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Disaster risk reduction and climate change adaptation in the Pacific:

The challenge of integration



A. Gero, K. Méheux and D. Dominey-Howes

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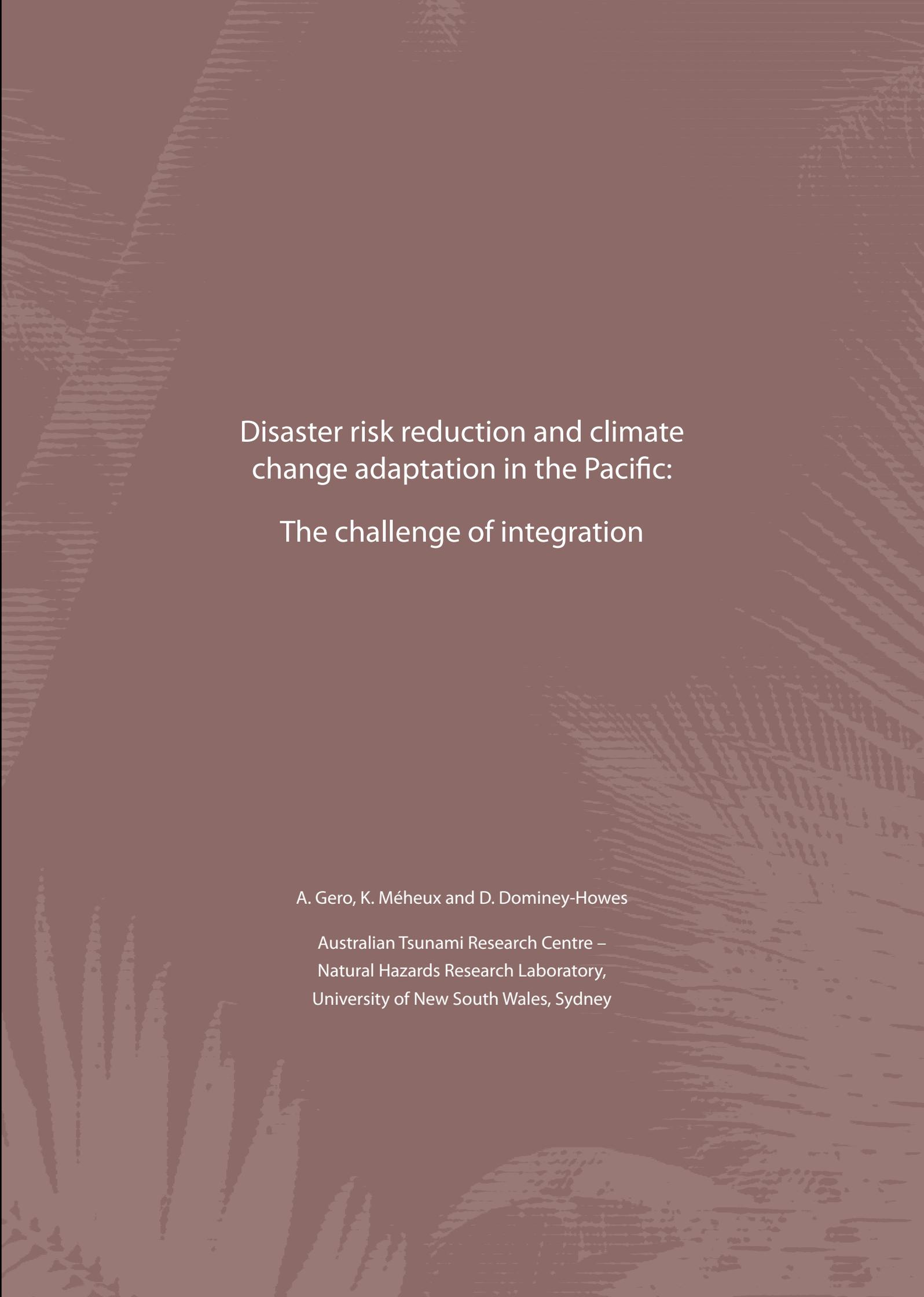
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List of Acronyms

ADB	Asian Development Bank	NGO	Non-government Organisation
ADRA	Adventist Development Relief Agency	NZAID	New Zealand's International Aid & Development Agency
APN	Asia Pacific Network	OCHA	Office for the Co-ordination of Humanitarian Affairs
AusAID	Australian Agency for International Development	PACE-SD	Pacific Centre for Environmental and Sustainable Development
BCPR	Bureau for Crisis Prevention and Recovery	PCIDRR	Pacific Community focused Integrated Disaster Risk Reduction
CBA	Community Based Adaptation	PEMTAG	Pacific Emergency Management Training Advisory Group
CBHFA	Community Based Health and First Aid (Samoa Red Cross programme)	PIC	Pacific island country
CEO	Chief Executive Officer	PIFS	Pacific Islands Forum Secretariat
CI	Conservation International	PRIF	Pacific Regional Infrastructure Facility
CIDA	Canadian International Development Agency	RC/RC	Red Cross / Red Crescent
CIM	Coastal Infrastructure Management	SGP	Small Grants Programme
CROP	Council of Regional Organisations of the Pacific	SOPAC	Pacific Islands Applied Geoscience Commission
CSO	Civil Society Organisation	SPC	Secretariat of the Pacific Community
DMO	Disaster Management Office	SPREP	Pacific Regional Environment Programme
EU	European Union	TAF/OFDA	The Asia Foundation / Office for Development Assistance
FAO	Food and Agriculture Organisation	UN	United Nations
FSM	Fiji School of Medicine	UNDP	United Nations Development Programme
FSPI	Foundation for the Peoples of the South Pacific International	UNEP	United Nations Environment Programme
GEF	Global Environment Facility	UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
GFDRR	Global Fund for Disaster Reduction and Recovery	UNESCO	United Nations Education, Science and Culture Organisation
GTZ	Germany Agency for Technical Co-operation	UNICEF	United Nations Children's Fund
IFRC	International Federation of the Red Cross / Red Crescent Societies	UNIFEM	United Nations Development Fund for Women
IUCN	International Union for the Conservation of Nature	UNISDR	United Nations International Strategy for Disaster Reduction
LLRM	Local Level Risk Management	UNSW	University of New South Wales
MAF	Ministry of Agriculture and Fisheries	USP	University of the South Pacific
M&E	Monitoring and Evaluation	VCA	Vulnerability and Capacity Assessment
MNRE	Ministry of Natural Resources and Environment	WIBDI	Women in Business Development Inc
MOF	Ministry of Finance	WHO	World Health Organisation
MOH	Ministry of Health	WMO	World Meteorological Organisation
NAP	National Action Plan for Disaster risk reduction and disaster risk management	WWF	Worldwide Fund for Nature
NAPA	National Adaptation Programmes for Action		
NCCA	National Council of Churches Australia		
NDMO	National Disaster Management Office		

Executive Summary

Integrating community based disaster risk reduction (DRR) and climate change adaptation (CCA) is identified at the policy and practical level as crucial to aid effectiveness. Successful integration reduces both duplication of efforts and confusion at the community level. This research focuses on Pacific community based DRR and CCA initiatives, and draws upon the knowledge and insight of key stakeholders from multiple backgrounds to develop an understanding of the current status of DRR and CCA in the region. Additional understanding is gained through detailed case studies of current projects in Fiji and Samoa which highlight the challenges and best practice methods used to integrate DRR and CCA in current community based projects.

Analysis of primary and secondary data collected for this research was undertaken with the use of the Earth System Governance framework, allowing for challenges and hurdles to integration to be viewed in a new light. This approach identified a common barrier to integrating DRR and CCA to be the multitude of organisations engaged in related initiatives. Being aware of who is involved and how (including their capacity, roles and responsibilities) can assist in bringing together and encouraging collaborative efforts of DRR and CCA stakeholders. Furthermore, understanding the context in which DRR and CCA stakeholders operate – both culturally and institutionally, can further enhance integration, as can recognition of the policy and legislative frameworks in which projects are situated.

The development of concise guidelines assists in understanding the challenges involved in Pacific DRR and CCA integration, and more importantly provides practical recommendations to support *agents* to overcome them. To assist further still, we present four activities to develop the understanding of these guidelines in practical and thought provoking ways. These activities include developing an awareness and understanding of the *agents* working in DRR and CCA and the institutional and cultural *architecture* in which they are situated.

Foreword

The need to integrate Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) has been acknowledged as a key issue in the region for a number of years. More recently, the Leaders of the Pacific Islands Forum, at a meeting in August 2009 in Cairns, sought to bring new determination for strengthening development cooperation in the Pacific. Integration of DRR and CCA will support this call for aid effectiveness. At the local level, communities themselves do not see any separation between risk reduction and climate change adaptation and talk about all aspects of disasters and climate-related challenges in the context of development. Integration therefore brings a number of potential benefits such as aid effectiveness, reducing burdens on small scale administrations in the Pacific and ultimately enhancing resilience of communities in the Pacific.

Even though the benefits of integration seem fairly intuitive, institutional arrangements and related political economies are established in a way in which DRR and CCA are managed to some extent separately. The need for integration has been discussed in the Pacific region more explicitly over the last five years but with few signs of structural change in the way in which disaster and climate change issues are managed on the ground.

The research undertaken by the Australian Tsunami Research Centre - Natural Hazards Research Laboratory (ATRC-NHRL) at the University of New South Wales casts a different light to these seemingly insurmountable institutional challenges. The research outlines who is engaged in community level DRR and CCA, the challenges for integration, the characteristics of best practice in the region for integrating DRR and CCA and practical guidance. Through the Earth System Governance framework of the 5 A's (Agency, Architecture, Adaptiveness, Accountability and Allocation) the research forces us to explore solutions through both formal and informal mechanisms in the Pacific.

If we are to make any real change towards more effective delivery of disaster and climate change related programming in the region, then we must go beyond preset institutional parameters. The novel and practical recommendations emanating from this research provides a clear yet innovative pathway forward.



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Section One: Introduction

1.1 Introduction to the project and research questions

1.1.1 Pacific Context

“Climate change has the potential to reverse hard-won development gains in the [Pacific] region.”¹

Development partners in the Pacific understand that the impacts of climate change will be severe, as noted in the above quote from the 2009 Pacific Islands Forum meeting in Cairns, Australia. Sea level rise and associated impacts (e.g. coastal erosion, storm surge, inundation and coastal hazards), changes to the nature and frequency of extreme events and threats to water resources (Mimura et al., 2007) and food security (Food and Agriculture Organization, 2008) are expected to occur in the Pacific as a consequence of climate change in coming years. In addition to these direct impacts, climate change has the potential to compound the often devastating impacts of some of the natural hazards in the Pacific. Pacific island countries (PICs) frequently experience natural hazards such as tropical cyclones and storms, earthquakes, tsunami and volcanic activity causing significant economic and human losses. Examples include tropical cyclones Ofa and Val in Samoa in 1990 and 1991, respectively, that resulted in damage equaling four times the gross domestic product (GDP) of Samoa (Ministry of Natural Resources and Environment (MNRE), 2005); a tsunami in 2009 affecting Samoa, Tonga and American Samoa killing close to 200 people and destroying scores of coastal villages (OCHA, 2009), and flooding in Fiji in 2009 that resulted in damages of FJD\$54 million with an additional FJD\$5 in humanitarian costs (Lal et al., 2009).

Natural hazards and climate change therefore challenge the significant investment in development in PICs that is made by donor countries such as Australia and New Zealand². There are strong similarities in the methods used to reduce vulnerability to disasters and climate change. Thus, it can be argued that aid effectiveness requires the successful integration of climate change adaptation and disaster risk reduction efforts. This discussion regarding integration of disaster risk reduction (DRR) and climate change adaptation (CCA) is crucial given the recent announcements of significant amounts of climate change adaptation funding in the Pacific (for example Australia’s \$150 million for the International Climate Change Adaptation Initiative for the Asia Pacific region (Australian Government, 2009)).

Although there is much discussion surrounding the topic of integration, to date, very little research exists on how this can be achieved. This research therefore investigates the challenges associated with integrating climate change adaptation and disaster risk reduction in community based projects in the Pacific. PICs are known to be intrinsically vulnerable due to their small size, insularity and remoteness, environmental factors, limited disaster mitigation capacity, demographic and economic factors (Pelling and Uitto, 2001; Méheux et al., 2007). This study focuses on Fiji and Samoa as examples of two different PICs, allowing research to develop deeper insight into some of the issues occurring in the region.

Community based projects are the focus of this research as this approach to development is becoming more common place as donors come to realise the benefits in this methodology (Uitto and Shaw, 2006). Benefits are particularly apparent for initiatives aiming to build resilience to disasters and climate change, as local communities are able to work with development partners and identify risks themselves, thereby addressing vulnerability issues using local knowledge (van Aalst et al., 2008; Mercer et al., 2009).

1. Ajay Chhibber, United Nations Assistant Secretary-General, and Assistant Administrator of the United Nations Development Programme and UNDP Director of the Asia and the Pacific Regional Bureau, at the Pacific Islands Forum in Cairns, Australia in August 2009.

2. Australia and New Zealand are two of the biggest donors supporting development in the Pacific. Australia’s estimated Official Development Assistance for 2009-10 is AUD\$32.4 million to Samoa and AUD\$35.4 million to Fiji (AusAID, 2009a). For the same period New Zealand will contribute NZ\$14 million in Samoa and NZ\$6.5 million in Fiji (NZAID, 2009).

1.1.2 Project research questions

This research aims to address the current gaps in knowledge and understanding regarding the integration of DRR and CCA in the Pacific region. Of particular interest is the use of participatory methods (Pelling, 1998; 2007) in community based programming, and whether these methods are creating projects that are more sustainable, empowering and effective by building community resilience to disasters and climate change. To achieve this, the following four research questions are addressed:

1. Who is engaged in community based disaster risk reduction and/or climate change adaptation in the Pacific, what do they do and how are they connected?
2. What are the challenges to integrating participatory disaster risk reduction and climate change adaptation in the Pacific?
3. What are the characteristics of best practice in integrated community based disaster risk reduction and climate change adaptation in the Pacific?
4. How can this information be used to enhance community resilience in the Pacific?

The first research question is addressed through a mapping exercise (see Section Two), identifying the *agents*, actors and stakeholders and their corresponding projects relating to Pacific community based DRR and CCA. Examples of these projects are examined in depth using information gathered through extensive interviews, participation in workshops and village simulation exercises to gain a deep understanding of the factors and dynamics at play which contribute to Pacific DRR and CCA (Section Three). Analysis of the key characteristics acting to assist or hinder the integration of DRR and CCA, and the challenges faced at the community to global level are presented in Section Four, which addresses research questions two and three. Our research includes the development of guidelines for integrating DRR and CCA (Section Five), and specific workshop based activities for DRR and CCA practitioners that aim to assist in overcoming the challenges we identify. These activities developed to answer research question four will act to benefit the development community involved in DRR and CCA in the Pacific and beyond by framing the issues in a fresh light (Section Six). Refer to Appendix A for a full project outline and proposal of the research. A basic definition of terms is provided in Box 1.1.

Box 1.1: Definition of terms

Before proceeding, it is useful to firstly define some of the key terms used in this research that are sometimes interpreted differently depending on the context. Here definitions are provided for the terms *community*, *participation*, *disaster risk reduction*, *climate change adaptation*, *vulnerability* and *resilience*.

The term **community** is used across multiple scales, referring to that of a village, common interest groups (e.g. the football community) and even the global community. Within this report, Gregory et al.'s (2009) definition is used, recognising community as a "group of people who share common culture, values and/or interests, based on social identity and/or territory, and who have some means of recognising, and interacting upon these commonalities" (Gregory et al., 2009:103). This recognises the geographic boundaries often seen in the Pacific and is also consistent with the definition used in the DRR and CCA literature.

Participation is a commonly contested term, subject to a range of potentially contradictory interpretations. Arnstein's (1969) seminal "ladder of participation" provides a typology of participation ranking varying types of participation from those paying lip service to the ideal, up to full citizen control and empowerment. Identifying the type of participation is valuable as project success has been influenced by higher levels of community involvement in decision making (Pretty, 1995). For a full critique of various forms of participation, see Oakley (1991), Méheux (2007) and Pelling (1998; 2007).

It is now recognised that disasters are the result of human actions, not simply natural processes (Helmer and Hillhorst, 2006). **Disaster risk reduction** (DRR) is therefore concerned with reducing the underlying factors that contribute to human vulnerability, defined as "the systematic development and application of policies, strategies and practices to minimise vulnerabilities, hazards and the unfolding of disaster impacts throughout a society, in the broad context of sustainable development" (United Nations International Strategy for Disaster Reduction (UNISDR), 2004:3). DRR activities can be concerned with "hard solutions" e.g. building infrastructure to certain standards, or "soft solutions", for example education and awareness raising.

Climate change adaptation (CCA) is defined as "an adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits benefit opportunities" (IPCC, 2007). CCA recognises that due to the concentrations of greenhouse gases in the atmosphere, our climate is, and will continue to change, despite efforts to curb emissions (IPCC, 2007). It is therefore necessary to brace ourselves to some extent for coming changes, particularly with regard to vulnerable populations and those likely to experience proportionally more negative impacts. CCA activities therefore also address vulnerability, in this respect in regard to climate (or climate driven) changes. Like DRR, CCA activities are seen as including both hard and soft solutions – e.g. replanting mangroves, coral gardening, reinforcing sea walls, ceasing upstream logging, rebuilding or maintaining healthy ecosystems, as well as climate change education and awareness raising.

Vulnerability is a term which has several meanings and definitions. Even the Intergovernmental Panel on Climate Change (IPCC) uses inconsistent meanings. For our purposes, we use the following definition: "the characteristics of a person or group and their situation that influence their capacity to cope with, resist, and recover from the impact of a natural hazard" (Wisner et al., 2004:11). Vulnerability is closely linked to sensitivity, exposure and the ability to respond (**resilience**).

Resilience refers to the ability of joint social-ecological systems to retain controls on function and structure in the event of disturbances, while being able to self-organise and build capacity for learning and adaptation (Libel et al., 2006). In ecosystem terms, this is expressed in how much disturbance an ecosystem can cope with before shifting to a different state. In social terms, this is expressed in the ability of humans to withstand and recover from stresses such as environmental change or political upheaval (Libel et al., 2006).

1.2 Current thinking on integrating DRR and CCA and community based initiatives

The conceptual and practical similarities and differences of DRR and CCA have been the subject of several recent studies (e.g., Thomalla et al., 2006; Mitchell and van Aalst, 2008; Venton and La Trobe, 2008; Mercer, 2010), which have found that whilst there are some political and physical distinctions between the scope of each field there is a key area of similarity – a focus on vulnerability reduction and the enhancement of resilience (see Figure 1.1).

Thomalla et al. (2006) argue that CCA and DRR projects need to adopt a common approach to reducing vulnerability, as the current disconnected ways of working have thus far failed to make significant headway towards vulnerability reduction. The Australian Government has incorporated integration into their policy, with coherence and coordination between DRR and CCA one of four outcomes of its 2009 DRR policy (AusAID, 2009b).

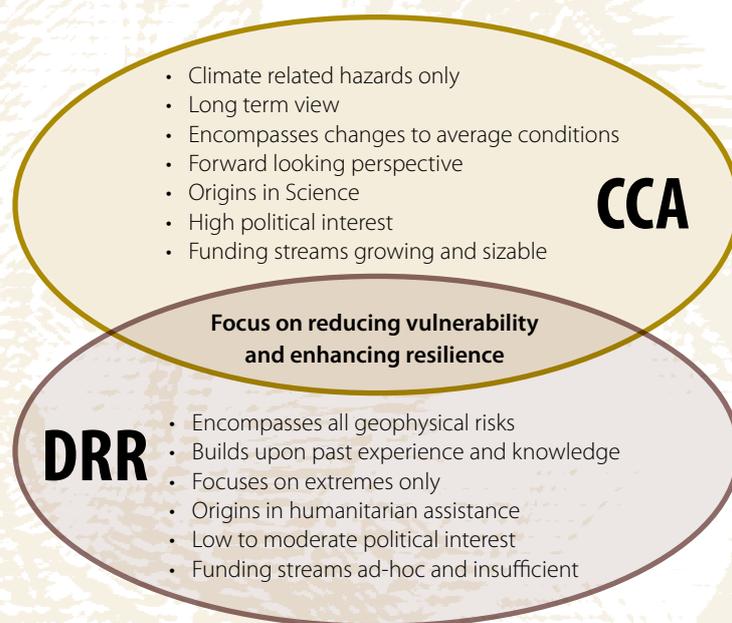


Figure 1.1. Similarities and differences of DRR and CCA (modified from Venton and La Trobe, 2008).

A number of compelling arguments for the integration of DRR and CCA have been made (Glantz, 2003; O'Brien et al., 2006; Lewis, 2007) and discussions are occurring across scales to make this a reality. Key benefits of integration have been identified as:

- Reduced climate related losses through widespread DRR measures
- Increased efficiency of resources (financial, human and natural, which is crucial when considering aid efficiency) and
- Enhanced effectiveness and sustainability of CCA and DRR approaches (Venton and La Trobe, 2008).

