook 2011; and personal communication with A. Arnhambat, budget manager, Ministry of Finance and Economic Management, Vanuatu, 2011.



Because of the cross-cutting nature of both disasters and climate change impacts, **strong institutions** are a vital part of a good enabling environment. They can provide the necessary coordination and ensure that there is both a whole-of-government and whole-of-country approach to DRR and CCA. A recent report on an institutional and policy analysis of CCA and DRR in the Pacific (UNISDR and UNDP 2011) concluded that few institutions in the Pacific are capable of providing tangible support to national and local DRR and CCA efforts in the absence of donor assistance. Institutional fragmentation is

resulting in huge inefficiencies in the use of limited financial and other resources. In most Pacific island countries and territories (PICTs), national institutions remain poorly aligned with the growing number of policies and action plans that propose a more community-focused and integrated approach to CCA and DRR and that seek to make development efforts more resilient to climate-related risks. Improved coordination and alignment is now occurring in some countries, including the Cook Islands (see case study 5), and the experience of the Caribbean is also relevant in this regard (case study 6).

#### Case Study 5: Strengthening DRR and CCA Institutions in the Cook Islands

A recent decision to prepare a Joint National Action Plan (JNAP) for disaster risk management (DRM) and CCA has gone hand in hand with a series of institutional reforms. The preexisting National Action Plan Advisory Committee and the National Climate Change Country Team have been merged to form a strengthened Disaster Risk Management and Climate Change National Platform. Until recently, the National Environment Service had taken the lead in climate change-related activities. This was despite the lack of a specific mandate for oversight of government's climate initiatives, but was consistent with its role as operational focal point for the United Nations Framework Convention on Climate Change (UNFCCC). Representation at international meetings, such as those under UNFCCC, has been and still is led by the Ministry of Foreign Affairs and Immigration. Recently, many of the climate change roles of the National Environment Service have been transferred to the newly established Climate Change Coordination Unit, which is located in the Office of the Prime Minister, along with the longer-established Emergency Management Unit.

These new arrangements are resulting in greater and higher-level coordination of both CCA and DRM. For example, the two units will have oversight responsibilities for implementation of a joint CCA/DRR project in the Pa Enea (outer islands), financed by the Adaptation Fund.

Sources: UNDP (2011).



## Case Study 6: Strengthening the Enabling Environment in the Caribbean

In 2009, the Caribbean Community Climate Change Centre (CCCCC) prepared the Regional Framework for Achieving Development Resilient to Climate Change, which is to be in effect until 2015. The strategic vision driving the regional strategy is to lay the ground for a “regional society and economy that is resilient to a changing climate.” The framework is underpinned by a series of principles, including recognition that an integrated approach is important in minimizing 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 in hazard risk reduction. The framework envisages that the financing of DRR initiatives will be treated as a development priority within the budgeting process, and that all government entities will advance the goals and objectives of the framework by ensuring that disaster risk reduction is taken into account in the design of development programs and projects.

The CCCCC, the Caribbean Disaster Emergency Management Agency, and other regional institutions are strategic partners in charting an integrated approach to DRR and CCA. On top of this, the Caribbean has a novel governance mechanism in the form of the Comprehensive Disaster Management Coordination and Harmonisation Council. It provides the overall management and technical guidance needed to ensure that comprehensive disaster management implementation activities within and between countries, as well as across different sectors and disciplines, are coordinated and harmonized. Climate change is recognized as a cross-cutting concern in comprehensive disaster management.

In addition, the Caribbean Development Bank’s 2009 Disaster Management Strategy and Operational Guidelines provides an excellent example of regional stakeholder organizations 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 harmonized donor interventions. In keeping with this theme, the Caribbean Development Bank offers proactive assistance for integrated DRM and CCA work.

In 2011, the Board of Directors of the Caribbean Development Bank approved a US\$470,250 grant to the CCCCC to establish a Project Development Unit. The unit will assist the center in building its capacity to coordinate the effective implementation of the climate change strategy and the associated Caribbean Community and Common Market (CARICOM) implementation plan; it will also provide technical support to the member states to assist in implementing appropriate climate change responses.

The Caribbean Development Bank project will focus on providing the services to manage the Project Development Unit, preparation of a pipeline of priority climate change adaptation investment projects for member states, and the development of tools and guidance resources.

Source: UNISDR and UNDP 2011.



The Pacific region has invested heavily in enhancing **knowledge and skills** related to CCA and DRR. While the longer-term impacts of these efforts are somewhat reduced by the usual issues, including staff retention and mobility, an assessment of the Pacific’s first regional climate change project (the Pacific Islands Climate Change Assistance Programme, which ran for an initial period of three years, starting in mid-1997) highlighted the sustainability of the training outcomes (GEF 2001). For example, of the 33 students (from 11 Pacific island countries) who gained the Certificate in Climate Change Vulnerability and Adaptation Assessment, the vast majority were still working in their own countries on tasks that utilized their expertise in ways that contributed substantively to climate change activities.

The ongoing evolution of the certificate program is another example of a regional training initiative’s sustainability. The program was developed by, and had an initial trial at, the University of Waikato, in collaboration with the United Nations Institute for Training and Research. It was then transferred to the University of the South Pacific (USP) and taught initially by a combination of USP and University of Waikato staff. Since first being offered in 1999, the USP program has evolved into the Postgraduate Certificate in Climate Change Vulnerability and Adaptation Assessment, an intensive four-month program of study with two required courses. These can be taken through any USP campus in the Pacific, using distance and flexible learning. There is now another version of the program as well, a Postgraduate Diploma in Climate Change, which

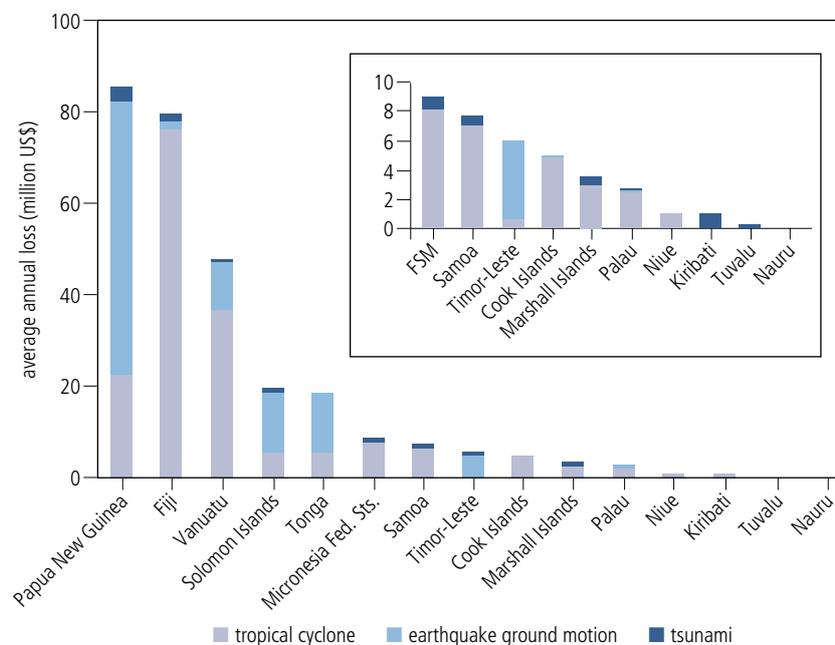
comprises four courses taken over one year full time or two years part time. The two required courses are the same as those for the certificate program. Many of the other optional courses are also available through distance and flexible learning.

Scholarships have always been an integral part of ensuring access to, and the sustainability of, these educational initiatives. Currently, USP postgraduate scholarships in climate change are available through a European Union (EU)–funded project and through the Australian Agency for International Development (AusAID)–funded Future Climate Leaders Project. The scholarships are available to citizens of PICTs.

There is growing evidence that, while PICTs face high costs for CCA and DRR, most interventions are cost-effective (such as the examples discussed in case study 2). However, this latter finding is dependent on assumptions as to how the climate will change, including the speed of that change. The challenge is to secure funding for investments where there is no guarantee of significant returns, at least in the near term. Pacific island countries are generally unwilling to use their own financial resources, especially to fund CCA interventions, preferring instead to rely on their development assistance partners. An

emerging response is to use **trust funds** and other financing modalities (see, for example, PIFS 2012) as well as **structured financial instruments** that reduce vulnerability to disasters and climate change by spreading remaining risks across countries and sectors. Such instruments must recognize that substantial CCA and DRR interventions in the Pacific have high transaction costs.

The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) is supporting DRR in PICTs, in part by providing spatially detailed, state-of-the-art probabilistic assessments of the risks associated with tropical cyclones, earthquakes, and tsunami, including fiscal risk exposure. PCRAFI has generated the most comprehensive risk exposure data set ever collected within the Pacific Islands, and possibly globally. The data set covers population, buildings (residential, commercial, public), infrastructure (e.g., bridges, dams, ports), and major cash crops (e.g., coconut, banana, taro). PCRAFI results, presented in figure 3.5 and table 3.2, are useful not only in raising awareness about the financial consequences of extreme events, but also in helping countries and their development partners to prioritize their DRR investments. PCRAFI’s risk assessment results can potentially support multiple



**Figure 3.5. Annual average losses for individual Pacific island countries and territories as a consequence of tropical cyclones, earthquake ground motion, and tsunami.**

Source: World Bank 2011.

Note: The inset graph is a detail of the main graph—that is, it enlarges the scale so that the smaller dollar amounts are clearer.

Table 3.2 Risk profiles for Vanuatu (2010)

General information	
Total population	246,000
GDP per capita (US\$)	2,960
Total GDP (million US\$)	729.0
Asset counts	
Residential buildings	90,699
Public buildings	3,280
Commercial, industrial, and other buildings	6,767
All buildings	100,746
Hectares of major crops	78,434
Cost of replacing assets (million US\$)	
Buildings	2,858
Infrastructure	420
Crops	25
Total	3,303
Government revenue and expenditure	
Government revenue (million US\$)	173.7
Government revenue (% GDP)	23.8
Government expenditure (million US\$)	178.8
Government expenditure (% GDP)	24.5

Source: World Bank 2011.

Note: The projected 2010 population was trended from the 2006 census using estimated growth rates provided by SPC.

applications for public and private stakeholders; they are relevant for urban and development planning; building codes; community-based disaster risk management; postdisaster damage assessment; property catastrophe insurance market development; and, sovereign disaster risk financing.

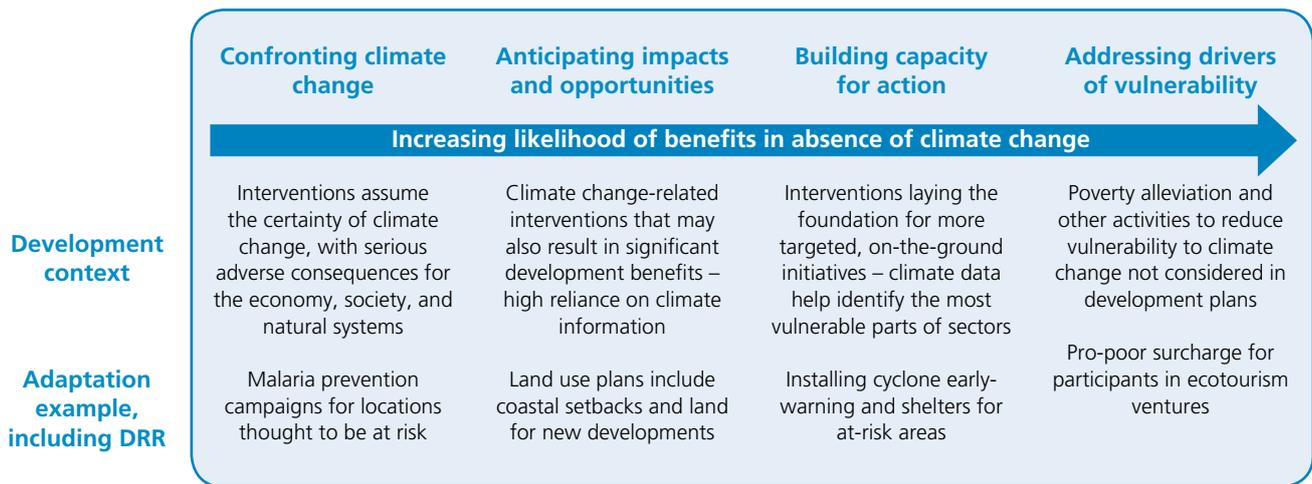
### Effectively managing disaster and climate risks requires better decision support.

Sound decision making requires access to policy-relevant and end-user-friendly information that is accurate and localized. It also requires strong leadership, advocacy, and high levels of awareness for all players, including the public.

Decisions and actions to reduce vulnerability in the Pacific must be taken now, in spite of existing scientific, geopolitical, and economic uncertainties. **Emphasis should be on “no regrets” interventions and exploitation of synergies** (see figure 3.6). Reductions in greenhouse gas emissions should go hand-in-hand with CCA and DRR, but seeking such synergies should not constrain the Pacific’s access to energy, or its economic growth.

Confronting uncertainty in decision making is not new or unique to the Pacific’s efforts to reduce vulnerability. The challenge is to reduce the extent and causes of uncertainty and build on existing expertise, institutions, community networks, and infrastructure to implement successful interventions despite an uncertain future. The decision support mechanism developed under the Pacific Adaptation to Climate Change (PACC) Project illustrates how existing expertise may be taken advantage of (case study 7). It also illustrates the ongoing high demand for capacity support in the region and the lessons that can be drawn from other regions and initiatives.

In contrast to those described in case studies 6 and 8, the Pacific region’s political and technical leadership structures related to climate change and disaster risk management are relatively flat, rather than hierarchical. While the Pacific Islands Forum Secretariat (PIFS) is the region’s premier political and economic policy organization, SPREP is often identified as having the regional mandate for climate change initiatives and as the lead regional CROP agency on climate change issues in the Pacific. Moreover, under the Disaster Reduction



**Figure 3.6. Responses to climate change, from development focused (left) to climate change focused (right), with illustrative examples.**

Source: Adapted from Becken and Hay 2012.

### Case Study 7: Decision Support under the PACC Project

A draft proposal for a PACC Regional Backstopping Facility was prepared in 2007, but was not pursued. Rather, nearly all the PACC countries expressed an initial interest in seeking assistance through the United Nations Institute for Training and Research (UNITAR) Capacity Development Platform. A role was also identified for USP's Pacific Centre for Environment and Sustainable Development (PACE-SD), with the aim of bringing the two work programs into closer alignment for the benefit of member countries. PACE-SD has an excellent track record in relation to work on climate change and related issues, including the development and application of a community-centered approach to vulnerability assessment and adaptation. An interim arrangement was to use an informal group of like-minded officers from the relevant Council of Regional Organisations in the Pacific (CROP) agencies to meet the technical backstopping needs of countries.

To quote the PACC annual report for 2009, the first year of operation: "Capacity training and backstopping support for the project in the first year of implementation has been in overdrive due to requests for support to the regional Project Management Unit (PMU) and partners. SPREP [Secretariat of the Pacific Regional Environment Program], UNDP [United Nations Development Programme], USP PACE, SOPAC [Pacific Islands Applied Geoscience Commission], SPC [Secretariat of the Pacific Community], IISD [International Institute of Sustainable Development], and SEI [Stockholm Environment Unit] have provided support. It is realised that such a support will need to be continued for the next year and beyond due to the fluidity in the situation regarding the case of Coordinators at present." This statement not only highlights the substantial and critical need countries have for targeted technical assistance, but also suggests that the available support is being provided in ways other than the envisaged "one-stop shop." In this regard, PACC and the region as a whole could have benefited had the original vision of the Regional Backstopping Facility developed into something analogous to the Caribbean Community Climate Change Centre.

Significantly, the second regional adaptation project in the Caribbean (see case study 6) helped to transform the Regional Project Implementation Unit, originally established under the first adaptation project, into a regional legal climate change entity, the Caribbean Community Climate Change Centre. Through its role as a center of excellence, the CCCCC coordinates the Caribbean region's response to climate change and helps the people of the Caribbean address the impact of climate variability and change on all aspects of economic development. It provides timely forecasts and analyses of potentially hazardous impacts of both natural and man-induced climatic changes on countries and their economic, social, and environmental systems, and it develops special programs that create opportunities for sustainable development.

Officially opened in August 2005, the CCCCC is the key node for information on climate change issues and on the region's response to managing and adapting to climate change in the Caribbean. The official repository and clearinghouse for regional climate change data, it provides climate change-related policy advice and guidelines to the CARICOM member states through the CARICOM Secretariat. In this role, the CCCCC is recognized by the UNFCCC, the United Nations Environment Programme (UNEP), and other international agencies as the focal point for climate change action in the Caribbean. It has also been recognized by the United Nations Institute for Training and Research as a center of excellence, one of an elite few.

*continues*

## Case Study 7: (cont.)

PACC could also have learned from the experiences of the Pacific Region Support Mechanism (PRSM) for the National Capacity Self-Assessment (NCSA) Project. The PRSM was established in 2004 to assist the NCSA teams in the 14 eligible PICTs. Founding members of PRSM were SPREP, UNDP, the United Nations University, and Australia's Department of Environment and Heritage. SPREP coordinated the PRSM activities. Under PRSM three subregional workshops were implemented to help countries with the inception of the NCSA. Participants used a self-assessment methodology, with advice and training provided during two in-country national workshops and through e-mail communications. This assistance and collaboration were reasonably successful, even though the NCSA Project provided no funding to the PRSM and leadership and coordination by the NCSA Project staff were limited. The PRSM not only increased the immediate impact of the NCSA outreach activities in the region, but also helped the region maintain technical support capacity.

