Institutional and Policy Analysis of

Disaster Risk Reduction and Climate Change Adaptation

in Pacific Island Countries

Final Report

Prepared for the

United Nations International System for Disaster Reduction
and the
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By

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Dedication

This report is dedicated to Joe Konno of Chuuk State, Federated States of Micronesia. Joe was a strong advocate, and an able practitioner, of an integrated approach to disaster risk reduction and climate change adaptation. He passed away suddenly on May 24, 2010, while travelling to a climate change meeting in New Zealand.

Joe was larger than life, in every way. He will be sadly missed. Rest in peace, Joe.

Executive Summary and Recommendations

Introduction. This report explores how and why the fields of disaster risk reduction and climate change adaptation have developed in parallel, globally as well as in the Pacific, rather than in a more integrated manner. Essentially the former has focused on addressing existing risks related to all categories of hazards, though it is increasingly also taking a longer term view, similar to that of climate change adaptation. Importantly, disaster risk reduction looks more widely than just climate-related risks. On the other hand, adaptation has been more concerned with addressing future climate risks, with relatively more limited and less developed tools and with institutional frameworks, political processes, information sharing and a community of practitioners that often struggle to provide meaningful and lasting responses to climate change.

As experience with both disaster risk reduction and climate change adaptation grows, there is increasing recognition that these two fields share a common focus in that they are both concerned with reducing the vulnerability of communities and contributing to sustainable development. Many governments, including those in PICs, are recognizing the important role disaster risk reduction can play in reducing the adverse impacts of climate change. This includes acknowledging that reducing risks related to current weather and climate conditions is usually the best way to prepare for addressing risks related to climate change.

However, there are still many challenges and barriers that need to be overcome before true synergy and appropriate convergence between disaster risk reduction and climate change adaptation can be achieved. In order to make swifter progress, as well as learn from the advances made to date, the present study undertakes a thorough analysis of the institutional and policy context of disaster risk reduction and climate change adaptation in Pacific island countries. The main objective of the study is to provide an analysis of the current level of integration of disaster risk reduction and climate change adaptation in the region, with an emphasis on the policy and institutional environment, and provide recommendations to regional and national stakeholders for follow-up action. These cover the policies and institutional arrangements, responsibilities and operational services. Taken together, these will help enhance the capacity to address, in a proactive and coordinated manner, the risks from multiple natural hazards and climate change, across multiple development sectors. Annex 1 presents an annotated bibliography on integrating climate change adaptation and disaster risk reduction.

All PICs were asked to provide their most relevant and practical experiential and other information on the policies and institutional arrangements, responsibilities and operational services which can strengthen the capacity to address the risks from multiple natural hazards and climate change across relevant development sectors, working in a proactive manner. Additional and more in depth examples and other information were sourced from four Pacific island countries – the Cook Islands, Fiji, Palau and Vanuatu - through site visits and other means. These countries provide an excellent opportunity to assess, in greater detail, a wide range in vulnerabilities, approaches and progress in implementing climate change adaptation and disaster risk reduction. In addition, they also cover the main sub-regions of the Pacific as well as the diverse political systems and institutional arrangements.

Background. Both the internationally agreed Hyogo Framework for Action on Disaster Risk Reduction and Disaster Management (“the Hyogo Framework”) and the Pacific Islands Disaster Risk Reduction and Disaster Management Framework for Action (2005 – 2015) (“the Madang Framework”) outline a broad-based vision of

disaster risk reduction, encompassing governance, risk assessment and warning, knowledge and education, risk management and vulnerability reduction, and disaster preparedness and response. This vision is also applicable to the future threats presented by climate-change-related extreme events. At the global level the need for climate change adaptation, including international assistance to developing countries to implement climate change adaptation, is recognized in the United Nations Framework Convention on Climate Change while at the Pacific regional level the Pacific Framework for Action on Climate Change, and its associated Action Plan, provide policy guidance for how Pacific island countries can best address climate change.

All three frameworks are currently undergoing their mid-term reviews. This present report is intended to inform these reviews.

Need for More Disaster Risk Reduction. There is strong evidence, both globally and in the Pacific that there is an increase in both the observed frequency and intensity of weather- and climate-related hazards. These increasing trends, which are consistent with those anticipated as a result of global warming, have important implications for disaster risks. Weather-related disaster risks are increasing, with more devastating impacts on communities than expected. Moreover, there is also growing evidence that, at least in the short to medium term, many important impacts of climate change may manifest themselves through a change in the frequency, intensity or duration of extreme events. Thus, while responses to climate change may initially have been framed by a longer-term outlook, there is now at least as much emphasis on the present and immediate future. Similarly, the disaster risk management community is moving rapidly from looking only at historic and current risk, to considering future risks.

Responding to the future changes in extreme events will require bolstering disaster risk management as a first line of defence, along with disaster preparedness and response. The goal should be to reduce vulnerabilities to the added impacts that climate change will exert through more extreme weather events, by emphasizing the importance of reducing sensitivity a well as exposure to weather- and climate-related hazards. For example, climate change poses a threat to food security through erratic rainfall patterns and decreasing crop yields, contributing to increased hunger.

While development planning and processes should anticipate climate extremes, variability and change to the extent possible, there will always be weather and climate “surprises” – unforeseen events including climate-related disasters such as tropical cyclones. Planning for such weather and climate “surprises” is becoming increasingly important, and is yet another example of the benefits of integrating climate change adaptation and disaster risk reduction in national development planning and processes.

Some of the Challenges. While there is an assumption of beneficial synergies between disaster risk reduction and climate change adaptation, few of these are currently being exploited. Convergence of adaptation and disaster risk reduction is often compromised by poor interaction and institutional coordination among the communities of practice around disasters, climate change and development. However, risk management is a powerful, integrative concept and tool. An excellent opportunity for integration of disaster risk reduction and climate change adaptation arises from the fact that both communities of practice pursue a risk management approach.

The limitations of climate data and modelling to project changes over project-relevant timescales mean that adaptation responses are often based on existing climate variability and extremes, thereby linking with disaster risk reduction while also building greater flexibility to cope wider ranges of variation in the future. Since it is impossible to determine the precise effects of climate change on the number or intensity of disaster events we cannot prepare for them in a detailed and explicit manner. However, it is appropriate to use disaster risk reduction as a no regrets approach to minimise disaster impacts generally and, as a consequence, minimise the impact of extreme events that have been exacerbated by climate change.

Furthermore, climate risks may not be the most important constraint on poverty alleviation and other improvements in livelihoods. As a result, climate considerations need to be embedded in a process that considers all risks, with risk management including assessing how development processes can contribute to reducing vulnerability to climate change.

Limits to Total Integration. Some geophysical hazards (e.g. earthquakes, volcanic eruptions, tsunamis) are unrelated to climate change, at least in the short to medium term. For this reason alone there can never be a total convergence of disaster risk reduction and climate change adaptation. But for the Pacific, weather- and climate-related hazards underpin the majority of disasters, the economic damage and losses due to disasters are substantial and there are decades of learning on coping with variability and change brought about by numerous, often compounding, pressures on social, economic and environmental systems. While disaster risk reduction expands beyond weather- and climate-related disasters, adaptation includes not only climate extremes, but also the more slowly evolving risks posed by systematic trends such as increasing mean temperatures and sea-levels. Thus, while there are clear synergies that must be exploited, there are also some mutually exclusive elements within disaster risk reduction and adaptation that need to be addressed separately.

Exploiting the Synergies. Disaster risk management and climate change adaptation share commonalities in purpose in that they aim to reduce the vulnerability of societies to hazards by improving the ability to better anticipate, resist and recover from their impact. There is enormous value added if adaptation efforts draw on the national platforms and other disaster risk reduction tools and experiences within and outside the Hyogo Framework. Disaster risk reduction provides many tried and tested tools for addressing risk. Thus, rather than implement climate change adaptation separately, there is benefit in recognising that climate change is bringing a range of new risks and hazards. Disaster risk reduction is increasingly contributing to adaptation as the disaster management debate moves beyond core humanitarian actions of emergency response, relief and reconstruction towards disaster prevention, preparedness and risk reduction.

People, especially, need to have the capacity to adapt to both an increase in the frequency and magnitude of extreme events, as well as to the slower and incremental consequences of climate change and of development that enhances vulnerability. This broad scope of adaptation provides a mechanism for helping to reduce the unhelpful dichotomy between the humanitarian and developmental approaches integral to disaster risk reduction and climate change adaptation.

Institutional and Policy Maps and Gaps. Detailed institutional and policy analyses related to disaster risk reduction and climate change adaptation were undertaken in detail for the four pilot countries, Cook Islands, Fiji, Palau, Vanuatu. Relevant information from other Pacific Island Countries was also reviewed.

Tonga is clearly in the lead in the Pacific in terms of the integration of disaster risk management and climate change adaptation. The innovation extends not only to developing a joint national action plan for disaster risk management and climate change adaptation, but to also encompassing mitigation of greenhouse gas emissions, making it in fact a joint plan covering both disaster risk management and climate change. This development will serve as an inspiration and guide to other Pacific island countries, and perhaps beyond the region. It is interesting to note that these developments have occurred without any substantive institutional reorganization. Rather operational and political leaders have taken and supported the joint initiative. The Federated States of Micronesia, on the other hand, has undertaken its integration initiatives from a common institutional platform – from the Office of Environment and Emergency Management. This has responsibility for both disaster risk management and climate change policies and work programmes. Another source of inspiration for integration of disaster risk management and climate change adaptation is provided by Vanuatu. It is moving, albeit slowly, towards both integration across policy, institutions and work programmes.