This research focuses in particular on community based approaches to DRR and CCA, which recognise and value local culture, conditions and development issues (Ayers and Huq, 2009) and are thus gaining momentum amongst development practitioners. Evidence of the growing

interest is partly seen in the popularity of the international workshops on community based (climate) adaptation, which attracts hundreds of participants from a range of sectors, for example the International Institute for Environment and Development's Community Based Adaptation conferences.

Within the DRR field, community based approaches to reducing vulnerability have become increasingly popular over the past 20 years (Allen, 2006). In fact, a policy trend towards valuing local knowledge and capacity (Allen, 2006), and instances of putting this policy into practice are emerging, with good examples from the Philippines and Bangladesh (see Warner, 2003; Delica-Willison and Willison, 2004; CARE-Bangladesh, 2005).

Integrating DRR and CCA in community based approaches is acknowledged to be a challenging task. DRR and CCA can involve technicalities in language, terminology and approach and consequently there is a clear need to bridge the gap between the science and local knowledge to make available relevant information at the local level, in ways that are culturally appropriate (Rojas-Blanco, 2006; Nunn, 2009). Although there is often a strong desire to keep the approach simple, the technical nature of DRR and CCA may require additional external assistance (van Aalst et al., 2008). Perhaps a solution to this challenge lies in ongoing work with local communities to devise solutions that will be sustainable for that particular location (Rojas-Blanco, 2006).

There is a clear lack of critical analysis of community based approaches with regard to DRR, CCA and vulnerability reduction (Allen, 2006). Consequently, we aim to assess the current situation of community based approaches in the Pacific, particularly in Fiji and Samoa, to assist the international community to better understand the outcomes of this emerging approach to community development. Our approach explicitly addresses issues of governance, an issue that is touched upon in the literature (e.g. Sperling and Szekely, 2005; Thomalla et al., 2006) as a confounding problem with respect to the integration of DRR and CCA at the community level.

1.3 Governance

1.3.1 What is governance?

In a 1989 discussion about development the World Bank first described governance as "the manner in which power is exercised in the management of a country's economic and social resources for development" (World Bank, 1992:1). Since then, there have been a growing number of distinct subject areas in academic literature which refer to governance in different contexts and at different scales (Krahmann, 2003).

Today, when policy makers, academics and the development community think about governance, themes emerge surrounding decision making, power and control, democracy and legitimacy, accountability and the legal framework (Lamour, 1998). Governance refers to the changing locus of political authority and the fragmentation of policy making (Krahmann, 2003). This fragmentation, and the trend from **government** to **governance**, has arisen due to changes in the international environment. Since the 1970s, we have seen not only enormous detrimental changes to the natural environment, but also intensified international trade regimes, rapid technological change (Lamour, 1998) and a shift of power away from the nation state. Furthermore, governance issues have arisen through broad social changes such as increased education and greater participation by women in paid employment (Lamour, 1998). These changes have led to the

proliferation of non-state organisations with growing political authority. From local to global levels, issues are being addressed by a range of actors and stakeholders in response to the changing nature of the state and policy making.

Governance is also high on the agenda of development agencies. In fact, "Governance is the linchpin in current international development strategy" (Goldsmith, 2007:165) as "good governance" is thought to be fundamental to economic development (Kaufman et al., 2005). While definitions of "good governance" come from a range of theoretical traditions (Lamour, 1998), it is thought to be tied to the effectiveness of government, going hand in hand with democracy (Santiso, 2001). There are, however, differences in opinion as to what "good governance" means as it depends on cultural context. In the South Pacific, for example, strong traditional organisations and political sensitivity to local pressure (Lamour, 1998) are important factors. The Worldwide Governance Indicators have been developed to measure the quality of governance and are updated annually for over 200 countries (see Kaufman et al. (2005) and World Bank (2009) for details).

Better governance is thought to lead to better development outcomes (Kaufman et al., 2005). As such, we utilise current governance theory to analyse the issues of DRR and CCA in the Pacific, since these issues are intrinsically related to development.

Environmental governance is necessary as a separate governance issue due to the complexity surrounding the management of natural resources. Aspects of the environment such as the oceans, the atmosphere, forests, deserts and rivers transcend national boundaries, and raise issues regarding ownership. For example, who owns ocean fish stocks or ground water (World Resources Institute, 2003)? Managing these resources requires more than national environmental policies. For this, and many other reasons, over time the world has shifted from one of intergovernmental politics to global governance (Bierman et al., 2009a).

Environmental governance questions how we make environmental decisions and who makes them (World Resources Institute, 2003). Issues such as access to information and the processes used to make decisions – including the level of participation – are fundamental to environmental governance (World Resources Institute, 2003). Recognition of local culture, local traditional governance structures and different perspectives of land and environment are also crucial to the concept of environmental governance.

1.3.2 What is Earth System Governance?

Earth System Governance recognises the complexity of environmental governance, particularly in the context of sustainable development. Earth System Governance is defined as:

"the interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society (from local to global) that are set up to steer societies towards preventing, mitigating, and adapting to global and local environmental change" (Bierman et al., 2009b:4).

The Earth System Governance Project is the joint effort of four global change research programs, and stems from the Amsterdam Declaration on Global Change, which urgently calls for "an ethical framework for global stewardship and strategies for Earth System management" (Earth System Partnership, 2001). Earth System Governance differs from environmental governance via the

development of its own methodology, which links all relevant social sciences and draws on natural sciences where needed (Bierman, 2007). In addition, Earth System Governance is future oriented, relying on “new forms of evidence and new forms of validity and reliability of empirical knowledge” (Bierman, 2007:334). The reason we need these new elements to assist in environmental governance is due to the speed and nature of global change. As a result, Earth System Governance has been developed as a research tool for global environmental change which links the analysis of the earth system to governance theory (Bierman, 2007).

Earth System Governance identifies five fundamental research and governance challenges, which Bierman (2007) notes as cross cutting themes in global change research. These problem structures, or the five A’s, are:

AGENCY, and who has power and authority beyond the state, and what are their roles and responsibilities? The challenge of *agency* looks into how authority is granted and exercised (Bierman et al., 2009b) and also the distinction between actors and agents. Here, civil society and non-government organisations (NGOs) are playing an increasing role.

Problems relating to **ARCHITECTURE** of Earth System Governance. This challenge relates to the emergence of governance systems, such as new institutions and networks, and how effective they are. Analysing architecture also involves assessing the overall integration of governance across scales from local to global (Bierman et al., 2009b).

ADAPTIVENESS of governance mechanisms (decision making, exercising authority, rule making, policy development) to cope with the rapid global change we are currently facing. The challenge of adaptiveness in Earth System Governance requires long term sustainability, coupled with flexibility to cope with the speed of change (Bierman et al., 2009b; Kelman and West, 2009).

ACCOUNTABILITY and legitimacy, which relate to democracy and decision making. “What institutional designs can produce accountability and legitimacy that guarantees balance of interests and perspectives?” (Bierman et al., 2009b:5).

Modes of **ALLOCATION** in Earth System Governance (Bierman et al., 2009b). This challenge incorporates *allocation* and access to information, which in turn relate to justice, fairness and equality (Bierman et al., 2009b). Furthermore, inclusion and exclusion, participation and human rights also may fall under this challenge.

Earth System Governance provides a framework which allows for problems and challenges associated with global change to be assessed and deconstructed in such a way whereby innovative solutions can be developed. This research applies the framework of Earth System Governance to expose the challenges and identify potential solutions associated with integrating DRR and CCA in the Pacific, as explained in more detail below.

1.3.3 Why use an Earth System Governance approach here?

This report identifies the current challenges and barriers to integrating DRR and CCA in the Pacific. Many of the challenges identified will not be new to those working in the field. However, by utilising the Earth System Governance framework, which fits the research problem nicely,

challenges are presented in a different light. By doing this, innovative solutions to these challenges may become more readily apparent.

For example, the *architecture* of DRR and CCA in the Pacific is complex. Firstly, the two communities are separate due to historical development. However, their practical approach is often identical, particularly at the local level. Assessing the *architecture* may resolve some of the challenges here.

There is no mistaking the relevance of *agency* with regard to DRR and CCA in the Pacific. The numerous organisations and institutions are identified in Section Two and reveal the many stakeholders, actors and *agents* involved in DRR and CCA from the local to the global level. How do these organisations forge relationships and how do they exercise authority? These questions are fundamental to the challenge of *agency* in Earth System Governance.

The remaining three A's (adaptiveness, accountability and *allocation*) are similarly addressed in a Pacific context throughout the remainder of the report³.

People working in DRR and CCA in the Pacific, and indeed globally, are cognisant that better integration between the two communities is required. Moreover, reasons why integration is not occurring are also known but separation remains. By employing the Earth System Governance approach and the 5 A's, and by viewing problems with a "governance lens", we aim to provide new insight and possible solutions to the problems surrounding integrating DRR and CCA.

1.4 Data collection and Methods

Grounded in an understanding of contemporary DRR and CCA literature, this research is informed by two extended periods of field work during which extensive semi-structured interviews were conducted with multiple *agents* and stakeholders in-country. Four weeks were spent in Fiji in July 2009 and 3.5 weeks were spent in Samoa in September 2009. A total of 47 individuals from 29 organisations were interviewed, providing insight into the challenges faced by practitioners who are struggling to find practical ways to integrate DRR and CCA at the community level.

Organisations from which participants were interviewed are listed in Appendix B. To complement data collected through interviews, researchers also participated in disaster simulation exercises that formed part of the Pacific Community focused Integrated Disaster Risk Reduction (PCIDRR) project in Naimalavau and Namuka villages in Fiji. In addition to this, researchers participated in the Mekong-Asia Pacific Community Based Adaptation (MAP-CBA) Workshop in Samoa (August 2009), alongside Pacific Islanders working on community programs. Observations during village visits associated with the CBA initiative were also undertaken in Samoa. These activities were extremely useful in gathering information and talking informally with people from different backgrounds who are involved in DRR and CCA.

An Earth System Governance framework has been adopted to address challenges relating to the integration of DRR and CCA. This approach was adopted as it lends itself to the issues and challenges emerging from the literature and our case studies. We acknowledge that alternative approaches may have been used. However, the Earth System Governance framework, as a new and innovative means to addressing challenges relating to governance, provides useful insight which has not been explored before⁴.

3. When referring to the 5 A's in this report, italics are used to remind the reader that *architecture*, *agency*, *adaptiveness*, *accountability* and *allocation* are applied in an Earth System Governance sense.

4. Further details on methods and data collection will be included in forthcoming academic papers arising from this work and will be posted on the project's web page (see <http://www.nhrl.unsw.edu.au>).

Section Two: Mapping Community based DRR and CCA

2.1 Introduction

Understanding the current context of community based DRR and CCA in the Pacific is key to identifying how the two fields can work together more effectively. Presented here is an inventory of current DRR and CCA initiatives in the Pacific developed from a desktop review of available material and validated and expanded through in-country consultations with DRR and CCA professionals. Through mapping the landscape of DRR and CCA it is possible to develop a good understanding of:

- **Who** are the actors, *agents*⁵ and stakeholders associated with community based DRR and CCA initiatives in the Pacific? The overall *architecture*⁶ of DRR and CCA also begins to emerge when identifying actors, *agents* and stakeholders.
- **What** DRR and CCA initiatives are currently occurring in the Pacific and what funding arrangements and timeframes are associated with them?
- **Where** the current DRR and CCA projects are taking place, and
- **How** the relationships and connections between actors, *agents* and stakeholders support DRR and CCA.

2.2 Who: Agents, actors and stakeholders involved in community based Pacific DRR/CCA

Organisations involved in DRR and CCA initiatives cross all scales, and include local village communities, small non-government organisations (NGOs), government agencies, and transnational institutions. These *agents* and actors come from a range of sectors of society, for example academia, the donor community, the United Nations (UN) and faith based organisations. Roles and responsibilities are diverse. For example some *agents* provide funds or technical aspects and resources while others implement projects via their networks in country and their ability to connect with people at the local level. Furthermore, *agents* may play a variety of roles depending on the situation. A list of organisations (and the sectors in which they fall) involved in Pacific DRR and CCA activities is presented in Table 2.1.

5. "Agents" here refers to actors beyond the nation state who have authority. We are interested in questions relating to governance such as how these agents exercise authority and how authority is granted (following Bierman et al., 2009a).

6. In an Earth System Governance sense, *architecture* refers to "the interlocking web of principles, institutions and practices that shape decisions by stakeholders at all levels" (Bierman, 2007:332).

Table 2.1: Agencies and organisations involved in DRR and CCA activities in the Pacific.

Non-Government Organisations (NGOs):	Faith-Based Organisations:	Council of Regional Organisations of the Pacific (CROP):	Donors:
<ul style="list-style-type: none"> • FSPI • WWF • IUCN • Conservation International • Oxfam • LajeRotuma • Women in Business Development Inc (WIBDI) • Live and Learn • Community / village groups 	<ul style="list-style-type: none"> • National Council of Churches Australia (NCCA) • Caritas • CARE • Adventist Development Relief Agency (ADRA) • Fiji Council of Churches 	<ul style="list-style-type: none"> • Secretariat of the Pacific Community (SPC) • SOPAC • SPREP • Pacific Islands Forum Secretariat (PIFS) • Forum Fisheries • Pacific Islands Development Programme 	<ul style="list-style-type: none"> • AusAID • NZAID • World Bank • Asian Development Bank (ADB) • China • Japan • European Union (EU) • German Agency for Technical Cooperation (GTZ) • Taiwan • Finland • The Asia Foundation / Office for Development Assistance (TAF/OFDA) • France • Asia Pacific Network (APN) • Force of Nature • Canadian International Development Agency
Red Cross Movement:	Government:	United Nations (UN):	
<ul style="list-style-type: none"> • International Federation of the Red Cross • RC/RC Climate Centre • National Red Cross Societies 	<ul style="list-style-type: none"> • National Disaster Management Office (Fiji and Samoa) • Ministry of Natural Resources and Environment (MNRE, Samoa) • Department of Environment (Fiji) • Fiji Meteorological Service • Ministries of Finance and Planning (Fiji and Samoa) • Ministry of Agriculture and Fisheries (Samoa) • Ministry of Health (Samoa) 	<ul style="list-style-type: none"> • FAO • UNESCO • UNDP (Pacific Centre and Multi-Country Offices) • UNISDR • UNOCHA • UNICEF • UNIFEM • UNESCAP • WHO • SGP • GEF 	
Academia:			
<ul style="list-style-type: none"> • Fiji School of Medicine • USP and PACE-SD • East-West Centre (Hawai'i) • UNSW 			

* SOPAC holds the mandate for disaster management coordination in the Pacific

** SPREP holds the mandate for coordination of climate change issues and management in the Pacific

Within community based projects, the community constitutes one of the most important (if not always the most powerful) *agents*. The Pacific, including Samoa and Fiji, maintains strong traditional local governance structures including formal Women's Committees and Council of Chiefs. Along with Church groups (see Box 2.1), these local *agents* are profoundly significant in how a village functions, including in response to disasters and climate change. In Samoa, for example, their *agency* is formalised by the links to the national government (see Figure 2.1). Here, we can see the hierarchical traditional governance structure with the *pulenu'u* (village mayor) as the "go-between" to national government (Huffer and So'o, 2005).

Box 2.1: Religion as an “agent” in the Pacific - Fijian and Samoan examples

Religion is a powerful *agent* in the Pacific. Christian Churches are ubiquitous throughout the Pacific and the vast majority of Pacific Islanders identify themselves with some Christian denomination. Conversions from local religious beliefs to Christianity began with the arrival and persistence of missionaries in the 1800s and since then Christianity has been a crucial aspect of Pacific societies. Throughout the Pacific, Christianity is a key national symbol, and Christian practices have become localized over time (Douglas, 2002). In Fiji for example, the Methodist Church is has been “Fijianised”, which does little to attempt to be inclusive to Indo-Fijians and reinforces the separation between Fijian and Indo-Fijian groups (Madraiwiwi, 2006).

Religious leaders perform a very important role in Fijian culture and society is said to be built around Three Pillars of Fijian Society:

- Na Matanitu (the government – traditional and western)
- Na Vanua (the culture, traditions, land and beliefs)
- Na Lotu (the Church, Christianity) (A. Blake, pers. comm., 2009 and Ryle, 2005).

A similar situation exists in Samoa, where the Church is a key institution relevant to village governance and development (Tuimaleali’ifano, 2000). Furthermore, *faife’au* (village pastors) rank at the peak of village, district and national hierarchies (Tuimaleali’ifano, 2000) and “to pose a public critique of the *Lotu* (Church) is almost viewed as a violation of the sanctity of the Divine” (Tofaeono, 2000: 131).

At the local level, the *agency* of religion is seen in Church’s authority in village life and day-to-day decision making. For example, in Samoa, there have been situations where people have tried to defect to minority denominations in a village and been met with hostile and violent consequences from the rest of the village population (Va’a, 2000).

Inclusion of religion in local to national politics (Huffer and Schuster, 2000), and the way in which Churches reinforce traditional authority (Tuimaleali’ifano, 2000) provide evidence for the power, authority and influence the Church wields in Pacific society.

Correspondingly, any sustainable development efforts undertaken by donors and development partners need to take the Church seriously as an *agent* for change. The approach may perhaps harness the power and influence the Church wields to maximize the benefits of a particular development initiative. See our Sections Three and Four for more information.

Regional networks in the Pacific constitute a significant agent in DRR and CCA. The “Pacific Disaster Risk Management Partnership Network” has convened annually since 2006 at Regional Partnership meetings to present advances made and share information on relevant topics. Over the past few years the Partnership Meetings have included members from the CCA community, indicating the desire to collaborate with their colleagues working on similar initiatives.

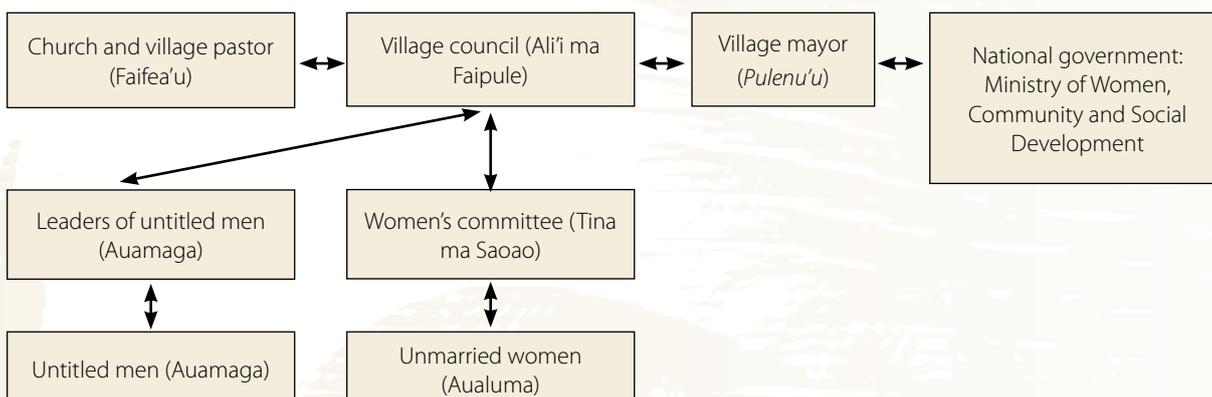
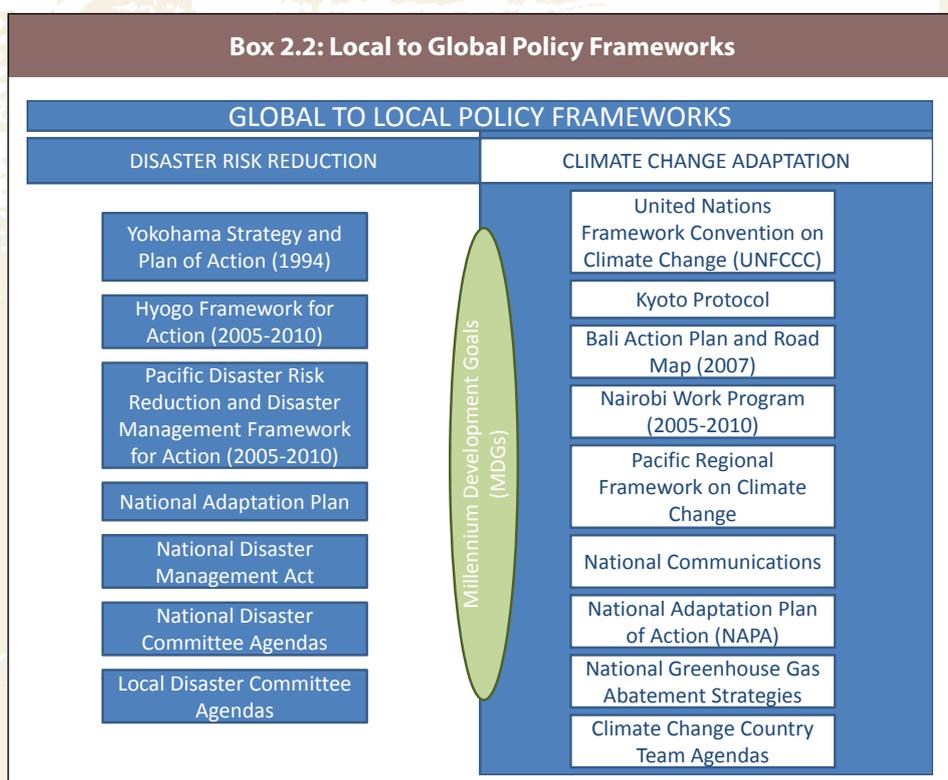


Figure 2.1. Traditional Samoan village structure (Tuiloma-Sua, pers comm.)