Source: Hay 2009b.



Programme of SPC/SOPAC, the SPC has the regional mandate to support and strengthen disaster risk management in the region. In 2010 the inaugural CROP Executives Subcommittee Meeting for Climate Change Coordination was convened. It resulted in an agreement by all CROP agencies to renew efforts to work together to address regional climate change issues and support country efforts to address the impact of climate change. The subcommittee met again in November 2011.

The overarching policy guidance for SPREP's climate change program is the Pacific Islands Framework for Action on Climate Change (2005–2015), while the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005–2015 guides the region's disaster risk management efforts and the SPC/SOPAC's Disaster Reduction Programme. Both regional frameworks were approved by Pacific leaders in 2005 and were reflected in the Pacific Plan as key priorities under the Kalibobo Roadmap.

There are two notable consequences of the relatively flat leadership structure described above. First, with respect to a holistic response to climate change, including increased disaster risk and its links with development, no one organization has a clear leadership role. The result is frequent confusion over roles and responsibilities and hence inefficiencies at both regional and country levels. Second, the current regional institutional arrangements hamper an integrated approach to CCA and DRR. This is in contrast to the more harmonized approaches either long established or recently adopted in some other countries (UNISDR and UNDP 2011).

In recent years, the PIFS has played a role that increasingly links climate change with economic and social development in the region. It has developed advice on how forum member countries can access and oversee financial resources for managing climate change, and it has recently been strengthened to improve its ability to perform these tasks. However, its leadership, coordination, and advocacy roles are inadequate for ensuring improved support from regional organizations and more effective responses by countries. Based on the findings of an institutional and policy analysis of DRR and CCA in Pacific island countries, UNISDR and UNDP (2011) looked to the Caribbean to see if approaches there held some merit for the Pacific. The example of the CARICOM Secretariat (case study 8) suggests what the Pacific region needs if it is to have the required capacity at regional level to address climate change challenges successfully.

There are some encouraging developments now underway in the Pacific regarding pursuit of integrated approaches to DRR and CCA. A recent initiative is the joint Roadmap towards a Post 2015 Integrated Regional Strategy for Disaster Risk Management and Climate Change Adaptation and Mitigation. The document, endorsed at the 2011 Pacific Platform for Disaster Risk Management, outlines the steps to preparing an integrated regional strategy for disaster risk management and climate change adaptation and mitigation. Endorsement of this document is consistent with the efforts of many PICTs, and intentions expressed at some regional and global forums, to integrate DRM and climate change response efforts at national and subnational levels.

### Case Study 8: The CARICOM Secretariat as an Exemplar of Regional Leadership, Advocacy, and Action for Climate Change

The Caribbean Community and Common Market was established under a treaty signed in 1973 by the sovereign countries of Barbados, Jamaica, Guyana, and Trinidad and Tobago. Subsequently the eight Caribbean territories have also joined CARICOM. The CARICOM Secretariat is the principal administrative organ of the community. Its mission is to provide dynamic leadership and service in partnership with community institutions and groups, with the goal of a viable, internationally competitive, and sustainable community and with improved quality of life for all.

The main functions of the Secretariat include the following:

- Initiate or develop proposals for consideration and decision by the relevant CARICOM organs.
- Initiate, organize, and conduct studies.
- On request, provide services to member states on community-related matters.
- Collect, store, and disseminate relevant information to member states.
- Assist CARICOM organizations in developing and implementing proposals and programs.
- Mobilize resources from donor agencies to assist in implementing CARICOM programs.

In 1994, Barbados hosted the Global Conference on the Sustainable Development of Small Island Developing States. The resulting Barbados Programme of Action focused on sustainable development through adaptation to climate change impacts. Soon after, the Organization of American States and CARICOM jointly organized a series of national and regional workshops to facilitate maximum stakeholder consultation on climate change issues. The result was a proposal for the Caribbean Planning for Adaptation to Climate Change project. This major initiative ran from 1997 to 2001, overseen by an advisory committee chaired by CARICOM. Three major regional adaptation projects have followed: Adapting to Climate Change in the Caribbean, Mainstreaming Adaptation to Climate Change, and Regional Monitoring and Evaluation System for Disaster Risk Management and Climate Change Adaptation in the Caribbean Tourism Sector. The names of the projects are themselves indicative of a rapid maturation in regional responses to climate change under the guidance of the CARICOM Secretariat, and they highlight how the Secretariat balances political and technical leadership roles.

Source: Adaptation Partnership 2011



At a national level, for instance, Tonga recently prepared the Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management. Funding came from the Global Environment Facility (GEF) through the United Nations Development Programme; from the African, Caribbean, and Pacific Group of States–European Union Natural Disaster Facility through SOPAC; and from SPREP. A joint team from SOPAC and SPREP provided training, facilitation, and technical assistance throughout the process of developing the plan. Similar multiagency assistance has been provided to other countries, including the Marshall Islands, the Cook Islands, Tuvalu, the Federated States of Micronesia, and Vanuatu, many of which have completed, or are close to completing, JNAPs. Through its regional implementation of the GEF-funded Community-Based Adaptation Programme, a global initiative, as well as its own Community-Centred Sustainable Development Programme, UNDP is also taking a multiagency approach to implementing DRR and CCA at the community level.

Several NGOs and communities have also taken substantial steps toward a more integrated approach to planning and implementing CCA and DRR (see case study 9). Gero, Méheux, and Dominey-Howes (2011) evaluated several community-based integrated DRR and CCA initiatives in Fiji and Samoa and identified donor requirements, partner organizations, and underlying policy frameworks as barriers to an integrated approach to implementing DRR and CCA at this level. They also highlighted the benefits of such an integrated approach, including reduced duplication of effort, enhanced aid effectiveness, sharing of relevant experience and lessons learned, and delivery of well-targeted and more holistic assistance that is easier to align with the management of health, nutrition, and disease risks as well as responses to other livelihood issues. Facilitating a dialogue between DRR and CCA practitioners also serves to initiate, develop, and sustain the good relationships that are becoming a crucial part of the institutional architecture in the Pacific.

## Case Study 9: Examples of Community-Based CCA/DRR Initiatives

The following are among the community-based initiatives that integrate DRR and CCA:

### WWF Coastal Resilience–Climate Witness Toolkit

- Raises awareness of climate change impacts and appropriate community-scale adaptation measures by linking local indigenous knowledge to scientific knowledge as an entry point
- Adapts methods from participatory techniques developed by WWF South Pacific in community conservation and natural resource–management projects
- Has been used to improve community coastal mangrove ecosystem management in Fiji

Source: WWF South Pacific Programme 2009.



### UNDP/SGP [Small Grants Program] Samoa Community-Based Adaptation

- Integrates community-focused climate change education and awareness and on-the-ground implementation of coastal protection measures
- Links information and expertise from local, national, regional, and global actors and stakeholders
- Piloted activities for shoreline protection in Fasitootai Village

Source: UNDP, n.d.



### Solomon Islands Red Cross Vulnerability and Capacity Assessment

- Involves communities in addressing their vulnerability by helping people to identify, prioritize, and implement risk reduction actions
- Through participatory techniques, helps communities to understand the implications of climate change for disaster risks that they face and to identify adaptation options
- Applies this approach through the Community-Identified Climate Adaptation in Temotu project on Pileni Island as part of the Preparedness for Climate Change Programme linking National Societies to climate change–related stakeholders in the Solomon Islands

Source: Red Cross/Red Crescent Climate Centre 2011.



### USP Climate Change Adaptation in Rural Communities

- Uses a participatory methodology that bases climate change adaptation in the broader framework of sustainable development
- Approaches CCA through a DRR lens: critical problems related to climate extremes at the community scale are addressed first, before scientific knowledge is applied to add a specific climate risk element
- Has piloted this approach during phase 1 of the project in the water and coastal management sectors in six communities in rural Fiji; will apply the same approach in six other communities in Fiji during phase 2

Source: Aalbersberg et al. 2010.



## Effectively managing disaster and climate risks requires further mainstreaming of DRR and CCA in development.

Two regional frameworks, the Pacific Islands Framework for Action on Climate Change 2005–2015 (PIFACC) and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005–2015 (RFA), consider management of natural hazards as a cross-cutting issue, and specifically as a cross-sectoral development issue.

This conception means that a broad range of **stakeholders and players must cooperate and coordinate their activities** in order to effectively reduce climate and wider disaster risks to sustainable development at **national and subnational levels**. Both frameworks therefore include strategies designed to mainstream climate change and natural hazard risk management into national planning and budgeting processes, as well as to improve sector- and community-level planning and decision making to ensure that responses to climate and other risks are systematic and coordinated.

While mainstreaming is a complex and broad-ranging undertaking, a recent assessment (UNISDR and UNDP 2011) reports considerable progress in this area, especially in relation to implementing DRM National Action Plans (NAPs). While NAPs are an important tool for promoting mainstreaming, the mainstreaming process itself should lead to management of natural hazards being incorporated in subnational and sector/agency action plans—right down to the community level—in an integrated manner (Pacific Disaster Risk Management Partnership Network 2009).

Thus a substantial number of national planning instruments, including national development strategies and relevant sector policies and plans, now acknowledge the need to consider DRR as integral to development planning and implementation. On the other hand, inclusion of DRR in national budgetary processes remains very limited. In many countries, there are well-developed policies and plans related to implementing DRR at the local (provincial, community) level; this situation has come about principally through national legislation and DRM action plans. But generally there is only limited extension of DRR planning into relevant sectors.

The situation regarding CCA is somewhat different. Formal and anecdotal evidence (see Nakalevu 2010)

indicates that many individuals working on climate change adaptation at the technical level are not sure what procedures and activities to undertake when mainstreaming CCA. To date the approach to mainstreaming has lacked consistency, due in part to the absence of a clear and practical methodology. Most CCA mainstreaming efforts have focused on the national planning level, with very little attention given to subnational levels or to sectors. This situation has arisen despite the guidance on incorporating CCA into development offered by SPREP's 2000 report (Campbell 2000).

In preparing a mainstreaming methodology and associated tools under the PACC Project, King (2010) found the strategies and mainstreaming steps recommended in the SPREP report to be sound. It could be argued that the 2000 guidelines had limited uptake, and hence impact, because of their top-down approach—they targeted policymakers and development planners. At the time, climate change was perceived as an environmental rather than development issue, and few government officials responsible for preparing and implementing development policies and plans would have been committed to the mainstreaming process and outcomes. It might have been more appropriate to target individuals with more expertise and experience

<p><b>DRM National Action Plan Provisional Indicative Implementation Programme (PIP)</b> Vanuatu (NAP+PIP); Marshall Islands (NAP+PIP), Papua New Guinea</p>	<b>NAP +</b>
<p><b>National Adaptation Plan of Action</b> Kiribati, Samoa, Solomon Islands, Tuvalu, Vanuatu</p>	<b>NAPA</b>
<p><b>Joint DRM/CC National Action Plan Provisional Indicative Implementation Programme (PIP)</b> Tonga, Cook Islands (JNAP + PIP), Niue, Micronesi Fed. Sts., Fiji, Tuvalu, and Marshall Islands (to commence)</p>	<b>JNAP</b>
<p><b>Policies and Plans for DRM, CCA and Development</b> RFA, PIFACC, Pacific Plan</p>	<b>Regional</b>

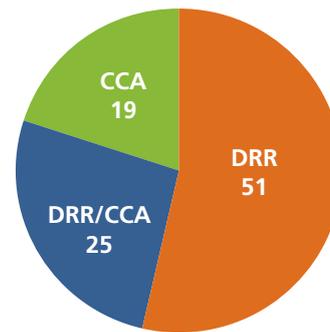
**Figure 3.7. National and regional DRM and CCA policy and planning instruments developed in the Pacific region since 2005.**

in climate change adaptation. However, there were few such people working in PICTs in the early 2000s. Since then, new mainstreaming guidelines commissioned by PACC have been completed. There are now more individuals undertaking CCA in PICTs; they are armed with greater technical knowledge than in the past, and have more motivation and formal responsibility to ensure success of the mainstreaming efforts.

King notes that the main value added by the new guidance is to introduce a variety of tools and approaches elaborated or developed since 2000. Rather than presenting a voluminous compendium of information, he provides an overall framework while pointing the reader to online and other resources. For readers with slow internet connections, provisions have been made under the PACC Project to provide resources on a CD-ROM. Unfortunately, the decision to focus on an “overall framework” results in guidance material that is overly generic and that fails to address the specifics of mainstreaming in a Pacific context. It also fails to support, in a meaningful and practical way, the more recent moves toward an integrated approach to CCA and DRR. Global guidance, such as that provided by Llosa and Zodrow (2011) and Harris and Bahadur (2011), could add increase the learning from initiatives in the Pacific, such as the Mainstreaming Disaster Risk Management and Adaptation to Climate Change into National Development Planning project currently being implemented by UNDP in selected PICTs.

### **Effectively managing disaster and climate risks requires more effective implementation of risk reduction measures.**

A 2011 stock-take of multicountry DRR and CCA initiatives by the United Nations International Strategy for Disaster Reduction (UNISDR) Asia-Pacific revealed that the Pacific region had 95 DRR, CCA, and integrated DRR/CCA projects and programs, 85 percent of which had first been implemented in 2006 (figure 3.8).<sup>1</sup>



**Figure 3.8. Number of regional DRR, CCA, and DRR/CCA initiatives implemented in the Pacific islands region, 1991–2010. The total number of initiatives is 95.**

Source: UNISDR 2011.

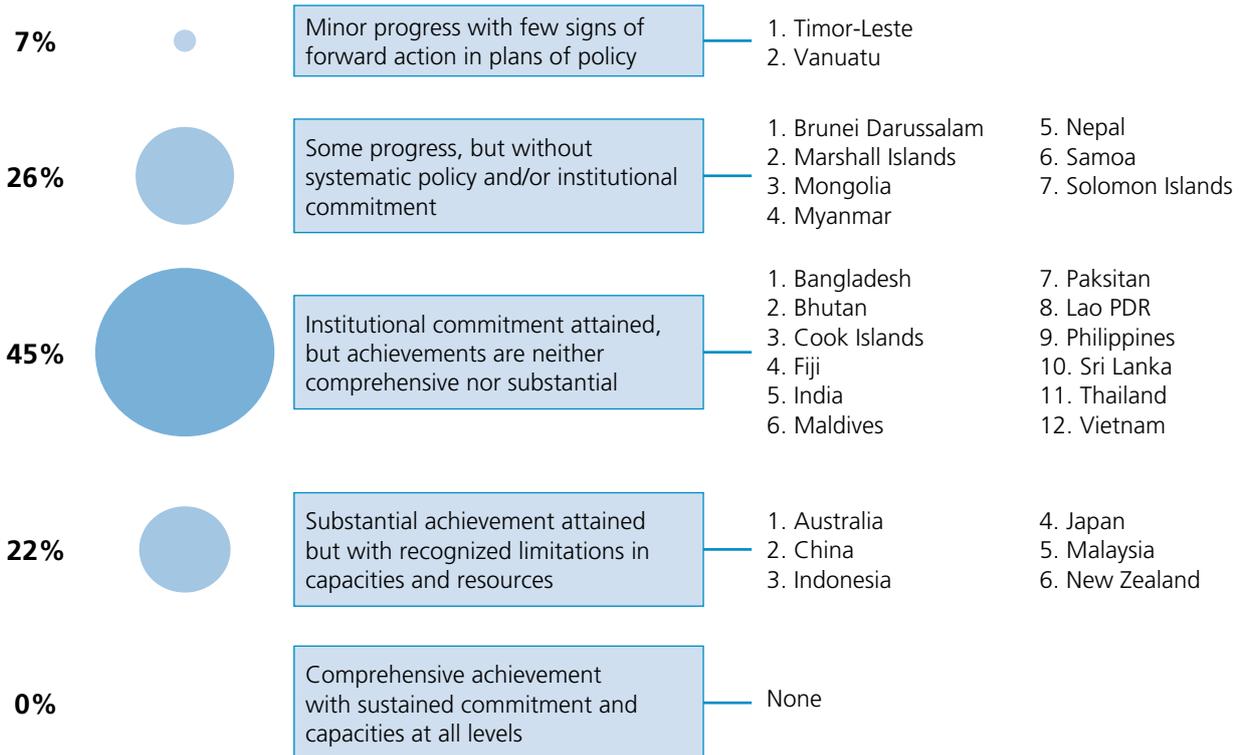
One impediment to effective implementation of risk reduction measures is that **DRR and CCA remain largely project oriented, with little sustainable or strategic integration into development.** The quantity and quality of DRR and CCA implementation has significantly increased since the “Not If But When” Policy Note was published in 2006. The mid-term review of implementation of the PIFACC (Hay 2009b) found that a lack of formal monitoring and reporting procedures made it difficult to judge its overall impact. The available evidence suggests, however, that the PIFACC has been far less influential than it ought to have been, mainly because its approach has been predominately project based.

A country self-assessment of the progress since 2005 in implementing the Hyogo Framework for Action (HFA)—a framework closely aligned to the RFA—found that Priority 4 (“reduce the underlying risk factors”) achieved the lowest average score of all the priorities. This is despite concerted efforts and committed investments aimed at linking DRR and CCA. Most of these initiatives are still in their early stages. Of the six PICTs included in the assessment, all achieved the median rating (institutional commitment attained). However, achievements do not appear to have been substantial (figure 3.9).

Since 2006, considerable experience has been gained regarding how to effectively implement risk reduction measures. The Kiribati Adaptation Program (KAP) is one of the longest-running integrated programs in the region, and one from which many lessons have been learned (case study 10).