Learning from the Caribbean. Caribbean countries and communities are facing increasing threats, similar to those in the Pacific Region. There is increasing awareness of the need for, and a growing movement to, develop sustainable linkages between disaster risk management and climate change. This has resulted in new linkages between disaster management and climate change in institutional contexts, including development of a formal relationship between Caribbean Disaster Emergency Response Agency, the Caribbean Community Secretariat, and the Caribbean Development Bank. Since coping measures for climate variability and extremes already exist in the Caribbean, as in the Pacific, adaptation to future climate change focuses on identifying gaps in the current capacity for addressing present-day climate variability and extremes. Reducing vulnerability to near-term hazards is also considered to be an effective strategy for reducing long-term climate change risks.

Recently the Caribbean Community Climate Change Centre prepared the Regional Framework for Achieving Development Resilient to Climate Change. The strategic vision driving the regional strategy is to lay the ground for a “regional society and economy that is resilient to a changing climate”. The Regional Framework is underpinned by a series of principles, including recognizing that an integrated approach is important in minimizing the use and costs of limited technical, administrative, and financial resources; in reducing any potential conflicts in policy development; and in promoting coordination among all stakeholder groups in hazard risk reduction. The Framework envisages that the financing of disaster risk reduction initiatives will be treated as a development priority within the budgeting process, and that all government entities will advance the goals and objectives of the framework by ensuring that disaster risk reduction is taken into account in the design of development programmes and projects.

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

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

Regional Frameworks: Influences and Implementation. There is significant complementarity and congruence between the two regional frameworks. Many of the key players (e.g. donors, non-governmental and regional organizations) are involved in implementing both disaster risk management and climate change adaptation. The two frameworks have common linkages with the Pacific Plan for Strengthening Regional Cooperation and Integration. On the other hand, at the level of implementation there is considerable separation. This has its origins at the highest levels. The Hyogo Framework, which has been endorsed by 168 governments, is promoted especially by partners in the International System for Disaster Reduction. The objectives and work programmes of many disaster risk management initiatives in the Pacific are strongly guided by the Hyogo Framework and the Pacific Regional disaster risk management Framework, as are the supporting institutional structures.

A similar situation exists for climate change initiatives in the Pacific, with these being influenced by United Nations Framework Convention on Climate Change processes and funding and to a lesser extent by the Regional Framework for Climate Change. The 2009 meeting of the Pacific Climate Change Roundtable called for a study to consider the feasibility of establishing a Pacific Regional Climate Change Fund or funding modality, including assessing the need for a technical backstopping and facilitation mechanism. A study is now underway to assess the feasibility of establishing a Pacific Regional Climate Change Fund or Facility, with the objective of harmonizing donor assistance in this area and reducing the administrative burden and other constraints Pacific island countries are experiencing with accessing and utilizing climate change overseas development assistance. A Pacific Disaster Reserve Fund is also being considered amongst a range of disaster risk financing options, including the vision that it could potentially provide Pacific island countries with a regional vehicle to access immediate post-disaster financing for their recovery and reconstruction activities and as well to incentivise them to invest in disaster risk reduction.

Until recently there has been a substantial and counterproductive disconnect between the Pacific Applied Geosciences Commission and the Pacific Regional Environment Programme in relation to assisting countries address their climate-related risks by implementing disaster risk reduction and climate change adaptation. The two frameworks, and the associated differences in the mandates of these two regional organizations, mean that major opportunities to reduce risks and build resilience on the ground in the Pacific have been missed. The Pacific Plan has done little to help bridge the gap, and neither did the recent Regional Institutional Framework processes. Fortunately, new leadership at both the Pacific Applied Geosciences Commission and the Pacific Regional Environment Programme is now providing a favourable environment for increased coordination and cooperation between the two agencies, especially with respect to disaster risk reduction and climate change adaptation.

Increased integration of disaster risk management and climate change adaptation in the Pacific will require improved functionality of the Pacific Climate Change Roundtable and the Pacific Platform for disaster risk management. The latter is the coordinating institution for the Pacific disaster risk management Partnership Network. Both the Pacific Climate Change Roundtable and the Pacific Platform are currently being reviewed, the latter being part of the mid-term review of the Pacific Regional disaster risk management Framework. This is, in turn, part of the mid-term review of the Hyogo Framework.

The timing and locations of the Pacific Climate Change Roundtable and Pacific Platform meetings are generally determined by the availability of funding, often related to a offer from a country to host a meeting. Hence arrangements are largely reactive and not necessarily optimum in terms of timing, location and logistic arrangements. A more desirable approach would be to hold the Pacific Climate Change Roundtable and Pacific Platform meetings at the same location, and with reasonable overlap in terms of timing, allowing the opportunity for a small number of joint sessions and the convening of joint working groups. Even more benefits would arise if these meetings were held back-to-back with another event linked to a climate or disaster risk management theme. The Pacific Climate Change Roundtable meets bi-annually while the Pacific Platform meets annually. This suggested arrangement would allows the Pacific Platform flexibility regarding meeting location and timing in the intervening years.

Evaluation of Climate Change Interventions Supported by the United Nations Development Programme. The aim of this evaluation was to report on an analysis of available information on how national climate change priorities have been addressed by countries with the assistance of the United Nations Development Programme. There have been 80 projects implemented by the United Nations Development Programme between 1991 and 2009. These had a total value of USD62.5 million. The majority of projects, by far, had a renewable/sustainable energy focus (31 projects), with the next most common categories being adaptation (22 projects) and support and capacity building (22 projects). Somewhat understandably, the adaptation projects focussed on the coastal sector (7 projects) and disaster risk reduction (6 projects). The above analysis is totally input focussed, due to the nature of the databases that have been compiled by international and regional agencies. In order to provide some insight into the outputs and outcomes of these activities, more detailed analyses were conducted for the four pilot countries, the Cook Islands, Fiji, Palau and Vanuatu. They show considerable benefits arising from the assistance provided by the United Nations Development Programme.

Success Factors: Practical Reasons for Encouraging Greater Integration. For capacity-constrained national entities, giving priority to mainstreaming processes working in an integrated way can help ease the burden of programming development assistance. For example, this will happen if finance and planning ministries and planning ministries are committed to taking an integrated approach to national planning through budget processes and aid coordination. Ensuring there is a mechanism in place which increase the chance that community needs to reduce vulnerability and enhance resilience are reflected in the operational plans of government ministries and departments, as well as in the work plans of relevant international agencies, will also assist integration.

It is preferable to have a single government agency responsible for climate change adaptation and disaster risk management. It, or both agencies if such an arrangement is not possible, is best located within an influential ministry and should be adequately supported, financially and in other ways. The shared development,

use and maintenance of comprehensive national databases on past, current and planned disaster risk reduction and climate change adaptation activities can facilitate the implementation of integrated approaches, including the through the learning and other information they generate. But these databases need to be kept up to date and be highly accessible to all relevant parties, both within and outside government; this can help promote joint planning, assessments and other activities and also feed into a similar regional database.

Success Factors: Practical Approaches that Facilitate Integration. Risk management is an integrating concept that explicitly helps bring together the different time-dimensions of disaster risk management and climate change adaptation, including ongoing and future changes in risks. Thus a risk management approach ranges from preparedness and disaster mitigation to broader adaptive activities related to livelihoods, natural resources management, as well as migration and human security and conflict prevention. A risk-based approach also facilitates objective and more quantitative methods, including cost benefit analyses that evaluate the incremental costs and benefits of interventions and prioritize options. At a practical level, integrating disaster risk management and climate change adaptation in this way focuses efforts on reducing both present and future risks related to climate variability and extremes - in many instances current levels of climate risk are already unacceptably high.

Integration of disaster risk management and climate change adaptation is further facilitated when there is a clear understanding of the scientific, financial and socio-economic arguments for such integration, as well as how best to reflect this understanding in relevant policies, plans and actions. Natural disasters, while undesirable, do provide a benefit of a learning opportunity for disaster risk management and climate change adaptation, including quantifying the relative costs and benefits of disaster risk reduction. At these and other times, central and local government officials can engage with communities and assess opportunities and the need for more integrated approaches to climate change adaptation and disaster risk reduction.

Climate change adaptation and disaster risk reduction activities need to be linked across the full range of time frames, spatial scales and sectors. In the Pacific an approach that has proven to be effective includes a mix of top-down national and sectoral capacity building to strengthen the enabling environment, such as by climate and disaster proofing policies, plans and regulations and mobilizing financial resources, and bottom-up project implementation which reflects the fact that in the Pacific much climate change adaptation and disaster risk reduction takes place at the local level – in communities, households, businesses etc. Experiences from the Pacific also show that efforts to work with communities to generate gender-sensitive responses to the current and future impacts of climate change and natural disasters are more successful when they involve a number of responses from a number of partners; it is also vital that these multi-stakeholder responses be well coordinated.

A more integrated approach should include identification and exploitation of the co-benefits between climate change adaptation, disaster risk management, development, and environment protection, and focus on maximizing the benefits of taking a no regrets approach. The small size, and highly integrated nature and sensitivity of Pacific island economies, societies and natural ecosystems make this a priority. For these and other reasons development assistance partners who are active in both disaster risk reduction and climate change adaptation take a strong position to advocate for the integration of disaster risk reduction and climate change

adaptation programming and ensure they follow up on every opportunity do so in their own programming.