Within the climate change community, the Development Partners for Climate Change (DPCC) is an emerging network of predominantly Suva (Fiji) based donors, who meet face-to-face to share information for a better coordinated approach to CCA. The emergence of this group highlights the collaborative efforts and interest from the climate change and development communities to deliver effective CCA projects and programs. The DPCC also include members from the DRR community in their deliberations. The use of teleconferencing assists in linking up with members remotely; however, technology is sometimes a limiting factor in these situations. Extending membership to relevant people remotely remains a challenge. Regional meetings for the climate change community also exist in the form of the Climate Change Roundtable, which can be likened to the Regional Partnership Network meetings for the DRR community. This is discussed in more detail in Section Four. For more information on established and emerging global CCA and DRR networks, including online networks and information sharing websites, see Appendix C which describes these in more detail.

Table 2.1 clearly demonstrates that DRR and CCA in the Pacific are at least in part commonly driven by non-state actors from diverse backgrounds. These new *agents* have emerged partly in recognition of the limited capacity of governments of the Pacific to react to the growing burden of climate change and disasters. In addition, some *agents* are responsible for ensuring certain global policy is translated to national policy, e.g. the UNISDR and the Hyogo Framework for Action (2005-2010, see Box 2.2, Local to Global Policy Frameworks, for details).

The presence of UN and other multinational bodies also shows that these organisations, historically concerned with development, have shifted focus to CCA issues as climate change impacts are recognised as an impediment to development. In the Pacific especially, climate change presents one of the most serious threats to sustainable development (South Pacific Regional Environment Programme, 2006).



2.3 What: Community based DRR and CCA initiatives in the Pacific

The number of programs and initiatives in the Pacific related to DRR and CCA is growing, as the international community comes to realise that climate change is an urgent issue in need of attention particularly in small island developing countries (UNDP, 2009). Refer to Appendix D for a full list of Pacific initiatives, including some completed projects, and some yet to begin. Current community based DRR and CCA projects in Fiji and Samoa are listed in Table 2.2.

**Table 2.2. Current community based DRR and CCA projects in Fiji and Samoa (as of December 2009).
See Section Three for details of the types of activities implemented with these projects.**

Project / Initiative	Donor	Location	Implementing Agency / Organisations
Samoa Disaster Risk Reduction and Awareness Workshops	UNESCO, SOPAC, World Bank	Samoa	NDMO, multitude of other government agencies, NGOs, Red Cross
Samoa Red Cross Community Based Health and First Aid (CBHFA) Program	International and National Red Cross societies	Samoa	Samoa National Red Cross Society and government partner ministries
Climate Change and Food Security	FAO	Samoa	Women in Business for Development Inc (WIBDI)
Climate Change Adaptation in Rural Communities in Fiji	AusAID, Asia Pacific Network	Rural Fiji	University of the South Pacific (USP)
Navua Local Level Risk Management (LLRM)	UNDP Pacific Centre	Navua, Fiji	UNDP, SOPAC, Red Cross, NDMO
Live and Learn Disaster Preparedness	AusAID, NZAID, EU, SOPAC, WHO, UNICEF	Sigatoka, Nadi, Fiji	Live and Learn, UNICEF
LajeRotuma Initiative	SGP / GEF, AusAID	Rotuma, Fiji Islands	LajeRotuma Group, Community of Rotuma
Building Disaster Response and Preparedness in the Pacific	AusAID	Fiji, Samoa, Kiribati, Vanuatu	Caritas Samoa and Australia, Caritas Oceania and Pacific
Pacific Community-Focused Integrated Disaster Risk Reduction (PCIDRR)	National Council of Churches (NCCA), AusAID	Fiji, Solomon Islands, Tonga, Vanuatu	PCIDRR Team, NCCA, NDMO, ADRA
Small Grants Programme (SGP)	GEF, NZAID	Pacific Regional	UNDP
Pacific Adaptation to Climate Change (PACC)	GEF	Pacific Regional	UNDP, SPREP, Pacific Islands national governments
GEF and MAP-Community Based Adaption (CBA)	GEF / AusAID	Pacific Regional / Global	Small Grants Programme (SGP)
WWF Coastal Resilience	GEF	Fiji, India, East and West Africa	WWF, USP, SOPAC, Fiji Met Service
WWF Climate Witness	WWF	Global	WWF

2.3.1 Community based DRR and CCA activities

Common themes emerging from the community based DRR and CCA projects listed above include vulnerability reduction and enhancing resilience within communities, as these practices can reduce risk at the local level and be specific to the community's needs. Many are explicit in how these themes are addressed (e.g. the FAO funded Climate Change and Food Security project in Samoa which provides assistance in poverty alleviation and in developing sustainable livelihoods), while others address vulnerability in a more subtle way (e.g. Caritas's project in the Pacific).

Projects focus on activities such as water and food security, shoreline erosion, poverty reduction, education and sharing information on sustainable livelihoods. For both DRR and CCA, activities may be "hard solution" (relating to constructing or maintaining infrastructure such as sea walls) or "soft solution" (relating to changing behaviour or attitudes through education and awareness raising). Most projects employ some sort of community vulnerability assessment tool, such as Red Cross's Vulnerability and Capacity Assessment (VCA, see IFRC, 2006). Tools such as the VCA are becoming common practice in community based programs and are developed by a range of organisations for specific purposes. See Box 2.3 for a list of selected community vulnerability assessment tools.

Interestingly, some of the same activities are claimed by both the DRR community as reducing risk of "disasters", and the CCA community as adapting to climate change. An example can be seen in the construction of sea walls. Sea walls, or "shoreline protection" of other varieties, are not a new phenomenon and were traditionally constructed to reinforce the coastline after events such as tropical cyclones. Climate change scenarios indicate tropical cyclones and severe weather may become more frequent and intense, thus a sea wall may be considered a response to climate change. A similar story exists for drought and flood in the Pacific, which have historically occurred but may become more severe with a changing climate. Thus, DRR and CCA both claim water and food security as measures to overcome these threats. Here we can clearly see the need and opportunity for integration of DRR and CCA.

Another example may be seen in the Samoa Red Cross Community Based Health and First Aid (CBHFA) Project which, upon initial inspection, appears to have only tenuous connections to DRR and CCA. However, the project's holistic view of vulnerability and capacity ensures that both DRR and CCA are included in discussions alongside other risks relating to health and disease, nutrition and education.

Other similarities include drawing upon the traditional knowledge and methods for coping with severe weather and disaster that have developed over time as residents of the Pacific learnt to cope in an environment prone to events such as tropical cyclones and flooding. Both the Climate Change and Food Security project in Samoa and PCIDRR in Fiji encourage traditional food and water storage methods as part of their work.

Most community based DRR and CCA projects incorporate some kind of capacity building, education and/or awareness raising element as behavioural change can significantly reduce vulnerability to disasters and climate change. The Caritas project Building Disaster Response and Preparedness in the Pacific aims to educate people on disaster preparedness, risk reduction and response with the objective of altering individual behaviour. By understanding how to be prepared for disasters and how to respond when they occur, people's adaptive capacity is greatly

enhanced. As such, a capacity building element is also included in the majority of community based DRR and CCA projects. The approach is often via an outsider to the community conducting presentations and workshops on DRR and / or CCA, although the approach can vary. Creative methods that draw upon local people's own knowledge are also used, for example the WWF's Coastal Resilience project includes seasonal calendars, community mapping and participatory workshops. The Samoa Red Cross exercises considerable creativity with the use of puppets, plays and acting to convey important messages surrounding village vulnerability. Given the fact that English is usually the second language of Pacific people, having information conveyed in the local language is beneficial and fortunately often the case.

Box 2.3: Examples of Community vulnerability and assessment tools

Tool	Organisation
Community Risk Assessment (CRA) Tool Kit	Provention Consortium
Vulnerability and Capacity Assessment (VCA)	International Federation of the Red Cross Societies
Community Based Risk Screening Tool – Adaptation and Livelihoods (CRiSTAL)	International Institute for Sustainable Development (IISD), World Conservation Union–IUCN
Climate change and Environmental Degradation risk assessment (CEDRA)	TearFund
Opportunities & Risks of Climate Change & Disasters (ORCHID)	Institute of Development Studies (IDS)
Capacity and Vulnerability Assessment (CVA)	Citizenry-Based & Development-Oriented Disaster Response (CDRN)
Disaster Risk Assessment	UN-HABITAT
Vulnerability and capacity assessment (CVCA)	Emergency Preparedness Canada
Hazard Risk Vulnerability Assessment (HVRA)	British Columbia, Provincial Emergency Program
Hazard, Vulnerability and Capacity Assessment (HVCA)	Citizens Disaster Response Network (CDRN), Philippines
Participatory, Vulnerability & Capacity Assessment (PVCA)	PROYAS
Participatory Disaster Risk Assessment	Asian Disaster Preparedness Centre
Participatory Vulnerability Analysis (PVA)	ActionAid
Resilience and Vulnerability Assessment (RVA)	Emergency Management Australia (EMA)
Community Vulnerability and Adaptation (CV&A)	SPREP, part of CBDAMPIC Project
Climate Witness	WWF

Given the strong gender roles that exist in many Pacific cultures, some projects factor in gender sensitivity into their programming approach. Single gender workshops are one way to ensure both women and men are able to express their opinions freely, and this is an aspect of the WWF's Coastal Resilience project. Recognising the various roles women and men play in village life is also important for project planning. As such, the Samoa Red Cross implements its CBHFA initiative through the Church network of the village, rather than through the traditional village governance structure. If implementation was via the latter, women would be expected to prepare food and refreshments for the outsiders, excluding them from participating in project activities.

2.3.2 Funding and resourcing

The Global Environment Facility (GEF) is the financial mechanism for the United Nations Framework Convention on Climate Change (UNFCCC). The GEF funds a significant proportion of climate change related projects, including community based projects such as WWF Coastal Resilience and Community Based Adaptation in Samoa. DRR projects have varied funding sources, including bilateral donors such as AusAID and NZAID, the World Bank and CROP agencies such as SOPAC. Box 2.4 provides a comparison of funding sources, and shows how separate funding mechanisms can serve to reinforce the inhibiting factors that divide DRR and CCA.

The duplication of DRR and CCA activities highlighted in Section 2.3.1 directly relates to funding and resourcing issues for donors in the region with clear implications for aid effectiveness. This alone provides a clear argument for why integration of DRR and CCA is crucial.

Box 2.4: Funding sources for DRR and CCA – an example

Global Fund for Disaster Reduction and Recovery (GFDRR)

- Partnership of ISDR, the World Bank and 23 donor countries
- Support implementation of the Hyogo Framework for Action (HFA)
- Provides technical and financial assistance in high risk, low income countries to mainstream DRR into national development strategies

= disaster risk reduction initiatives

Global Environment Facility (GEF)

- Financial mechanism for UNFCCC
- Provides US\$250 million for adaptation and mitigation activities
- Independent financial institution
- Has been providing funds for environmental projects in developing countries since 1991

= climate change initiatives

2.4 Where: Locations of projects

As illustrated in Table 2.2, DRR and CCA initiatives in Fiji and Samoa range considerably in size and scope (a pattern mirrored across the Pacific). Projects such as that of the WWF Coastal Resilience project, which focuses on enhancing the resilience of mangrove ecosystems also form part of global level initiatives. A number of projects are described as 'regional', meaning they encompass more than one of the 14 PICs⁷. There are also a number of country specific programs such as Samoa Red Cross' CBHFA. Some projects restrict their focus so as to be village / community specific. Single community projects are commonly used as pilot projects or case studies to gain knowledge and experience of a certain case in its natural setting with the hope that the approach may be expanded elsewhere (Punch, 2005). An example of this is the Navua Local Level Risk Management Pilot Project in Fiji - a collaborative effort between the UNDP, SOPAC and Fiji Red Cross focused on reducing the risks in the village of Navua.

Understandably, regional and sub-regional projects are usually funded by the larger donors and regional organisations with the capacity to finance and manage a number of initiatives. It is the regional projects that are often a collaborative effort since a pool of funds can deliver a range of positive outcomes, and a group of organisations can provide a range of expertise required for multi-disciplinary activities. For example, the UN's Food and Agriculture Organisation (FAO) runs a

7. Federated States of Micronesia, Kiribati, Fiji, Nauru, Republic of Marshall Islands, Solomon Islands, Palau, Samoa, Vanuatu, Tokelau, Tuvalu, Niue, Tonga and Cook Islands. Territories of the USA (Guam, American Samoa) and France (New Caledonia, French Polynesia) are generally excluded from 'regional' projects.

Pacific-wide program in collaboration with agricultural ministries of government to improve PICs' stability and resilience to natural disasters and the impacts of climate changes from a food security standpoint (Food and Agriculture Organization, 2008).

Given the vast geographical spread of PICs, most headquarters for regional Pacific *agents* are located in Suva, Fiji, stemming from the country's existing infrastructure and history of being the central hub for the Pacific. This allows *agents* to meet and develop relationships and collaborate on joint initiatives. While in the developed world, technology allows for Skype, video-conferencing and teleconferencing, in the Pacific technology is still limited, making these forms of communication at times impossible. Travelling around the Pacific is expensive due to the isolated nature of some islands. Thus, access to DRR and CCA projects, support and information sometimes does not happen due to the prohibitive expense and lack of technology. This issue will be difficult to resolve since improving technology is an extremely expensive exercise. Much of the Pacific is highly vulnerable to the effects of climate change and questions of fairness in the *allocation* of adaptation initiatives arise (Adger et al., 2006). So in which countries or communities are projects allocated? Is the *allocation* fair and inclusive of the most vulnerable? Here, the DRR and CCA actors, *agents* and stakeholders need to be aware of each other's programming so as not to duplicate efforts, or perhaps more importantly, disregard communities in need. Communication between the DRR and CCA communities is crucial, as are good relationships within and between communities.

The South Pacific Regional Environment Program (SPREP) is the Pacific's chief organisation responsible for climate change matters and is located in Apia, Samoa. The Secretariat for the Pacific Community (SPC) is another important Pacific organisation for DRR and CCA, located in Noumea, New Caledonia. These organisations are considered Council of Regional Organisations of the Pacific (CROP) agencies, commonly referred to as CROP agencies. Supported by both the Australian and New Zealand governments, CROP agencies are regional intergovernmental bodies and wield considerable authority in the Pacific. The locations of organisations are important as good relationships and face-to-face meetings are crucial to the development of sustainable and positive outcomes.

2.5 How: Relationships and connections

Disaster risk management (DRM) and DRR are not new themes in the Pacific, as the region frequently experiences disasters. As a result, the Pacific DRR/DRM community is a well established and relatively organised group which is illustrated via the active Pacific Disaster Risk Management Partnership Network. Led by SOPAC, the Pacific organisation with the mandate for DRR, the Network meets annually to share information, skills and experience and to coordinate future projects and programming. The Pacific Disaster Net website assists in facilitating information sharing amongst Network members (see www.pacificdisaster.net). Therefore, the institutional *architecture* surrounding DRR in the Pacific is well established, although there is scope for expansion through wider engagement with NGOs and CSOs.

Climate change is now recognised as a serious threat to the livelihoods of people globally, not least those living in the Pacific due to the smallness, remoteness, environmental and economic factors (Pelling and Uitto, 2001). Over the past few years, momentum has steadily built and real action on climate change, particularly CCA, is now the focus for many development projects in the Pacific. The climate change community, however, is less tangible than that of DRR. This is mainly

due to the fact that climate change is likely to impact, at least in some way, upon all sectors, from agriculture to tourism to infrastructure and beyond. Forming a discrete group of those concerned with climate change is therefore a difficult task. Mainstreaming CCA is now being encouraged in development circles (Sohn et al., 2005), as gender was in the past (United Nations, 2001).

SPREP, as mentioned in Section 2.4, is responsible for coordinating climate change mitigation and adaptation in the Pacific, partly through the Pacific Islands Framework for Action on Climate Change (PIFACC, see South Pacific Regional Environment Programme, 2006). Additionally, SPREP coordinates the Pacific Islands Climate Change Roundtable (PICCR), an annual gathering of governments, regional and international organisations including civil society to coordinate and collaborate on climate change issues and action in the Pacific (South Pacific Regional Environment Programme, 2006). These annual meetings provide the means to build, develop and maintain good relationships between governments, development partners and NGO / CSOs to improve the delivery of CCA initiatives. Encouragingly, DRR counterparts are becoming regular participants in these meetings, providing time to build and develop relationships with their CCA counterparts. This is a strong recognition of the need to integrate better across communities, and a positive step for future collaboration and information sharing.

The Suva-based Development Partners for Climate Change (DPCC) may well be one of the first formal networks in the Pacific to form as a result of climate change. We can only expect that other similar networks will develop in coming years. Therefore, the institutional *architecture* for CCA is harder to define, and would-be members are scattered across sectors. Core “self-identified” members, such as SPREP and the DPCC do exist as a basis to the climate change community but it is evident that more cohesion and coordination within the community are required.

2.6 Summary and conclusion

This exercise of mapping the “who, what, where and how” of DRR and CCA in the Pacific has identified many *agents*, actors and stakeholders involved from a range of sectors. It has also shown that the DRR *architecture*, due to its longer history, is more established and robust than that of the CCA community, which is in its early years of formation and development.

DRR and CCA initiatives in the Pacific are evolving in such a way that past obstacles to integration are slowly dissolving, if not only via the recognition that better communication between the communities is needed. Unfortunately, limited technology is a barrier to linking people across the Pacific when face-to-face meetings are not possible. The geographic nature of the Pacific, including the isolation of many islands, is an additional prohibitive factor to information sharing as travelling around the islands can be extremely expensive.

Networks such as the Pacific Disaster Risk Management Partnership Network assist in the integration of DRR and CCA through their annual conference, which serves as an information sharing opportunity across scales. NGOs, government ministries, donors and transnational bodies such as the World Bank are represented, allowing for an exchange of ideas and a chance to collaborate further in efforts to reduce vulnerability and enhance resilience to disasters and the effects of climate change. Perhaps better representation from the NGO and CSO sector could improve democratic governance, allowing this sector of society to have a voice in important decision making.

Issues and challenges identified through this mapping exercise are further explored in Sections Three and Four. A focus on governance as a tool to assist in defining the problems of integrating DRR and CCA may lead to innovative and creative insights to provide the means for donors and development partners to better assist the Pacific region to cope with the challenges of disasters and climate change.

Section Three: Community based DRR and CCA – examples from Fiji and Samoa

3.1 Introduction

Case studies are used in social research to gain a full understanding of a case in depth, in its natural setting and taking into account complexity and context (Punch, 2005). Case studies presented here are “instrumental case studies” (Punch, 2005), used to provide insight into the reality of practice of community based DRR and CCA in the Pacific. Through the case studies, common characteristics of successful initiatives and common themes relating to the challenges of integrating DRR and CCA are identified.

Of the eight cases studied, three are presented here in depth to illustrate the diversity of CCA and DRR projects. Multiple *agents*, actors and stakeholders involved in these three case studies (Samoa Community Based Adaptation (CBA), Navua Local Level Risk Management (LLRM) and Pacific Community focused Integrated Disaster Risk Reduction (PCIDRR)) were interviewed to develop a full picture of each project. In addition, participation in project related activities and workshops in Fiji (in July 2009) and Samoa (in August/September 2009), and holding an informal focus group, provided further information and scope to allow for a more robust and comprehensive picture to be developed for each case study. The remaining five case studies provide further information on the types of activities associated with community based DRR and CCA in the Pacific.

Here we present an overview of the types of activities the case studies use and describe the funding, project partners and aims and objectives of the projects. Full reports on each case are presented in Appendix E.

3.2 Overview of Case Studies

DRR and CCA projects studied in this research vary in their approach. Some are pilot projects, such as the Navua LLRM Project, others form part of a global initiative with either Fiji or Samoa selected as countries for implementation, for example WWF Coastal Resilience and Samoa CBA, respectively. The projects incorporate a range of different activities to meet their objectives and are described in Table 3.1. Figures 3.1 and 3.2 show the locations of the key case studies presented below.