Other initiatives are also generating important experience in the Pacific. These include the use

<sup>1</sup> “Multicountry” initiatives had to involve at least two countries. The number of initiatives would likely have been significantly higher if single-country projects had been included. The screening process may also have excluded community-based projects undertaken by civil society or local actors (UNISDR 2011).



**Figure 3.9. Summary of progress toward HFA Priority 4 (“reduce the underlying risk factors”) in the Asia-Pacific region since 2005. Although there have been concerted efforts and committed investments aimed at linking DRR with CCA, most of these are still in early stages.**

Source: UNISDR 2011.

### Case Study 10: The Kiribati Adaptation Program



Photo: Carlo Iacovino

KAP is a three-stage program with the following objectives:

- **KAP I: Preparation (2003–2005/2006)**—mainstreaming adaptation into national planning
- **KAP II: Pilot implementation (2006–2011)**—implementing pilot adaptation measures in coastal protection and water resources management
- **KAP III: Expansion (2011–2015)**—scaling up best practices and successful investments from phases I and II

Many lessons were learned from the recently completed KAP II, including these:

- A focused project design, targeting a few sectors and involving select implementing agencies, is required where countries have limited project management capacity.
- Commitment to climate change adaptation at a high level of government is integral to project success.
- Targeted technical capacity building in sector ministries has sustainable outcomes past the life of the project itself.
- Thorough community consultation and engagement is fundamental to the success of technical interventions. Capacity building in this regard may be required where implementing agencies do not have a strong history of participatory development.
- Monitoring and evaluation frameworks and processes need to be straightforward and integrated with existing indicators in sector ministries, where possible.

Source: Authors.



of physical planning to reduce the vulnerability of coastal communities in Samoa (case study 11); an initiative to improve the resilience of school buildings in Nauru, which has provided important lessons in climate-proofing of infrastructure (case study 12); and the efforts of SPC to align policies and plans in agriculture and rural development, which offers lessons for alignment of DRR and CCA (case study 13).

### Effectively managing disaster and climate risks requires better monitoring and evaluation.

There has recently been considerable activity, both internationally (e.g., Villanueva 2011) and regionally (e.g., SPREP 2011), to address the region's shortcomings in monitoring and evaluating DRR and CCA interventions. Currently the M&E conducted under the Pacific Disaster Risk Reduction and Disaster

#### Case Study 11: Land Use Planning to Reduce Disaster- and Climate-Related Risks in Samoa

Samoa has led the Pacific in the use of physical planning to reduce the vulnerability of coastal communities and infrastructure to natural hazards. This effort has taken place within the wider context of development planning, including land use planning and disaster risk reduction. The initiatives had their origin in a project (the Samoa Infrastructure and Asset Management, or SIAM, project, funded by the World Bank) designed to ensure that Samoa's transport and coastal infrastructure assets were economically, environmentally, and socially sustainable and managed by an effective partnership of all stakeholders.

Preparation of a Coastal Infrastructure Management (CIM) Strategy was an important first step. This was undertaken in 2000, as part of the development of a national-level policy for the management of coastal infrastructure and local implementation plans. The strategy recognizes that, for all communities, agencies, and other stakeholders to be resilient, they must be adaptive, responsive, and quick to recover.

The strategy approaches the management and use of land and other resources through a partnership between government and villages, while also highlighting the importance of education, awareness, monitoring, and evaluation. Since its adoption by the cabinet in 2001, the strategy has become well entrenched in a wide range of planning and management frameworks. It is now a foundation document for most of the agencies and stakeholders active in coastal management in Samoa.

Consistent with the strategy, by 2007 all 41 districts of Samoa, covering 283 villages, had prepared CIM Plans. Over 7,000 people were directly consulted in order to reach an agreement between the government and communities on how to address coastal erosion, flooding, and landslides. The CIM Plans are not statutory instruments. However, each plan was formally signed by village representatives and by both the chief executive officer and the minister of the Ministry of Natural Resources and Environment, signifying the government's commitment to the plans. The plans themselves include both "hard" and "soft" interventions, with the former being dominant. For example, of the 1,720 interventions to be undertaken at the village level, 280 involve replanting and riparian management. All interventions combine science, technology, and local knowledge.

A further instance of innovation was the updating of the National CIM Strategy in 2011. This came as part of renewed efforts to implement the CIM Plans in light of growing concerns about risks to coastal communities and infrastructure. The strategy now ensures a whole-of-catchment approach. In the small-island context relevant to Samoa, this is usually described as a "ridge-to-reef" approach and is now recognized as being fundamental to integrated resource and hazard management in Samoa. Importantly, the updated strategy now considers the full range of hazards for communities and infrastructure in order to address such issues as inland flooding and watershed management, particularly in light of their effect on village safety, water quality, and coastal infrastructure. The updated strategy also provides a clear link between land use policy and planning, emergency management, and hazard reduction.

There has been a delay in implementing the plans in a comprehensive manner, principally due to a lack of funding; village level physical works alone were recently costed at over US\$ 16 million. Recently, the UNDP-supported Sustainable Community Development Programme has been piloting CIM Plan implementation in 4 of the 41 districts. Within the context of the CIM Plans, the program has prepared more detailed and comprehensive Sustainable Village Development Plans for 25 villages. Projects financed under the Pilot Programme Climate Resilience (PPCR) and the Adaptation Fund were approved in 2011. These will implement revised CIM Plans in 16 and 25 districts, respectively, thereby achieving a whole-of-country approach. The revised CIM Plans will be implemented in conjunction with other related planning frameworks, such as Sustainable Management Plans and Village Disaster Risk Management Plans.

Sources: Daly et al. 2010; Hay and Wedderburn 2011.



### Case Study 12: Climate-Proofing Infrastructure

An excellent example of the success in climate-proofing infrastructure is the reconstruction and refurbishment of school buildings in Nauru. Between 2007 and 2010, four of the Nauru Secondary School's double story teaching blocks were totally reconstructed, and three of its existing buildings were refurbished (AusAID 2010). This was the largest infrastructure project in Nauru in 18 years. During the peer review of the proposed infrastructure works, the need to account for climate change in the project's design was identified. Climate change was considered along with other key cross cutting issues, such as gender and access for the disabled. Subsequently, climate-related risks and concerns were assessed as part of an environmental impact assessment undertaken to inform project design. A climate change risk matrix was also included in the environmental management plan for the project.

As a result of these initiatives, the final design for the buildings included measures to reduce their vulnerability to projected changes in climate as well as natural disasters. The design also included measures to ensure the works and buildings would not adversely affect the local environment. Windows were selected to resist winds of a category 4 cyclone, external wall structures were reinforced through block work, building materials were chosen to withstand changes in solar radiation, and low energy lights and fans were installed.



### Case Study 13: Improving Alignment and Coordination of Policies, Plans, and Actions

There is a need for increased coherence between regional and national policy frameworks, institutions, resourcing, and implementation of DRR, CCA, and socioeconomic development. The agricultural and rural development policies cascading from the Pacific Plan, directly and indirectly, to the national level offer a lesson in how this coherence might be achieved. The Pacific Plan encourages every PICT to formulate a National Sustainable Development Strategy where this or an equivalent instrument does not yet exist. Agricultural and rural development policies are incorporated into the strategy. The PIFS was mandated to assist with this task through such means as technical assistance. This National Sustainable Development Strategy, or its equivalent, provides a direct link from the Pacific Plan to the national governments.

The indirect link with the Pacific Plan is through SPC, which is then linked to both the national and subnational levels through the bilateral Joint Country Strategy (JCS). The JCS discusses in detail the national and subnational projects that both parties have agreed to implement. Agreement by both parties is supported by relevant policies and resources. The latter can be national resources and those from development partners and donors. The relevant policies include those that have been mainstreamed into the national plans on the basis of mandates from forum leaders.

Since the regional mandate for food security initiatives rests with SPC, risks to food security resulting from climate change are already incorporated into the JCS. Implementation is facilitated as SPC directs its substantial resources and expertise, and utilizes its bilateral and global partnerships. Stakeholders at the national and subnational levels benefit substantially from this arrangement.

DRR and CCA can be built into this existing mechanism, allowing a more structured and coordinated approach. The mechanism can be further strengthened if, through existing collaborative arrangements, SPREP is made a trilateral partner in the JCS (with SPC and the relevant country the other partners). SPREP may need to supplement its substantial intellectual resources and to strengthen its technical assistance capabilities in order to contribute effectively in the collective delivery of services to the national and subnational stakeholders.

With this additional capacity in place, the SPREP Council can direct DRR and CCA support to national governments, with SPREP facilitation. SPREP can then use its partnership with SPC to engage with countries needing such assistance. Forum leaders and the SPREP Council, in an integrated manner with SPC climate change programs, will be able to monitor and assess performance in DRR and CCA, including through the mechanism of the Pacific Plan annual progress reports.

Source: Personal communication with K. Tavola, independent consultant, Fiji, 2011.



Management Framework for Action (SOPAC 2009) leads the region in assessing the extent of activities related to DRR and CCA. But even these **efforts focus on M&E of inputs and outputs, rather than outcomes and longer-term impacts.**

Given the importance of community-based DRR and CCA for the region, the results of some village-level interventions in Samoa are significant—not only in the reductions in vulnerability they achieved, but also in their use of the Vulnerability Reduction Assessment (VRA) tool (Droesch et al. 2008) to gauge effectiveness. The VRA methodology is based on key steps for designing adaptation projects, as laid out

in the adaptation policy framework developed by UNDP. The VRA is itself based on a similar approach, the Threat Reduction Assessment methodology, that is commonly used in biodiversity projects.

VRA was used to assess the success of initiatives in 11 villages in Samoa. Six of 11 villages decreased their VRA scores in one year, indicating a decline in their vulnerability. This decline was largely achieved by an increase in adaptive capacity. Repeated application of VRA in the 11 interventions showed where and why some interventions were successful and others were not, leading to lessons learned (Petrini 2010).

Photo: Olivia Warrick



## 3.3 The Way Forward: Overcoming Remaining Barriers

There are myriad challenges confronting successful implementation of DRR and CCA. These challenges have been recounted in recent publications, reports, reviews, and assessments covering the period from 2006 to the present day. A first-order inventory of the challenges identified in the relevant literature shows that, to varying extents, all of the challenges impede the effective integration of DRR, CCA, and development. Some challenges are strategic in nature while others are operational. Together they can be classified into three broad categories that identify one of the following needs:

- **1. Grounding of risk considerations in development**, to facilitate integration of DRR and CCA, and integration of DRR/CCA in development, in order to achieve resilient development and livelihoods.
- **2. Robust and effective political authority, leadership, and accountability** to underpin effective implementation and sustain outcomes.
- **3. Strong coordination and partnerships**, to ensure cooperation and collaboration, at all levels and between all actors and stakeholders, and to facilitate appropriate data sharing, communication, and decision making.

In the 16 relevant studies that were reviewed (listed in appendix 5 in an order corresponding to table 3.3), many of the same challenges and themes recur, across scales and levels and within the three broad areas outlined above. Table 3.3 summarizes the findings.

**Table 3.3. Summary of literature review on DRR/CCA needs and challenges in PICTs and the region.**

Challenges	References																Category
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
No incentive to reduce risks as long as donors respond generously to disasters irrespective of prevention culture			X	X			X										1
Prevention measures may not be visible for many years and may compete with other priorities (short-term domestic, etc.) dictated by others; few rewards for early action and proaction			X		X		X				X						1
Donors face strong pressure to respond rapidly to disasters, and have to mobilize funds outside normal budgets (Good Samaritan's Dilemma)			X				X										1
DRR and CCA have not been adequately mainstreamed (or factored) into national planning and processes (or into public investment planning); risk of "mainstreaming fatigue"	X		X	X	X		X				X	X	X	X	X		1
Risk management efforts undermined by virtue of their location in junior/weak ministries with limited authority/influence			X		X		X									X	1
Lack of intragovernment coordination and information sharing related to DRR and CCA issues (both whole of government and whole of country)—e.g., drought risk		X	X		X	X							X				3
Lack of sound national enabling environment encouraging risk reduction and adaptation behavior (limited cooperation between development/DRR/CCA)			X	X			X				X	X	X				1
Lack of awareness (of regional and national DRR and CCA policies and plans) has implications for behavior change, implementation, and enforcement	X			X		X	X				X	X	X				3

*continues*

Table 3.3. (cont.)

Challenges	References																Category
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Inadequate budgetary provisions and implementation for DRR policies and plans wherein “words are in place but there is a lag in action” (additional resources for DRR and CCA should be used to strengthen risk governance capacities and could leverage further resources for CCA to address underlying risk drivers and residual risks)	X			X	X	X							X				2
Sustaining public awareness, particularly of low-frequency disasters such as earthquakes, and expanding awareness beyond high-risk areas						X											3
Inadequate support for risk reduction tools, legal and technical instruments, and compilation of best practices and lessons learned (especially in relation to mainstreaming DRR/CCA into national and sector policies, plans, and processes and including DRR/CCA in regulations and codes)							X					X		X			3
Inadequate exposure of national risk experts to external practice							X										2
Mandates for DRR and CCA coordination in separate institutions, with DRR tending to be humanitarian led and CCA environment led		X	X	X							X	X			X		1
Inadequate integration of existing policy and strategy frameworks such as NAPs, NAPAs, and Poverty Reduction Strategy Papers, with National Sustainable Development Strategies, plans, and regional frameworks		X	X	X							X	X	X		X		1
Limited coordination and collaboration between DRR and CCA institutions—possible duplication and lost opportunities for synergies (at international, regional, and national levels)		X		X								X	X		X	X	3
Investing institutional and administrative responsibility for DRR and CCA at the highest possible level in government for necessary political authority, resources to influence development policy and plans, and available risk management options		X	X	X	X		X					X	X		X	X	1
Many DRR and CCA actors (governments, communities, donors, development partners) require “very significant” levels of coordination and collaboration to ensure appropriate, cost-effective (soft and physical investment) activities and sustainable outcomes	X	X	X	X					X		X	X	X	X	X	X	3
Shifting the emphasis from disaster preparedness and response to risk reduction and development, which requires effective integration of disaster risk considerations into development policies, planning, and programming at all levels	X		X	X	X		X				X	X		X	X		1
Shifting the emphasis from “project” funding (reactive and short term) to “program” funding (proactive, innovative, lasting)—i.e., scaling-up			X		X							X		X			2
Shifting the emphasis from mandate-driven outputs to development-driven outcomes to achieve greater harmonization, coordination, and cooperation		X							X	X		X	X			X	1
Shifting the emphasis of social protection from ex post to ex ante mechanisms in order to more effectively target the most vulnerable groups				X	X				X	X							1
Lack of a coordinated strategy for capacity building; connection between DRR and CCA in capacity-building activities; sustainable capacity building; behavioral change at all levels	X		X						X	X		X	X		X	X	3
Bridging between levels (regional->national->local->community and the private sector); need for improved coordination and better relationships (top-down flows of resources for implementation have had little to no impact where most risk occurs and is felt most)		X							X	X	X	X	X		X		3

## 3.4 Fostering Resilient Development

The many challenges involved in successfully implementing CCA and DRR—as well as the opportunities to improve their effectiveness regionally, nationally, and at the community level—have been discussed above. The following list describes important elements needed for progress toward resilient development:

- **Prerequisites** to progress include a strong enabling environment for DRR and CCA, with predictable resource allocations.
- Progress depends on the right **process**: DRR and CCA should be integrated into development policy, planning, and implementation, using a programmatic approach wherever possible and appropriate.
- The approach should be **proactive**, with an emphasis on risk reduction (i.e., prevention) rather than reactive responses.
- The approach needs to be **present oriented**—focused on managing current risks and sources of vulnerability—as the best preparation for building resilience to future pressures.
- The approach must be **practical**, delivering tangible improvements in resilience rather than stopping at policymaking, planning, and capacity building.
- The approach requires setting **priorities**, recognizing that resource limitations do not allow all risks to be managed.
- The approach must invite **participation**, involving all stakeholders in a meaningful manner, as early in the process as good practice suggests.
- **Partnerships** are key: progress requires whole-of-community, whole-of-government, and whole-of-country approaches that include civil society and the private sector, and that foster effective regional cooperation and coordination.
- **Political leadership** is key: high-level advocacy and leadership are critical to success, whether the context is the village, the country, or the region.
- Assessing **performance** is key: it provides opportunities to learn, build knowledge, and scale up successful interventions and modify those that are underperforming.

Of these 10 elements, four that are especially important are further elaborated below.

## Prerequisites

An important dimension of the enabling environment is ensuring that financial resource allocations are targeted, well timed, and predictable. Performance budgeting is now encouraging greater efficiency, accountability, and transparency. Budget appropriations to spending ministries no longer comprise separate budget lines for numerous different classes of inputs, such as stationery supplies or fuel for vehicles; instead, financial resources are allocated for outputs and sub-outputs. When appropriations are made by output, each ministry identifies and publishes performance indicators and targets as part of the approved estimates. Opportunities to incorporate national environmental concerns, including climate change considerations, into these main components of the economic planning and

development cycle or process can be identified and taken advantage of.

A move to performance-based budget preparation is normally associated with a parallel reform in budget execution, and spending ministries now have more freedom in how they use budget funds to meet their assigned levels of output, while still maintaining high levels of accountability for spending taxpayer money.

Two examples (case study 14 and case study 15) illustrate the importance of a robust mechanism for funding DRR and CCA, one involving the national level and one involving an international mechanism for resource mobilization. Another example (case study 16) outlines a mechanism for integrating climate finance into national policy, planning, and budgetary processes.