Success Factors: Addressing Capacity Constraints. Pacific island countries face significant capacity constraints, in all facets of climate change adaptation and disaster risk management. Most practical initiatives incorporating climate change adaptation and disaster risk reduction take place at the individual level – a person, a family, a community, or a business enterprise. Singly and collectively they need to be equipped and empowered with the knowledge, skills, tools and financial and other resources necessary to work efficiently and effectively. Governments and their development partners play an important role by helping to ensure that the necessary capacity exists. But this requires a high level of coordination and integration between levels of government, something that is often lacking. The consequences of poor coordination are often exacerbated by poor communication between governments and local communities. Moreover, climate change adaptation and disaster risk reduction initiatives are frequently undermined or rendered less effective by a lack of political will, insufficient funds, or the absence of expertise or guidance. Government officials need to develop a supportive and productive rapport with community leaders in order to achieve timely and efficient flow of information and assistance.

Capacity constraints become even more apparent when there is a move towards integrating climate change adaptation and disaster risk reduction. Since there are significant barriers to increased integration, countries and individuals need to be provided with the added knowledge, skills and motivation to overcome them. They also need to be empowered, which calls for the strengthening of the enabling environment so it supports a more integrated approach. Capacity building needs to be seen as an ongoing, but evolutionary process which involves developing the capacity of all ministries, sectors and communities to carry out disaster risk reduction and climate change adaptation activities, jointly wherever possible and practical. Capacity building is much more than training. It also includes development of tools and institutional systems and processes. Strengthening the enabling environment, as well as the capabilities of individuals, will also help increase the absorptive capacity – the ability to make efficient and effective use of development and other external assistance provided to countries and sub-national entities such as communities.

Important but not Insuperable Barriers to Greater Integration of Climate Change Adaptation and Disaster Risk Reduction. The main barriers include the two separate, and well-established regional frameworks for disaster risk management and climate change in the Pacific. These are supported by their associated international agreements and institutions. The regional frameworks and their related international agreements have given rise to separate regional and national institutional arrangements, policies, action plans as well as two separate regional networks - the disaster risk management Pacific Platform and the Pacific Climate Change Roundtable; the pervasive nature of the separation generates enormous resistance to change.

On top of this, the frameworks and agreements are, in themselves, insufficient to coordinate the efforts of many individual government agencies and development partners. A more systematic whole-of-government and whole-of-country approach to both planning and implementation is required, with a balance between pre-determined activities and adaptive approaches.

Quantifying the benefits of a particular initiative to reduce climate-related risks is very challenging, especially when working at community level where a subsistence economy dominates. Often the benefits of prevention go unseen and unappreciated,

while disasters win sympathy and immediate responses nationally and from across the world. To promote disaster risk reduction and climate change adaptation the case needs to be made in economic terms. Although efforts have begun to close this gap, this remains an important challenge.

Good Practices for Integrating Climate Change Adaptation and Disaster Risk Reduction. Development of national adaptation strategies represents an important opportunity to integrate disaster risk reduction and climate change adaptation, as has been achieved in both Tonga and the Federated States of Micronesia. Integration of disaster risk reduction and climate change adaptation brings together individuals working in the fields of socio-economic development, humanitarian assistance, climate risk management and disaster risk reduction. There is an urgent need to develop a common language and understanding between these groups. Effective communication is a prerequisite to coordination and harmonization. One impediment is the way in which weather and climate change information is packaged, delivered and presented. Often it is not immediately usable in everyday decision-making that shapes the lives, livelihoods and responses of ordinary people to climate extremes, variability and change.

More emphasis should be placed on bottom-up approaches that combine disaster risk reduction and climate change adaptation. In this respect, community-based adaptation and community-based disaster risk management are already showing considerable success in the Pacific, as is ecosystems-based adaptation. Use of existing social networks to integrate adaptation and risk reduction into ongoing development efforts is also proving effective at the community level. Grounding policy at the local level cannot be done by international and regional organizations, but rather must be owned by local civil society. Practice should influence policy. In this respect, local-level case studies are useful in informing the development of higher-level policies, including national climate change strategies and sectoral climate change policies.

There is, however, a need for resources to follow the delegation of any responsibilities to local levels. This will require decisions on the allocation of assets to be made at the local level, through semi-formal decision-making processes. As a result, new funding models and incentive structures need to be explored. Local monitoring frameworks for vulnerability and resilience tracking and reporting will also be required. An effective way to increase transparency and responsiveness is to establish, at the local level, an independent monitoring function for development plans and budgets that include disaster risk reduction and climate change adaptation, with strong participation from at-risk groups, and from civil society at large.

At the national level, the process leading to the preparation of a National Adaptation Programme of Action has been found to be a successful way to integrate adaptation into national development plans. Selection of the National Adaptation Programme of Action priority projects is always consistent with national poverty reduction goals, while the completed National Communications to the United Nations Framework Convention on Climate Change, along with the National Adaptation Programmes of Action, have allowed planning decisions to be based on a sound knowledge of climate change and its potential impacts. Funding for National Adaptation Programme of Action preparation has been available to Least Developed Countries only. But the success of the National Adaptation Programmes of Action has resulted in many other countries preparing a national adaptation plan, or similar

The scaling up of community-based adaptation and community-based disaster risk management projects has been facilitated by the creation of partnerships with local community groups and the use of local development plans. Strengthening institutions at local and central government level, and the sharing of information and experiences through district- and national-level networks, also contribute to the up-scaling of project outcomes.

Recent experience with both community-based adaptation and community-based disaster risk management has highlighted that people-centred strategies are more cost-effective for reducing weather and climate-related disaster risk, and can be more equitable than large-scale structural measures. People-centred strategies that enhance access to, and understanding of, information and promote livelihood diversification are more likely to provide a robust defence against a number of stresses, not just those related to extreme weather and climate events.

Successful reduction of climate risks requires close interaction and coordination across relevant institutions. This is facilitated by advocacy and leadership by the overseeing ministries, such as those concerned with finance and planning, as well as specific mechanisms such as interdepartmental committees and joint planning to systematically link policies on climate change adaptation and on disaster risk reduction.

More integrated approaches have been developed. These include Vulnerability and Capacity Assessment and Climate Vulnerability and Capacity Analysis. Both approaches are based on people being empowered to transform and secure their rights and livelihoods and the critical roles of local and national institutions, as well as public policies. These have a major influence of people's adaptive capacity.

Role of the Enabling Environment. At national level, governments in particular have the important responsibility of ensuring a strong enabling environment, as well as benefiting from that enabling environment when undertaking climate change adaptation and disaster risk reduction measures themselves. A critical aspect of the enabling environment and a foundation for knowledgeable decision making is to have access to relevant hazard information. Thus national meteorological and hydrological services have an important role to play ensuring access to reliable and long-term natural resource data.

Entry Points. Environmental and health impact assessments are effective entry points for inter-sectoral cooperation on disaster risk reduction and climate change adaptation, as they are typically high policy priorities. Assessments and activities designed to enhance food, water and human security also provide useful entry points as all are sensitive to climate change and are usually important dimensions of natural disasters. Holistic but practical and locally-focussed approaches, such as an ecosystem-based planning, also provide excellent opportunities to promote the integration of disaster risk reduction and climate change adaptation. Other relevant entry points are described, including engineering design studies for infrastructure and visioning activities, at community to national level

Self Assessment Tool. A self-assessment tool is presented. It is intended to be used by countries, and specifically by disaster risk reduction and climate change adaptation managers and their teams, on a regular (e.g. annual basis) to assess progress in understanding, policy making, programming, institutional strengthening and delivery of practical outcomes for the target beneficiaries of disaster risk reduction and climate change adaptation. The focus of the assessment is on policy design and institutional effectiveness. It is a tool for adaptive management of disaster

risk reduction and climate change adaptation – determining what is working in order to reinforce successful efforts, and what is not working as expected, in order to refocus or halt the initiatives being undertaken. In the process of the assessment, barriers and gaps will be identified, along with lessons learned, success factors and success stories. The tool can be used by a single person who has good access to, and understanding of, the necessary information. But it can also be used as an analytical framework for more extensive assessments that involve one or more of the following: desk reviews, interviews, focus groups, and informal or formal questionnaires.

Priority Areas for Future Development of Guidance Notes and Other Tools

The following are identified as areas of disaster risk reduction and climate change adaptation practice in the Pacific region that would benefit from the preparation of guidance notes and other tools. The lead agency with the comparative advantage is also identified.

- Evaluating the Self Assessment Tool, developing guidance on its application and conducting training and awareness workshops to encourage uptake and use – United Nations International System for Disaster Reduction and the United Nations Development Programme, jointly;
- Guidance to national and local government on strengthening the enabling environment to support greater integration of disaster risk reduction and climate change adaptation at national and local levels - United Nations Development Programme;
- Making the economic case for increased integration of disaster risk reduction and climate change adaptation, especially at community level – Pacific Islands Forum Secretariat, Pacific Islands Applied Geosciences Commission and the Pacific Regional Environment Programme, jointly;
- Development and application of participatory policy making and planning to achieve greater effectiveness and efficiency in disaster risk reduction and climate change adaptation, especially at community level – the Pacific Regional Environment Programme, the Pacific Islands Applied Geosciences Commission and United Nations Development Programme - jointly; and
- Preparation and dissemination of Pacific case studies on coordination and harmonization of disaster risk reduction and climate change adaptation, with a focus on work at community level and on the enabling environment for disaster risk reduction and climate change adaptation – United Nations International System for Disaster Reduction.