Table 3.1. DRR and CCA Case Study Information

Project / Initiative	Donor	Location	Implementing Agency / Organisations	Activities	Aims and objectives
Pacific Community-focused Integrated Disaster Risk Reduction (PCIDRR)	National Council of Churches (NCCA), AusAID	Fiji, Solomon Islands, Tonga, Vanuatu	PCIDRR Team, NCCA, NDMO, ADRA	Disaster management training, development of Community Disaster Plan and disaster response practice via simulation exercise.	To create better awareness and understanding of disaster risks at the community level and to identify means to enhance resilience to these risks. Creation of Community Disaster Plan, training of people in village in disaster response (National Council of Churches Australia (NCCA), 2007).
Samoa Community Based Adaption (CBA)	GEF / AusAID	Global: 10 pilot countries including Samoa	Small Grants Programme (SGP) and United Nations Development Programme (UNDP)	Enhancing community resilience to climate change via community education and awareness, coupled with "hard solutions" such as shoreline protection.	Enhancing community resilience and the ecosystems upon which they depend via a "results based approach" including community adaptation priorities (United Nations Development Programme (UNDP), 2008).
Navua Local Level Risk Management	UNDP Pacific Centre	Navua, Fiji	UNDP, SOPAC, Red Cross, NDMO	Education and community awareness for pre-existing early warning flood system in addition to multi-stakeholder involvement in long term community awareness activities.	Using the Local Level Risk Management (LLRM) approach, capacity building with the community, NGOs and local authorities in terms of risk sensitisation and disaster risk sensitive development projects.
Building Disaster Response and Preparedness in the Pacific	AusAID	Fiji, Samoa, Kiribati, Vanuatu	Caritas Samoa and Australia, Caritas Oceania and Pacific	Education and community awareness with the aim being to change behaviour to incorporate better preparedness for disasters in everyday living.	To raise awareness and educate key Catholic people in disaster risk reduction in order to pass this information on to the wider community (Caritas Australia, 2008).
WWF Coastal Resilience	GEF	Fiji, India, East and West Africa	WWF, USP, SOPAC, Fiji Met Service	Community consultation coupled with scientific evidence to devise strategy to manage coastal mangrove ecosystems.	To develop a "generalisable" approach to addressing coastal resilience across similar habitats (i.e. mangroves), and maintaining intact mangrove systems that support the connectivity between mangroves and coral reefs.
Samoa Disaster Risk Reduction and Awareness Workshops	UNESCO, SOPAC, World Bank	Samoa	NDMO, multitude of other government agencies, NGOs, Red Cross	Education and community awareness relating to disasters. Follow up activities with the assistance of government ministries, including potential "hard solutions" depending on the needs of the community.	To strengthen village understanding of current vulnerability and capacity, risk reduction measures and consequently formulating a village Response Plan Booklet for all households. To also have a village simulation to test the response of the village to a disaster.
Samoa Red Cross Community Based Health and First Aid (CBHFA) Program	International and National Red Cross societies	Samoa	Samoa National Red Cross Society and government partner ministries	Education and community awareness relating to the specific needs of the community, using Red Cross's Vulnerability and Capacity Assessment (VCA) tool. Specific attention paid to disaster and climate change related issues and needs. Inclusion of government ministries to allow for follow up of additional activities.	To assess the specific vulnerabilities of the village and develop a targeted response to educate people in ways to overcome and become more aware of the risks in their daily lives.
Climate Change and Food Security	FAO	Samoa	Women in Business for Development Inc (WIBDI)	Education and community awareness relating to food security, nutrition and sustainable livelihoods. Provision of seeds and piggeries as start-up resources for identified family in need of assistance.	To target the most vulnerable people in communities and assist them in developing their own sustainable livelihoods. The approach includes assisting families reduce their dependence on remittances from family members overseas by becoming self-sufficient and growing their own food, and possibly growing enough to provide an additional source of income.

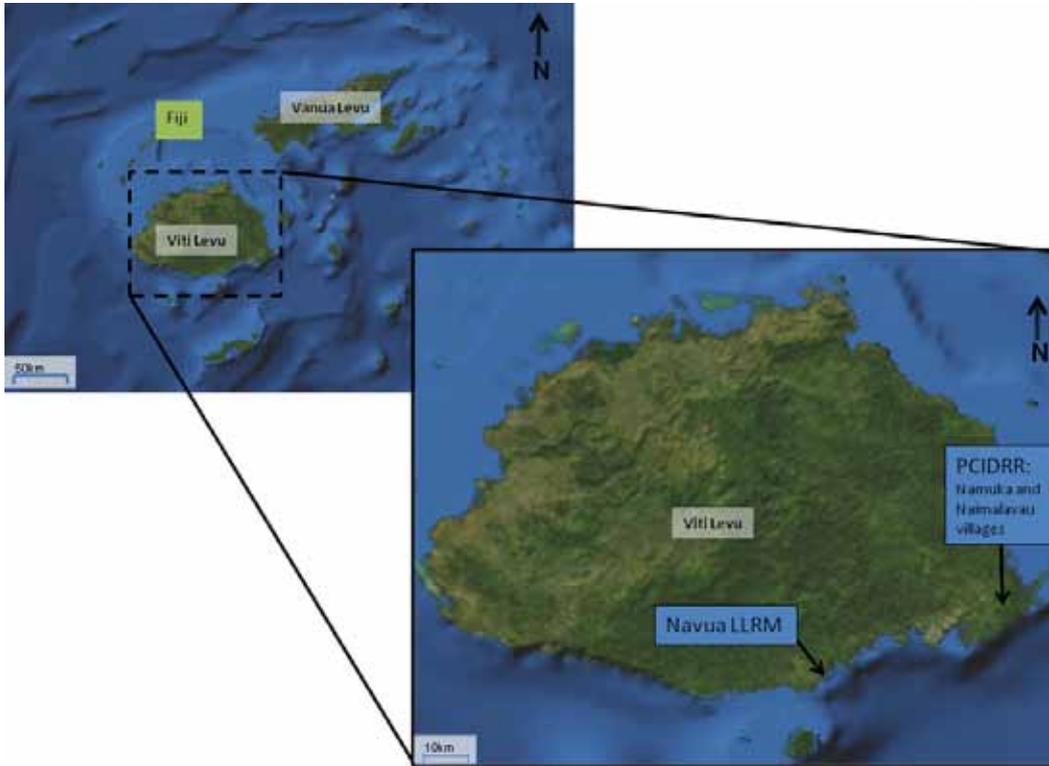


Figure 3.1. In depth case study locations in Fiji (adapted from Flash Earth <http://www.flashearth.com/>)

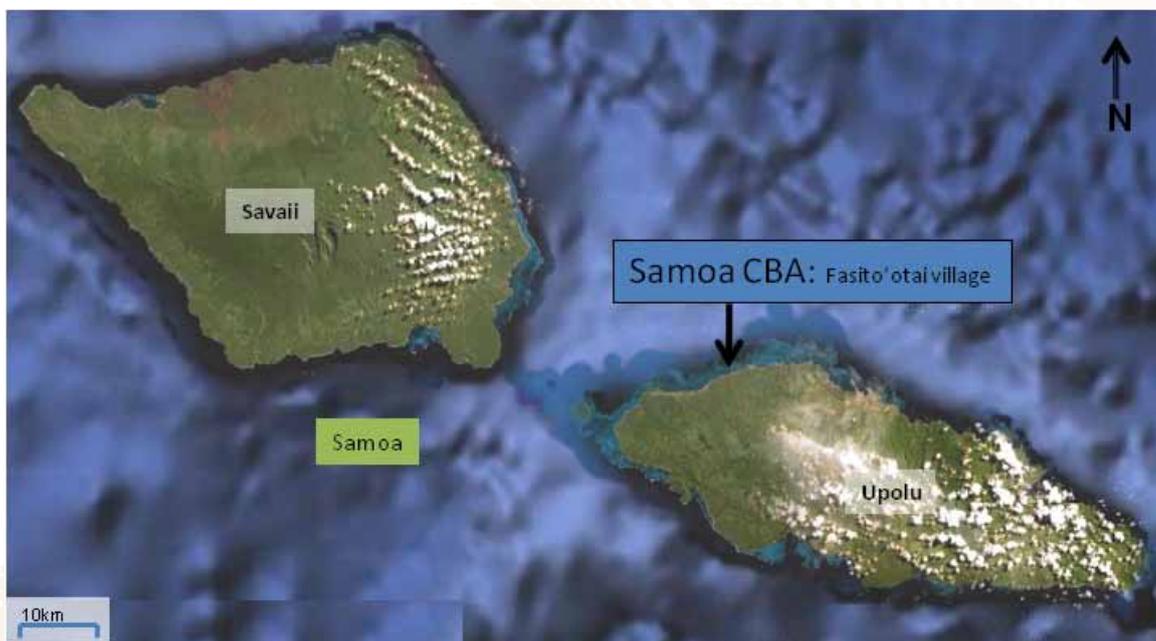


Figure 3.2. In depth case study location in Samoa (adapted from Google Maps).

3.3 In-depth case study summaries

3.3.1 Pacific Community-focused Integrated Disaster Risk Reduction (PCIDRR)

Pacific Community-focused Integrated Disaster Risk Reduction (PCIDRR) is a community based DRR initiative, funded by AusAID and implemented through the National Council of Churches Australia (NCCA) and the Church networks in the four countries in which it is implemented – Fiji, Solomon Islands, Vanuatu and Tonga. Its goal is to “create safer more resilient Pacific island communities to disasters so that people may achieve sustainable livelihoods and have more control over their lives” (National Council of Churches Australia (NCCA), 2007:2). Material presented here focuses on Fiji’s implementation.

The project’s activities involve training key people in Pacific communities in community based disaster risk management (CBDRM), and working closely with the community to develop village specific Community Disaster Plans (CDPs). CDPs are designed to identify relevant vulnerabilities and capacities and suggest ways to enhance community resilience to known threats (e.g. floods, tropical cyclones). PCIDRR activities also include disaster preparedness and response plans to cope with these hazards should they occur (as seen in Figure 3.3 which shows a disaster simulation in Naimalavau village, July 2009). While PCIDRR includes no explicit mention of climate change adaptation (CCA), it could be argued that CCA is implicitly included since events such as tropical cyclones and flooding, which are identified in the CDP, are likely to become more frequent and intense with future climate change (IPCC, 2007). Preparing for these hazards and identifying means to overcome community vulnerability to them may then be seen as a form of CCA. The focus solely on DRR is likely to stem from the project’s origins and requirements from AusAID. The donor is likely to have specified the focus on DRR, thus the NCCA followed this up with the development of the project which uses DRR language, DRR partners and DRR methodologies.



Figure 3.3 Naimalavau Village Disaster Scenario, July 2009

3.3.2 Navua Local Level Risk Management (LLRM) Project

Local Level Risk Management (LLRM) is a tool used to address risk by engaging with local organisational and institutional structures. This approach is used in Navua, Fiji, which is an area susceptible to severe flooding with examples being recent events in 2003 and 2004. The aim of this UNDP Pacific Centre two year project is to build upon a previous project, which was an early warning system for flood. The Navua LLRM project extends the early warning system initiative to work closely with the community, local organisations and various levels of government to reduce the area's risk to flooding (see Figure 3.4 which shows the sign in Navua describing the warning system).



Figure 3.4 Navua Early Warning System for flood

Many of the key *agents* in DRM in the country and region were involved in the project. This includes the Fiji Red Cross, with technical input from their global counterpart IFRC, SOPAC (which initiated the early warning system along with the Fiji Public Works (Hydrology Division) and Fiji Meteorological Service), the National Disaster Management Office (NDMO) and TAF/OFDA for DRM training assistance. Global donors such as the Global Environment Facility (GEF) and the Bureau for Crisis Prevention and Recovery (BCPR, a UNDP body) who provide technical assistance in devising DRR strategies for implementation were also involved.

The origins of this project lie in DRR, firstly from the flood early warning system, and then leading on to the LLRM approach which aims to reduce existing risk at the local level. Project partners also come from a DRR background (SOPAC, Red Cross, TAF/OFDA and importantly, the NDMO). Therefore, the scope and focus of the project is DRR, extending to the language and terminology used in workshops, meetings and documents, as well as the general mindset of the implementing partners. It could be argued, however, that this project does incorporate aspects of climate change adaptation (CCA) via the early warning system and also the community awareness aspects. Flooding could become an increasing risk with climate change with potentially more frequent and intense severe flooding events (IPCC, 2007). Therefore, this project can be seen to be adapting to the future risk by raising awareness and increasing preparedness to severe flooding.

3.3.3 Samoa Community Based Adaptation

The Community Based Adaptation (CBA) Project was formulated as a pilot project for 10 developing countries, including Samoa. Funded by the Global Environment Facility (GEF) and AusAID, the initiative aims to assist countries with on-the-ground action to cope with climate change impacts. Enhancing community resilience and the ecosystems upon which they depend is a key aim of the CBA approach (Global Environment Facility, 2009). The goal of the Samoa CBA initiative is to enhance the adaptive capacity of the village of Fasitootai and reduce the vulnerability of the mangrove and coral reef ecosystem to the risks associated with climate change. This will be achieved via a number of activities, including climate change education and awareness raising, construction of shoreline protection and replanting of mangroves to stop coastal erosion (see Figure 3.5 for an image of the village site).



Figure 3.5. Fasitootai village in Samoa, CBA project location

Global to local *agents*, actors and stakeholders are involved in this project. From the local level, the communities themselves represent a significant agent, with sub-groups and key people involved in the project. This includes the Church, the Council of Chiefs, the Women's Committee and the Development Committee. At the national level, government ministries such as the Ministry of Natural Resources and Environment (MNRE) and the Ministry of Works are involved, as well as the GEF-SGP Secretariat, the UNDP Country Team, the National Steering Committee and the Technical Review Committee. At the regional level, SOPAC, SPREP, UNSW and UNDP Technical Advisors are involved. Finally, GEF, AusAID and UNDP represent global level *agents* and stakeholders.

Since the "A" in CBA refers to climate change adaptation, the aim of the CBA initiative is to adapt to climate change at the community level. However, the outputs listed for the CBA project focus on reducing risk and enhancing resilience, with activities which could be arguably contributing to DRR. It just so happens that climate-related risk is the focus. The CBA initiative in Samoa

can therefore learn from the DRR field, by drawing on the expertise and experience of DRR practitioners such as those from the Disaster Management Office. This will enable lessons learned to be incorporated, and similar projects addressing vulnerability to be taken into account to reduce duplication of efforts and result in better outcomes for the community.

3.4 Remaining case studies

Building Disaster and Response and Preparedness in the Pacific – Caritas: The newly established Caritas Samoa branch is working with local communities, especially targeting the youth, to change behaviour on disaster risk reduction. By raising the awareness of disasters, the project aims to provide soft solutions in DRR.

WWF Coastal Resilience: This initiative couples with the Climate Witness approach, drawing on local indigenous knowledge of ecosystems and linking to scientific knowledge to develop a “generalisable” approach to coastal mangrove ecosystem management.

Samoa Disaster Risk Reduction and Awareness Workshops: The Disaster Management Office of Samoa is leading this project which provides a holistic approach to DRR. The aim is for each village in Samoa to be involved, highlighting local risks and capacity. Multiple partners from government and NGOs are involved.

Samoa Community Based Health and First Aid: Samoa Red Cross applies innovative and creative means to address community vulnerability, by firstly employing their Vulnerability and Capacity Assessment (VCA), then devising a targeted strategy based on the needs of the village.

Climate change and food security: This Women In Business Development Inc (WIBDI, a Samoan NGO) initiative addresses livelihood issues faced by Samoan families. It includes issues relating to health, nutrition and income generation alongside DRR and CCA, which are inherently present when discussing issues of livelihoods.

Section Four: Integrating DRR and CCA using Earth System Governance

4.1 Introduction

Earth System Governance offers a fresh and practical perspective of the strengths and challenges associated with projects that operate in the field of environmental management. The framework can be usefully applied to identify the key characteristics of integrated DRR and CCA in the Pacific. As will be shown below, the diversity of projects in the Pacific that are involved in DRR and / or CCA provides a range of examples of how the Earth System Governance framework's five A's assist in viewing the strengths and challenges in a slightly different light, and also begins to provide suggestions to help integrate DRR and CCA. In the following sections each aspect of Earth System Governance is taken in turn and current DRR and CCA projects in the Pacific are discussed.

Firstly, Table 4.1 groups important overarching themes and considerations of the case studies according to the five A's. Note that some aspects are cross-cutting themes and thus appear under more than one heading.

Table 4.1. Elements of case studies according to Earth System Governance's five A's

Agency	Architecture	Adaptiveness	Accountability	Allocation
Importance of relationships and personalities	Policy and funding <i>architecture</i> as barriers	Inclusion of local knowledge and village specificity	Accountability and the participatory approach	Resources and funding
Awareness of <i>agents'</i> roles and responsibilities	Pacific <i>architecture</i> and SPREP versus SOPAC	Cultural considerations	Roles and responsibilities – local to global	Inclusion and exclusion
Multiplicity of <i>agents</i> and lack of integration	Changing / rearranging the <i>architecture</i> ?	Adaptiveness of <i>agents</i>	Capacity building and commitment to sustainability	Commitment to sustainability
Agency of the Church in the Pacific	Recognition of existing <i>architecture</i>	Learning by doing	Application of lessons learned	Allocation and access to information
Communities as <i>agents</i>		Holistic approach to vulnerability reduction		
Gender as an <i>agent</i>				
Capacity of <i>agents</i>				

We now discuss these issues using the governance framework and according to the five A's, using examples and evidence from interviews⁸, observations and the literature. The end of this section presents overall challenges and best practice for integrating DRR and CCA in the Pacific. We also highlight the positive elements from our case studies that should be shared widely and learned from for future success in community based DRR and CCA.

8. When referencing interviewees, we identify them by the sectors mentioned in Section Two and abbreviate as follows: Non-Government Organisation = N, Faith Based = FB, Council of Regional Organisations of the Pacific = C, Donor = D, Red Cross/IFRC = RC, Government = G, United Nations = UN, Academia = A. Numbers following the sector code distinguish between individual interviewees.

4.2 Agency

"[It is] important to understand local structures - who says what, who is the decision maker, community organisations and what kind of roles they play." UN3

The preceding mapping exercise in Section Two uncovered a range of *agents* involved in Pacific community based DRR and CCA. These *agents* may be communities themselves (or subsets of communities, such as Women's Committees), NGOs, government departments or UN bodies. *Agents* are actors with authority to make decisions and they are increasingly from non-government sectors (Bierman, 2007).

The significance of *agency* can be seen in the above quote from a case study participant, which highlights the importance of understanding who the key actors are, what they do and how they operate. The ways in which *agents* interact and how *agency* is recognised within and between the DRR and CCA communities impact upon the level and quality of integration between DRR and CCA. A number of relevant aspects of *agency* identified in relation to Pacific DRR and CCA projects are described below.

4.2.1 Relationships and personalities in the Pacific

Across the Pacific, families and kin groups are a central feature of social organisation, defining individual's rights and obligations, with great respect shown to those who acknowledge their family by way of financial, moral and physical support (Macpherson and Macpherson, 2000). Some DRR and CCA *agents* recognise the *agency* of local structures and many projects take advantage of this to achieve their objectives. One project in Samoa, for example, focuses on educating youth about DRR and is doing so through traditional hierarchical structures:

"Samoa is a family oriented society, it's where everything starts from. Young people listen to the matais [chiefs] and the chiefs and the council, so that's one way of changing behaviour and the mindset of the youth." FB5

It is not surprising then, that the "family" or group of DRR and CCA practitioners in the Pacific replicate this social practice by respecting one another and offering assistance to their DRR and CCA "kin". Perhaps this is a scaling up of the value of family in the Pacific. Case studies often revealed the importance of relationships in the Pacific, for example:

"Relationships are more important here than elsewhere – [we] need to stay in the community and build the trust. It takes more here. [We] have to understand the culture and don't come in as a stranger." UN3

As this participant notes, the need to understand the local culture is a crucial element of any work in the Pacific. Culture may indeed be viewed as an invisible agent in its own right, as tradition and cultural practices dictate how things must be done. Adherence to and understanding of the *agency* and authority of culture therefore provides a good basis to developing lasting relationships in the Pacific. The case studies which made an explicit effort to align their activities to culture within the local context (e.g. Navua LLRM and Samoa CBA, See Figure 4.1) were accepted more readily by the local community, and are thus more likely to be sustainable in the long term. Recognition of the importance of relationships and harnessing the influence of culture and social structures is therefore a way in which *agents* can better integrate DRR and CCA in the Pacific.



Figure 4.1. Building relationships: Samoa CBA Project (Samoa, September 2009)

Good relationships are dependent upon having compatible personalities, as described by a DRR partner:

“It all comes down to personalities - if you’ve got people who are willing to take the time and have the energy, then you have different measures of success but you will have success.” C1

This is exemplified in the Samoa CBA initiative, which came about due to the local village pastor’s insight into issues in his village. From there, it was scaled up as a CBA project. The village was fortunate to have local experts involved in the project’s development and implementation, including an Engineer consulting for the CBA project. Without these important local *agents*, the project would not exist in its current form.