### Case Study 14: Targeted and Predictable Funding for CCA and DRR Initiatives in Samoa

Funding levels for climate change and related initiatives, including DRR, in Samoa have escalated from US\$0.8 million in 2008–2009, to US\$2.4 million in 2009–2010, to US\$2.75 million in 2010–2011, to US\$26.0 million in 2011–2012.

Development expenditure in Samoa is almost exclusively donor funded. Rather than being linked to specific outputs, such expenditure is recorded solely by project. Two recent initiatives are being undertaken to help increase the predictability of this donor funding. First, Samoa is working with some donors to implement direct budget support. For example, in the future the EU will be providing 85 percent of its assistance in the form of sector budget support. Second, Samoa has initiated the process of establishing a National Climate Change Adaptation Trust Fund, which will harmonize the management and use of the funds received from diverse sources while also ensuring the effectiveness and sustainability of the assistance provided by development and other partners.

Source: Government of Samoa 2011



### Case Study 15: GFDRR Support for DRR and CCA in the Pacific

The Global Facility for Disaster Reduction and Recovery (GFDRR), established in 2006 by major donors, the UN, and the World Bank, is a partnership with a mission to mainstream DRR and CCA in country development strategies by supporting a country-led and -managed implementation of the HFA. GFDRR has three main business lines to achieve its development objectives at the global, regional, and country levels:

- Track I: Global and Regional Partnerships
- Track II: Mainstreaming Disaster Risk Reduction in Development
- Track III: Standby Recovery Financing Facility for Accelerated Disaster Recovery

GFDRR continues to evolve as an integral part of the emerging global CCA financing system. It now provides a global humanitarian grant-financing mechanism for DRR and CCA, one that is a stable and efficient, and that has active field presence and unique operational capabilities to strategically mobilize and allocate expert and financial resources in real time. Since its inception, GFDRR's country work has consistently, and successfully, taken an integrated climate risk management approach, fostering DRR and CCA links at the country level, within the World Bank, and with external partners. This success has been achieved by strategically leveraging just-in-time seed funding, targeted investments, and global expertise.

The focus areas of GFDRR's work program for DRR/CCA are as follows:

1. Upstream integration of climate risk management in assistance strategies and national development plans, investment programs, and postdisaster recovery
2. Capacity building for weather and climate services, including improving National Hydro-Meteorological Services and early warning systems, which are critical for core CCA and DRR analysis and planning
3. Multihazard vulnerability and risk assessment and probabilistic economic modeling
4. Innovative climate and disaster risk financing and transfer

*continues*

### Case Study 15: (cont.)

In partnership with SOPAC, GFDRR contributed to the production of a disaster and climate variability regional stock-take report in the Pacific, as well as DRR assessment reports in seven countries in the region: Fiji, Kiribati, the Marshall Islands, Papua New Guinea, the Solomon Islands, Timor-Leste, and Vanuatu (World Bank 2009a, 2009b). The detailed country assessments helped identify major gaps in countries' preparedness for DRR/CCA and opportunities for investment. The project contributed to the merging of DRR and CCA agendas under a single institution in some countries, such as Vanuatu and the Solomon Islands. GFDRR also supports the Pacific Catastrophe Risk Financing Initiative.

The GFDRR stock-take noted the decline of hydrological networks and hence in the quality of available data in the region. The stock-take also found that the baseline hazard and risk information in the Pacific is too rudimentary to derive the flood risk assessments necessary to underpin meaningful flood management strategies. In response, GFDRR is funding the Integrated Flood Management in the Pacific–Nadi Flood Pilot. It will strengthen the capacity of the Fiji Meteorological Service in flood forecasting and warning, review the existing hydrological data for flood modeling in Nadi, and provide strategic guidance for more efficient services. These urgent needs were identified during the 2009 postflood assessment. The objective of the project is to pilot an integrated flood management approach based on a sound scientific flood risk assessment in the Nadi basin as a measure to reduce disaster risk that can be replicated in other watersheds in Fiji, as well as in other Pacific countries. Project activities include acquisition of the necessary baseline data and development of a state-of-the-art flood inundation model for the greater Nadi area, from which flood hazard and flood risk maps will be produced. These will inform the identification of effective flood mitigation measures and contribute to knowledge urgently required to underpin the Nadi Basin Flood Management Plan. This knowledge will be disseminated through national and regional workshops. The project budget includes US\$860,000 from GFDRR, plus cofinancing of US\$569,000.

While the project is designed to achieve results independently of inputs from other projects, its major strength lies in its being closely implemented with two other regional initiatives: the GEF-funded Pacific Integrated Water Resource Management project and the EU-funded Pacific Hydrological Cycle Observing System project. This synergy strengthens the project contribution to the overarching development goal of reducing flood losses in Fiji and in the Pacific region.

Source: Authors.



### Case Study 16: Climate Public Expenditure and Institutional Review: A Key Tool

New and additional international finance is becoming available to assist countries' efforts to respond to climate change and disaster risk. It is important to ensure that these financial flows are integrated into national policy, planning, and budgetary processes. The challenge is to secure a comprehensive, cross-government approach that delivers a coherent national response to climate change, involving both the public and private sectors. Such an approach has been termed a climate fiscal framework.

A first step in developing a climate fiscal framework is to assess how climate change–related expenditures are integrated into national budgetary processes. This assessment is called a Climate Public Expenditure and Institutional Review (CPEIR). Similar types of analyses are already well established, including other forms of public expenditure and institutional reviews. These reviews typically address (1) the macroeconomic context; (2) budget planning and execution; (3) the institutional framework; and (4) the issue of fiscal decentralization.

The CPEIR analysis must be set within the context of the national policy and institutional arrangements that exist to manage the response to climate change and disaster risk. Such an analysis needs to take account of three key spheres: policy development, institutional structures, and financial management. These three key elements provide an essential governance framework for effective actions for resilient development. Specifically, the CPEIR needs to undertake the following:

- An assessment of current policy priorities and strategies as these relate to climate change
- A review of institutional arrangements for promoting the integration of climate change policy priorities into budgeting and expenditure management
- A review of the integration of climate change objectives within the budgeting process, including as part of budget planning, implementation, expenditure management, and financing

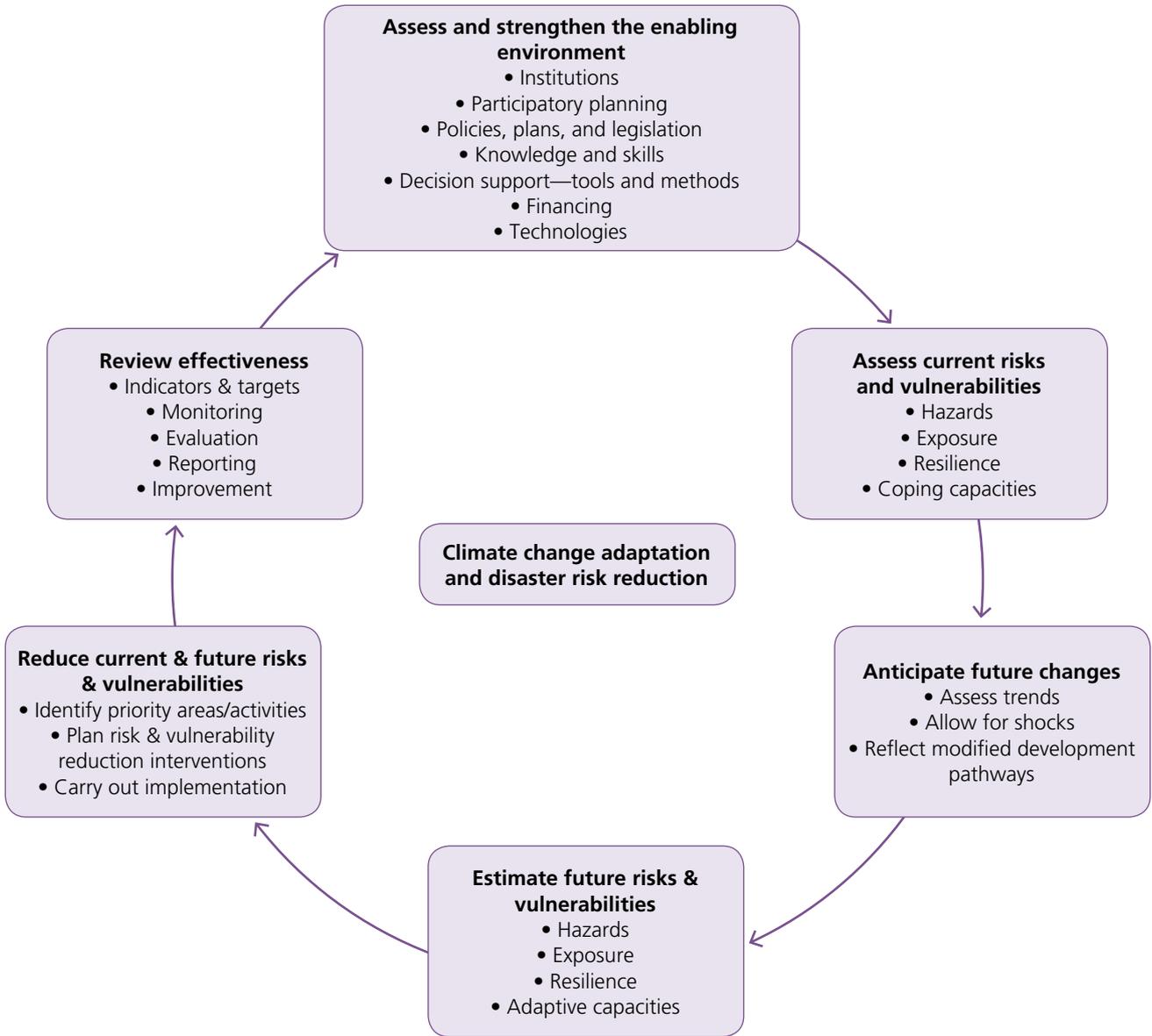
CPEIRs have already been undertaken in Nepal and Bangladesh, with one currently underway in Samoa.

Source: Bird et al., 2011.

**Process**

CCA and DRR are much more than discrete measures to reduce risk. They are part of a process that includes strengthening the enabling environment, assessing and managing current and anticipated

climate risks and vulnerabilities, and reviewing and improving actions’ effectiveness (see figure 3.10). The Cook Islands has embarked on a development-focused program that will integrate DRR and CCA interventions at island and community levels (see case study 17).



**Figure 3.10. Good practice approach to preparing for and implementing DRR and CCA.**

Source: Authors.

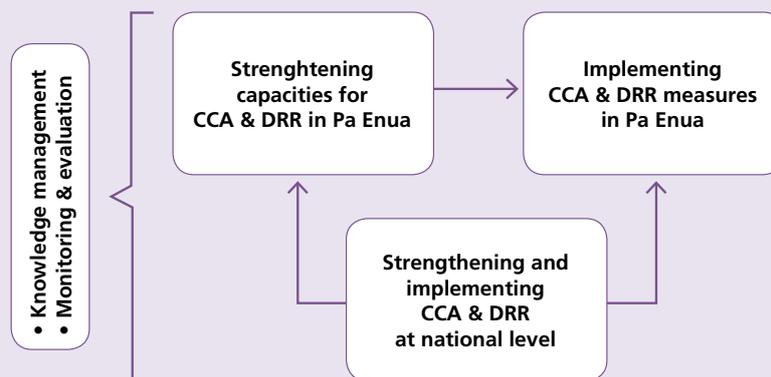
### Case Study 17: Targeted and Predictable Funding for CCA and DRR Initiatives in Samoa

An integrated approach to DRR and CCA is illustrated in a program in the Cook Islands Pa Enea (outer islands). As shown in figure 3.12, the program has a three-pronged approach, ultimately focusing on the implementation of on-the-ground adaptation and disaster risk reduction measures at the community level in the Pa Enea. These will be integrated with sustainable island capacity building and wider development processes, and supported through enhanced national policy capacity, institutional capacity, and knowledge management capacity. The objective of the program is to strengthen the ability of communities in the Pa Enea, and the public service, to make informed decisions and manage anticipated climate change-driven pressures (including extreme events) in a proactive, integrated, and strategic manner. In achieving this objective, the program will support, at the national, sectoral, and island levels, implementation of the Cook Islands' new NAP for DRM and CCA.

Activities at the national level involve strengthening policy, institutional capacity, and public awareness of CCA and DRR, through conducting and updating climate risk assessments, enhancing climate early warning systems tailored to vulnerable sectors, and training policymakers and technicians in the relevant government departments. DRR and CCA capacity-building

activities in the Pa Enea include increasing the adaptive capacity of households, businesses, and affected sectors (such as agriculture, water supply, tourism, health, fisheries, and coastal management); enhancing the adaptive capacity of local communities through engagement in island-level CCA-DRM planning processes linked with Island Development Plans and the National Joint Action Plan; and targeted training and awareness-raising activities using different media. In the third component of the program community-based CCA and DRR measures will be implemented in relation to crop production, coastal protection, fisheries, tourism, and health and water resources management. These measures will have been identified and prioritized during implementation of the second component, as part of the process of preparing integrated island- and community-level DRR and CCA action plans consistent with the island strategic development plans.

Source: Government of the Cook Islands and UNDP 2011.



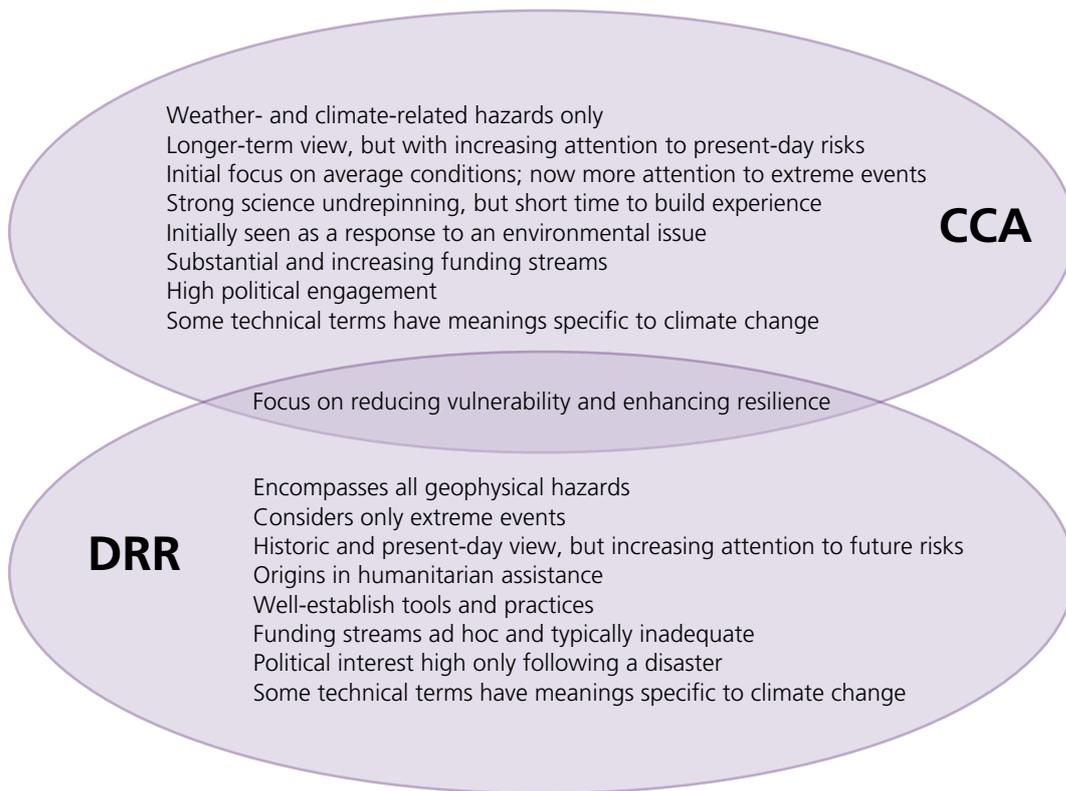
**Figure 3.12. The components of Strengthening the Resilience of Our Islands and Our Communities to Climate Change (program for Cook Islands).**

Source: UNDP 2011.



Despite many distinguishing features (listed in figure 3.11), DRR and CCA share a common purpose. Both aim to enhance resilience and reduce the vulnerability of human and natural systems to hazards by improving the ability to better anticipate, resist, and recover from their consequences. There is enormous value added if adaptation efforts draw on the national platforms and other DRR tools and experiences within and outside the Hyogo Framework. DRR provides many tried and tested tools for addressing risk,

including the new risks created by climate change. It is increasingly contributing to adaptation as the disaster risk management debate moves beyond core humanitarian actions for disaster management of emergency response, relief, and reconstruction toward disaster prevention, preparedness, and risk reduction. Responding to possible future changes in extreme events will require bolstering DRM as a first line of defense, along with disaster preparedness and response. The goal should be to reduce vulnerabilities



**Figure 3.11. Different characteristics of DRR and CCA. In spite of obvious differences, the two share a common purpose; recent efforts have focused on harmonization and integration of DRR and CCA.**

Source: UNISDR and UNDP 2011.

to the impacts that climate change will produce in the form of more extreme weather events, by emphasizing the importance of reducing sensitivity as well as exposure to weather- and climate-related hazards (UNISDR and UNDP 2011).

### Political leadership

High-level advocacy and leadership are essential to successful implementation of DRR and CCA. There has always been a strong political imperative for disaster relief, with leaders understanding the power of symbolic and real responses to disasters. Since saving lives and assisting disaster victims is a moral, humanitarian, and political paradigm that appeals to most people, disaster relief can be a powerful tool for leaders, enhancing their political profile and facilitating patronage (UNISDR 2011).