Recommended Steps and Follow-up Actions for Strengthening the Integration of Disaster Risk Reduction and Climate Change Adaptation

Regional and International Stakeholders

For immediate consideration and action:

1) The PPCR, through its secretariat (the Pacific Regional Environment Programme) should establish and continually maintain a single, online data base of past, current and planned disaster risk reduction, climate change adaptation and related projects which have multi-country involvement, with information on tangible benefits and learning they will or have generated, in order to promote joint planning, evaluation assessments and other activities;

2) The Pacific Climate Change Roundtable, through its secretariat (the Pacific Regional Environment Programme) should establish and continually maintain an online date base of Pacific-focussed case studies, good practices, lessons learned, methodologies and tools which can be used to enhance the integration of disaster risk reduction and climate change adaptation at regional, national and community levels, as well as all relevant materials and information, such as documents, contacts, and meeting calendar;

3) The Pacific Climate Change Roundtable and the Pacific Regional Disaster Risk Management Platform should make every reasonable effort to convene their meetings at times and locations that maximize the coordination and integration opportunities while also delivering the greatest environmental benefits in terms of minimizing greenhouse gas emissions;

4) With the support of relevant agencies, the University of the South Pacific should consider developing the capacity to assist relevant regional organisations to provide practical technical and other support to Pacific island countries on how best to maximize efficiency and effectiveness by taking an integrated approach to disaster risk reduction and climate change adaptation;

5) As part of the upcoming reviews of the Pacific Regional Disaster Risk Management and Climate Change Frameworks, the opportunities for greater integration of disaster risk reduction and climate change adaptation should be explored, while recognizing that the former Framework deals with disasters other than those related to weather and climate extremes while the latter Framework deals with the reduction of greenhouse gas emissions as well as with adaptation;

6) Donors, Pacific island governments, non-governmental and relevant Regional Organizations should agree on how they might, working collectively, promote the greater integration of disaster risk reduction and climate change adaptation; development assistance partners who are active in both disaster risk reduction and climate change adaptation should take a strong position to advocate for the integration of disaster risk reduction and climate change adaptation programming and ensure they follow up on every opportunity do so in their own programming.

National Stakeholders

For immediate consideration and action:

7) Each country should ensure that all their disaster risk reduction, climate change adaptation and related programming is included in the regional database (see 1 above) along with relevant case studies, good practices, lessons learned, methodologies and tools which can be used to enhance the integration of disaster risk reduction and climate change adaptation at regional, national and community levels (see 2, above);

8) Each country should assess, in a general way and for the national context, the broader costs and benefits of taking a more integrated approach to disaster risk reduction and climate change adaptation, relative to business as usual, including assessing the ongoing effectiveness of current disaster risk reduction strategies in the face of a highly variable climate which may also undergo considerable change in the near future;

9) Each country should assess, in the national context, the synergies between humanitarian, development, environmental and climate change, especially at

community level, and use the insights to strengthen DRR and climate change adaptation strategies, individually as well as collectively;

10) Each country should implement, improve and maintain local monitoring frameworks for vulnerability and resilience tracking and reporting; and

11) Pacific island governments should strengthen national policy and planning processes to reflect the importance of a strong enabling environment for climate change adaptation and disaster risk reduction initiatives at local (e.g. community and enterprise) levels.

Table of Contents

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List of Abbreviations

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
CBA	Community-based Adaptation
CBDRM	Community-based Disaster Risk Management
CCA	Climate Change Adaptation
CCCCC	Caribbean Community Climate Change Centre
CCG	Central Control Group
CDEMA	Caribbean Disaster Emergency Management Agency
CDMCHC	Comprehensive Disaster Management Coordination and Harmonization Council
CHARM	Comprehensive Hazard and Risk Management
CRP	Comprehensive Reform Programme
CVCA	Climate Vulnerability and Capacity Assessment
DEC	Department of Environment and Conservation
DM	Disaster Management
DPCC	Development Partners for Climate Change
CRMI	Caribbean Risk Management Initiative
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EMCI	Emergency Management Cook Islands
FSM	Federated States of Micronesia
FSPI	Foundation of the Peoples of the South Pacific International
GEF	Global Environment Facility
GFDRR	Global Facility for Disaster Reduction and Recovery
GFG	Governance for Growth
HMSC	Hazard Management Sub-committee
IPCC	Intergovernmental Council on Climate Change
ISDR	International System for Disaster Reduction
LDC	Least Developed Country
LLRMA	Local Level Risk Management Approach
LMMA	Locally Managed Marine Area
MDG	Millennium Development Goal
MSHMP	Multi-stakeholder Hazard Mitigation Plan
NACCC	National Advisory Council on Climate Change
NAP	National Action Plan
NAPA	National Adaptation Programme of Action
NDC	National Disaster Committee
NDMO	National Disaster Management Office
NDRMF	National Disaster Risk Management Framework
NEC	National Emergency Committee
NEMO	National Emergency Management Office
NESAF	National Environmental Strategic Action Framework
NGO	Non-governmental Organisation
NSDS	National Sustainable Development Strategy
NTF	National Task Force
NZAID	New Zealand Agency for International Development
OEEM	Office of Environment and Emergency Management
PAA	Priorities and Action Agenda
PACC	Pacific Adaptation to Climate Change (Project)
PACE-SD	Pacific Centre for the Environment and Sustainable Development
PCCR	Pacific Climate Change Roundtable
PDRMPN	Pacific Disaster Risk Management Partnership Network
PIC	Pacific Island Country
PICCAP	Pacific Islands Climate Change Assistance Programme
PIFACC	Pacific Islands Framework for Action on Climate Change
PNDMP	Palau National Development Master Plan
PNG	Papua New Guinea

SDP	Sustainable Development Plan
SEEDS	Sustainable Economic and Empowerment Development Strategy
SOPAC	Pacific Islands Applied Geosciences Commission
SPREP	Pacific Regional Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction
VCA	Vulnerability and Capacity Assessment

1. Introduction

Due to high climate-related risks for the Pacific islands region, and the likelihood these will increased substantially in the future, disaster risk reduction (DRR) and climate change adaptation (CCA) represent important policy goals. DRR is the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and the improved preparedness for adverse events (UNISDR, 2009). It is an important component of disaster risk management (DRM), which also encompasses disaster management (DM) and its three components - disaster preparedness, relief and recovery (Figure 1).

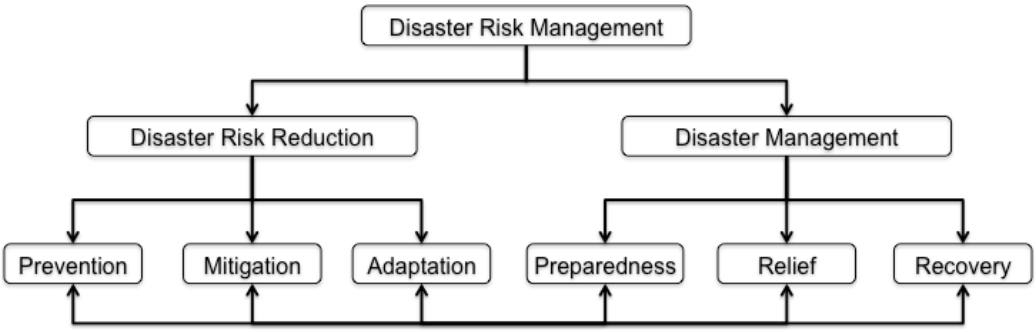

Figure 1. Disaster risk reduction: its components and context.

This diagram signals a number of important points, including CCA being an integral component of DRR. The present report is focused on the institutional and policy dimensions of this integration in the Pacific islands region. The diagram also highlights that all components of DM are linked. For example, disaster recovery should include elements of DRR. A third important point related to the figure is that DRR includes mitigation, as in “reduction of risk”. However, in the context of CCA, mitigation means “reduction in greenhouse gas emissions”. This use of the same word by the DRR and climate change communities has proven to be one of many barriers to the closer integration of DRR and CCA.

Both the internationally agreed Hyogo Framework for Action on Disaster Risk Reduction and Disaster Management (“the Hyogo Framework”) and the Pacific Islands Disaster Risk Reduction and Disaster Management Framework for Action (2005 – 2015) (“the Madang Framework”) outline a broad-based vision of DRR, encompassing governance, risk assessment and warning, knowledge and education, risk management and vulnerability reduction, and disaster preparedness and response. This vision is also applicable to the future threats presented by climate-change-related extreme events.

In itself, CCA is an adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (IPCC, 2007). It forms one of the two major categories of response to climate change (Figure 2). At the global level the need for CCA, including international assistance to developing countries to implement CCA, is recognized in the United Nations Framework Convention on Climate Change (UNFCCC) while at the Pacific regional level the Pacific Framework for Action on Climate Change

(PIFACC), and its associated Action Plan, provide policy guidance for how Pacific island countries (PICs) can best address climate change.

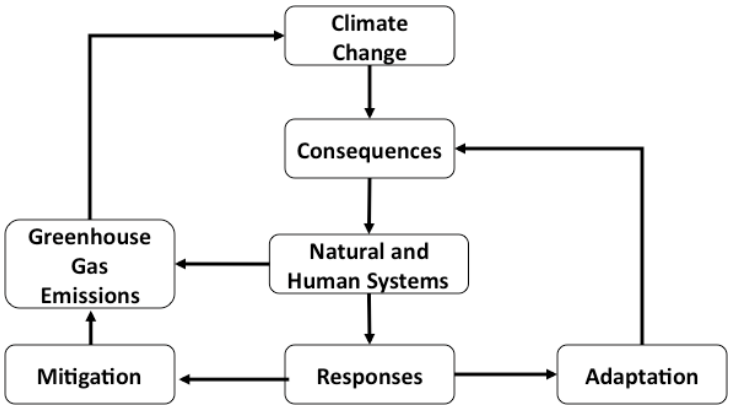

Figure 2. Adaptation in the context of responses to climate change.

All three frameworks (the Hyogo Framework, the Madang Framework and the PIFACC) are currently undergoing their mid-term reviews. This present report is intended to inform these reviews.