Conducting interviews revealed that the same *agents* were often involved across multiple case studies. The importance of good relationships is therefore paramount, again noted by a partner involved in the PCIDRR project:

“The group is smaller - you run into the same people in workshops whether it’s CCA or DRR or DM [Disaster Management]. The group is small. The best way to get through it is having networks.” FB1

The limited number of *agents* involved in Pacific DRR and CCA, can be seen as an asset, and as current projects revealed, can result in cross-fertilisation of ideas (e.g. project activities were being replicated across Fiji and Samoa), sharing of expertise (e.g. experts from Fiji would go to Samoa for capacity building workshops) and general enthusiasm to assist colleagues wherever possible.

4.2.2 Awareness of roles and responsibilities; agency / authority / experience of others

Acknowledging the *agency* of recognised Pacific DRR and CCA organisations is important in establishing and maintaining relationships, as noted by a DRR partner:

“Some organisations you immediately looked at as a partner to work with - they understand the mandate you carry and track record, they value that. Then again, same organisation, different people don’t necessarily feel that way. It always comes back to people!” C1

One case study was late in recognising the *agency*, experience and existing capacity of organisations in the Pacific. As a result, difficulties arose and it took considerable time to overcome issues with project partners. Project management has since recognised the need and benefits of working with experienced partner organisations, with the project leader later noting: “Whatever we do, we have to work in conjunction with what they [DRR partners] are already doing. We don’t want to create parallels.” FB2

Agency can also be gained via financial power, e.g. donors bring funds to the Pacific, thus hold considerable influence in decision making. Donors such as the World Bank, however, recognise the limits of their *agency*:

“Australia and New Zealand have incredibly strong ties [to the Pacific] politically, historically and to some extent geographically. World Bank and ADB [Asian Development Bank] are global, not tied specifically to the Pacific. We don’t try to compete at that level.” D6

Here, the World Bank recognises that in working together, it is important to acknowledge the strengths of your organisation and to:

“Try to find your comparative advantage and limit your intervention to what you have and what you can offer... In the Pacific it’s not so difficult to get along because we all bring something that is a bit different.” D6

The issues described above relate closely to the importance of relationships. Disregard for existing capacity and ignoring the authority of established *agents* only hinder community based DRR and CCA. This will also have strong implications for an integrated CCA / DRR projects, where sets of *agents* from each field need to be understood, and where new relationships are established. This is discussed further in the *architecture* section.

4.2.3 Multiple agents, lack of integration

The proliferation of *agents*, particularly in regard to CCA, has resulted in further challenges to integrating DRR and CCA. This is recognised by members of the DRR community who note: “there is a whole world out there we [DRR actors] have not engaged with yet which we should reach out to.” UN4. This “whole world” that is referred to is the CCA community. Climate change and related adaptation initiatives have brought about additional work for the DRR community, which has been established for considerable time. DRR actors are now required to expand their scope and engage with new *agents* previously unknown to them. Overlaps between the two communities do exist. Indeed, the work of their respective ‘lead agencies’ in the Pacific typifies this operational overlap, as one DRR actor noted:

“Most of what SPREP is doing is adaptation so there is a lot of overlap with the mandate with SOPAC. It’s not so different. Analysis showed the different priorities - but many were similar with different words.” UN4

This issue is not unique to the Pacific, as noted by Mercer (2010): “CCA strategies at the community level are similar to, if not the same as DRR strategies” (Mercer, 2010: 250).

As a consequence of the fact that human induced climate change is a relatively new and emerging challenge to be addressed by the Pacific, there is limited organisation amongst CCA *agents*, as noted by a representative from the Fiji government:

“There are a number of different government departments working on climate change - NGOs too. At the moment it’s a bit all over the place and there’s no integration. All these different government departments are working in isolation. Agriculture, NDMO... they are all doing their own work but no links [exist] between programs” G3

The mapping exercise presented in Section Two revealed a growing number of networks relating to DRR and increasingly CCA, to overcome this issue of working in isolation and duplication of efforts. CCA networks often begin unofficially and informally, such as the Development Partners for Climate Change, a Suva based group of donors concerned with how CCA is being incorporated in the Pacific. Signs of collaboration with DRR partners are emerging; however it is still a learning ground regarding how to best achieve integration, as noted by a DRR practitioner:

“At the local level, it might be the opportunity to bring it together. [We] need to have the backing from the higher level as well.” UN4

Issues of scale cannot be avoided and there appears to be considerable confusion as to whose responsibility it is to better integrate DRR and CCA. This is discussed further under the accountability section.

4.2.4 Agency of the Church in the Pacific

Recognition of the Church as an agent in the Pacific (see Figure 4.2 for an example of the many Churches in Samoa) is seen in several DRR and CCA projects in Fiji and Samoa. A number of projects such as Building Disaster Response and Preparedness in the Pacific and PCIDRR are designed by religious groups (Caritas and National Council of Churches Australia, respectively) and naturally use their Churches as a key project implementer. Even organisations that are not affiliated with any religious denomination also use the power of the Church as an entry point into the villages for their program. For example, the Samoa Red Cross CBHFA project, who approach Church leaders to conduct their program. The Church then endorses the event and therefore encourages community participation. A partner from UNDP notes:

“In the Pacific, the Church is one of the most useful networks to filter the message and get the message across”. UN8

Correspondingly, the *agency* and authority of the Church is used to spread the message of DRR. Caritas representatives note:

“The Church has some weight in Samoa. Caritas in Samoa has an advantage as it is affiliated with the Catholic Church. We would like to use this weight to assist us and utilise the clergy.” FB5

Caritas project coordinators use excerpts from the Bible and religious passages to get their messages across, for example: “God wants us to co-operate with him. And to show our co-operation, God helps those who help themselves.” FB5

Additional material collected during time spent in Samoa showed how this is extended to DRR, with important parts of the Bible likened to the disaster cycle as seen in Figure 4.3.



Figure 4.2. Church as an agent

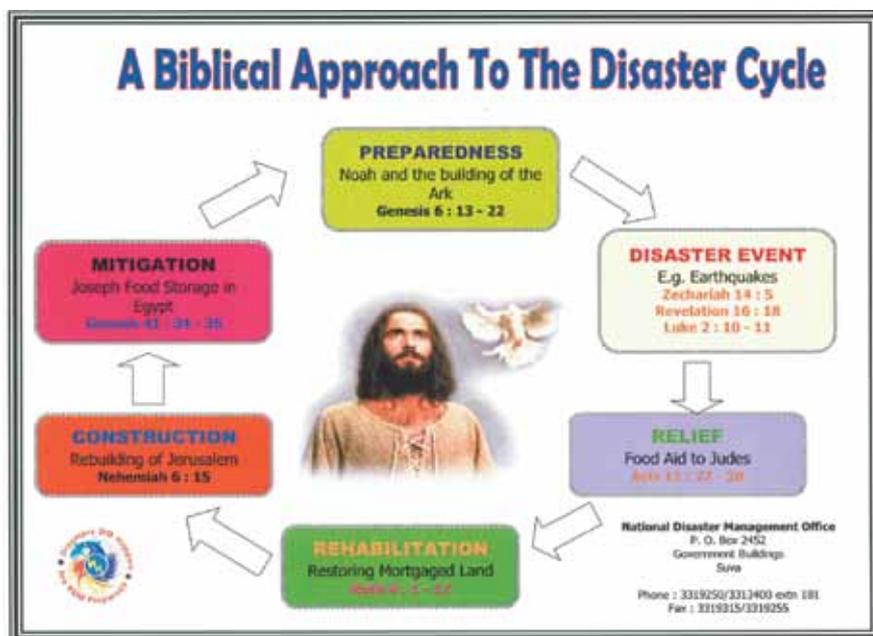


Figure 4.3. A Biblical Approach to the Disaster Cycle. Courtesy of Caritas Samoa , originally developed by Fiji NDMO.

4.2.5 Communities as agents and decision makers

“The villagers did not see any separation between risk reduction and response and wanted a conversation about all aspects of dealing with cyclones and other climate-related challenges in the context of development.” (Daly et al., 2010: 269)

Considerable complexity exists in the Pacific regarding decision making at different levels. Formal governance structures linking national to local legislation do exist in the Pacific (e.g. the Village Fono Act in Samoa which gives village councils autonomy), allowing for local decision making. Community based DRR and CCA are still, however, often a top-down approach (Mercer, 2010). The reason for this is the technical nature of DRR and CCA, and the emerging challenges relating to global climate change. However, recent community development initiatives in Samoa point out that the community often desires the tackling of DRR, CCA and development together (Daly et al., 2010). Empowering communities to become more involved in DRR and CCA is an interest of several interview participants:

“My personal interest has been in trying to see how we can change the enabling environment so the communities can be better involved - they decide their own strategies and approaches.” N5

Enabling communities to decide their own approach may assist in breaking down the barriers between DRR and CCA, since most communities would want to reduce their overall vulnerability, addressing both DRR and CCA (Daly et al., 2010). This is the approach taken by the Samoa Red Cross’ CBHFA project and the Samoa DMO workshops, which both take a holistic view and focus on the needs of the specific village.

Viewing the communities of the Pacific as the most powerful *agents* is an opinion held by some case study participants who are of the opinion that funding for DRR, CCA and environmental management as a whole should be managed locally and by appropriate people:

“Funding for climate change needs to be channeled to appropriate people, to raise their awareness and give them the tools to manage their environment effectively. They might be traditional leaders,

elected leaders, Church leaders, school teachers, education leaders - people of influence...They are the people with a vested long term interest in a particular environment. Governments change and have short term agendas and profit, not long term environmental sustainability." A1

This participant is also suggesting that it is a waste of time to bother with policy and legislation regarding environmental management:

"[I am] recommending donor funds going straight to community and not messing around with policy and legislation. Just trying to empower communities and get them the info they need to make sensible and sustainable decisions about environmental management." A1

The above quote also addresses sustainability issues. When the community participates and perhaps leads the implementation and management of a project, it is more likely to persist in the long term. Case studies which encourage full participation from the community from the outset appear to be the most sustainable. For example, the idea behind the Samoa CBA initiative came from within the village. Conversely, projects which include a token amount of community participation, or do not include the community in project design, approach and implementation are less likely to be sustained beyond the duration over which funding is available.

4.2.6 Gender as an agent

Gender in the Pacific is an important issue to address, particularly with regard to climate change and disasters, as women and men are affected and cope with extreme events differently (UNISDR, 2008). The different skills and expertise of women are identified by a case study participant:

"Women are great at implementing and organising and they advise the chiefs. Men only talk and they sit and eat! The women are the very strong part of the village because they take care of their families. They make sure the kids are safe and the water is clean." N8

DRR and CCA projects in the Pacific vary in the degrees to which they recognise and address gender. Samoa CBA, Navua LLRM and Samoa Red Cross CBHFA all address gender in a practical and fulfilling way, while other case studies appear to address gender in a more tokenistic manner, for example having a mandate for a certain number of women on a particular committee, rather than encouraging input in a more meaningful (and less "tick the box") way. Genuine inclusion of gender considerations is likely to result in more sustainable projects (UNISDR, 2008), whereby integration of DRR / CCA is likely to ensue over the project's lifetime.

4.2.7 Capacity of agents

Research into the projects and people involved in community based DRR and CCA in the Pacific revealed some inspiring people who work tirelessly to enhance the resilience of Pacific people to climate change and disaster. Unfortunately, as noted by a case study participant, these people are too few:

"With a lot of these agencies you only have one key person. The depth within any organisation is another concern. It comes with the staff issues. They need to go at least two or three deep but they don't have the luxury of that." C2

Agents in the Pacific may be cognisant of the need to better integrate DRR and CCA; they may simply not have the capacity to do it. If integration means attending more meetings and workshops, traveling more and consulting with a greater number of partners on a wider range of

projects, then perhaps the greatest challenge is that of capacity. As noted by a partner from the donor community: *“Donors need to recognise countries have limited capacity to absorb funding.”* D2

Here again the issues of good relationships and personalities emerge. This research has revealed the nature of DRR and CCA communities in the Pacific to be collaborative and co-operative, at least within the DRR and CCA communities separately (and increasingly so across communities too). Although funds may be limited, a case study participant notes: *“With all the organisations we work with, we just have an agreement. We just do cost sharing and look at all our strengths and contribute what we have.”* UN3

Most established *agents* recognise the capacity, skills and experience of their colleagues and draw upon this capacity when needed. Good relationships and a cooperative spirit allow for collaborative efforts to achieve more than solo-efforts. This is an asset of the Pacific community, and should be celebrated and replicated elsewhere, where capacity may be a concern.

4.3 Architecture

There is abundant evidence from DRR and / or CCA projects in the Pacific to suggest that the institutional *architecture* surrounding DRR and CCA in the Pacific is one of the main hurdles to integration. Research on integrated disaster risk management has similarly identified the problem of inadequate institutional arrangements, and how “institutional innovation” is necessary to overcome problems (Gopalakrishnan and Okada, 2007: 354). Nicholls (2001) notes that weak institutions are bottlenecks to effective management. The institutional framework, or *architecture*, may be a significant reason for lack of communication and therefore integration between the DRR and CCA communities.

4.3.1 DRR and CCA policy and funding mechanisms as a barrier to integration

An obstacle to integrating DRR and CCA is via policy and legislation from the local to the global level, since projects must be framed according to pre-existing guidelines as illustrated in Box 2.2 (Section Two). This creates a barrier for DRR and CCA practitioners trying to develop and implement holistic and strategically placed activities that reduce overall vulnerability and enhance resilience to risk. For example, given its climate change focus, the Samoa CBA project follows the policy guidance chain on the right of Box 2.2. A similar community based project, also aiming to reduce risk to natural disasters such as tropical cyclones (not a new phenomenon in the Pacific), but with a DRR focus such as the Navua LLRM project, follows that of the left.

The problem, however, is the lack of policy guidance for integrated DRR and CCA. The current arrangements remain disparate, despite the rhetoric and discussions globally and regionally for the need to integrate. As one case study participant notes: *“It’s all well and good to have all the policies and statements and declarations but it’s how we bring that about, on the ground in a systematic way.”* N5

Many participants believe that the problem is also due to disparate funding mechanisms, such as the GEF for climate change and the GFDRR for DRR activities. Maintaining these separate pots of funding will perpetuate the barrier to integration. Even within single organisations the funding for DRR and CCA can be separate, as noted by one case study participant: *“Even the World Bank has disparate funding mechanisms - there is the GFDRR and a different fund for climate change.”* UN1

A possible solution was voiced by one case study participant from the donor community, suggesting a single funding pot such as the new venture called the Pacific Regional Infrastructure Facility (PRIF), where donors contribute and development initiatives are funded through a single source. The participant noted:

“The [PRIF] Facility is a way for NZAID and AusAID to coordinate everything under the umbrella of infrastructure. So far it’s ad-hoc and hard to make linkages. This program hopes to address that gap.” D1

4.3.2 Pacific architecture and SPREP versus SOPAC

An obvious hurdle to integrating DRR and CCA in the Pacific is seen in the overlapping roles and separate agendas of two key CROP agencies: SPREP and SOPAC, who hold the mandate for coordinating CCA and DRR, respectively. SPREP was often a partner organisation for CCA case studies, while SOPAC was often involved in our DRR case studies. One case study participant notes:

“The challenge [is] at the regional set up - it’s separate in terms of the work of SOPAC and SPREP. That will be a major undertaking to bring it together at that level.” UN4

Part of the challenge lies in the fact that within the government, SPREP liaise closely with the Ministry of Environment, while SOPAC’s government contact is the NDMO. While this has worked in the past, it is increasingly evident that duplication of efforts is a problem again noted by a case study participant:

“There is still a long way to go to solve this puzzle because organisationally it is so disparate - you’ve got SOPAC and SPREP. Even the country focal points are different: at DRR meetings, all NDMOs [are present] ... And you’ve got the Climate Change Roundtable and its all Ministry of Environment. So how on earth do we align better?” UN1

Geographical difficulties also exist, since SOPAC is based in Suva (Fiji) while SPREP is based in Apia (Samoa), as noted by a SPREP representative:

“The geographical separation poses problems and difficulties. For them [SOPAC and the DRR community] it’s easier to get together, for us it’s more of an ordeal. We are lucky that some of the events have been held here [in Apia].” C3

A solution perhaps lies in an issue already described above – that of building good relationships to overcome the architectural barriers to integration, particularly in regard to SOPAC and SPREP, the key *agents* for DRR and CCA in the Pacific. This may be made easier through the smallness of the DRR and CCA communities, as described by a case study participant:

“In a lot of [Pacific island] countries it’s largely the same sets of people dealing with DRR and CCA perhaps with someone taking the lead in one or the other. Not in all the countries, but most countries have the same personnel working on both issues.” C3

This is echoed by a key participant from the DRR community:

“Relationship building is urgent. It is so separated! We have a good partnership network that looks at DRR/DRM, but in actual fact there is a whole other group of people meeting on climate change related issues!” UN4

As mentioned earlier, tentative links are forming between the DRR and CCA communities. For example, DRR representatives are beginning to attend CCA events, and vice versa. What is

needed, however, is meaningful engagement and dialogue at all levels and across sectors, and collaboration to reduce duplication of efforts and minimise confusion at the local level.

4.2.3 A change in architecture?

Recognition of this potential duplication of efforts between CROP agencies led to the start of discussions in 2007, regarding a reshuffle of how and where CROP agencies are situated. A case study participant from SOPAC noted:

“Leaders thought SOPAC and SPREP should come into SPC. SOPAC [is] to come under SPC as a division. [SOPAC] keeps its name for a while but may eventually be re-named.” C1

SPREP will incorporate parts of SOPAC, but largely remains separate (E. Ronneberg, pers comm.). This reshuffling hints at the willingness and ability of some organisations to consider changing the established institutional *architecture* to share information, better co-operate, overcome barriers and reduce duplication of efforts – exactly what is needed to better integrate DRR and CCA. A wider institutional re-organisation of the DRR and CCA *architecture* was recommended by several of our case study participant: *“Until now, nobody has thought to reconstitute the national arrangements to try to formalise that coming together, to take conscious steps to bring these two together.” C1*

Participants recognise the difficulties in rearranging the “furniture”, particularly from the government perspective: *“Pacific island country governments are rigid so when something new comes along it’s difficult to accommodate into a structure that isn’t willing to change.” A1*

It would be unfair to blame governments in the Pacific for their rigidity. As described earlier, the capacity within organisations including governments is stretched, so that to incorporate additional work or to consider a whole restructure while maintaining productivity is unreasonable, as again noted by our academic participant: *“How do you set up new systems when you don’t have the resources to set up new government departments?” A1*

Furthermore, the need to strengthen the capacity of government in Fiji is raised by another participant for better integration of DRR and CCA to occur:

“We don’t have the institutional arrangements to make these things [integration] work. We need to look at how these can be strengthened. Fiji had been more advanced - they have gone backwards in the last 10-15 years.” N5

An additional suggestion which several key case study participants raised regarding how to better integrate DRR and CCA was that of pursuing the active inclusion of Finance and Planning ministries in Pacific disaster and climate change meetings and forums. This would shift the focus to a holistic view of reducing vulnerability, and mainstream the issues of DRR and CCA into national budgeting and planning. Early steps have been made toward this through the inclusion of CEOs and key representatives from the Finance and Planning departments in recent Pacific Disaster Management Meetings and the Climate Change Roundtable, which may assist in breaking down the barriers between DRR and CCA and reducing the duplication of efforts in PICs. As one participant noted:

“If it could come through ministries that have more oversight - you know like planning and finance, that could be a way. They see just the concept of risk, and anything that undermines their development - whether it’s called a disaster or climate change - it undermines their development agendas.” UN1

4.3.4 Recognition of existing architecture

Most of the projects investigated in this study align activities to pre-existing DRR or CCA strategies, policy and arrangements at the local, national and regional level. For example, in Samoa, CCA policy includes the National Adaptation Programmes for Action (NAPA), Coastal Infrastructure Management (CIM) Plans and the Climate Risk Profile (K. Petrini, pers. comm.). The UNDP CBA guidelines stipulate recognition of existing institutional frameworks as mandatory: *“The CBA initiative will work within the national institutional and legal framework within each of the participating countries.”* (United Nations Development Programme (UNDP), 2008: 5).

The Samoa Red Cross CBHFA similarly appreciates and adheres to pre-existing DRR *architecture* and policy guidance:

“I think the systems are good here, the systems are in place and it’s easy for everyone to go in and do their work. We are using all that information, including the CIM plans and it’s all part of it.” RC3

Navua LLRM follows suit with the UNDP, as lead *agency*, aware of the institutional administrative complexities from the outset. To ensure long term sustainability, implementing partners worked within the existing governance structures and where possible, identified ways in which community concerns were considered at national level. Adhering to governance mechanisms from the local to global is difficult, but necessary as one case study participant notes:

“Those [governance] structures are there - and that’s the great thing about Fiji... that’s the way their provincial and regional development has gone and it makes sense to follow that pattern because you have reporting lines and people who will listen and take advice ... Whatever is done at the community level has got to reinforce and endorse and support what exists at the national level - there has to be a sync.”C2

The strong Pacific *“cultural architecture”* also needs to be taken into account as indicated by several participants, who are aware of the strength of cultural protocols and local governance structures which dictate how communities in the Pacific function: *“[There are] also incredible issues surrounding social and cultural context that must be taken into account, otherwise interventions are not successful or sustainable” D6*

This is again echoed by another participant, who values indigenous knowledge as a means to recognise cultural *architecture*:

“[It] comes back to the point of understanding the structures within the community. Also the knowledge - we always use the traditional knowledge and it does mean a lot to the communities here... to use this.” UN3

Pacific cultural *architecture* is at least partially founded on Christianity, with the Church a powerful agent, as described in the previous section. DRR/CCA projects which recognised the significance of *architecture* provided by the Church could use it to their benefit, as the Caritas and PCIDRR projects did in their implementation of DRR activities.