But increasingly, the public expects or even demands proactive approaches, through DRR, that endeavor to prevent disasters. Social demand for improved accountability mechanisms can galvanize political will to reform risk governance

arrangements and to invest in DRR. Since citizens must be aware of disaster risks if they are to hold governments to account, a lack of public information and education often presents a significant barrier to a stronger culture of social accountability.

Public pressure on political leaders can lead to legal provisions and regulations that clearly demarcate the responsibilities of leaders and government officials. Where transparent contractual arrangements are agreed on for both civil servants and private service providers, performance-based payments can be linked to budgets and expenditure. Such processes can be implemented by way of performance reviews within and across government departments or through social audits at a local or sector level.

Especially because of the cross-cutting nature of DRM and CCA, a central ministry with a high level of political authority needs to be made responsible for them to ensure coherent policy and planning. When relatively peripheral ministries or emergency management organizations have responsibility for natural hazard risk

management policy, development investments are unlikely to reflect the need for proactive approaches. Indeed, such arrangements tend to reinforce the existing skewed focus on disaster management and encourage any investments in DRR and CCA to be stand-alone rather than integrated into development programs.

Locating central government responsibility for DRM and CCA within national planning departments or ministries for economy and finance would increase the effectiveness of policies and accompanying legislation. Given their role in deciding allocations of the national budget and their political leverage over planning and investment, these ministries could help to ensure policy coherence across development sectors, including integration of CCA and DRM into national development planning.

Over the past 20 years, there has been a trend in many countries to adopt a decentralized approach to CCA and DRM; this was thought to be consistent with mainstreaming climate change and natural

hazard risk considerations into development policy and planning processes. While decentralization can facilitate implementation, devolving too much responsibility to weak local governments may actually slow down rather than accelerate progress. Thus, while both CCA and DRM activities need to be locally grounded, not all functions need to be fully decentralized. The central arms of government need to provide technical, financial, and policy support, and take over DRM responsibilities when local capacities are exceeded.

Where CCA and DRM are overly concentrated at the national level, an incremental approach to decentralizing is desirable. This can allow time to ensure that adequate capacity exists and that reforms involve clear mandates, adequate budgets, and appropriate systems of accountability. As outlined in case study 18, SOPAC, through the Pacific Disaster Risk Management Partnership Network, has helped many PICTs to mobilize high-level political support for climate risk reduction.

### Case Study 18: Mobilizing Political Support at the Highest Levels

In the Pacific, many countries have benefitted from the work undertaken by SOPAC on behalf of the Pacific Disaster Risk Management Partnership Network. This has involved leading and coordinating high-level advocacy at the cabinet/political level to garner support for DRM mainstreaming in national, sectoral, local, and community planning and budgetary processes. These efforts had their origin in the SOPAC High Level Advocacy Team, which was established in 2001, when advocacy was identified as a necessary prerequisite to the implementation of DRM capacity building, and in particular DRM mainstreaming activities, in Pacific island countries.

In February 2001, a Pacific regional workshop agreed on the mandate, goal, and objective for the SOPAC Advocacy Program. In addition, the workshop recommended the appointment of a High Level Advocacy Team to obtain the highest-level national commitment to, and support for, the integration of disaster risk reduction and response strategies into national development policies and plans and to encourage the adoption by national governments of a comprehensive and integrated risk management policy designed to reduce vulnerability, enhance community resilience, and achieve sustainable development.

Subsequently, the SOPAC High Level Advocacy Team assisted in the initial stage of developing DRM National Action Plans in Vanuatu, the Marshall Islands, Samoa, and the Cook Islands. The advocacy method was tailored to suit the country in which the NAP was being developed. In the case of Vanuatu, advocacy was based on individual meetings with relevant sector representatives. In the Cook Islands and Marshall Islands, it combined one-on-one advocacy with the head of government and senior ministers with meetings with technical officials; a one-day workshop on the need to mainstream disaster risk reduction and disaster management was also conducted for parliamentarians in the Marshall Islands in January 2009.

High-level advocacy has been reestablished as a priority through a joint effort of the SOPAC Division of the Secretariat of the Pacific Community and UNISDR. The focus of the advocacy will remain on Parliamentarians, national DRM/planning/finance agencies, and other relevant stakeholders, with the emphasis on the need to increase budgetary allocations for disaster and climate risk reduction. This effort involves advocating for mainstreaming disaster risk management into national and sectoral development policies and practices and for adopting all-hazards risk management practices as an essential element in reducing vulnerability, enhancing community resilience, and achieving sustainable development.

Source: SOPAC 2010.



## Performance

Improving the monitoring and evaluation of DRR and CCA interventions, and using the results to prepare and share lessons learned and good practices, will do much to avoid inappropriate adaptation (maladaptation) of DRR initiatives and to scale up successful experiences.

Managing for results is an ongoing process, involving constant feedback, learning, and improvement. It is particularly important in the context of CCA, as this has a very short history. Many development policies, plans, and projects currently fail to take into account climate variability, let alone climate change. There is growing evidence that climate change is already having major repercussions across economies, societies, and natural ecosystems, and that it has the potential to destabilize economic growth, exacerbate

food and water shortages, and erode recent gains in poverty reduction. Given this evidence, and given the accelerating pace of climate change—and the lack of experience in CCA, in particular CCA’s integration with DRR and development—the importance of engaging in an ongoing process of doing, learning, and improving is evident.

Programs, projects, and work plans should be modified regularly, based on the lessons learned through M&E. The design of new programs and projects will also be influenced by the lessons coming from M&E. This ongoing process of doing, learning, and improving is referred to as the results-based-management, life-cycle approach (figure 3.13). Learning not only helps improve results from existing programs and projects, but also enhances the capacity of organizations and individuals to make better decisions in the future.

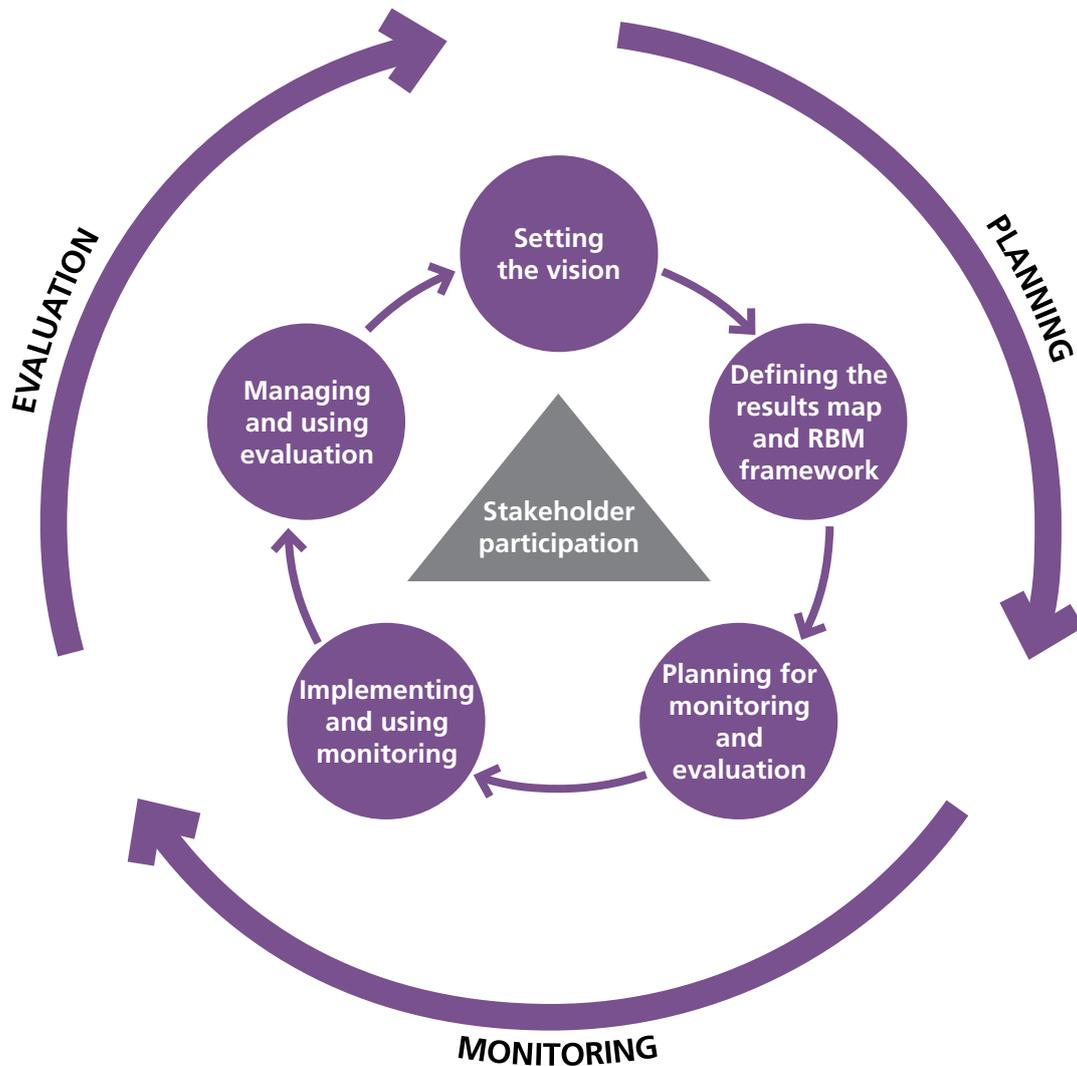


Figure 3.13. Results-based-management, life-cycle approach.

When it is used to redesign initiatives that are not delivering anticipated and desired results—when it helps programs move from “bad practice” to “good practice” (i.e., “failure” to “success”)—M&E can produce transformational changes in CCA and DRR. The South Pacific Sea Level and Climate Monitoring Project and the Pacific Catastrophic Risk Financing

Initiative are examples of the gains made possible by M&E and adaptive management (see case study 19).

As already noted, the M&E process is relatively well developed for assessing levels of activity and effectiveness for DRM at both national and regional levels in the Pacific. However, the same cannot be

### Case Study 19: Learning through Monitoring and Evaluation

Monitoring and evaluation has resulted in continuing improvement in the design and implementation of some significant regional DRR and CCA interventions.

#### Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI)

- Commenced in 2007; 2 phases have been completed
- Joint initiative of SPC/SOPAC, World Bank, and Asian Development Bank (ADB), with financial support from Japan, GFDRR, and EU
- Phase 1 (2007–2009): Explored technical feasibility of developing a catastrophe risk insurance pool for the Pacific based on risk profiles for 8 PICTs
- Phase 2 (2009–2011): Broadened the focus to develop (1) comprehensive risk information for 15 island countries to underpin DRM/CCA in general; and (2) inclusive disaster risk financing solutions for PICTs covering both catastrophic and noncatastrophic risks
- Phase 3 (2012+): Focuses on developing applications and capacity of PICTs in utilizing risk information for informed decision making in DRM and CCA; applications include disaster risk financing, disaster damage estimation and forecast, and urban/infrastructure planning; climate change science an integral part of this phase

Source: Authors.



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

- Phase I commenced in 1991; now in Phase IV
- Initially involved 14 PICTs; funded by Australia; growing in importance
- Consists of an operational observing network of tide gauges and geodetic stations providing accurate measurements of absolute values of sea level in 12 PICTs
- Reviewed on a regular basis, resulting in a great many lessons learned, shared, and acted on in the design of subsequent phases
- Key findings have resulted in changes (e.g., project design; roles and responsibilities of various implementing stakeholders; increasing regional/national ownership and leadership)
- Phase IV builds on learning from previous phases and current circumstances for aid effectiveness

Source: Sandford and Hunter 2007.



Australian Government

AusAID

#### The Kiribati Adaptation Program (KAP)

- Project commenced in 2006; implemented by the World Bank in three stages, KAPI, KAPII, and KAP III
- Government of Kiribati responsible for M&E; KAPII included an extensive and intricate results and monitoring framework that reflected a complex project design
- Institutional capacity not sufficient to manage either the breadth of project design or its results and monitoring framework; hence M&E was less comprehensive than it could have been, and many important lessons were not systematically documented
- Monitoring by donors and the World Bank identified need for restructuring the project to a manageable scope and simplifying the results and monitoring framework
- Lessons highlight the importance of ensuring M&E design is appropriate for institutional capacity; aligning indicators with existing development M&E frameworks so as not to overburden countries; building flexibility into M&E systems so they can be revised and improved as needed

Source: Authors.



said for CCA or for integrated approaches to DRR and CCA. Recent initiatives, such as the review of PIFACC and the preparation of a roadmap for a post-2015 integrated regional strategy for DRM and CCA, have highlighted the need for improved M&E. A monitoring and evaluation framework has been added to the second edition of the PIFACC, released in late 2011 (see figure 3.14). The purpose of the framework is to provide a simple, useable tool for evaluating progress in implementing the PIFACC. The framework focuses on information that is available and collectable in an ongoing manner in the region, including through the biannual National PIFACC Updates on Implementation that contribute toward reports to the Pacific Climate Change Roundtable (PCCR). Reviews of PIFACC implementation will be undertaken prior to PCCR meetings in 2013 and 2015. Importantly, a study will also be undertaken following endorsement of the framework, to provide a baseline for these reviews. It is to be hoped that the baseline study will also result in development of performance targets, based on indicators in the framework. Targets are not included in the second edition.

Given the potential for very significant increases in funding for adaptation to climate change, governments and their partners will want to assess how these investments affect both resilient development and livelihoods. This type of assessment will require that evaluation policies and practices embrace indicators and targets that are both qualitative (focused on flexibility and learning) and quantitative (focused on efficiency and effectiveness). Given the uncertainty and complexity of climate change impacts, the need for participatory approaches that encourage sharing and learning among all actors and stakeholders is crucial. These approaches should span all scales and levels, from community level to regional level, and from projects to programs to overarching development plans.

Future policy and planning, along with programming and project instruments, should use existing M&E frameworks as starting points; they should incorporate both quality and quantity indicators; and they should embrace principles of flexibility, learning, and participation. Such M&E frameworks for CCA and DRR in development initiatives would ensure

Theme 1: Implementing tangible, on-ground adaptation measures			
Regional or national	Outcomes and outputs	Indicators	Examples/Measures
<b>1.1 Enhanced resilience to the adverse effects of climate change through the implementation of best practice adaptation and risk reduction</b>			
N	1.1.1.1. Documented records of key climate risks and vulnerable areas	<ol style="list-style-type: none"> <li>1. Methods and tools to support risk assessment vulnerability assessment</li> <li>2. Demonstrated application of participatory and multisectoral risk assessment processes in country</li> <li>3. National climate change action plans, relevant national projects, and/or vulnerability maps</li> </ol>	<ul style="list-style-type: none"> <li>• Integration of climate change within National Sustainable Development Strategy</li> <li>• Joint National Action Plans (JNAPs) for climate change and disaster risk management</li> <li>• National climate change frameworks</li> </ul>
N	1.1.1.2. Documented evidence of adaptation measures developed and implemented, with reference to new and existing data sets and traditional knowledge applied in adaptation planning	<ol style="list-style-type: none"> <li>1. Number and scale adaptation projects implemented</li> <li>2. Application of participatory and multisectoral processes for choosing appropriate adaptation measures</li> <li>3. Degree of local ownership of adaptation planning processes</li> <li>4. Coordinated use of local traditional knowledge and data in adaptation planning processes</li> </ol>	<ul style="list-style-type: none"> <li>• On-ground adaptation measures in key nationally identified sectors, communities, and regions</li> <li>• Climate change coordinating committees established</li> <li>• In-country traditional knowledge narrative databases established</li> </ul>
N	1.1.1.3. Sectoral programs and development plans with adaptation measures integrated	<ol style="list-style-type: none"> <li>1. Climate change considerations incorporated into key development sector policies and strategies</li> <li>2. Funding for adaptation measures incorporated into development budgetary allocations</li> </ol>	<ul style="list-style-type: none"> <li>• Sector policies and plans (e.g. transport, water resources, coastal zone) include climate change considerations</li> <li>• Vulnerability assessment data available across all sectors (e.g. sea-level rise inundation maps)</li> </ul>

Figure 3.14. A portion of the PIFACC monitoring and evaluation framework.

enduring outcomes and impacts. If the ultimate goal is resilient development and livelihoods, the evaluation of integrated DRR, CCA, and development actions should, as a starting point, use and build on existing development evaluation and indicator frameworks. Moreover, the uncertainties and complexities of climate change impacts mean that the chosen framework should be dynamic, flexible, and adaptable.

Given that the integration of DRR and CCA needs to be grounded in development processes, the following offer logical starting points for regional and national evaluation systems that track and assess adaptation and disaster risk outcomes at the highest levels of government: the Pacific Aid Effectiveness Principles (2007), which focus upon ownership, alignment, harmonization, results, mutual accountability, and capacity development; the Cairns Compact on Strengthening Development Coordination in the Pacific (2009); the Pacific Plan (2005); and the Regional Tracking of Millennium Development Goals (e.g., the 2010 and 2011 reports).

It would also be prudent to ensure consistency with international practice and consider the Paris Declaration for Aid Effectiveness (2005) and the related Accra Action Agenda (2008), as well as the Millennium Development Goals (2005), the United Nations Development Assistance Framework (2006), and the HFA Monitor (2009). In addition, some indicators from the RFA Monitor and the PIFACC (second edition, 2011) may also be relevant. The DRR and CCA M&E policies and practices of key partners such as the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the World Resources Institute (WRI) (Spearman

and McGray 2011) can provide guidance, as can the few evaluation frameworks for measuring progress of the interface between climate change adaptation, disaster risk reduction, and development, such as Villanueva (2011).