This report will explore how and why the fields of DRR and CCA have developed in parallel, globally as well as in the Pacific, rather than being more integrated. Essentially DRR has focused on addressing existing risks related to all categories of hazards, though it is increasingly also taking a longer term view, similar to that of CCA. Importantly, DRR looks more widely than just climate-related risks. DRR also has a comprehensive range of established tools and practices at both national and local levels. On the other hand, CCA has been more concerned with addressing future climate risks, with relatively more limited and less developed tools and with institutional frameworks, political processes, information sharing and a community of practitioners that often struggle to provide meaningful and lasting responses to climate change.

As experience with both DRR and CCA grows, there is increasing recognition that these two fields share a common focus in that they are both concerned with reducing the vulnerability of communities and contributing to sustainable development. Many governments, including those in PICs, are recognizing the important role DRR can play in reducing the adverse impacts of climate change. This includes acknowledging that reducing risks related to current weather and climate conditions is usually the best way to prepare for addressing risks related to climate change. As a result, some countries and territories have already started to take action to coordinate their DRR and CCA efforts and to integrate both disaster risk and climate change considerations into their development and poverty alleviation policies, plans and activities.

However, there are still many challenges and barriers that need to be overcome before true synergy and appropriate convergence between DRR and CCA can be achieved. In order to make swifter progress, as well as learn from the advances made to date, the present study undertakes a thorough analysis of the institutional and policy context of DRR and CCA in PICs. The main objective of the study is to provide an analysis of the current level of integration of DRR and CCA in the region, with an emphasis on the policy and institutional environment, and provide recommendations to regional and national stakeholders for follow-up action. These

cover the policies and institutional arrangements, responsibilities and operational services. Taken together, these will help enhance the capacity to address, in a proactive and coordinated manner, the risks from multiple natural hazards and climate change, across multiple development sectors. Annex 1 presents an annotated bibliography on integrating CCA and DRR.

All PICs were asked to provide their most relevant and practical experiential and other information on the policies and institutional arrangements, responsibilities and operational services which can strengthen the capacity to address the risks from multiple natural hazards and climate change across relevant development sectors, working in a proactive manner. Additional and more in depth examples and other information were sourced from four PICs – the Cook Islands, Fiji, Palau and Vanuatu - through site visits and other means. These countries provide an excellent opportunity to assess, in greater detail, a wide range in vulnerabilities, approaches and progress in implementing CCA and DRR. In addition, they also cover the main sub-regions of the Pacific as well as the diverse political systems and institutional arrangements. The Terms of Reference for the study, and additional information on the methodology are presented in Annex 2.

The present report will be widely disseminated to regional and national stakeholders through various channels and media, such as presentations at key regional meetings and national events, high-level advocacy missions, email and web-based platforms.

2. Making the Case for Increased Integration of DRR and CCA in the Pacific

There is strong evidence, both globally (e.g. IPCC, 2007; McMullen and Jabbour, 2009; Richardson et al., 2009; and Webster et al., 2005) and in the Pacific (e.g. Hay and Mimura, 2010) that there is an increase in both the observed frequency and intensity of weather- and climate-related hazards such as heavy rainfall, frequently resulting in flooding; droughts; high sea levels, often exacerbated by storm surges; and possibly cyclones. These increasing trends, which are consistent with those anticipated as a result of global warming, have important implications for disaster risks. Weather-related disaster risks are increasing, with more devastating impacts on communities than expected.

Moreover, there is also growing evidence that, at least in the short to medium term, many important impacts of climate change may manifest themselves through a change in the frequency, intensity or duration of extreme events (IPCC, 2007). Thus, while responses to climate change may initially have been framed by a longer-term outlook, there is now at least as much emphasis on the present and immediate future. Similarly, the DRM community is moving rapidly from looking only at historic and current risk, to considering future risks.

Responding to the future changes in extreme events will require bolstering DRM as a first line of defence, along with disaster preparedness and response. The goal should be to reduce vulnerabilities to the added impacts that climate change will exert through more extreme weather events, by emphasizing the importance of reducing sensitivity a well as exposure to weather- and climate-related hazards.

2.1 An Integrated Approach to DRR and CCA Can Help Protect Development Gains

The effects of climate change are increasing the risk of disasters. These will place additional burdens on humanitarian and development systems at all levels (see Box 1). This is important progress in understanding since, until recently, it has been

difficult for DRM to disassociate itself from a focus on the historic disaster event while for several decades climate change was seen as an environmental as opposed to a development issue. Recently, the Prime Minister of PNG announced establishment of the Office of Climate Change and Development, clearly in recognition of the strong linkages between the two.

Box 1

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

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

The total economic cost of the January floods in the sugar belt through damage to infrastructure and losses to growers and millers is estimated to be about $24 million. Additionally humanitarian costs of about $5 million were incurred.

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

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

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

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

Climate change, including an increase in extreme weather and climate events, poses a threat to food security through erratic rainfall patterns and decreasing crop yields, contributing to increased hunger. Furthermore, adverse climate change impacts on natural systems and resources, infrastructure, and labour productivity may lead to reduced economic growth, exacerbating poverty. These effects threaten the achievement of Millennium Development Goad (MDG) 1. Loss of livelihood assets, displacement and migration may lead to reduced access to education opportunities, thus hampering the realization of MDG 2. Depletion of natural resources and decreasing agricultural productivity may places additional burdens on womens' health and reduce time for decision-making processes and income-generating activities, worsening gender equality and women's empowerment (MDG 3).

Increased incidence of vector-borne diseases, increases in heat-related mortality, and declining quantity and quality of drinking water will lead to adverse health effects threatening the achievement of MDGs 4,5,6 and 7. In general terms, the realization of MDG 7 may be jeopardized through climate change negatively impacting quality and productivity of natural resources and ecosystems, possibly irreversibly, threatening environmental sustainability. Climate change, a global phenomenon, calls for a collective response in the form of global partnerships (MDG 8).

While development planning and processes should anticipate climate extremes, variability and change to the extent possible, there will always be weather and climate "surprises" – unforeseen events including climate-related disasters such as tropical cyclones (also called typhoons or hurricanes). Climate change projections suggest that at least for some parts of the Pacific these will increase in frequency and intensity, meaning more climate-related disasters. Losses from such disasters will often exceed 10 percent of gross domestic product in disaster years, and in some countries has been as high as 80%. Inevitably this results in committed funds being diverted for disaster recovery operations, throwing the budgeting process into chaos. Planning for "climate surprises" is becoming increasingly important, and is yet another example of the benefits of integrating CCA and DRR in national development planning and processes. As a result risk transfer instruments are becoming more common. These include various forms of catastrophe insurance, such as parametric insurance (as well as more traditional policies), catastrophe bonds, contingent debt agreements and insurance.

In principle, many development activities can reduce vulnerability to climate change impacts and natural disasters. While development as usual can inadvertently increase vulnerability – for example, a new road that is resilient to climate impacts and disasters might encourage people to settle in new areas that are highly exposed to the adverse impacts of climate change, such as more damaging storm surges and sea-level rise.

The recent Global Assessment Report on Disaster Risk Reduction (ISDR, 2009) focuses on the nexus between disaster risk and poverty, in a context of global climate change. The study shows that both mortality and economic loss risk are heavily concentrated in developing countries and within these countries they disproportionately affect the poor. Disaster impacts have persistent, long-term negative impacts on poverty and human development that undermine the achievement of the Millennium Development Goals. The Report shows how climate change will magnify the uneven social and territorial distribution of risk, increasing the risks faced by the poor and further amplifying poverty.

The Report calls for an urgent paradigm shift in DRR. Current progress in implementing the Hyogo Framework is failing to address the underlying drivers of risk and the translation of disaster impacts into poverty outcomes. It notes that efforts to reduce disaster risk, reduce poverty and adapt to climate change are poorly coordinated. A key challenge identified by the Report is to link and focus the policy and governance frameworks for DRR, poverty reduction and CCA in a way that can bring these local and sectoral approaches into the mainstream. This will contribute towards poverty reduction and the achievement of the Millennium Development Goals, while also providing a vehicle to enable countries to adapt to global climate change.

Promotion of a comprehensive DRR approach that includes preparedness must therefore be a key component of CCA and of development that safeguards humanitarian efforts and past development investments. Thus reduction of disaster

risk is recognized as a core component of adaptation to climate change, with adaptation processes drawing on approaches to DRR, as well as tackling gradual changes and new hazards. This means strengthening climate resilience in the longer term by focusing on the immediate climate and DRR needs, while also building capacity for dealing with longer-term adaptation challenges. Importantly, the basis for adapting to the future climate lies in improving the ability to cope with existing climate variations and extremes. Climate change projections inform this process, to ensure that current coping strategies are as consistent as possible with the anticipated changes in the future climate.

2.2 Recognizing the Differences

However, while there is an assumption of beneficial synergies between DRR and CCA, few of these are currently being exploited. As shown above, adaptation is potentially a key component of DRR. But the convergence of adaptation at the practical level under DRR (with a focus though not exclusive emphasis on present-day risks) and CCA (with its emphasis on changes in those risks in the longer term) is often compromised by poor interaction and institutional coordination among the communities of practice around disasters, climate change and development. However, risk management is a powerful, integrative concept and tool. An excellent opportunity for integration of DRR and CAA arises from the fact that both communities of practice pursue a risk management approach.

The limitations of climate data and modelling to project changes over project-relevant timescales mean that adaptation responses are often based on existing climate variability and extremes, thereby linking with DRR while also building greater flexibility to cope wider ranges of variation in the future. Since it is impossible to determine the precise effects of climate change on the number or intensity of disaster events we cannot prepare for them in a detailed and explicit manner. However, it is appropriate to use DRR as a no regrets approach to minimise disaster impacts generally and, as a consequence, minimise the impact of extreme events that have been exacerbated by climate change.