4.4 Adaptiveness

“Traditional culture also includes CCA - people have been adapting to climate change for millennia but no-one has ever called it adaptation. Scientists are pushing this as some kind of new agenda.

These are basic things that you do when you live close to the environment in vulnerable island settings because you have no choice if you are to survive.”A1

The issue of adaptiveness with regard to integrating DRR and CCA in the Pacific is broad, with one view expressed in the quote above from a case study participant who recognises the limits to the recent concept of CCA. But adaptiveness within an Earth System Governance framework can relate to much more than this, as described below.

4.4.1 Use of local knowledge and village specific approach

“Communities in the Pacific have been surviving with disturbances for a long time. This [project] is therefore incorporating the local knowledge - how they have coped with disaster - for many of them its just natural disaster, its not something that you can tag...” N4

The quote above refers to the WWF Coastal Resilience project, noting that adaptiveness is nothing new for Pacific people. This reiterates the value of community based projects, as communities naturally integrate DRR/CCA. Policy makers could arguably learn from communities and their vulnerability reduction / resilience building approaches to coping with environmental change. Many DRR/CCA projects in Fiji and Samoa use traditional knowledge and methods of coping with disasters and climate change (see Figure 4.4) including Navua LLRM, Samoa CBA and Samoa Red Cross CBHFA. Whilst other projects may incorporate traditional knowledge, it is not as significant a theme as in these projects. The Samoa Climate Change and Food Security Project for example aims to reintroduce forgotten food preservation practices, as noted by the Project Coordinator:

“I never see people practice this [traditional methods of food preservation] right now because we have fridges and lights... I remind them that in a cyclone you gotta go back to those old methods. There will be a time when there is no power!” N7

In addition to adaptiveness relating to traditional practices, a common characteristic identified as a strength for many case studies was that of village specificity. Adapting the approach to the specific needs of the village and its existing capacity allows for local ownership of the project. For example, the Samoa CBA approach recognises the country and community-specific needs of each location. It also highlights the way in which this pilot initiative will provide an example that can be learned from, scaled up, and replicated elsewhere.

All case studies were adaptive to the needs of the community in this sense, highlighting the adaptive nature of community based program design and the recognition that community needs and capacity do vary. Developing village specific community disaster plans was a common activity, particularly from the DRR side. This village specific approach should be encouraged for all future projects dealing with community vulnerability, in both the DRR and CCA communities (Daly et al., 2010).

4.4.2 Inclusive of cultural considerations

Although related to the above-mentioned issue of village specificity, projects which were adaptive to cultural considerations from the outset were seen to provide the basis for better relationships and communication between the community and the implementing



Figure 4.4. Pacific traditional coping mechanism: floating cooker

partner. For example, in the Samoa CBA project, the normal means in which a UNDP project is approved by the community is for one community member to sign the project document. In Samoan culture, however, more than one person needs to approve something before it is accepted by the community as noted by a case study participant from the community:

“The GEF-SGP Climate Change Adaptation Officer originally said no, the rule is for one signature, well I said I am trying to sell this to the village and if you don’t get it right at the beginning then I am going to have problems selling it. That’s sorted out now.” N8

As a result the Samoa CBA documentation now accepts multiple signatures. The GEF-SGP Climate Change Officer is well aware that working with the local culture can be of great benefit, and adds: *“Sitting around with chiefs would be far more effective [than Western style formalities] and that’s how we may end up doing it.” UN6*

DRR/CCA projects which adapted their approach to the cultural context in which they were working tended to be more effective in conveying the underlying message. One way this can be seen is in the adaptation of language from the technical nature of DRR and CCA vocabulary to more easily accessible terminology. The Samoa DMO Workshops pay special attention to the issue of language, as noted by a case study participant:

“We have to talk about the causes of climate change, greenhouse gases. But we have to make sure we use very simple Samoan because these words are technical and there is no Samoan vocab for these. You have to take into account the level of understanding of the village people.” G5

Adapting the approach to the target audience is crucial and projects which adhere to this message go further in achieving greater awareness than those who disregard the level of understanding within the community (Nunn, 2009).

4.4.3 Adaptiveness of agents

Agents in community based DRR and CCA in the Pacific have generally shown reasonable levels of adaptiveness in various ways. The Red Cross CBHFA adapts its program to incorporate DRR and CCA in innovative ways, including puppetry and drama, which can be helpful in tackling sensitive issues (perhaps not DRR or CCA related) that are difficult to talk about openly.

Some *agents* have shown adaptiveness by taking on CCA in addition to their traditional roles in DRR. They recognise the strong links between DRR and CCA and adapt accordingly. One member from an NGO in the CCA community notes:

“I attended several DRR sessions with UNDP Pacific Centre. I found it interesting that they are just as long standing in the work they do, because of the current increase in disasters they are in the forefront of this [climate change] a lot more. But they have always been there! But because the agenda is there they are being pushed to being more proactive.” N4

Agents are therefore being adaptive because climate change is altering the environment in which they operate. Thus, they are required to take on issues not traditionally in their field, such as the UNDP taking on climate change as a key and mainstreamed issue into their work across development.

4.4.4 Learning by doing and adapting along the way

There is much talk at the policy, legislative and institutional level on CCA, and the integration with DRR. Several of the projects studied show that “learning by doing” and adapting the approach along the way based on lessons learned, have benefits. Some quotes from participants are as follows:

“Our approach is a model that has been developed along the way and is still developing. Every country we go to we learn something more.”FB2

*“People want action now on the ground with adaptation projects and there is no knowledge base on how to do it. Let’s do it and build a knowledge base by doing it. That’s the main thing - enough talk, let’s do it and then we have case studies that we can figure out what next, it doesn’t exist yet.”
UN6*

“That’s Samoa’s approach - we do things, we implement, we continue to improve.”G5

This shows a certain adaptiveness and willingness to trial methods whilst learning along the way. Provided there is ample time for evaluation of these techniques and readiness to change methodology along the way, this is identified as a strength.

4.4.5 Holistic view to reducing vulnerability

Applying an approach that adapts to overall vulnerability and resilience is something several *agents* in Pacific DRR/CCA advocate for. This approach shies away from explicitly addressing the need to integrate DRR and CCA, and rather addresses the needs of the community as a whole. Perhaps the best example of this is the Samoa Red Cross CBHFA project, which, as mentioned, is highly creative, incorporating puppetry, skits, drama groups, dancing and singing. The creativity essentially comes from the Red Cross volunteers who turn the issues of the village, which are sometimes sensitive issues not easily talked about in Samoa (e.g. HIV), into an approach that is educational and informative, and often entertaining. This is certainly a strength of the program, as it allows the village to receive the full package rather than a piece-meal approach to development, as noted by a Red Cross representative, a key case study participant:

“We have seen a lot of advantage in taking things together, not only targeting the same audience... also resource sharing. So it helps with costs. We are not a rich organisation but we can work with others and share resources.” RC3

This approach is common to the International Red Cross’s approach, as indicated from a representative from the International Federation of Red Cross Red Crescent (IFRC): *“So one way we try to integrate DRR and CCA is by reducing vulnerability of communities by addressing broader development issues.” RC1*

Focusing on vulnerability and risk rather than explicitly DRR and CCA was also the aim of the Navua LLRM project, as noted by a participant: *“We didn’t differ so much in addressing DRR and CCA. We focused on vulnerability and risk.” UN3*

This approach of adapting DRR and CCA into a more holistic approach to addressing vulnerability may provide some answers to the duplication of efforts amongst *agents*. However, questions and complexities will remain, as noted below from a member of the DRR community:

"[There is a] new proposal for community based planning, and [it involves implementing agents to] consider whatever the community see as their need and integrate DRR, CCA, whatever is required. Conceptually it is easy to look at the risks to development, but practically, it's quite difficult." UN4

Difficulties may arise due to roles and responsibilities – which *agents* should address the needs of the community? This issue is related to accountability, which is described in the next section.

4.5 Accountability

"Whose responsibility? In a well functioning State it's the government. But the challenge is when you don't have a functioning government. Then whose responsibility does it become? That's the outlier - the situation in Fiji now. So at the end of the day, as the slogan goes – 'disaster is everybody's business'. And you could also say it's nobody's responsibility. So we need to say it's your responsibility as well as your business."N5

With regard to the challenges of integrating DRR and CCA at the community level, when focusing on accountability, issues of participation emerge as a key theme. Is the method fully participatory, inclusive and democratic? The issue of responsibility, particularly with regard to climate change, also arises in regard to accountability and an example is seen in the quote above. Furthermore, are Pacific communities responsible for the changes to their environment? The answer is often no, and this, along with additional accountability issues, are discussed below.

4.5.1 Accountability and participation

"What I like about these projects [is] that they are extremely participatory. It is engaging the community through the analysis, they drive the assessment and they drive the action plan, so they can own the process the whole way through and on the pendulum of participatory approaches it is more on the better half." UN1

The above quote refers to the approach used within the Navua LLRM project, including in particular the use of the Red Cross VCA, which is strongly participatory in its approach. There are many views of the "participatory approach" as described in Section One. While all the projects studied here claim to be participatory in their approach, it is clear some do this more effectively than others. For example, is a workshop participatory when the information flows generally from the facilitator to the community? This one-way information flow is often regarded as a tokenistic form of participation (Arnstein, 1969) as the community is not involved in the formulation, design or methodology of the project. As communities themselves can be key drivers of an integrated approach their meaningful participation is invaluable. See Figure 4.5 for an example of community participation as part of the PCIDRR project.



Figure 4.5. Village disaster scenario debrief, Naimalavau, Fiji (July 2009)

An example of strong and genuine community participation can be seen in the Samoa CBA approach, where the initial idea and activities came from within the village community. It is however not always easy to engage the participation of communities, as one participant notes:

“The main challenge is the actual participation of people, not only getting involved but also to commit themselves seriously to this. It is very challenging - time is money and when you call a meeting it’s hard to get people to get together.” FB5

Within the Caritas project, coordinators rely upon participation from the Catholic clergy to spread messages of DRR throughout their parishes and villages. Their participation is therefore crucial to achieving the project’s aims. A key challenge in garnering community support and participation can be the level of skills and knowledge within a community. One participant notes:

“Where necessary, and this is more often than not, people in communities need skills and knowledge to be able to truly participate. It is all very well to talk and encourage participation but people need to know how to do this and also be given information firstly in a manner that they can understand and secondly that can allow them to make informed decisions.” FB7

This may be particularly true in the DRR and CCA fields which are often perceived as highly technical. *Agents* working with communities need to be able to ‘translate’ both DRR and CCA concepts into laymen’s terms and empower communities to feel comfortable and confident if they are to be able to fully participate in projects. This can be a challenge if, as noted above, DRR and CCA *agents* are not fully conversant in both fields.

A further issue related to accountability and participation is that of gender and the inclusion of both male and female participation since Pacific culture maintains strong gender roles (see Figure 4.6 for an example of one of women’s roles). Some of the projects incorporate the different roles of women and men in their approach. The Navua LLRM project, for example, held single gender focus groups and workshops to ensure men’s and women’s concerns were raised to an equal degree (as noted by Morgan, 1996). This is noted by a case study participant:

“With the VCA - we looked at particular groups. We had a women’s group, a youth group, men... there we had different groups and it was limited. We ran about 28 workshops. Participation was different from village to village. People would ask if they could attend!” UN3

Gender issues are further captured in the following quote from a case study participant from the Samoan community:

“There’s a distinction between men and women. Women can grab that thinking very quickly because they deal with the kids and the families and the water and food, keeping the houses safe... Men are more physical, getting food on the table.” N8

Other projects were again arguably tokenistic in how they approached participation of women and men, which is something in need of strengthening to ensure accountability for both genders and ultimately the effectiveness of projects.



Figure 4.6. Samoan women: “Women... deal with the kids and family and the water and food” N8

4.5.2 Roles and responsibilities: who is accountable?

Pacific *agents* are generally well aware of their roles and responsibilities, and of their accountability to the community at different scales, as noted in the following quotes from participants:

“This is in our hands - as the UN we should be coordinating, but also the donors could be there as an integrated force and demand more from departments.” UN4

“Disaster preparedness and response are part of the Red Cross’s traditional programs. Now with climate change coming up we are integrating these things together because we have been very active in these areas.” RC3

“For the Red Cross we have to be accountable for everything that we do. We are accountable to the communities.” RC2

The Pacific community faces the urgent need to adapt to climate change despite the acknowledged fact they have contributed a meager amount of greenhouse gas emissions (Red Cross, 2007). Here again is an accountability issue, which was raised in the Samoa DMO village workshop case study, as noted by one participant: *“There were always questions about why are we paying for this when the countries who actually emit should be doing something about it?”* G5

The participant’s answer, however, was not one which relinquishes responsibility to the culprit (i.e. the developed world), instead, rallying the community to action:

“We are a small island with a big ocean - we are an independent state, we are supposed to help ourselves and not just wait for those countries to do something. Otherwise we will just suffer more.” G5

This shows that although developed countries should be held accountable for their actions, small developing countries such as Samoa are being proactive and not complacently awaiting development assistance.

4.5.3 Capacity building and commitment to sustainability

“I believe that one of the problems in dealing with local partners is that a true assessment of their institutional capacity is not made and once the external partnering organisation leaves the local organisation is no stronger.” FB7

This insightful quote recognises the strong need to build capacity – in this case institutional capacity in community based DRR and CCA. Case studies that actively aim to build capacity at the community level are far more likely to succeed in the long term as they address sustainability. If the community’s (or community organisation’s) skills and capacity is enhanced from the project then this is a definite strength. While most DRR and CCA projects studied aim to do this, the level of priority within projects varies. The Caritas DRR project document for example is explicit in its attempt to build capacity: *“Caritas Australia’s Pacific program has a core focus on community based development and Institutional Capacity Building”* (Caritas Australia, 2008).

A project’s commitment to sustainability addresses accountability as it recognises the future needs of the community, and also reduces raising the expectations of the community. By building capacity within the community it is hoped that when the project funding ends and the official project period ceases, the community can continue in some way to reduce their vulnerability to disasters and climate change, even if this only relates to community awareness. Some case studies addressed sustainability in a genuine manner, while others unfortunately did not. Lack of sustainability is a flaw in project design. Vrolijk (1998) notes that resources for implementation of risk reduction activities need to be made available by the facilitators when the work starts and that this is vital for the success of the project.

A related issue is that of monitoring and evaluation (M&E). To be accountable to the community it is crucial for project coordinators to monitor and evaluate the progress along the way. The Samoa CBA approach, like many UNDP projects, places a heavy emphasis on M&E, recognising the need to keep track of progress throughout the project’s lifetime. The CBA project also incorporates a strong participatory approach to M&E from its early inception, calling on local to national stakeholders to assist in developing baselines for M&E (United Nations Development Programme (UNDP), 2008). The heavy emphasis on participatory M&E contributes to local ownership, resulting in the project being assessed according to culturally appropriate and locally identified baselines and targets.

4.5.4 Application of lessons learned

Sharing lessons learned, both within and between the DRR and CCA communities, can go a long way to assist in bridging the divide between the two communities. The practice of sharing knowledge and experiences gained from DRR and CCA projects in the Pacific amongst those within and outside the community shows a level of accountability and is symbolic of the good relationships that exist in the Pacific.

A case study that actively advocates for information sharing and learning from other projects and build upon past successes is the Samoa CBA, which aims to build knowledge products into the list of outputs and also scale up the pilot projects and replicate them elsewhere. This type of additional project activity should be more common, especially now when the challenges of integrating DRR and CCA are becoming more apparent and more evidence for the chance to collaborate is needed. As noted by a key participant: *"[It is] important to collate some of the case studies. See wherever there is a good start, then document it and share with others. It's still trial and error."* UN4

Evidence of early steps towards this can be seen with, for example, a forthcoming joint IPCC and UNISDR publication on integrated DRR and CCA which will include case studies of experiences in the Pacific (see IPCC, 2009). The inclusion of CCA *agents* in DRR fora and meetings is also going some way to building a single community of practice and share experiences and lessons learnt.

4.6 Allocation

4.6.1 Allocation of resources and funding

"Overall, the funding issue is a major constraint. Money comes to the region in terms of regional programs. What looks like a nice amount of money isn't that much when you consider the whole region. And to bring the capacity building out to the outer islands where it should be done - I find its happening in only a few cases. [It] seems like there isn't enough to spread it out, which shouldn't be the case at this point in time." UN4

This quote from a key participant highlights the challenge of *allocation* of resources, undoubtedly a problem in many developing regions of the world. This issue is also related to the "where" of DRR and CCA projects, as addressed in Section Two. Where are projects located, and why? The above quote notes that it is often the outer, remote islands of the Pacific that need *allocation* of resources, but these locations are inherently difficult (and expensive) to get to. So instead projects are located in the centres, such as easily accessible locations in Fiji, which is encouraged by some key *agents*: *"This was all for Fiji, which should be the starting point as there's a lot of infrastructure and capabilities, and if they can get it right here it's easier elsewhere."*C2

At the global level, it also appears that the Pacific misses out on the attention it deserves, owing perhaps to the low population. One key participant notes that: *"[The Pacific] region is quite marginalised, even in negotiations, it's not easy to voice the sometimes quite different positions."* UN4

This issue is also related to *allocation*, since we know that a lot of the funding bodies are global (e.g. GEF and GFDRR). If the Pacific region is not allocated sufficient funds to implement DRR and CCA projects, vulnerability of communities will remain at the current levels.

4.6.2 Inclusion versus exclusion

Several DRR and CCA projects in Fiji and Samoa implement their activities via the powerful Church network in the Pacific. The Church in the Pacific is a powerful agent and an effective means to alter community behaviour. However, this approach may serve to exclude parts of the community. For example, the PCIDRR initiative in Fiji targets the Church as an entry point to villages. Fiji is comprised of many multi-cultural communities, made up of indigenous Fijian villages (who are generally Christian), and Indo-Fijian “settlements” (who are generally comprised of people from the Hindu and Muslim faiths), as well as communities with Chinese and other mixed ethnicities with varying cultural backgrounds. The PCIDRR project is targeting Church networks, therefore generally indigenous Fijian communities only, thus excluding a significant portion of the population. This may be due to the channeling of funds through the Church network (thus targeting only Christian communities), or via the identification of “vulnerable communities”, which was led by the NDMO. Whatever the reason, this is identified as an *allocation* challenge, since many vulnerable communities are non-indigenous groups living close to hazardous regions such as rivers, deltas and coasts.

The Caritas Project in Samoa, although linked to the Catholic Church, does not discriminate according to denomination, as noted by a key participant: “[The project is] working with young people - talking to them about what role they can play [in DRR] in the future. This includes any young people in the village.” FB6

4.6.3 Commitment to long term sustainability

The commitment to long term sustainability is discussed in the accountability section, however listed here as well to highlight the link to *allocation* of resources. In a project’s design, long term sustainability should be allocated resourcing, whether financial, or capacity building of local people.

4.6.4 Allocation and access to information

“[The] bottom line is that communication that is not effective is not communication at all – it’s just a waste of time.” A1

It is crucial that community based DRR and CCA projects are targeted appropriately to the audience. The above quote highlights this in terms of communication. English is often the second language for many Pacific islanders, thus communication should occur in local languages to ensure the message gets through.

Allocation and access to information regarding DRR and CCA are still lacking in the Pacific. Historical data and even current observational data are a challenge in the Pacific due to limited resources, as noted below by a key participant:

“Access to the right information is still not there. So we are not even able to assess historic risk, and we are offering it to the climate change community and we need to look at emerging issues.” UN4

4.7 Best practice and overall challenges

Investigation of DRR and CCA projects in Fiji and Samoa provides useful insight into the challenges of integrating community based DRR and CCA in the Pacific. We have seen a variety of approaches, with some commonalities, used to enhance the resilience of communities to climate change and disasters. We have also seen some of the positive ways in which DRR and CCA are being integrated at the community level. By tackling vulnerability holistically and by considering the needs of the specific community in question, DRR and CCA are taken into account alongside other risks such as health, education and other livelihood related issues. We now highlight the best elements from each of our case studies.

4.7.1 Best Practice in Pacific DRR and CCA projects

Samoa Disaster Management Office (DMO) Workshops: This project addresses DRR from a broad development approach which is seen via the inclusion and participation of a number of government ministries and NGOs in the workshops. The approach is therefore comprehensive and presented in such a way so as to resonate with local people and address livelihood issues. In addition to this, climate change risks are addressed alongside risks associated with natural climate variability and development.