A one-size-fits-all DRR/CCA evaluation and reporting tool is unlikely to suit the circumstances of all PICTs or to be applicable at all levels. In order to ground climate and disaster risk management in development processes, all countries could at the highest level build on the systems and approaches used to evaluate their national development plans (or equivalent). Doing so would include ensuring that measures to assess progress in achieving the MDGs include indicators sensitive to adaptation and disaster risk. Section 2 and table 3.1 above, along with guidance notes by UNISDR (2008, 2009) and UNISDR and UNDP (2011), show how achievement of MDGs is linked to disasters and disaster risk reduction and suggest several ways to incorporate disaster risk reduction into MDG actions; figure 3.15 suggests how MDG 7 might be used in evaluation and reporting. The point to emphasize is that using existing approaches would reduce the burden of investing time and resources to develop a new evaluation system, with additional reporting requirements.

Learning not only helps improve results of existing programs and projects (see case study 19), but it will also serve to enhance the capacity of organizations and individuals to make better decisions in the future.

With respect to developing an integrated CCA and DRR policy and action regional framework by 2015, the associated monitoring and evaluation framework

Modified DRR-sensitive indicator		
Goal 7. Ensure environmental sustainability		
<b>Target 9</b>	Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources	Percentage area complying with enforcement of no development or no construction by laws on lands classified in land use plans to be at high risk as per hazard maps
<b>Target 10</b>	Halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation	Proportion of population with sustainable access to an improved water source not susceptible to destruction or depletion by natural hazards like floods, droughts and seismic and cyclone risks
<b>Target 11</b>	By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers	Proportion of people with access to secure land tenure not located in high-risk hazard prone zones e.g., land slide or flood prone or seismic zones

**Figure 3.15. Indicators for targets for Millennium Development Goal 7 (“ensure environmental sustainability”) and possible modifications intended to capture disaster risk reduction in MDG actions/measures.**

should use as its starting point the DRR-related indicators in the United Nations Development Assistance Framework and the RFA Monitor for the Pacific Disaster Risk Reduction and Disaster Management Framework for Action. Regional and national indicators from the recently developed PIFACC Monitoring and Evaluation Framework (2011) would also need to be considered. As was indicated above, it is important that any monitoring and evaluation approach be flexible, dynamic (responsive to the uncertainty and complexity of climate change effects), and participatory (facilitating links between capacity, actions, and key actors, such as individuals and communities).

Such a framework would be especially relevant for improving interventions at program and project levels, for ensuring increased effectiveness of results and impact, and for preventing results/outputs from creating or contributing to increased risk and vulnerability. Framework results can be used to prepare and share lessons learned and good practices, to help avoid inappropriate DRR actions/initiatives and maladaptation, and to scale up successful experiences. Using results in this way is particularly important in the context of CCA, given its very short history.



Photo: The World Bank

# 4

## Summary

From the preceding analyses and case studies, the following points stand out:

### **Climate and disaster risks are**

- Affected by hazard, exposure, and vulnerability
- Context specific and dynamic
- Often not reduced by current CCA and DRM policies and interventions
- Continuing to increase as a result of trends in vulnerability, exposure, and climate

Although there is a range of practices that would increase climate- and disaster-resilient development in the Pacific region, the following guiding principles are particularly pertinent:

### **Resilience to disasters and climate change is enhanced when**

- DRR is practiced, even without reflecting CCA
- Lessons from DRR inform CCA

- DRR and CCA are integrated, as are approaches to assessing and understanding risk
- DRR and CCA include strategies, policies, and measures that address exposure and vulnerability
- There are strong enabling environments for CCA and DRR, including well-functioning institutions, data, information and knowledge systems, education, and public awareness
- DRR and CCA are integrated into development planning, design, and approval processes, and development initiatives are screened to ensure benefits are not jeopardized by changing weather and climate conditions or by extreme natural hazards
- Investments include a balance of hard and soft CCA and DRR measures, such as strengthening of infrastructure and urban land use planning
- There is economic diversification and sustainable management of natural resources
- Predisaster financial mechanisms are used where little formal insurance or postevent compensation is available
- There is increased research, development, demonstration, diffusion, deployment, and transfer of technologies, practices, and processes, as well as capacity building for promoting access to CCA and DRR technologies
- Disaster risk is identified, assessed, and monitored, and early warning is enhanced
- National planning and coordination strategies for improving local DRR and CCA are integrated with local knowledge and made to support local empowerment and action
- DRR and CCA are both a local and a national priority, with a strong institutional basis and high-level political support
- Actions address causes of vulnerability, poverty, and limited resource access, thereby facilitating sustainability
- Climate- and disaster-related research, systematic observation of climate, and related data are available in order to inform decision-making processes
- Roles and responsibilities of key actors, stakeholders, and institutions are clearly and rationally assigned, based on comparative advantages
- Financing sources for DRR and CCA are harmonized and flexible, and existing strategic and corporate planning and budgetary mechanisms are used to increase predisaster and climate risk investment
- DRR and CCA interventions are jointly planned and programmed by PICTs and their development partners

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## Appendix 2. Outputs from the Policy and Practice Note Session at the Pacific Platform Meeting for Disaster Risk Management, August 2011

During session 6 of the Pacific Platform Meeting for Disaster Risk Management, August 1–5, 2011, in Auckland, New Zealand, participants contributed to the Policy and Practice Note on integration of disaster risk reduction and climate change adaptation in development in the Pacific. This appendix transcribes the participant sign-in sheet and notes from of the working group discussions.

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The following notes represent the responses of the working group to five questions on disaster risk reduction and climate change adaptation.

**1. What are some key messages for DRR/CCA stakeholders working at national, community, regional and development partner levels? Example response: There must be relatively less emphasis on assessments and capacity building and more emphasis on tangible efforts to reduce climate and related risks.**

- Disconnect national policies to provisional level
- Need to strengthen coordination amongst stakeholders
- No linkages between national and community level
- Need awareness and increase understanding DRM & CCA at all levels
- Single Ministry for CCA & DRM
- Incorporation indigenous science and 21st century science in development of adaptation strategies.
- Requires high-level coordinating body
- Recognizing different needs, capabilities, and resources.
  - Cross-cutting issues/challenges
- Inclusive consultative mechanism for establishing national strategy for DRR/CCA integration.
  - Protocols will be country-specific
  - Shift from TA to mentoring so that outcomes can be firmly embedded.

Long term “Vision” Planning inclusive of all national stakeholders. The planning must be inclusive of

- Immediate
- Short
- Long term

**Inclusive of Govt/NGOs**

**Vulnerability versus Resilience**

Communities know what to do

- Focus on capacities (existing) rather than vulnerabilities
- Value of interdisciplinary teams. (DRM + CCA) for better efficiency, complementarily. Needs to be enabled by institutional structure and connections
- DRR and CCA should be integrated existing

sector policies and plans—MAINSTREAMING

- Capacity building is still critical as well and should be made more effective.
  - Need to focus on horizontal as well as vertical linkages
- Mainstreaming
  - Strengthen connections between all and local
- Identify opportunities for coordination between national, community and regional development partners
- Ensure community view represented at national level. Community buy-in is essential
- Peoples existing risk & potential vulnerability as a starting point, with DRR/CCA wrapper around people
- Needs to be placed within a broader development structure
- Communication, interaction and engagement across all levels
- Need recognition and strengthening of roles and responsibilities creating enabling environment for stakeholders to interact, engage, collaborate etc.
- Integration of CC/DM agencies
- Elevating their status within government
- Action on the ground
- Enhancing EW system
- Already policy but disconnected at the implementation level
- Need to step up capacity building & awareness
- Lack of effective core mechanisms
- CCA/DRM – under/ ??
- Coordination is important between
  1. Partners
  2. Levels
- Community buy in => essential
- Mainstreaming essential, given scarce resources: Need to get the few people available to work together
- Also important to come under one roof to ensure coordination + programs (doesn't work if totally separate)
- Needs to be in context of broader development picture
- Remember vulnerability is increased by poverty
- A lot of awareness of CC but little knowledge—need to clarify what is DRR + CC and identify roles and responsibilities

- To what extent should they operate jointly or separately? In any case a longer term approach is needed
- Creating an enabling environment for DRR & CC to interact productively
- Improving on the legal frameworks
- Enforcement of the legislation at the community level (example building codes)
- Better vertical integration

*Top-Down & Bottom-up to respond to community real needs.*

- Better awareness at community level & better preparedness
- Dialogue to share best practices at all level
- Better recognition of the relevance of CCA and DRR and their linkage
- Data & intelligence is key to preparedness & planning & accuracy of warning systems
- Better coordination at international level
- DRM & CCA affects national & personal budgets
- Mainstreaming DRM & CCA through communities needs & activities are integrated into national planning
- Donors
  - Of local point
  - No more assessments
  - More coordination
- More research
- More capacity in country that we think => capacity development
- Engage more with communities that => where it all starts

## KEY MESSAGES

- We cannot forget the importance of incorporating indigenous science and 21st century science into developing practical and acceptable adaptation strategies.
- Less technical assistance, more doing, greater use of monitoring
- Too many conditions on funding—stakeholders know what needs to be done
- Do gap analysis—find out what needs to be done as opposed to just talking about it
- Community engagement—connect with them to improve community resilience

- Networks exist—get better integration of scientific knowledge to communities
- Less technical assistance, more guidance/mentoring of getting information to communities
- Make language understandable/relevant
- Greater connection with communities
- Access to financing donor harmonizing, cut bureaucracy & make funding easier to use.
- Make greater use of local knowledge—they know just need guidance
- DRR + CCA to be joined
- In the Pacific mainstreaming the issues
- A key champion within Government
- Strengthen the link between local Government + communities
- All levels of Government must be connected on key messages
- Practical messages for the communities. What they can do??
- It is the risk and its consequences that are important—not its origin (natural, economic or climate change)
- More we made connections at the right levels of Government to ensure DRR/CCA are factored into all decisions and plans
- Governments need to commit to DRR/CCA at all levels plan community to local government and at national level, and across all those elements involved.
- These have to be practical examples that can be implemented at community levels, suggested by finance, advice and leadership

## 2. Over the past ten years, what initiatives have worked well? Example response: DRR/CCA interventions undertaken jointly at community level, such as in Community X.

- Mangrove plantation has been inventor (for example in Fiji)
  1. Tangible community initiatives
  2. Building on existing knowledge and institutions
- Separate budget based on NAP (DRM)
- Initiation where there is effective governance
- Many initiatives are new and need to be fully monitor + evaluation
- Tuvalu => water + sanitation dealt with together (DRM/CCA) and JNAP

- Climate change is now within the mainstream agenda
  - Training & education at all levels (esp. community based)
  - Community engagement early & often
  - Introduction of CCA & DRM in school programs
  - Better vertical integration needed (top-down & bottom-up) to respond to community needs
  - Insufficient coordination among ministries & sometimes unwillingness to share information
  - Improvement of legal frameworks & enforcement at community level
  - Too dependent on donor aid. Government have not taken ownership of the DRR/CCA problems + commit sufficient funds
  - Programmes on awareness and education
  - Improved building codes and infrastructure standards including disaster risks
  - Improvements in awareness and education
  - Infrastructure standards
  - Building codes, compliance
  - Increased awareness of disaster reduction
  - Increased efforts to coordinate amongst partners
  - Integration of CC/EM/Met/DMO at national level—CK, VU
  - Joint NAP
  - Technical backstopping from partners
  - Role of media (ongoing)
  - DRR/CCA/ what Collaboration in Tuvalu under the JNAP
  - At a community level, NGOs have implemented good on-ground programmes such as mangroves replanting programmes (rather than seawall)
  - Proven in Fiji during the last cyclone
  - Tonga water Supply => DRR/CCA intervention that increase rainwater harvesting through roof/gutter/tank approvals (proven deny droughts)
  - Progress toward Joint National Action Plans
  - Emerging scientific evidence base
  - Capacity building—Some NDMOs are now firmly in charge and directing policy e.g. In PNG i.e. Food and water security. In Samoa in community preparedness.
  - Building codes applied—progress evident
  - Community awareness has improved, a bit from a low base
  - The community approach has wide benefits that transcend DRR
  - **Community Level:** The more the community is involved in the process of assessments of action plans, increase ownership and implementation by the community themselves, hit the ground level
  - **Government Level:** Pulling DRM & CCA outputs into one ministry for better coordination JNAPS
  - Adaptation of early warning systems
  - Donors: Agreement by donors for better coordination
  - Cook Is: DRR/CCA one ministry
  - Adaptation of EWS
  - Agreement from donors on coordination
  - Land use policy in Fiji with a participatory process
  - Tonga etc. PCIDRR: Community programmes in DRR (for example mangrove planting) that have had side effects for CCA
  - SOPAC—Integrated Maps of DRR/CCA
  - Donors-separated fund streams for DRR + CCA but on the ground they will combine into one programme.
  - Integration of national action plans (Tonga, Cook Islands)
- 3. What has not worked so well, or at all? Example response: Undertaking a robust prioritization of possible DRR/CCA interventions based, for example, on cost benefits analyses.**
- Quite a lot of resources etc. but hard to coordinate these into DRR/CCA
  - There is a need for still more coordination
  - Requirements on NGO for applying for donor funds.
  - Assistance can be disappointed, with well coordinated programmes or projects (with strong leadership) will deliver benefits.
  - Some donors have specific tight criteria for the application of funds, which makes it difficult for them to collaborate with others
  - NGOs find it difficult to access some financial facilities offered by other organisations
  - Integration of DRM/CCA
  - Duplication of duties
  - Lack of integration at all levels

- A lack of bottom-up approach
- Climate uncertainty allows maceration
- Coastal protection (seawalls)
- Efforts to prevent building on coasts
- Top-down planning with lack of a collaborative community process
- Lack of follow-through/benchmarks for plans
- Lack of budget line items on Risk Reduction
- Clarity needed on sector budgets => risk management
- Parallel process and lack of clarity integration in principles and strategies

How do we deal with this?

- Inter-ministerial with Finance
- Climate adaptation communication— procurement, actions
- Absence of details OR related budget
- Clarity in sector and other budgets climate adaptation, risk management
- Doing actions on the ground without understanding the issues, e.g. seawalls, dredging
- What does CC mean to Pacific Islanders?
- What are the implications of sea-level rise on atolls
- Not enough effort going into developing; need to have information on rainfall, elevation
- Include more technical sectors in these meetings, for instance engineers
- Economic drivers increase vulnerability
- Mainstreaming of CCA/DRR in legislation and policy
- Lack of options
- Coastal protection, such as seawalls, that have collapsed over time + exacerbated erosion
- Efforts to limit building on the coast have failed.
- Not looking at full extent of environment impacts (including impacts on people)
- Mixed messages in the media on CC+ developed community. Vague or inconsistent terminology complicates the message
- Transparency of NDMOs + governments in managing donor funds needs to improve
- Insufficient consultation
- Insufficient engagement with communities
- Reporting to donors needs to be effective in presenting the case for funds
- Lack of specific budgets for DRR in government
- Confusion with various funding windows
- DRR + CC parallel processes (for risk management) driven largely by international processes + repeating MEA + UNFCC
- Disaster management historically not part of development
- Indicators to measure progress
- Lowering of costs
- Reduction in losses after natural disasters
- Number of households relocated to safer areas & Number of building retrofitted to withstand cyclone for ex
- The presence of DRR/CCA consideration included into development process & relevant documents
- Actual establishment of offices dealing jointly with CCA/DRR and coordinating
- Duplication of resources wasting time & money
- One-off projects, unsustainable, usually the same project is repeated again a few years later
- Over consulting
- Donor coordination
- Still too much focus on response and not enough investing in risk reduction
- Change in Governments and Governments' priorities (like cyclones)
- Government not listening to communities all the time
- Too many conditions/donors/competing aims/ reporting requirements
- Regional organization need to talk to each other and to coordinate better and too many missions stretch local capacity at same time.
- Too many reports, financial, operational, administrative, technical as opposed to DOING!

**4. Given that the PPN will focus on the FIVE questions outlined in the presentation (see handout) in what ways would the Policy and Practice Note be of use to you, and/or of use to others? Example response 1: The**

**Note will be of limited use to climate change negotiators, but of great use to those working on community-based DRR and CCA. Example response 2: The World Bank will use the Note to inform the implementation Strategy of their Pacific Portfolio.**

- If it answers the question, it provides a common fragment for community to work toward. Will allow large meeting to be more effective
- Assist with resources mobilization
- Might assist with justification for budgets at the national level
- Learn climate adaptation approaches and experiences used elsewhere
- Consider their relevant application in own situation
- Engagement and facilitation
- Socialise
- What is the roll-out plan?
- Policy note based on issues discussed today it would be useful
  - PN includes guidelines on how to address issues passed
- Guide the WB's support to regions including resources/funding
- Coordination is important between
  1. Partners
  2. Levels
- Community buy in => essential
- Mainstreaming essential, given scarce resources: Need to get the few people available to work together
- Also important to come under one roof to ensure coordination + programs (doesn't work if totally separate)
- Needs to be in context of broader development picture
- Who is the note serving? Who will use it? What value will it add? How will it serve the region?
- It must take the issue forward in some sense
- What is the roll-out plan? It will need to be socialized

#### NOT ACTING TODAY

- More losses
- Higher costs

- Higher impacts on infrastructure, environment, people, economies.
- Use Policy note to link to national/community initiatives to help justify funding requests
- Provides a space to show positives & best practice
- Can be used as an advocacy tool to all key stakeholders
- Help justify funding requests
- Show case—best practice
- Advocacy tool
- Still, difficult to know now as it is not finalized
- World Bank will benefit from it

#### **KEY MESSAGES:**

We cannot forget the importance of incorporating indigenous science and 21st century science into developing practical and acceptable adaptation strategies.