Furthermore, climate risks may not be the most important constraint on poverty alleviation and other improvements in livelihoods. As a result, climate considerations need to be embedded in a process that considers all risks, with risk management including assessing how development processes can contribute to reducing vulnerability to climate change.

As noted above, there are several geophysical hazards (e.g. earthquakes, volcanic eruptions, tsunamis) that are unrelated to climate change, at least in the short to medium term. For this reason, and given the other differences highlighted in Figure 3, there can never be a total convergence of DRR and CCA. But for the Pacific, weather- and climate-related hazards underpin the majority of disasters (Table 1), the economic damage and losses due to disasters are substantial (Table 2) and there are decades of learning on coping with variability and change brought about by numerous, often compounding, pressures on social, economic and environmental systems. While DRR expands beyond weather- and climate-related disasters, adaptation includes not only climate extremes, but also the more slowly evolving risks posed by systematic trends such as increasing mean temperatures and sea-levels. Thus, while there are clear synergies that must be exploited, there are also some mutually exclusive elements within DRR and adaptation that need to be addressed separately.

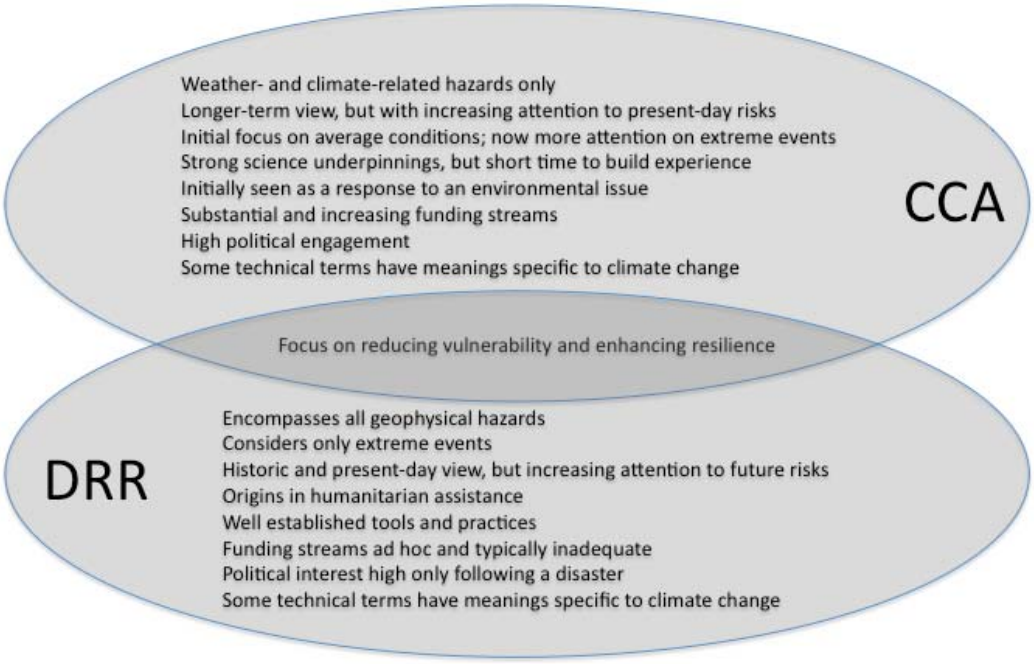

Figure 1 DRR and CCA: The common ground and the differences (source: adapted from Gero et al., 2009).

Table 1

Frequency and estimated economic and social impacts of natural disasters in the Pacific Islands Region (1950-2009)*

Type	Number	Killed	Total Affected	Total Victims	Economic Damages USD2009	No. with Economic Damages
Drought	8	60	947635	947695	66,666,667	1
Earthquake	28	139	38400	38539	205,616,905	7
Epidemic	12	306	10662	10968	0	0
Flood	28	132	451073	451205	264,339,362	11
Landslide	16	544	2563	3107	0	0
Storm	134	1573	1937467	1939040	6,128,846,865	57
Volcano	18	3009	203399	206408	159,420,290	1
Wave Surge	4	2534	11574	14108	0	0
Wild Fire	2	0	9000	9000	67,340,426	1
Total	250	8297	3611773	3620070	6,892,230,514	78

Source: Hay and Mimura, 2010; data from EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be – Université Catholique de Louvain – Brussels – Belgium.

Table 2

Estimated economic damage and losses
(at constant 2005 prices in US$ million)

Period	Pacific*	Pacific Island*
1981 - 1990	17,656	1,649
1991 - 2000	11,857	1,603
2001 - 2009	11,698	756

Source: Clovis Freire (UNESCAP), personal communication; ESCAP calculations based on data from EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be – Université Catholique de Louvain – Brussels – Belgium, and UNSD data on Implicit Price Deflators in US Dollars from National Accounts Main Aggregates Database.

* Pacific - American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu

** Pacific island developing economies- American Samoa, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, , Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu

2.3 Exploiting the Commonalities

DRR and CCA share commonalities in purpose in that they aim to reduce the vulnerability of societies to hazards by improving the ability to better anticipate, resist and recover from their impact. There is enormous value added if adaptation efforts draw on the national platforms and other DRR tools and experiences within and outside the Hyogo Framework. DRR provides many tried and tested tools for addressing risk. Adaptation efforts at national and more local levels can be enhanced when these tools are combined with knowledge of climate change. Many of the experiences gained by the disaster management community over the years can usefully inform the development of climate-related policy.

Thus, rather than implement CCA separately, there is benefit in recognising that climate change is bringing a range of new risks and hazards. This highlights the need reflect these added dimensions being brought to DRR, by revising and strengthening disaster risk assessments and DRR measures. Much is to be gained by reaching out across the DRR and CCA disciplines for enhanced coordination and learning. DRR is increasingly contributing to adaptation as the disaster management debate moves beyond core humanitarian actions of emergency response, relief and reconstruction towards disaster prevention, preparedness and risk reduction. However, there are also signs of competition, or at least reluctance to forge greater convergence between DRR and CCA. This has the potential to delay and derail implementing critical action on the ground.

An integrated approach to DRR and CCA, that reduces risks to both climate variability and to current weather and climate extremes, will be more effective in reducing vulnerabilities of people. As noted above, disasters and climate change impact on poorer people in poorer countries, disproportionately. An integrated approach will also better protect hard won development gains as well as infrastructure and other valuable assets. As also noted above, this is also a major no-

regrets strategy for adaptation, since it provides enormous benefits even in the absence of climate change. As indicated in Figure 3, and elaborated conceptually in Figure 4, the common focus of CCA and DRR is reducing vulnerability and enhancing resilience to weather and climate-related hazards. Patta et al. (2010) have shown that, for developing countries, these vulnerabilities will rise most quickly between now and the second quarter of the century, after which the effects of socio-economic development may begin to offset rising exposure. This implies an urgency to the need for action in country, as well as for international assistance to finance adaptation.

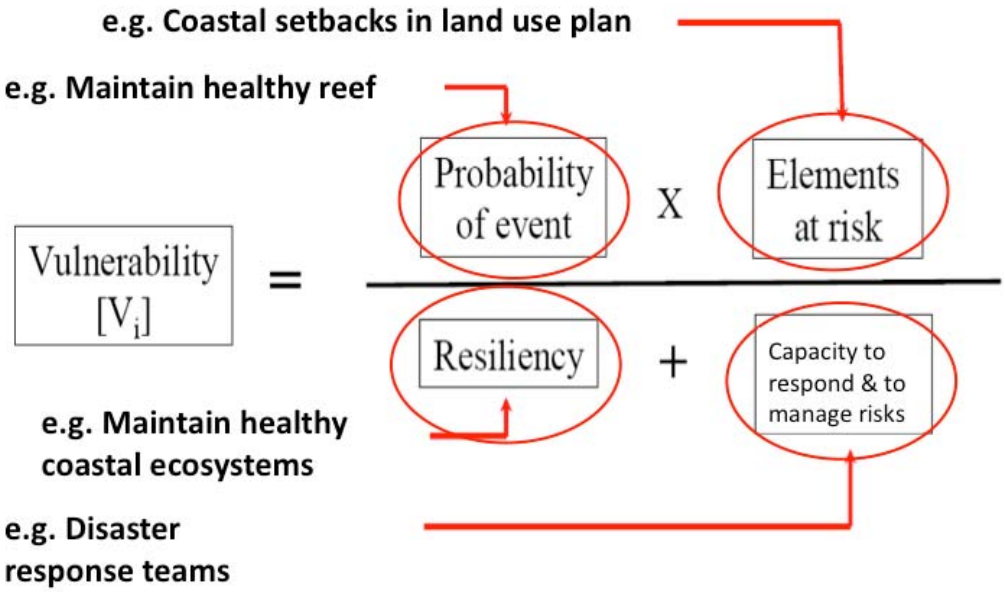

Figure 4. Illustrating the conceptual and practical commonalities between climate change adaptation and disaster risk reduction (source: adapted from Hay and Mimura, 2010).

People, especially, need to have the capacity to adapt to both an increase in the frequency and magnitude of extreme events, as well as to the slower and incremental consequences of climate change and of development that enhances vulnerability. This broad scope of adaptation provides a mechanism for helping to reduce the unhelpful dichotomy between the humanitarian and developmental approaches integral to DRR and CCA. This gap is decreasing as development thinking recognises that risk is at the centre of the human dimensions of poverty and hence the need to embrace risk management. For decades the large, sudden-onset catastrophes have dominated the attention of the disaster management community, particularly the humanitarian sector. On the other hand, development practitioners tend to ignore both sudden and gradual-onset catastrophes, often seeing them more as interruptions to development rather than as highlighting the need to take measures to avoid development increasing disaster risk.