Caritas Samoa's Building disaster response and preparedness in the Pacific: This project's focus on behavioural change highlights that much can be done to reduce risk to disaster by altering daily practices. These changes do not carry a cost but make a significant difference to the vulnerability of local people. Sometimes referred to as "soft solutions," they are not associated with anything structural, but recognise that behavioural change is a powerful tool for community based DRR.

Samoa Red Cross Community Based Health and First Aid (CBHFA): The strength of the Vulnerability and Capacity Assessment (VCA) in community projects cannot be overlooked. The VCA is a tool developed by the Red Cross to identify exposure to risk and how to overcome vulnerability using resources available within the community (IFRC, 2006). It draws out details from community members that might have gone unnoticed if only village leaders had been consulted. In addition, the VCA also highlights the capacity existing in the village and the practices that may be common and unconsciously lead to effective reduction in risks.

WWF Coastal Resilience of Mangroves to Climate Change: The use of traditional knowledge via The Climate Witness Toolkit is a strength of this project. The Toolkit has its foundations in valuing local indigenous knowledge and observations of climate change and coupling this information to scientific data. This recognises traditional knowledge and people's observations – people who are living in remote and perhaps vulnerable regions, as a valuable resource and empowers people to continue to monitor and observe alterations in their environment, since it forms even stronger evidence that the natural systems are changing.

Navua Local Level Risk Management (LLRM): This project endeavoured to work closely with the existing levels of government (central, provincial and national) to ensure long term sustainability of the project. Although this was difficult at times, perseverance led to good working relationships and a level of trust developed ensuring positive outcomes. Integration across fields, including DRR and CCA, is more likely if the project is supported across levels of government.

Samoa Community Based Adaptation (CBA): There is much talk at the policy, legislative and institutional levels on CCA but the CBA initiative represents one of the few community based CCA projects actually being implemented now attempting the "learning by doing" approach. This means that with careful planning from the global level, incorporating flexibility based on local needs, a CCA project can begin implementation with the aim to scale up and replicate in other locations over time.

Women In Business Development Inc (WIBDI) Food Security: Although the Food Security Project's aim is to deliver a long term solution to food availability, its approach is much more holistic via the attention paid to health and nutrition, its links to income generation, budgeting and reduced reliance on remittances and even household planning. In this sense, vulnerable families in Samoa are learning about ways to enhance their resilience to risks – be they related to disasters and climate change, or financial risks related to fuel and food prices globally.

Pacific Community focused Integrated Disaster Risk Reduction (PCIDRR): A strength of this project is the element of reinforcing roles and responsibilities with regard to disaster response. While natural hazards are not a new phenomenon for Pacific Islanders, reminding people of how to best respond and putting this into practice and consolidating their response effort is a positive aspect of this project.

4.7.2 Key Challenges

Overall, challenges of *agency* and *architecture* provide the greatest hurdles to the integration of DRR and CCA in the Pacific. The multiplicity of *agents*, from a local to global scale, makes it difficult for some organisations to find their niche without duplicating the efforts of others. The lack of integration may also be a function of capacity: *agents* working in DRR and CCA activities in the Pacific have limited time and liaising and corresponding with even more partners can be to the detriment of their “other” work. A better understanding of the roles and responsibilities amongst *agents* could lead to reduced duplication and better collaboration and cooperation in the Pacific.

The disparate policies and funding mechanisms, the separation of responsibility of DRR and CCA via SOPAC and SPREP, and the overall institutional *architecture* create barriers for a streamlined approach and meaningful integration of DRR and CCA. Incorporating the complex cultural *architecture* also presents itself as important for communities in accepting and “owning” DRR / CCA projects. Overcoming the challenges of *architecture* with regard to the integration of DRR and CCA in the Pacific would therefore go a long way to provide the means for better cooperation and collaboration between *agents*. Even as a first step, recognising that the existing *architecture* IS a barrier could open up opportunities for collaboration and dialogue between the two communities.

Finally, achieving genuine participation of communities is highlighted as a challenge. Fair and equitable *allocation* of resources to those most in need is a continuing difficulty, but by better understanding past and present projects and *agents* working in the field, practitioners can make more efficient use of their resources. Again, this relates back to better communication and co-operation between *agents* and the *architecture* in which they are grounded.

4.8 Summary and conclusion

For enhanced integration between the DRR and CCA communities, what is required are better relationships that cross the DRR and CCA architectural divide, as the limited contact between the communities is a major challenge to integration. *Agents* need to come together and communicate and engage with each other more often to overcome the divide that separates DRR and CCA. This will also be further explored in the next section.

Section Five: Guidelines for integration of DRR and CCA

5.1 Introduction

The preceding sections have illustrated the current status of DRR and CCA in the Pacific, including most importantly, the *agents* working in DRR and CCA and the existing institutional and cultural *architecture* in which community based projects operate. The known challenges to integrating DRR and CCA at the community level, as well as the best practice methods that past and present projects have developed and draw upon, have also been highlighted.

This section synthesises this background information, again drawing on the Earth System Governance framework, to present useful and practical guidelines for DRR and CCA practitioners on how to better integrate these two important fields of practice. By doing so, we therefore answer research question four, which asks “How can this information be used to enhance community resilience in the Pacific?”

5.2 Guidelines for integration

The following guidelines for integrating DRR and CCA are based on case studies and analysis as presented in Sections Two, Three and Four. The guidelines are situated in the Pacific context. However, they also draw upon a global experience and are transferrable to other regions.

5.2.1 Be aware of AGENTS operating in the DRR and CCA fields

Having an awareness and understanding of the existing *agents* and their roles and responsibilities across the fields of Pacific community based DRR and CCA can be of great benefit to integration. Not only will existing *agents* be able to share relevant experiences and lessons learned (perhaps from CCA to DRR practitioners, or vice versa), they will also be aware of gaps and future needs to address. Opening the dialogue between these *agents* also serves to initiate, develop and maintain the good relationships that are crucial in becoming part of the institutional *architecture* that operates in the Pacific (see Guideline 5.2.2)

5.2.2 Familiarise yourself with existing DRR and CCA ARCHITECTURE

This guideline is strongly related to Guideline 5.2.1, and recognises that it is important to be cognisant of DRR and CCA Pacific *architecture*, both institutional and cultural, to best integrate these two fields. This also includes the funding, policy and legislative frameworks that facilitate DRR and CCA projects. Knowledge of this *architecture* and adherence to recommended protocols will reduce duplications of efforts, and thus contribute to aid effectiveness. Understanding and drawing upon these governance mechanisms will ground a new project in such a way that local ownership is a genuine possibility.

5.2.3 Ensure genuine participation from the outset so as to be ACCOUNTABLE to all stakeholders

Consultation with DRR and CCA organisations and community *agents* from the outset is sometimes a difficult task when developing a community project. However, our case studies have proven that when this is done (e.g. Navua LLRM and Samoa CBA), genuine participation and long term sustainability are more likely. The process of project development in partnership with relevant *agents* ensures accountability to all stakeholders. It also indicates important levels of respect to existing *agents* - something that has proven to be a significant element of cultural practice in the Pacific, from the family level right up to the regional institutional level.

5.2.4 Be ADAPTIVE to local needs

Although not strictly an integration recommendation, adaptiveness is a significant issue with regard to good project implementation. Recognition of cultural *architecture* is paramount in any community based project, if long term sustainability is an objective. Adapting a DRR/CCA project to local needs and capacity recognises that communities are not only unique in their needs, but also resourceful and often contain significant knowledge and skills. By adapting the project design, methodology and implementation to the specific community, these skills (and needs) will be more effectively used and addressed.

5.2.5 Ensure careful consideration when ALLOCATING resources

As per the previous guideline, *allocation* is not as obviously linked to the challenges of integrating DRR and CCA as the first three *A*'s. This guideline, however, encapsulates several important and relevant issues. Firstly, adhering to the preceding four guidelines should allow for a good understanding of past and present DRR and CCA projects, thus reducing duplication of efforts and allocating resources appropriately. Secondly, long term sustainability should be incorporated (to some degree) in project design, e.g. by allocating resources to build capacity at the local level to ensure knowledge and skills remain when funding ceases. Thirdly, integration of DRR and CCA is in part dependent on appropriate communication of information. Ensuring access and *allocation* of information to communities – in local languages and using local terminology for complex concepts – stands a project in good stead to achieve goals of reducing vulnerability and enhancing resilience to disasters and climate change.

5.3 What is next?

Traditionally, most research ends here, leaving readers to digest the information presented and proceed in implementing guidelines how they see fit. This is recognised as a difficult task, so the next section presents activities to assist in putting the abovementioned guidelines into practice.

Section Six: Activities

The preceding section describes a number of key guidelines for integrating DRR and CCA in community based projects. Four short activities are presented in this section that can be used by actors and *agents* embarking upon a DRR, CCA or integrated projects, or even for general community development or vulnerability reduction projects. The activities are primarily targeted at *agents* who are not currently integrating DRR and CCA in their work. The activities are designed to raise awareness and challenge *agents* to think outside their discipline, to ultimately reconceptualise their attempts from potentially insular efforts to practices that embrace integration and wherever possible find opportunities to ensure their work integrates and acknowledges aspects of both DRR and CCA.

Each activity relates directly to one of the guidelines for integrating DRR and CCA (except *allocation* which is included in Activity 1). Activities are written in a consistent format so facilitators are provided with clear instructions, discussion points and anticipated learning outcomes. Activities are available in Appendix F, with additional notes for facilitators, worksheets for participants and recommended further reading.

How to use these activities

Each activity has been designed to stand alone and may be most usefully applied in group environments where the group consists of people from a mixture of disciplinary backgrounds. However, the activities will also work within a single organisation to stimulate debate about current work practices and future projects.

6.1 Activity 1 - Who's who and what do they do?

This activity relates to guideline 1: Awareness of *agents* (who are the *agents* in DRR and CCA and what do they do?).

Objective/learning outcome

This activity is designed as an introduction to integrated DRR and CCA. The activity aims to familiarise participants with DRR and CCA *agents*.

Equipment

Butcher's paper and markers, Agent cards (each card should have the name of a DRR/CCA agent. These can be pre-printed (see Appendix F) or can be developed by participants as part of the exercise)

Activity instructions

Organise people into small groups and provide each group with a pack of agent cards. Ask each group to arrange the cards into three piles 1. DRR, 2. CCA, 3. DRR and CCA. Allow each group 5-10 minutes to complete this task.

Bring all the groups back and ask them to report on where they have placed the *agents* and why. Encourage debate if groups have placed *agents* in different piles.

Discussion points:

- Do the overlapping *agents* work together?
- Do overlapping *agents* work more with DRR or CCA *agents* and why might that be?
- How can the DRR and CCA *agents* be brought towards becoming integrated *agents*?
- Do they notice any patterns? Are there any barriers between *agents*?
- Remind group about the *allocation* challenge, and how resources should be allocated equitably.

Variations

Instead of using pre-printed 'agent cards' you can ask participants to write down the *agents* they can think of on post-it notes or paper and then organise their pieces of paper. This might introduce new *agents* that have not been considered before. It can also provide you with an idea of how in-depth the participants' knowledge is.

6.2 Activity 2 – The architecture underpinning DRR and CCA

This activity relates to guideline 2 – Familiarise yourself with existing DRR and CCA *architecture*.

Objective/learning outcome

This activity is designed to familiarise participants with the policies, frameworks and institutions that underpin and support DRR and CCA initiatives and how they can interact to build a solid structure for integrated DRR and CCA.

Equipment

Whiteboard and markers or butcher's paper and markers.

Facilitators notes

Introduce what '*architecture*' is. This activity may be difficult for participants to envisage so it is recommended that an example be provided to set the scene.

Example: *Architecture underpinning rugby*

The *architecture* underpinning and supporting rugby includes international agreements (International Rugby Union) which represent policy and establish and monitor the rules of the game. The Rugby World Cup can be likened to an international conference, while regional competitions could be seen as regional networking events. Sponsorship could relate to funding and resourcing. Individual player contracts could represent individual *agents* within organisations. The Commonwealth Games is an occasion where players and clubs mix with other sports. A mixed Pacific Islander Team could be likened to a group with similar culture and background, coming together as a region for a specific purpose.

Activity instructions

Reiterate what *architecture* is in terms of DRR and CCA (institutional and cultural; global to local policy frameworks and funding mechanisms).

Ask the group what elements of Pacific *architecture* influence their work (e.g. cultural protocols, national legislation, networks). In groups, consider the different components of DRR and CCA *architecture*. Use these components to 'construct' a building. Ask each group to present their building and explain how the components work together to support the structure.

Examples for facilitator (see Appendix F for a visual example)

Institutions = nails, International policy frameworks e.g. Hyogo Framework for Action / UNFCCC = beams, Pacific Culture = fine mat on the floor, Donors = thatching

6.3 Activity 3 – Adaptability in Community Based Adaptation

This activity relates to guideline 4 – Be adaptive to local needs.

Objective/learning outcome

This activity uses a short case study to encourage participants to consider how projects can adapt to suit local contexts and to then reflect on how their own work does and can adapt.

Equipment

Handouts with the following case study:

Samoa CBA Case study

The Community Based Adaptation (CBA) project in Fasitootai village, Samoa, aims to enhance the adaptive capacity of the village and reduce the vulnerability of the mangrove and coral reef ecosystems to the risks associated with climate change. This will be achieved via a number of activities, including climate change education and awareness raising within the community, construction of shoreline protection and replanting of mangroves to stop coastal erosion. Being “bottom-up” and community driven is a key element of the CBA approach.

Global to local stakeholders are engaged in this project. From the local level, this includes the Church, the Council of Chiefs, the Women’s Committee and the Development Committee, ensuring the development of the project’s goals are locally appropriate and locally owned. At the national level, relevant government ministries are involved, as well as the GEF-SGP Secretariat, the UNDP Country Team, the project’s National Steering Committee and the Technical Review Committee. At the regional and global levels, stakeholders such as SOPAC, UNDP Technical Advisors, GEF and AusAID are represented. When visiting the village, stakeholders from outside the community adhere to local cultural customs and UNDP formal procedures and documents are adapted to suit the community’s needs. Presentations and workshops are conducted in the local language to ensure genuine engagement with the community.

Key documents this CBA initiative builds upon include the National Adaptation Programmes of Action (NAPA) and Coastal Infrastructure Management (CIM) Plans, ensuring the inclusion of relevant baseline information and allowing for the identification of capacity and policy gaps to be addressed. The CBA approach places heavy emphasis on monitoring and evaluation (M&E), recognising the need to keep track of progress throughout the project’s lifetime. The CBA project incorporates a strong participatory approach to M&E from its early inception, calling on local to national stakeholders to assist in developing culturally appropriate baselines for M&E.

Activity instructions

Ask participants to read the short case study of CBA in Samoa and to consider the following questions for discussion:

- How has the development of this project been adapted to meet local needs?
- What techniques were used to ensure the project is locally appropriate?
- How do you adapt your projects when implemented in different places?
- Is there anything else you would do in terms of adapting this project to the local context?
- What could you do differently / better?

6.4 Activity 4 – Accountability and the “ladder of participation”

This activity relates to guideline 3 – Accountability through participation.

Facilitators notes

A project addresses the challenge of accountability effectively when a range of *agents* are involved in meaningful ways from project inception to final evaluation. Indeed, the genuine participation of a range of *agents* throughout the lifespan of a project, from development to implementation and monitoring, is a key strength for integrated DRR and CCA.

It has long been recognised that *agents* can ‘participate’ in diverse ways with varying degrees of influence over projects. This exercise uses an adaptation of Arnstein’s (1969) ‘ladder of participation’ to analyse the ways *agents* participate in current DRR and CCA projects and what implications this may have for accountability.

A typology of participation (Pretty, 1995).

Type of participation	Description
Manipulative participation	Participation is simply a pretence, with ‘people’s’ representatives on official boards but who are unelected and have no power.
Passive participation	People participate by being told what has already been decided or has already happened.
Participation by consultation	People participate by being consulted or answering questions. No share in decision making, professionals not obliged to accept people’s views.
Participation for material incentives	People participate by contributing resources e.g. labour for food.
Functional participation	Participation seen by external <i>agents</i> as a means to achieve project goals, especially reduced costs. Tends to arise after major decisions have been made by agencies.
Interactive participation / Partnership	People participate in joint analysis, development of action plans and formation or strengthening of local institutions. Participation seen as a right. Groups take control over local decisions.
Self-mobilisation / citizen control	People participate by taking initiatives independently of external institutions to change systems.

Objective/learning outcome

This exercise is designed to encourage reflection on the ways in which various *agents* participate in a project.

Equipment

Butcher’s paper, marker pens, handout with the ladder printed on it along with the Typology of Participation (see Appendix F).

Activity instructions

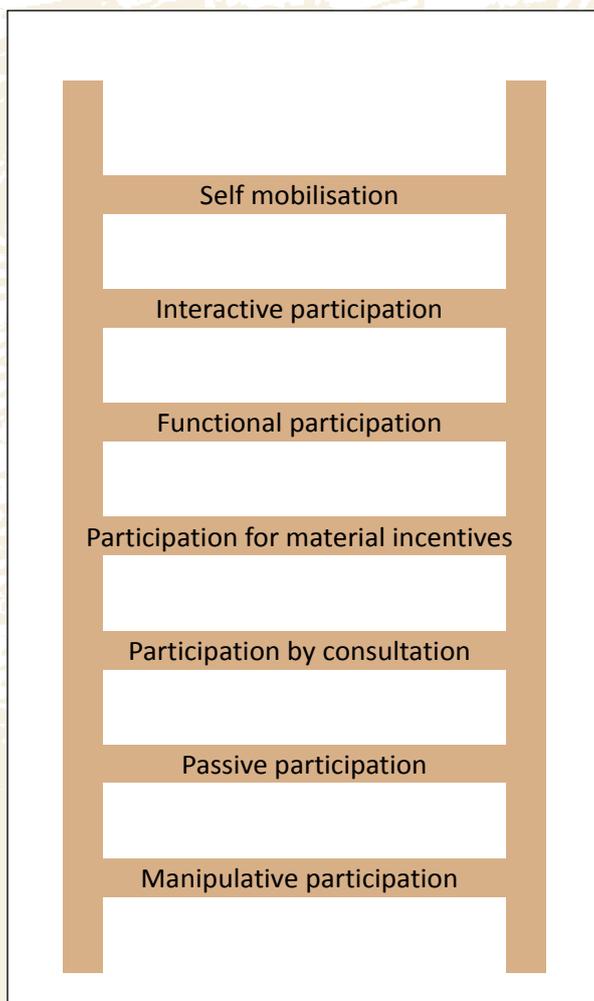
Ask participants to think (individually or as a group) of a project they are currently involved in

and brainstorm a list of all the *agents* involved in the project. Place each agent on the ladder of participation according to their actual level of participation. Ask participants to reflect on whether they feel each agent is at an appropriate step on the ladder and why.

Discussion points

- What is an 'appropriate' level of participation?
- What is a 'meaningful' level of participation?
- How accountable is your project to its participants?

Activity 4 Handout sheet: Ladder of Participation



Section Seven: Conclusion

This research has investigated the current status and thinking on integrating DRR and CCA in community based projects in the Pacific. By drawing upon case studies from Fiji and Samoa, in addition to interviews, observations and background literature reviews, the challenges and best practice in integrating DRR and CCA at the community level were brought to light.

A key finding is the importance of *agency* and the significance of building and maintaining good relationships between DRR and CCA practitioners across sectors (e.g. government, NGOs, donor community). An example of how this is occurring is in the way networks of CCA *agents* were including their DRR counterparts more frequently (and vice versa). A recommendation is to be aware of existing DRR and CCA *agents* and their roles and responsibilities so as to be actively inclusive, and to strategically place any new initiative such that it addresses gaps and future needs of communities. This process also serves to open dialogue and build and develop good relationships between DRR and CCA *agents*, potentially creating collaborative opportunities.

Another key finding is the importance of the cultural and institutional *architectural* context. This was found to be a crucial element of project inception and design. Recognising the differing funding, policy and legislative frameworks within which DRR and CCA operate, *agents* can also better understand how to develop projects that do not duplicate another. The Samoa CBA project is a good example of this as it was developed with the backing of relevant national plans and documents, and also worked within the local village structure to ensure community ownership.

The importance of *adapting* projects to local needs and capacity is also crucial. Projects which included localised plans or assessments provide examples of how this method of best practice results in positive outcomes in genuinely enhancing community resilience (e.g. PCIDRR's Community Disaster Plan, the VCA used by the Samoa Red Cross and Navua LLRM project). It is strongly recommended that this practice be implemented in all community based initiatives.