- See what kind of things the WB is doing in regions
- PPN will give guidance as whole funding can be accessed
- Practical/Realistic targets—Country specific/community relevant
- Incorporated dispute
- Make no progress in adapting to DRR/CCA
- Evidence of behavioural change
- Evidence of what has been achieved
- It should argue the pro's and con's of integrating
- It should also provide key national level recommendations (Practical measures)
- It should target all stakeholders on how to integrate
- It is but one resource and should not be the overarching guide
- It should inform the roadmap but also take on decisions made concerning the roadmap
- The PPN will provide guidance to national governments for the integration of DRR and CCA. It should explain the risks of not doing it as well as the benefits
- It could inform a regional policy approach (such as the roadmap). It cannot be the policy.

**5. What indicators might we use to measure how well we are doing with reducing climate and related risks to development? Example response: % of national budget allocated to integrated DRR and CCA interventions.**

- Human and economic loss is reduced, use 2010 as base year
- All Ministries integrate DRM/CCA into action plans
- Incorporate CCA/DRM into school curriculum/ programs.
- Number of countries that develop/adopt a national strategy for CCA/DRR
- Financial monitoring system to track DRR/CCA expenditures
- Social benefits are measured, tracked (But how to do this?)
- Number of new agreements for partnership
- Number of policies being used (US just recommended)
- Number of houses relocated to identified "safer" areas, refitted to withstand cyclones etc.,
- Use existing indicators from HFA and Pacific Regional Framework for Action.
- Combination of output and process
- Quality and quantity of data available to support policymaking
- National Budget allocation
- Existence of national integrated platform and integrated framework and whether there is cabinet/legislative commitment
- Communities—should have integrated plans
- Well-functioning information sharing system.
- How well is available risk based information used in planning programming, actions and decisions including for livelihoods—local, social, economic
- % national plans and programmes reflect explicit used of available risk-based information
- % of local actions are based on robust scientific information and traditional knowledge
- Progress Indicator OF WHAT???
- How 'well'—How to define doing reducing climate risks to development
- Target—donors, CROP
  - Indications of performance by the target groups
- Proportionate. Indicate inputs
- Human and economic loss is reduced (starting point 2011)
- Relevant ministries and agencies are able to integrate CCA/DRR into their policy action strategies, implementation and evaluation plans
- Integration of DRR/CCA into curricula
- Agency/Ministry tasked to coordinate and find out how the country is doing with reducing climate and related risks to development
- DRR/CCA/ what Collaboration in Tuvalu under the JNAP
- At a community level, NGOs have implemented good on-ground programmes such as mangroves replanting programmes (rather than seawall) => proven in Fiji during the last cyclone
- Tonga water supply => DRR/CCA intervention that increase rainwater harvesting through roof/ gutter/tank approvals (proven deny droughts)
- % of plans that reflect explicit info
- % of local action that reflects scientific info
- Simple but possible cost-benefit analysis
- Change in livelihoods access to water, sanitation, sustainable crops.
- Human development indicators
- Better vertical integration needed (top-down & bottom-up) to respond to community needs
- Insufficient coordination among ministries & sometimes unwillingness to share information
- Improvement of legal frameworks & enforcement at community level
- Too much dependent on donor aid. Government have not taken ownership of the DRR/CCA problems + committed sufficient funds
- # of new partnership developed with agreements to collaborate in projects to address climate aspects
- # of policies developed (recommended being used)
- Mechanism to track the progress of implementation evaluation/reporting (progress monitoring)
- % participation (schools, administration) for framework
- Number of communities benefited from CB prospect vulnerability profits action plans

- 
- Progress in addressing CCA in development issues at national level, as shown in national strategies & plans
  - Use existing indicators in national plans, Pacific plans international benchmark
  - Government policies in place for residence (building codes etc.) + enforcement
  - Budget dedicated to DRM/CCA.
  - Training & education at all levels (esp. community based)
  - Community engagement early & often
  - Introduction of CCA & DRM in school programs
  - Key elements are in place (example NAP)
  - Functional integrator structures in place at appropriate levels
  - DRR/CCA incorporated evaluation curriculum at all levels
  - Enforcement of building codes
  - Consistency of budget allocation
  - Interaction of DRM/CCA at community level => example community discussion
  - Rebuilding in the same location after a disaster
  - DRR/CCA are criteria within development
  - Country-specific metrics
- Adequate resourcing to implemented plans
    - Measure implementation rate
      - # Projects implemented
      - # Successful outcomes
      - What benefits achieved evidence
  - Evidence of behavioural change
  - The existence of national platform mechanisms
  - As legislation or policy a framework (national-action plan)
  - Community examples: land use controls, mangrove planting
  - Indicators: Community plans DRR/CCA is factored into these plans. (Integrated DR/CC village plans).
  - A well-functioning system of information sharing.
  - Budget allocation
  - Existence of national coordination mechanism
  - Existence of legislation or national strategy that guides or drives integration
  - DRR/CCA would be factored into community plans.
  - There would be a well functioning mechanism for sharing experiences and examples.

## Appendix 3. Summary Overview of the Collective Roles of CROP Agencies in Relation to Climate Change

**The Pacific Islands Forum Secretariat (PIFS)** is the permanent chair of the Council of Regional Organisations in the Pacific (CROP) and continues to play a general coordination role among stakeholders (including CROP and development partners) in the region, guided by PIFS leaders' decisions and regional policy under the Pacific Plan. Through its political convening power as secretariat to the leaders, PIFS coordinates the negotiation of development-partner policy on the Pacific region, which often guides where partners allocate their development assistance to the Pacific. Over the last five years, negotiations have involved specific agreements on climate change for a number of large development partners, including Japan and the European Union.

The work of PIFS in climate change is guided by the annual decisions of forum leaders, ministers, and officials on the issue. In the most recent years (2010–2011), this work has largely focused on strengthening access to and management of climate change resources for member countries. Emphasis has been placed on accessing international financing mechanisms and facilitating improved management of these resources at the national level through national systems wherever possible, e.g., budget support or national trust-fund arrangements. The organization's work over the coming year will focus on the practical application of these preferred national options through case studies; to support this work, regional options will also be further explored, including the practical application of a regional trust-fund arrangement.

PIFS is currently the coordinator of the Resources Working Group of the Pacific Climate Change Roundtable (PCCR). This role requires facilitating and monitoring the implementation of PCCR decisions on climate change resourcing. From 2011 to 2013, the role will focus on the development of a regional technical support mechanism and support under the United Nations Framework Convention on Climate Change (UNFCCC) to member countries on climate change financing issues. All of these activities are undertaken in consultation and collaboration with member countries, CROP agencies, and where appropriate, development partners and others stakeholders.

In addition, PIFS has taken a lead advisory role to Pacific island countries and territories (PICTS) and

the region on the important matter of accessing and managing climate change financing. Further action by PIFS is needed to strengthen the enabling environment at the regional level so that PICTs can reap the full benefits of integrated DRR, CCA, and development. It is especially important that PIFS provide the political authority and leadership needed to root DRR and CCA in regional debates on development and economy.

**Secretariat of the Pacific Regional Environment Programme (SPREP)** is the lead regional coordinating agency in climate change. It works in collaboration with all CROP agencies (through the established mechanisms) to ensure regional collaboration and to harness each CROP agency's area of comparative advantage for integrated support in response to PICTs' priority climate change needs. SPREP also offers experience and expertise in the areas of mainstreaming climate change into sector policies and linking to national sustainable development processes; identifying adaptation priorities through vulnerability and adaptation assessments; and supporting members in carrying out adaptation programs on the ground. In collaboration with other CROP agencies, the United Nations Development Programme (UNDP), and key donors such as the Australian Agency for International Development, the U.S. Agency for International Development, and the European Union, SPREP is also involved in monitoring. SPREP supports members in planning and implementing renewable energy activities in collaboration with the Secretariat of the Pacific Community (SPC), UNDP, and other partners, and assists with greenhouse gas inventories to support national communications reporting. SPREP also supports national meteorological services in managing and disseminating weather and climate information; it assists with relevant knowledge management, education, and awareness consistent with the Pacific Islands Framework for Action on Climate Change and the Pacific Islands Meteorology Strategy, and also supports PICTs in meeting their obligations under UNFCCC.

SPREP's 2011–2015 strategic plan reflects PICTs' climate change priority actions—those intended to strengthen PICTs' capacity to respond to climate change through policy improvement, implementation of practical adaptation measures informed by

assessments, enhanced ecosystem resilience to the impacts of climate change, and low-carbon development.

SPREP is also coordinating the Pacific Climate Change Portal in cooperation with CROP. Regional and national institutions in the Pacific islands region possess an enormous amount of climate change-related information and many relevant tools. The information, however, is not always readily accessible. There are also gaps in information, particularly at the national level. The portal will provide a platform for institutions and governments in the Pacific region to easily share climate change-related information and to fill information gaps, by linking for example to the SPC PRISM database, the Pacific Adaptation to Climate Change Project, the Pacific Islands Global Ocean Observing System, and others sources of data.

This effort is expected to improve and strengthen understanding of the issues related to climate change for a great number of people in the Pacific region. Improved access to information is in turn expected to strengthen and enhance the communication and collaboration needed to cope with climate change regionally and locally.

The major target groups expected to use the portal are national stakeholders (PICTs), regional stakeholders (CROP agencies), and development partners. A broader group of users, however, is not excluded.

The objectives of the portal are these:

- Publicize challenges and promote activities related to climate change, both globally and regionally
- Act as a hub for climate change information and knowledge sharing
- Assist decision makers by providing information on climate change adaptation and mitigation
- Identify gaps in current program activities
- Facilitate enhanced cooperation on climate change in the region

**Secretariat of the Pacific Community (SPC)** is the leading technical organization in the Pacific and has for many years implemented activities that directly or indirectly address the climate change-related risks and constraints facing PICTs; it has been particularly involved in building national capacity to identify and

manage these risks. SPC's existing programs and expertise can be applied to build climate resilience for PICTs in a number of sectors. SPC brings a wide range of expertise—especially scientific, technical, and data management skills—that can help PICTs fill climate change-related knowledge gaps. SPC is already supporting members in climate change-related responses across different sectors. Its decentralized mode of service delivery is particularly suited to working on the ground with members at the national level.

SPC's work covers almost all the key economic, environmental, and social sectors. These include the natural resources sector (agriculture, aquaculture, fisheries, forestry, water resources); the human and social development sector (education, health, water supply and sanitation, culture, gender and youth issues, human rights); the economic development sector (energy, information and communication technology, infrastructure, transport); the oceans and islands sector (coastal zone management, geological assessments, seabed mapping, maritime boundary delineation); cross-cutting areas (disaster risk reduction, statistics and demography, food security, climate change), and research, policy analysis, and advice. All the sectors are vulnerable to existing climate variability and to the changes that are projected to occur over the course of this century. Key areas of susceptibility include food and water security; human health; exposure of critical economic infrastructure to extreme weather events; sea-level rise; energy, transport, and communication security; and the social and cultural impacts of climate change.

**The Forum Fisheries Agency (FFA)** established its climate change program following endorsement by its governing council. The program focuses primarily on promoting the role of tuna fisheries in building resilience against climate change threats. The rationale is that tuna (and billfish) are increasingly threatened by both accelerating levels of fishing and oceanographic/climatic changes. The impacts are becoming a real threat to PICTs, particularly the most vulnerable economies, which are highly dependent on oceanic fisheries not only for subsistence but also for the financial benefits they offer and the contribution they make to gross domestic product.

FFA has an important role in climate change as it relates to effective management of tuna stocks. Through its climate change program, FFA provides the necessary support to its members in the areas of mainstreaming climate change into domestic

fisheries legislation and strategic policies and plans; facilitating transformational changes in the fishing industry to reduce hydrochlorofluorocarbon (HCFC) gases and improve onshore cold storage and supporting service facilities; facilitating commercial developments and fishing ventures to better position vulnerable countries to sustainably develop and exploit tuna resources, given predictions that stocks may move across FFA members' exclusive economic zones because of oceanographic and climatic changes; facilitating capacity building and substitution to better implement effective policies and implement effective climate change activities in tuna fisheries; undertaking necessary bioeconomic evaluation and modeling to better understand the impact of oceanographic and climatic changes; and providing analyses and advice on best practices and management options (including implications) to address impact of climate change on tuna fisheries.

**University of the South Pacific (USP)**, the premier tertiary institution in the region, is supported by 12 PICTs. Its current enrolment consists of over 20,000 students spread over 14 campuses, with the majority at its main campus in Laucala, Suva. Through the Pacific Centre for Environment and Sustainable Development (PACE-SD), a center of excellence in multidisciplinary aspects of climate change, USP has for the last decade offered courses and training programs in disaster risk management, resource management, environmental management, and sustainable development at the postgraduate level. PACE-SD helps PICTs to enhance their capacity in human resource development to meet the growing need for trained human resources for climate change adaptation. In addition, since 2006, PACE-SD has led an initiative in Fiji's rural communities to create awareness of, and to implement, climate change adaptation measures targeted at sustaining livelihoods.

USP is currently engaged in creating a cadre of skilled professionals as climate leaders able to support and guide national governments, nongovernmental organizations, and regional organizations in their efforts to adapt to climate change and to train other stakeholders in mainstreaming of adaptation, especially at the community level. It is also actively engaged in applied research supported by the General Secretariat of the Africa, Caribbean and Pacific-European Union (EU-ACP) Secretariat on the impacts of climate change, of associated extreme events, and of changes in the southwest Pacific

in crop and fisheries productivity, water resource management, ocean acidification, human health, etc. The research seeks to improve understanding of the projected adverse impacts of climate change in the region with a view to formulate appropriate strategies and implement sector-specific community climate change adaptive actions in as many as 15 Pacific members of the EU-ACP.

**Pacific Aviation Safety Office (PASO)** is a regional aviation oversight organization representing 13 Pacific island countries and carrying out work in 10 to help them meet their national and international aviation compliance obligations. Through global aviation frameworks, regional programs to reduce carbon emissions in the aviation sector have been developed; these are the programs to which the Pacific island countries can contribute.

In October 2010, the International Civil Aviation Organization (ICAO), at its 37th General Assembly, adopted a resolution relating to practices and procedures for the protection of the environment. Specifically, it endorsed the global goal of an annual average fuel efficiency improvement of 2 percent until 2020, with aspirational goals beyond this date.

As ICAO member states, the PASO member countries are encouraged to develop state action plans identifying practices and procedures to contribute to the ICAO global target of emissions reduction. PASO has a strong focus on improving levels of compliance and meeting ICAO resolution obligations, and encourages and assists states in the development of action plans toward this end.

PASO also works with states to ensure cooperation, where possible, with other initiatives to lessen environmental impact. One such initiative, designed to improve aircraft operational efficiencies and thereby reduce fuel use and resulting carbon emissions, seeks to improve route efficiencies associated with air navigation practices and routing aircraft through airspace.

**Pacific Power Association (PPA)** represents 25 electric utilities in the region and has been collaborating with other CROP agencies in the energy sector in the Pacific. In its work with electric utilities in PICTs, PPA has implemented, and will continue to implement, activities that directly reduce climate change risks. These activities aim to increase energy efficiency in both supply-side and demand-side

management; they will not only reduce greenhouse gas emissions but also improve utility performance.

PPA is currently promoting the use of renewable energy by ensuring that the utilities are ready to take on increased generation capacity from renewable energy sources. This work involves regulatory, technical, and policy changes in the utilities.

**South Pacific Tourism Organisation (SPTO)** is the regional body mandated to promote and develop tourism in and for PICTs. The region's tourism destinations depend on the natural environment as their core asset, and the environment is very sensitive to climate variability and change. Climate change is expected to impact environmental resources that are critical attractions for tourism, such as coastlines (beaches and mangroves), wildlife (bird watching, whale watching) and biodiversity.

Since the environment is such a critical resource for tourism, climate-induced environmental changes will have profound effects on tourism at the destination and regional level. The territory of SPTO member countries includes tiny atoll islands, which are highly vulnerable to sea-level rises. Climate change impacts, which could include changes in water availability, biodiversity loss, reduction of the natural beauty of landscapes, increased natural hazards, coastal erosion and inundation, damage to infrastructure, and the increasing incidence of vector-borne diseases, will all impact tourism to varying degrees.

To address climate change impacts on regional tourism, SPTO seeks to do the following:

- Increase awareness. SPTO conducts workshops and educational programs—in the form of training and advocacy initiatives—to share information on the impact of climate change on the tourism industry.
- Mainstreaming. SPTO helps national governments and tourism departments include climate change in their tourism development policies—for instance, by facilitating and taking on an advisory role in initiatives that relate to tourism development planning.
- Adaptation. SPTO works with other CROP agencies to deliver technical assistance to tourism industry operators on adaptation measures, and it also works closely with relevant organizations and other stakeholders whose programs/activities

impact tourism development (such as SPC in the areas of renewable energy, water, and sanitation).

**Fiji National University–Fiji School of Medicine** is currently engaged in various activities related to the health effects of climate change, although the historical role of the health sector in responding to such effects has been largely reactionary. This has been particularly true in the Pacific, where health ministries have been hard pressed to formulate cost-effective solutions to the health impacts of climate change in addition to their ongoing efforts to address existing health problems.