2.4 An Integrated Approach is Needed at the Local Level

In the Pacific, as elsewhere, global climate change and natural disasters have their greatest impact at the local level. ISDR (2009) reports on the findings of an analysis

of disaster risk at the local level that sheds light on the emergence of patterns and trends of extensive disaster risk, affecting wide areas and manifested as frequent, but relatively low-intensity, losses. Databases for 1970 to 2007 from a sample of 12 Asian and Latin American countries contained information on a total of 126,620 disaster loss reports aggregated at the local government level. The findings show that wide regions are exposed to more frequently occurring low-intensity losses. These widespread, low-intensity losses are associated with risk impacts such as a large number of affected people and damage to housing and local infrastructure, rather than to major mortality or destruction of economic assets. For example, 99.3% of local loss reports in the 12 countries mentioned accounted for only 16% of the mortality but 51% of housing damage. These losses are pervasive in both space and time. On the other hand, the same analysis showed that mortality and direct economic losses are highly concentrated. Just 0.7% of the reports cover 84% of the total mortality and 75% of the destroyed housing across the 12 countries.

These findings are corroborated fro the Pacific, at least in part, by the work of Lal et al., 2009. They document that between 1970 and 2007 Fiji reported a total of 124 natural disasters, affecting almost all parts of the country. Tropical cyclones accounted for 50 per cent of the events, followed by floods (33 per cent) and earthquakes (8 per cent). Reflecting the fact that events considered to be disasters in Fiji may be viewed as small by global standards, Lat et al. modified the definition of ‘extensive’ disasters from that used in the study by ISDR (2009). Such disasters were defined as those that caused five fatalities or fewer, or that generated losses of FJD5 million or less. Based on this criterion 60% of reported disaster events in Fiji could be considered to be ‘extensive’ • when considering fatalities, or 26 per cent of events could be considered extensive when considering costs.

It is important to note that these statistics reflect only the 104 disaster events (51 per cent) for which the government reported cost estimates. Information on extensive disaster events and their impacts at the sub-national level has not been collated in a systematic manner in Fiji. Data on many lesser events is sometimes not collected at all. In general, the occurrence of small disease outbreaks, local flash floods, and land degradation are usually invisible to the media and often to policy makers as well. However, the analyses reported above show that the accumulated impacts of these small and medium disasters may be equivalent to, or exceed, those of large disasters. And their impacts are felt locally. Any increase in the frequency of these lower intensity hazards has a large impact on poverty. The most important capacities for addressing such risks are within societies and local organizations. Communities most often rely on informal risk-sharing mechanisms based on social capital.

The ability to respond to extensive disaster events that do not attract external assistance is termed ‘autonomous adaptive capacity”. It influences the ability to undertake planned adaptation at different levels. Resilience is a familiar concept in the context of DRR, and is increasingly being discussed in the realm of adaptation. A resilient community is well-placed to manage hazards to minimize their effects and/or to recover quickly from any negative impacts, resulting in a similar or improved state as compared to before the hazard occurred. There are strong linkages between resilience and adaptive capacity; consequently, resilience also varies greatly for different groups within a community. Reducing vulnerabilities and building resilience at community level have four areas of focus: (i) income generation and diversification to reduce risk; (ii) functional formal and informal institutions, cooperatives, and associations at local level, linked to national and global counterparts; (iii) greater understanding of markets, such as those related to agriculture and labour, including its mobility; and (iv) a functioning civil society and building trust between people and elected officials (GFDRR, 2009).

Achieving a convergence between DRR and CCA requires strong national, regional and global coordination mechanisms that encourage systematic dialogue and information exchange between climate change and disaster reduction agencies, focal points and experts. DRR has existing platforms and co-ordination mechanisms at the national level. Adaptation will therefore need to be more closely linked to these existing mechanisms. The existing DRR mechanisms may also need to better reflect how climate change might affect the frequency and severity of certain types of natural disasters, such as droughts, floods and cyclones, and therefore also affect the adequacy or effectiveness of DRR measures and policies. Governments typically have plans and institutions dedicated to preparing for natural disasters and responding to them when they occur. The effect of projected changes in many extreme climate events on disaster preparedness and response plans and institutions should be assessed and modifications made as appropriate.

2.5 The Present is Not Indicative of the Future – The Need for Action

Hay and Mimura (2010) present evidence that the major investments in disaster preparedness and response in recent decades in the Pacific islands region have resulted in a decline in the number of fatalities per disaster. On the other hand, population growth and relocation, often into more at risk areas, have contributed to an overall trend of more people being affected by disasters. However, the numbers of people affected are consistently lower for disasters occurring in the present decade (the 2000s). This is despite category 4 and 5 cyclones being relatively more common. Encouragingly, economic losses per disaster have also been consistently low in recent decades (Hay and Mimura, 2010).

Importantly, the reduced economic and social consequences of the extreme events experienced in the 2000s (see Hay and Mimura and also Table 2) may also be due to the anomalous nature of that decade in that there have been relatively fewer tropical cyclones, and hence fewer extreme events of disastrous proportions. This is likely associated with the decade being dominated by La Niña conditions, during which cyclone frequency is low for much of the Pacific (Kuleshov et al., 2008). Significantly, climate projections suggest that, as a result of global warming, conditions in the Pacific will become increasingly El Niño-like. For this reason, Hay and Mimura warn that cyclone frequencies are likely to increase for much of the Pacific. Thus the immediate future will likely see a change from the relatively benign conditions of the present decade to conditions more reminiscent of those of the 1980s, when El Niño conditions dominated and the frequency of weather and climate extremes was much greater than now. On top of this, the intensity of tropical cyclones may well be substantially higher.

The above caution by Hay and Mimura has proven to be prophetic. Figure 5 shows the track and intensity of cyclones occurring in the Pacific region in 2008-09 (upper image) and for the 2009-10 cyclone season (lower image)[1]. The differences in cyclone number, intensity and spatial coverage are readily apparent. They are consistent with the weak El Niño conditions that have been prevalent for the past year. Between the two seasons the total number of cyclones increased from six to 13, with the number of category 4 and 5 cyclones increasing from zero (a record low number) to five.

[1] These annual patterns can be compared with historical (1956-2005) monthly data on tropical storms for November through April prepared by the UNOCHA Regional Office for Asia and the Pacific.

While there has been substantial change between these two years, it is unclear whether or not the new regime will persist. This very much depends on the longevity of the current El Niño. Regardless, the change does highlight the anomalous nature of the past decade, how quickly climatic patterns can change, and the enormous consequences of the change.

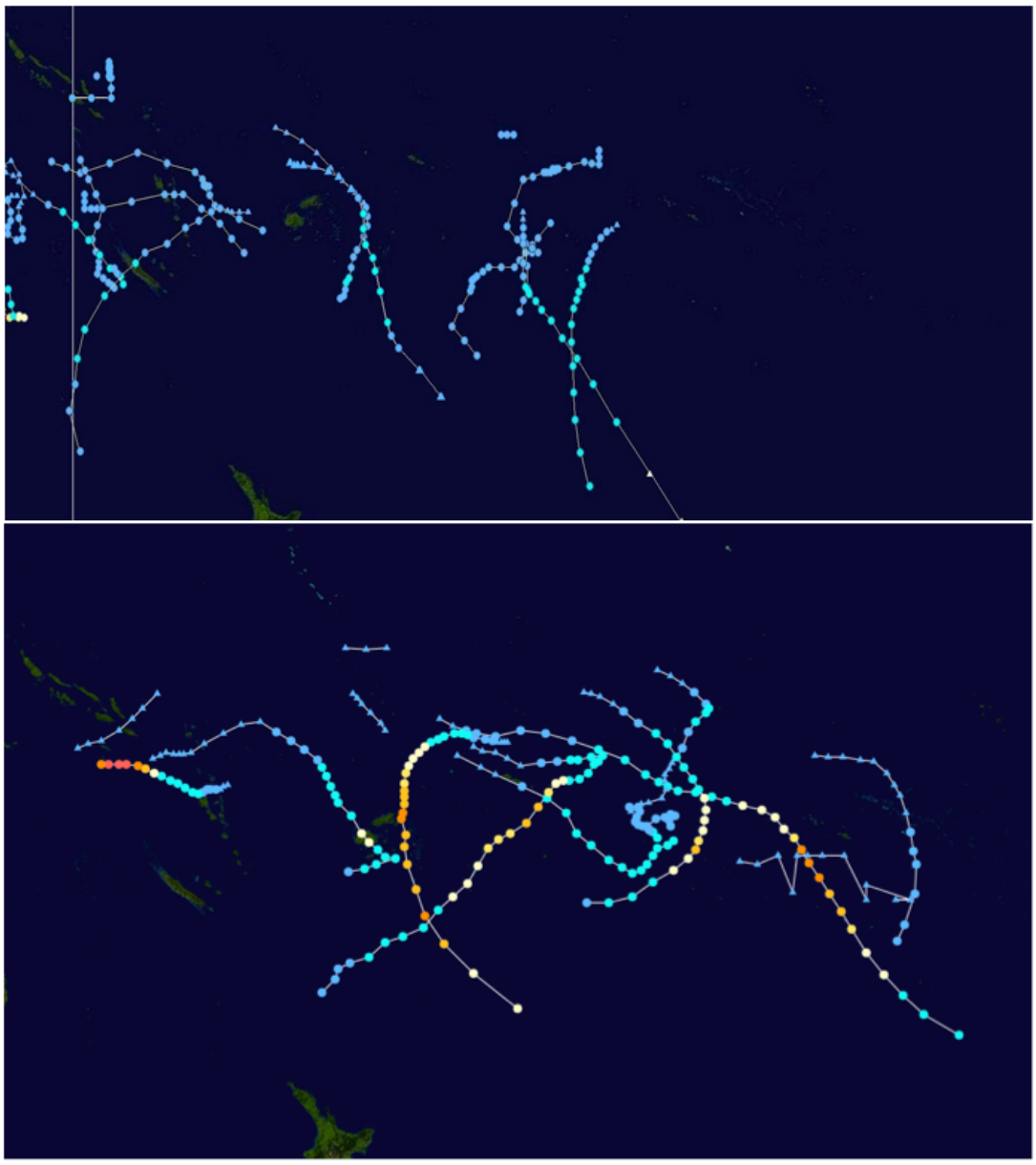

Figure 3. Tracks and intensities of cyclones in the Pacific region for cyclone seasons 2008-09 (upper) and 2009-10 (lower) (source: http://en.wikipedia.org/wiki/2009%E2%80%9310_South_Pacific_cyclone_season (accessed March 24, 2010)