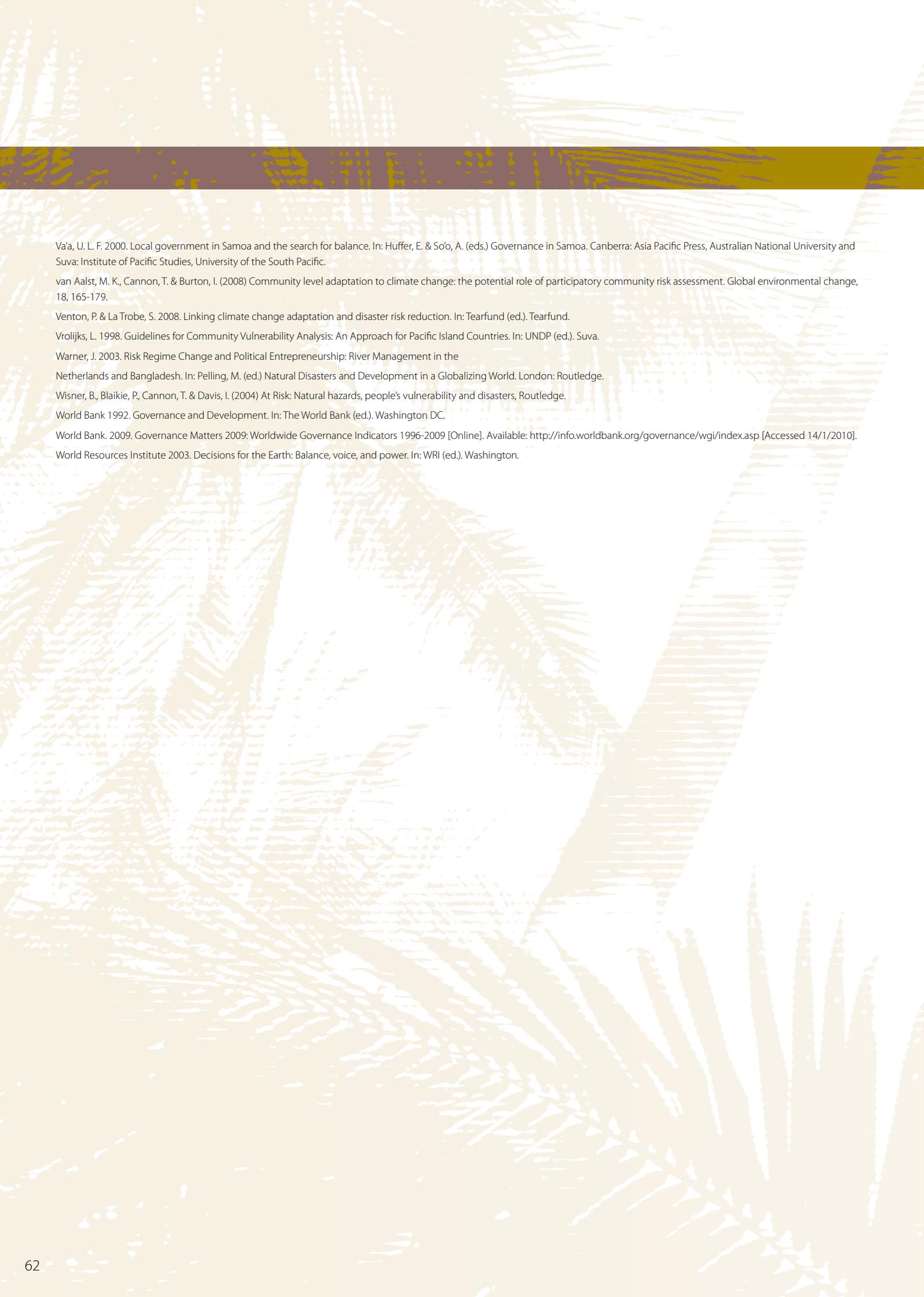
Guidelines and accompanying activities provide concise illustrations of possible solutions to overcome common challenges to integrating DRR and CCA. If *agents* draw upon these guidelines when developing strategies aimed at reducing risk and vulnerability or enhancing community resilience, the result is likely to be more robust in terms of incorporating relevant *agents*, and situating the strategy in the appropriate cultural and institutional context.

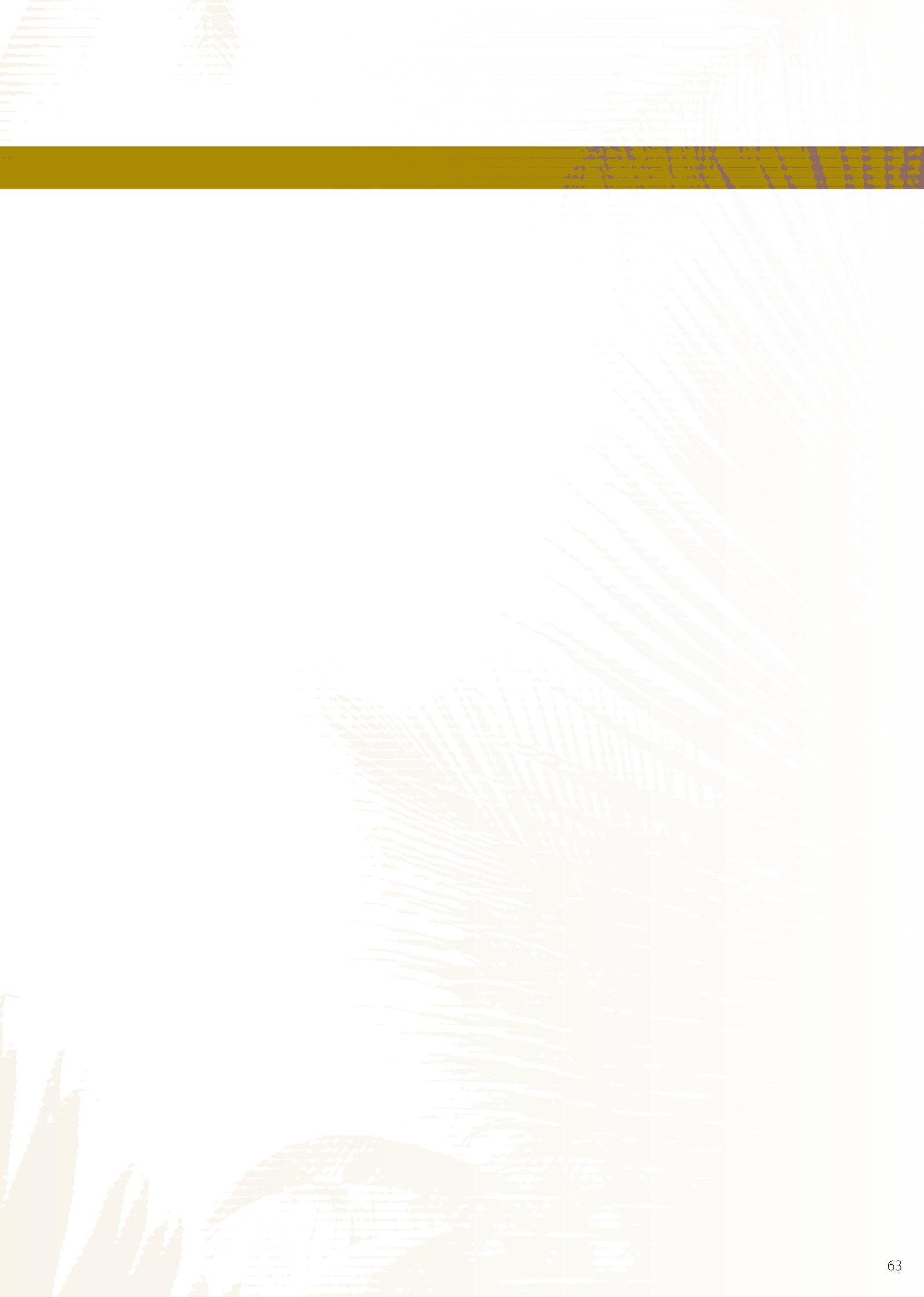
Continued efforts to integrate DRR and CCA are recommended, especially regarding the issue of responsibility: should it fall to the regional, national or local level? Whilst discussions on this issue persist, duplication and confusion remain. Thus, it is best to act at each level where possible in a flexible and adaptive manner, as many *agents* have shown to do. Over time, with continuing discussions and the active support from all *agents*, it is hoped that a fully integrated model of reducing vulnerability at the community level will be achieved.

Section Eight: References

- Adger, W. N., Paavola, J., Huq, S. & Mace, M. J. (eds.) 2006. *Fairness in Adaptation to climate change*, Cambridge, MA: MIT Press.
- Allen, K. M. (2006) Community-based disaster preparedness and climate adaptation: local capacity building in the Philippines. *Disasters*, 30, 81-101.
- Arnstein, S. R. (1969) A Ladder of Citizen Participation. *Journal of the American Institute of Planners*, 35, 216.
- AusAID. 2009a. AusAID Country Overview [Online]. Available: <http://www.ausaid.gov.au/country/country.cfm?CountryId=18> [Accessed 5/3/2010].
- AusAID 2009b. Investing in a Safer Future A Disaster Risk Reduction policy for the Australian aid program. Canberra: AusAID.
- Australian Government 2009. Australia Announces Funding Priorities For Pacific Climate Change Adaptation. In: *Climate Change and Water and Foreign Affairs* (ed.). Canberra, Australia.
- Ayers, J. & Huq, S. 2009. Community based adaptation to climate change: an update. In: *International Institute for Environment and Development* (ed.). London, UK: IIED.
- Bierman, F. (2007) 'Earth system governance' as a crosscutting theme of global change research. *Global Environmental Change*, 17, 326-337.
- Bierman, F., Siebenhuner, B. & Schreyogg, A. (eds.) 2009a. *International Organizations and Global Environmental Governance*, Oxon: Routledge.
- Bierman, F., Betsil, M. M., Gupta, J., Kanie, N., Lebel, L., Liverman, D., Schroeder, H. & Siebenhüner, B. 2009b. Earth System Governance: People, Places, and the Planet. In: *International Human Dimensions Programme on Global Environmental Change* (ed.) Science and Implementation Plan of the Earth System Governance Project. Earth System Governance Report 1 ed. Bonn.
- CARE-Bangladesh 2005. How can we drink saline water? Advocacy Campaign of the 'Pani Committee' (Water Committee). In: *CARE and Uttaran* (ed.).
- Caritas Australia 2008. Building disaster response and preparedness of Caritas partners in the Pacific. In: *Caritas Australia* (ed.). Australia.
- Daly, M., Puoutasi, N., Nelson, F. & Kohlase, J. (2010) Reducing the climate vulnerability of coastal communities in Samoa. *Journal of International Development*, 22, 265-281.
- Delica-Willison, Z. & Willison, R. 2004. Vulnerability Reduction: A Task for the Vulnerable People Themselves. In: Bankoff, G., Frerks, G. & Hilhorst, D. (eds.) *Mapping Vulnerability: Disasters, Development and People*. London: Earthscan.
- Douglas, B. (2002) Why religion, race, and gender matter in Pacific politics. *Development Bulletin*, 59, 11-14.
- Food and Agriculture Organization 2008. Climate change and food security in Pacific Island Countries. In: *FAO* (ed.). Rome.
- Glantz, M. (2003) *Climate Affairs*, Washington, DC, Island Press.
- Global Environment Facility 2009. Financing Adaptation Action. In: *GEF* (ed.).
- Goldsmith, A. A. (2007) Is governance reform a catalyst for development? *Governance: An International Journal of Policy, Administration, and Institutions*, 20, 165-186.
- Gopalakrishnan, C. & Okada, N. (2007) Designing new institutions for implementing integrated disaster risk management: key elements and future directions. *Disasters*, 31, 353-372.
- Gregory, D., Johnston, R., Pratt, G., Williams, M. J. & Whatmore, S. (eds.) 2009. *The Dictionary of Human Geography*: Blackwell Publishing.
- Helmer, M. & Hilhorst, D. (2006) Natural disasters and climate change *Disasters*, 30, 1-4.
- Huffer, E. & Schuster, A. 2000. Pule'aga: Views of Governance in Samoa. In: Huffer, E. & So'O, A. (eds.) *Governance in Samoa*. Canberra: Asia Pacific Press, Australian National University and Suva: Institute of Pacific Studies, University of the South Pacific.
- Huffer, E. & So'o, A. (2005) Beyond Governance in Samoa: Understanding Samoan Political Thought. *The Contemporary Pacific*, 17, 311-333.
- IFRC 2006. What is VCA. In: *International Federation of Red Cross and Red Crescent Societies* (ed.). Geneva: IFRC.
- IPCC 2007. *Climate Change 2007: 4th Assessment Report*. IPCC.
- IPCC 2009. *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*. In: *IPCC* (ed.) Scoping Paper – IPCC Special Report.
- Kaufman, D., Kraay, A. & Mastruzzi, M. 2005. *Governance Matters IV: New Data, New Challenges*. In: *The World Bank* (ed.). Washington.
- Kelman, I. & West, J. (2009) Climate change and small island developing states: a critical review. *Ecological and Environmental Anthropology*, 5, (In press).
- Krahmann, E. (2003) National, regional and global governance: One phenomenon or many? *Global Governance*, 9, 323-346.
- Lal, P. N., Rita, R. & Khatri, N. 2009. Economic Costs of the 2009 Floods in the Fiji Sugar Belt and Policy Implications. In: *IUCN* (ed.). Gland, Switzerland: IUCN.
- Lamour, P. 1998. Making Sense of Good Governance. In: *Research School of Pacific and Asian Studies* (ed.) *State, Society and Governance in Melanesia Discussion Paper*. Canberra: Australian National University.
- Lewis, J. 2007. Climate and disaster reduction [Online]. *Tiempo Climate Newswatch*. Available: <http://www.tiempocyberclimate.org/newswatch/comment070217.htm> [Accessed 23/3/2010].
- Libel, L., Anderies, J. M., Campbell, B., Folke, C., Hatfield-Dodds, S., Hughes, T. P. & Wilson, J. (2006) Governance and the Capacity to Manage Resilience in Regional Social-Ecological Systems. *Ecology & Society*, 11, 230-250.
- Macpherson, C. & Macpherson, L. 2000. Where theory meets practice: the limits of the good governance program. In: Huffer, E. & So'o, A. (eds.) *Governance in Samoa*. Canberra: Asia Pacific Press, Australian National University and Suva: Institute of Pacific Studies, University of the South Pacific.

- Madraiwiwi, R. J. 2006. Governance in Fiji: The interplay between indigenous tradition, culture and politics. In: Firth, S. (ed.) *Globalisation and Governance in the Pacific Islands* Canberra: ANU E Press.
- Méheux, K. (2007) An Evaluation of Participatory Damage Assessment Policy and Practice in Fiji. Doctor of Philosophy, Macquarie University.
- Méheux, K., Dominey-Howes, D. & Lloyd, K. (2007) Natural Hazard Impacts in small island developing states: A review of current knowledge and future research needs. *Nat Hazards*, 40, 429-446.
- Mercer, J. (2010) Disaster Risk Reduction or Climate Change Adaptation: Are we reinventing the wheel? *Journal of International Development*, 22, 247-264.
- Mercer, J., Kelman, I., Suchet-Pearson, S. & Lloyd, K. (2009) Integrating indigenous and scientific knowledge bases for disaster risk reduction in Papua New Guinea. *Geografiska Annaler: Series B, Human Geography* 91, 157-183.
- Mimura, N., Nurse, L., McLean, R., Agard, J., Brigulio, L., Lefale, P., Payet, R. & Sem, G. 2007. Small islands. In: Parry M.L., Canziani O.F., Palutikof J.P., van der Linden P.J., Hanson C.E. (ed.) *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.
- Ministry of Natural Resources and Environment (MNRE) 2005. National Adaptation Programme of Action. In: MNRE (ed.).
- Mitchell, T. & van Aalst, M. K. (2008) Convergence of Disaster Risk Reduction and Climate Change Adaptation A Review for DFID 1-22.
- Morgan, D. (1996) Focus Groups. *Annual Review of Sociology*, 22, 129-52.
- National Council of Churches Australia (NCCA) 2007. Executive Summary – PCIDRR Program. NCCA.
- Nicholls, N. 2001. CDB Disaster Management Programme: Lessons of experience. Caribbean Disaster Preparedness Seminar. Montego Bay, Jamaica.
- Nunn, P. (2009) Responding to the Challenges of Climate Change in the Pacific Islands: Management and Technological Imperatives. *Climate Research*, 10, 211-231.
- NZAID. 2009. Where NZAID Works [Online]. Available: <http://www.nzaid.govt.nz/programmes/c-fiji.html> [Accessed 5/3/2010].
- O'Brien, G., O'Keefe, P., Rose, J. & Wisner, B. (2006) Climate change and disaster management. *Disasters*, 30, 64-80.
- Oakley, P. 1991. *Projects with People: The practice of participation in rural development*. Geneva: International Labour Office.
- OCHA 2009. Samoa / Tonga Tsunami Situation Report 6. In: Office for the Coordination of Humanitarian Affairs (ed). Suva: OCHA.
- Pelling, M. (1998) Participation, social capital and vulnerability to urban flooding in Guyana. *Journal of International Development*, 10, 469-486.
- Pelling, M. (2007) Learning from others: the scope and challenges for participatory disaster risk assessment. *Disasters*, 31, 373-385.
- Pelling, M. & Uitto, J. I. (2001) Small Island developing states: natural disaster vulnerability and global change. *Environmental Hazards*, 3, 49-62.
- Pretty, J. (1995) Participatory Learning For Sustainable Agriculture. *World Development*, 23, 1247-1263.
- Punch, K. (2005) *Introduction to Social Research: Quantitative and Qualitative Approaches*, London, Sage Publications.
- Red Cross 2007. *Climate Guide*. Red Cross/Red Crescent.
- Rojas-Blanco, A. V. (2006) Local Initiatives and adaptation to climate change. *Disasters*, 30, 140-147.
- Ryle, J. (2005) Roots of Land and Church: the Christian State Debate in Fiji. *International journal for the Study of the Christian Church*, 5, 58-78.
- Santiso, C. 2001. Good Governance and Aid Effectiveness: The World Bank and Conditionality. *The Georgetown Public Policy Review*.
- Sohn, J., Nakhlooda, S. & Baumert, K. 2005. Mainstreaming climate change considerations at the multilateral development banks. Washington: World Resources Institute.
- South Pacific Regional Environment Programme 2006. Pacific Islands Framework for Action on Climate Change 2006-2015. In: SPREP (ed.). Apia.
- Sperling, F. & Szekely, F. 2005. Disaster Risk Management in a Changing Climate. World Conference on Disaster Reduction on behalf of the Vulnerability and Adaptation Resource Group. Washington DC, USA.
- Thomalla, F., Downing, T., Spanger-Siegfried, E., Han, G. & Rockstrom, J. (2006) Reducing Hazard Vulnerability: towards a common approach between disaster risk reduction and climate adaptation. *Disasters*, 30, 39-48.
- Tofaeono, A. (2000) Eco-theology : AIGA -- the household of life : a perspective from living myths and traditions of Samoa, Germany, Erlangen.
- Tuimalealifano, M. 2000. Village governance and development in Falelatai. In: Huffer, E. & So'o, A. (eds.) *Governance in Samoa*. Canberra: Asia Pacific Press, Australian National University and Suva: Institute of Pacific Studies, University of the South Pacific.
- Uitto, J. I. & Shaw, R. (2006) Adaptation to climate change: Promoting Community-based approaches in the developing countries. *Sansai*, 1, 93-108.
- UNDP 2009. Good Practices in Community based disaster risk management. UNDP.
- UNISDR 2008. Gender Perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation.
- United Nations 2001. Supporting Gender Mainstreaming. In: UN (ed.). Office of the Special Adviser on Gender Issues and Advancement of Women.
- United Nations Development Programme (UNDP) 2008. UNDP Project Document: Community Based Adaptation. UNDP.
- United Nations International Strategy for Disaster Reduction (UNISDR) 2004. Terminology: Basic Terms of Disaster Risk Reduction. Geneva: UNISDR.

- 
- Va'a, U. L. F. 2000. Local government in Samoa and the search for balance. In: Huffer, E. & So'o, A. (eds.) *Governance in Samoa*. Canberra: Asia Pacific Press, Australian National University and Suva: Institute of Pacific Studies, University of the South Pacific.
- van Aalst, M. K., Cannon, T. & Burton, I. (2008) Community level adaptation to climate change: the potential role of participatory community risk assessment. *Global environmental change*, 18, 165-179.
- Venton, P. & La Trobe, S. 2008. Linking climate change adaptation and disaster risk reduction. In: Tearfund (ed.). *Tearfund*.
- Vrolijk, L. 1998. *Guidelines for Community Vulnerability Analysis: An Approach for Pacific Island Countries*. In: UNDP (ed.). Suva.
- Warner, J. 2003. *Risk Regime Change and Political Entrepreneurship: River Management in the Netherlands and Bangladesh*. In: Pelling, M. (ed.) *Natural Disasters and Development in a Globalizing World*. London: Routledge.
- Wisner, B., Blaikie, P., Cannon, T. & Davis, I. (2004) *At Risk: Natural hazards, people's vulnerability and disasters*, Routledge.
- World Bank 1992. *Governance and Development*. In: The World Bank (ed.). Washington DC.
- World Bank. 2009. *Governance Matters 2009: Worldwide Governance Indicators 1996-2009* [Online]. Available: <http://info.worldbank.org/governance/wgi/index.asp> [Accessed 14/1/2010].
- World Resources Institute 2003. *Decisions for the Earth: Balance, voice, and power*. In: WRI (ed.). Washington.





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