Among the climate-related activities of the Fiji School of Medicine are these:

- Medical education and training. Climate change and health issues are now integrated into relevant programs offered by the Department of Public Health.
- Policy analysis. Academics are partnering with relevant counterparts within ministries of health and other ministries in PICTs to identify policy gaps and, where possible, revise and implement policies to support the health sector response to climate change.
- Research. Research activities have focused on strengthening health systems, ensuring early warning of and response to climate-sensitive diseases, and assessing the environmental health impacts of climate change.

The Fiji School of Medicine recognizes the health component of climate change projects and has encouraged staff to actively participate, where possible, on advisory committees, as well as play lead roles in ensuring that there is sufficient and appropriate guidance (with respect to health) on climate change activities in the region. The academic institution's collaborative activities will likely inform—and help Pacific island health professionals implement—activities that seek to reduce the health impacts of climate change in the region.

**Pacific Islands Development Programme (PIDP)** was established in 1980 with the mission of assisting PICT leaders in achieving and sustaining equitable social and economic development consistent with the goals of the people of the Pacific islands region. PIDP began as a forum through which island leaders could discuss critical issues of development with

a wide spectrum of interested countries, donors, nongovernmental organizations, and private sector actors. Today, PIDP's role as a regional organization has expanded to include carrying out secretariat functions for the Pacific Islands Conference of Leaders, where climate change issues have been discussed; for regional and national assessments of the impacts of climate change on PICTs; and for education and training on climate change tools and applications that will improve livelihoods.

## Appendix 4. Notes on “Acting Today for Tomorrow”: High-Level Dialogue and Meeting on Climate- and Disaster-Resilient Development

Jointly Hosted by the SPC, SPREP, and WB, Holiday Inn, Suva, Fiji  
June 4–5, 2012

### Overview

On June 4–5, 2012, the World Bank (WB), Secretariat of the Pacific Community (SPC), and Secretariat of the Pacific Regional Environment Program (SPREP) jointly hosted a high-level dialogue with representatives of Pacific island country and territory (PICT) governments, regional organizations, donors and development partners, and civil society organizations. The overall objective for the high-level dialogue and meeting was to bring together relevant stakeholders and actors to build consensus on actions that can serve as catalysts for change within an organization (government, regional organization, donor, development partner) in order to

1. Design and implement more-integrated approaches to disaster risk reduction (DRR) and climate change adaptation (CCA)
2. Advance the achievement of climate- and disaster-resilient development in the Pacific at local, national, and regional levels

The discussion was informed, in part, by the key messages and recommendations of “Acting Today for Tomorrow: A Policy and Practice Note for Climate and Disaster Resilient Development in the Pacific Islands Region” (PPN), produced by the World Bank. The event marked the launch of the PPN, which is now freely available in hard copy and online at <http://go.worldbank.org/OY19F5LU80>.

In addition to promoting a dialogue, the event included two substantial working group sessions. Discussions on June 4, 2012, were facilitated by Mr. Garry Wiseman, manager of the UNDP (United Nations Development Program) Pacific Centre. Discussions on June 5, 2012, were facilitated by Mr. James Roop, climate change adviser, Australian Agency for International Development (AusAid).

### Introductory remarks (SPC, SPREP, WB)

- All endorsed the PPN, recognizing its value in progressing the integration of DRR, CCA, and development in the region
- All stressed that, rather than putting forward new messages, the PPN highlights the urgency of doing business differently in order to gain traction on messages that have been evident for many years.
- All three organizations are engaged in initiatives to make CCA and DRR cross-cutting issues within their structures and programs.
- Priority issues in achieving climate- and disaster-resilient development in the region are:
  - Seek high-level political leadership
  - Address risk, regardless of whether the source is disaster, climate change, or other stressors
  - Avoid reinventing the wheel; there has been progress in integrating regional frameworks for climate change and disasters, notably the first joint meeting of the Pacific Climate Change Roundtable and Pacific Platform for DRM being held in 2013, and an MOU to ensure that the Pacific Islands Framework for Action on Climate Change (PIFACC) and Pacific Disaster Risk Reduction and Disaster Management Framework for Action (RFA) are integrated by 2015
  - Strengthen partnerships at all levels
  - Move from planning to implementation
  - Shift the emphasis from disaster response to preparedness and integration of DRR and CCA into national budgets
- The PPN will be used by SPREP in its strategic planning and development. SPREP looks forward to working with the WB and other partners to implement the PPN.
- PIFS endorsed the PPN and is committed to making the PPN an area of focus in the region.
- SPC endorsed the PPN and recognized its timely and significant contribution to their ongoing efforts to better understand and reduce the vulnerability and risks facing island countries.

## Political Prominence of Disaster and Climate Risks

*(This session included active participation of CROP CEOs)*

Perspectives on the political commitments that will be required at a regional level to support PICTs' efforts to foster strong political leadership for resilient development:

- The Forum Economic Ministers' Meeting leaders discussed the need for better coordination and integration of DRR, CCA, and development during their meeting in 2011 and in 2009 when they endorsed the Pacific Plan. However, there's been no specific effort to take action and the message needs to be presented to leaders in a compelling form at this year's meeting.
- Recent work on public financial systems supported by the IMF has helped national economies to withstand serious impacts of global crisis. This is analogous to type of work being promoted in PPN and is a useful format for regional work.
- Political leadership must be long term rather than focused around short electoral cycles. Donors should encourage longer-term programs that encourage building institutions that can retain staff in order to maintain capacity.
- Merging of key policy frameworks is necessary—good examples are JNAPS and the merging of the PIFACC and the RFA by 2015.
- High-level political leadership needs also to ensure line agencies continue to be strengthened.

Barriers to achieving political leadership:

- Terminology and characterization of the message is important when addressing Pacific leaders and politicians since the immediacy of disaster language often lacks the forward-looking aspects of reducing social and economic costs.
- The donor community responds to catastrophic events, discouraging budget provisions for prevention. The PPN does a good job of conveying this message in language that political leaders can understand.
- Integration leading to resilience is a big job and a big challenge since long-term objectives do not buy political votes.

What is needed to overcome barriers to integration and to achieve political leadership?

- CROP agencies need to use their comparative competencies
- Regular consultation with a wide range of stakeholders
- Strengthening technical capacity in the long term
- Long-term research regarding global trends in the region
- Global financing is essential—there is very little capacity to respond in the Pacific without engagement of the global community

## Exploring Opportunities for Improved Coordination and Partnerships

Barriers to effective coordination and partnerships highlighted by PICTs:

- Projects and programs do not always reflect national development priorities. Donors need to make advocacy for DRR and CCA an integral part of any programs they support.
- Inefficiencies created by the same staff attending climate change and disaster committee meetings
- Lack of information sharing
- Nonintegration of DRR and CCA institutions increases cost inefficiencies
- There is a gap between regional documents and research, and implementation driven by donors, that needs to be closed
- Donors need to have fewer preconceived ideas about use of funds and be more responsive to countries' needs
- Donors often focus on the activities themselves at the expense of a focus on outcomes
- PIFS is leading the development of a matrix of tasks being undertaken within CROP agencies to clarify what is being done and what each of us should be doing to avoid duplication. This will be useful for member countries and development partners as well as CROPS.

Strategies for improved coordination of DRR and CCA based on experiences at the country level:

- Vanuatu is pursuing integration of the National Committee on Climate Change and the National Task Force on DRM into the National Advisory Board for DRR and CCA, cochaired by the directors of the National Disaster Management Office (NDMO) and Vanuatu Meteorological and Geohazards Division (VMGD), with a secretariat that includes a project management unit to administer externally funded projects and programs.
- The Cook Islands developed a DRM policy with a focus on all-agency and all-hazard approach. The NDMO was moved to the Office of the Prime Minister to increase high-level visibility.
- The Solomon Islands restructured and combined the NDMO and Ministry of Environment, Climate Change, Disaster Management and Meteorology, and placed dedicated provincial disaster officers in provinces to improve the partnership between provincial government and communities.
- Papua New Guinea established the Office of Climate Change and Development in 2010 in order to bring risk considerations into development; the office holds annual meetings to ensure work plans are aligned among agencies. Interagency technical working groups oversee projects and initiatives to aid mainstreaming of DRR and CCA, each province has a CCA and DRR officer, and a climate-compatible development plan is being developed.

Pathways for improved coordination at a regional level:

- Three elements are essential to achieving improved donor coordination: (1) a common objective between donors regarding what they are working toward in different countries; (2) better understanding among donors of their own comparative advantage; (3) common regional benchmarks to measure outcomes of initiatives
- Countries and regional organizations need to play a part in telling donors what their comparative advantage is.

### **Grounding Risk Considerations in Development**

Factors that have facilitated integration of risk considerations in development at the country level:

- Developing good relationships with finance and planning agencies, including getting the minister of finance on board
- Finding good champions for change, including getting the minister for the NDMO and climate change on board and involving the heads of all ministries
- Putting the NDMO or climate change office into a high-level office with close proximity to national development policy and planning is important for visibility and for expediting political and bureaucratic processes
- All actors—church, youth, women—need to be brought into the development process. Budgetary planning processes often do not engage in enough of these efforts.
- The “Wantok” system is important to successful integration of institutional functions. For example, in Vanuatu the colocation of NDMO and VMGD in the same building has enabled a strong relationship and communication between the respective directors
- A large gap remains at the provincial level in DRR and CCA support
- Government needs to be able to guide donor activities in a unified way. The lack of institutional integration over time has prevented many of the activities laid out in DRR and CCA plans from being implemented, as donors have been selective in what they fund and have not always aligned with government priorities. Integration of DRR and CCA functions helps to achieve this
- Ensuring alignment of sector and central work plans early in the process. If this is not achieved it can be difficult to get line agencies on board later on, since risk management is not reflected in their work plans. Climate change offices—or equivalent—should play a coordinating role in this.
- Establishing MOUs with the Office of Provincial Affairs to ensure engagement of provincial authorities

- In Papua New Guinea, a National Development Partner’s forum for climate change meets once per month, which helps to facilitate alignment. Also Papua New Guinea has a matrix of DRR and CCA projects and programs to keep tabs on who is doing what and where. This has helped to avoid duplication.
- Donors and governments need to partner with other in-country organizations—NGOs, church organizations, community-based organizations, donor groups— to minimize the costs and logistical problems of implementation in isolated communities.
- Experience with community-based projects—such as a relocation project in the Torres Islands in Vanuatu—has shown that participatory consultative processes are key to ownership and that a range of sectors other than DRR and CCA need to be involved. Technical information needs to be translated to a form communities can understand and projects need to build from traditional governance structures.

### Implementation Lessons from Project and Program Interventions

Overcoming obstacles in the preparation phase:

- Development partners need to work more on being responsive to countries’ needs rather than conceiving projects remotely
- Planning must be participatory—done in partnership with the people involved—and incorporate local knowledge in order to ensure buy-in at all levels
- Project design must be outcome oriented
- Donors want to fly their own flags, but countries need to guide adaptation projects strategically, and this should occur in the design phase
- Build upon assessments that already exist, such as the Asian Development Bank (ADB)–supported climate-proofing work in the Federated States of Micronesia
- The planning stage must move quickly to implementation or it is difficult to get traction
- Land issues must be resolved very early in implementation phase.

- Project teams need to realistically account for the challenges of implementation in remote provinces when planning. Careful and realistic planning and forethought are required

Overcoming obstacles in the implementation phase:

- Donors need to be flexible in project design to accommodate issues as they arise, since much can change between the conception of a project idea and the beginning of implementation
- Projects must build on existing national policies, strategies, and plans
- Results orientation is important, so we must prioritize establishing baselines for monitoring and evaluation. Success should be measured by the continuation of changed business as usual following project completion. Therefore, structures and institutions need to be strengthened at provincial and national level
- Capacity building needs to occur at all levels, village to national, and should be two way; development partners need to learn from countries and vice versa
- Coordination and cooperation between partners is important to avoid projects and programs becoming a burden. For example, GIZ [German Society for International Cooperation] partners with SPC and SPREP and aims at a programmatic approach including joint programming, joint missions, and joint concepts where funds from different donors complement each other
- Support multisectoral steering structures
- A dedicated Project Management Unit is required for effective in-country coordination. Projects should not rely on existing in-country staff but need to establish dedicated project staff either on full- or part-time basis. It is very important to find a home for coordinators and other project staff after a project has finished to prevent loss of capacity
- Factor political uncertainty into design and planning by enabling adaptable plans to ensure projects are able to progress regardless of political change

- Development partners need to better use their own comparative advantages at a national and regional level—for instance, ADB’s strengths include building infrastructure, while its capacity building ability is weaker. Doing the right things is as important as doing things right
- It is important to differentiate between two types of capacity building: capacity to deliver the project, and technical capacity achieved through the project
- Concluding Comments and Next Steps (SPC, SPREP)
- The PPN will inform the roadmap process toward the integrated strategy for CCA and DRR in the region, for which consultations are starting soon.
- The challenge remains to put the messages of the PPN into action.
- An important takeaway lesson is that this region is well supported by regional organizations, donors, and partners to assist PICTs in integrating DRR and CCA. Support is just an email away.

### **Climate and Risk Information and Tools**

- The Australian Department for Climate Change and Energy Efficiency and the World Bank presented updates from the Pacific Climate Change Science Programme (PCCSP) and Pacific Catastrophic Risk Assessment and Financing Initiative (PCRAFI)

## Appendix 5. Studies Reviewed for the Analysis Summarized in Table 3.3

The order in which the works below are listed reflects their order in table 3.3.

1. UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific). 2009. *Interim Regional Synthesis Report on the Implementation of the Hyogo Framework for Action in Asia and the Pacific (July 2007 to September 2008)*. First Session of the Committee on Disaster Risk Reduction, March, 25–27, Bangkok, E/ESCAP/CDR/INF/4.
2. Gero, A., K. Méheux, and D. Dominey-Howes. 2010. *Disaster Risk Reduction and Climate Change Adaptation in the Pacific: The Challenge of Integration*. ATRC-NHRL Miscellaneous Report 4, University of New South Wales.
3. UNISDR and UNDP (United Nations International Strategy for Disaster Reduction and United Nations Development Programme). 2011. *Institutional and Policy Analysis of Disaster Risk Reduction and Climate Change Adaptation in Pacific Island Countries*. Report prepared by J. E. Hay. [http://www.unisdr.org/files/18869\\_institutionalandpolicyanalysisofdr.pdf](http://www.unisdr.org/files/18869_institutionalandpolicyanalysisofdr.pdf).
4. UNISDR (United Nations International Strategy for Disaster Reduction). 2009. *Risk and Poverty in a Changing Climate: Invest Today for a Safer Tomorrow*. Global Assessment Report on Disaster Risk Reduction. Geneva: UNISDR.
5. UNISDR (United Nations International Strategy for Disaster Reduction). 2011. *Global Assessment Report on Disaster Risk Reduction: Revealing Risk, Redefining Development*. Global Assessment Report on Disaster Risk Reduction. Geneva: UNISDR.
6. UNISDR (United Nations International Strategy for Disaster Reduction). 2011. *HFA Progress in Asia Pacific—Regional Synthesis Report 2009–2011*. <http://www.unisdr.org/we/inform/publications/21158>.
7. World Bank. 2006. “Not If But When: Adapting to Natural Hazards in the Pacific Islands Region.” Policy Note, East Asia and Pacific Region. <http://siteresources.worldbank.org/INTPACIFICISLANDS/Resources/Natural-Hazards-report.pdf>.
8. IFRC (International Federation of Red Cross and Red Crescent). 2011. *Law and Disaster Risk Reduction at the Community Level: Background Report*. Prepared by the International Federation of Red Cross and Red Crescent Societies in consultation with the International Committee of the Red Cross. Geneva.
9. Global Network of Civil Society Organisations for Disaster Reduction. 2009. “*Clouds but Little Rain . . .*” *Views from the Frontline: A Local Perspective of Progress towards Implementation of the Hyogo Framework for Action*. Teddington, UK: Global Network of Civil Society Organisations for Disaster.
10. Global Network of Civil Society Organisations for Disaster Reduction. 2011. “*If We Do Not Join Hands . . .*” *Views from the Frontline: A Local Perspective of Progress towards Implementation of the Hyogo Framework for Action*. Teddington, UK: Global Network of Civil Society Organisations for Disaster Reduction.
11. TearFund and UNISDR (United Nations International Strategy for Disaster Reduction). 2007. *Institutional Donor Progress with Mainstreaming DRR*. Report prepared by P. Venton and S. Latrobe. Teddington, UK.
12. GFDRR (Global Facility for Disaster Reduction and Recovery). 2009. *Reducing the Risk of Disasters and Climate Variability in the Pacific Islands: The World Bank Regional Stocktake, East Asia and the Pacific Region*. Report prepared by World Bank and SOPAC. Washington, DC.

13. SPREP (Secretariat of the Pacific Regional Environment Programme). 2010. *Pacific Islands Framework for Action on Climate Change (PIFACC) and the PIFACC Action Plan: Findings, Options and Recommendations*. Report Prepared by J. E. Hay. Rarotonga, Cook Islands.
14. Asian Development Bank. 2009. *Mainstreaming Climate Change in ADB Operations—ClimateChangeImplementation Plan for the Pacific*. Mandaluyong City, Philippines: Asian Development Bank.
15. SOPAC and UNDP (Pacific Islands Applied Geoscience Commission and United Nations Development Program). Forthcoming. *A Review of the Regional Disaster Risk Management Mainstreaming Programme in the Pacific*. Draft report prepared for the UNDP Pacific Centre and SOPAC Disaster Risk Programme.
16. Australia DCCEE (Department of Climate Change and Energy Efficiency). 2011. "Pacific Adaptation to Climate Change: Past Approaches and Considerations for the Future." Discussion paper prepared by J. E. Hay.







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