3. Institutional and Policy Maps and Gaps Related to CCA and DRR in the Pacific

Institutional and policy analyses related to DRR and CCA were undertaken in detail for the four pilot countries, Cook Islands, Fiji, Palau, Vanuatu. Relevant and instructive information was also analysed for other Pacific island countries to help provide a regional overview. The analysis considered both national and sub-national levels and assessed the institutional and policy arrangements in terms of: (i) level of mainstreaming of DRR and CAA in development planning processes; (ii) national policies for DRR and CCA and how they have been translated into programmes at national and local level; (iii) institutional arrangements for DRR and CCA; and (iv) the extent to which DRR/CCA policies and institutions have been integrated and the drivers and barriers for such integration.

3.1 Cook Islands

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

Table 3 shows the summary results of the DRR- and CCA-focused institutional and policy analyses for the Cook Islands.

Table 3

Summary of Findings
of the Institutional and Policy Analyses for the Cook Islands

Level of mainstreaming of DRR and CCA in development planning processes	
National	**Local**
The National Sustainable Development Strategy (NSDS) has resilience as a goal, allowing for an integrated approach to CCA/DRR; the NSDS acknowledges that investment in infrastructure, as called for in the Infrastructure Management Plan requires effective management structures to ensure its sustainability, including guarantee of budgeting for future maintenance costs and also climate-proofing infrastructure as a safeguard against the impact of weather related phenomena; a key strategic target is "establishing a coordinated and effective national disaster risk reduction and disaster management system for all hazards"; a key	Goal Six of the NSDS is a safe and resilient community; but with few exceptions little in the NSDS relates specifically to enhancing community resilience to natural disasters and climate change; however, many planned actions will do this, indirectly; a target in the NSDS is to have at least five CBA projects by 2010; several cyclone damaged harbours and airports in the Outer Islands have been prioritised for reconstruction and upgrade; construction of cyclone shelters on atolls in the Northern Group islands is also a key priority

target is National Risk Plan of Action for Disaster Risk Reduction and Disaster Management implemented by 2007, putting in effect the 2005 Cook Island National Disaster Risk Management Policy; the National Environment Strategic Action Framework (NESAF) includes a strategy dealing specifically with adaptation - proposes a number of immediate, short-term and medium-term actions to strengthen capacity and resilience; NSDS due to be reviewed, so planning to increase attention to DRR and CCA	
Policies and plans for DRR and how they have been translated into programmes	
National	**Local**
A National Action Plan (NAP) for DRM has been prepared; includes consideration of CCA, but quite limited; however, through the NAP CCA and DRR are included in the national budget process; disaster contingency fund of NZD400,000 set aside each year – trying to access some of this for DRR; still need DRM plans for each government agency, as called for in the NAP	Ecosystem-based community resilience building projects are being implemented; NAP includes activities at community level in Rarotonga and Outer Islands to develop and strengthen DRR programmes and activities, including identifying priority hazards requiring attention and measures to deal with them and incorporate in the respective Plans and Budgets; also provide training to Outer Island Councils for sustainable planning processes including planning for climate change
Policies and plans for CCA and how they have been translated into programmes	
National	**Local**
A National Adaptation Plan (similar to a NAPA) is under preparation, funded by Italy; many projects already being implemented, including PACC; water, waste and sanitation projects all include aspects of CCA; the NSDS calls for implementation of priority actions related to climate change that are relevant to land, coastal zone, freshwater and marine resources	Government works closely with NGOs, such as Red Cross, to undertake assessments, raise awareness and implement adaptation measures; capacity and vulnerability assessments have been conducted in seven of the inhabited islands; plans in place to complete assessments in all other inhabited islands; ecosystem-based management plans are being developed for each pearl farming community
Institutional arrangements for DRR	
National	
Focal agency is EMCI (see Figure 6); slow but increasing and effective engagement of other agencies in DRR activities, guided by the NAP	
Institutional arrangements for CCA	
National	
Focal agency is the National Environment Service (see Figure 6); slow but increasing and effective engagement of other agencies in CCA activities; vision to have a climate change officer in the Central Policy and Planning Unit (Office of the Prime Minister), with counterparts in ministries	
Level of integration of DRR/CCA policies and institutions, incl. drivers and barriers	
National	
The resilience goal in the NSDS facilitates an integrated approach to DRR and CCA. The Infrastructure Master Plan is also a way to advance both DRR and CCA in a coordinated manner; the strategy and action plans prepared under the National Capacity Self Assessment takes an integrated approach to DRR and CCA; the institutional arrangements for DRR in the Cook Islands (Figure 6) acknowledge the synergies with CCA and reflect the fact that CCA is a process involving the identification and implementation of measures or actions to help avoid and reduce the risks posed by hazards such as extreme weather events, high sea levels and prolonged droughts; the NAP and its implementation programme are seen as instruments and mechanisms to be used by the Cook Islands to ensure the minimisation of overlaps between the two national priority programmes of DRR and CCA; to facilitate this, the National Environment Service, as the mandated national agency for the coordination of the national CCA programme, provides the direct link for this programme to Emergency Management Cook Islands and to the NAP Advisory Committee; the National Environment Service is responsible for ensuring that the existing and planned CCA initiatives are made known to Emergency Management Cook Islands and to the NAP Advisory Committee in order to enhance the implementation of both CCA and DRR; if this greater coordination and cooperation is successful, the Cook Islands will be able to realise better gains through	

reduction of overlaps and more efficient use of national resources to address issues of climate change and disaster risk. main driver for integration is the knowledge of high vulnerability to extreme events, especially cyclones, and likely exacerbation by climate change; key barrier is the current institutional arrangements; main driver for integration is the knowledge of high vulnerability to extreme events, especially cyclones, and likely exacerbation by climate change; key barrier is the difficulty of gaining actual practical benefits from institutional arrangements designed to enhance a more integrated approach to CCA and DRR

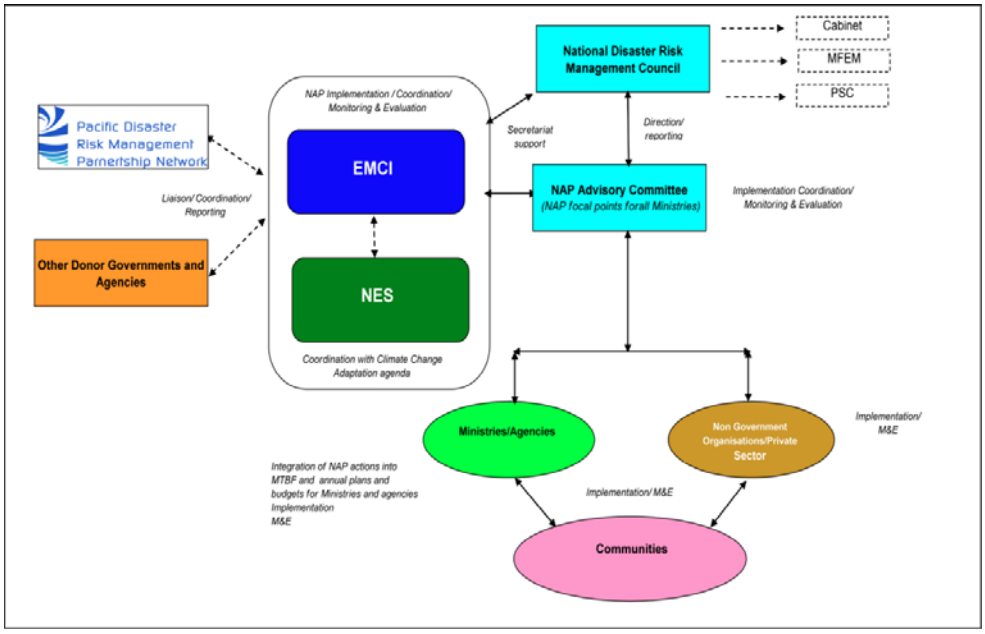

Figure 6. Conceptual diagram of DRM NAP implementation arrangements (source: Emergency Management Cook Islands).

3.2 Fiji

Over the last decade, damage caused by tropical cyclones has been estimated at about USD500 million and more than 100 lives have been lost. Tropical Cyclone Ami, which struck the northern and eastern regions in 2003, caused social and economic losses of more than $100 million, whilst the floods in April 2004 caused damage estimated at more than $30 million. As a result of these and other disasters and damaging events, a risk management approach underpins Government efforts in disaster risk reduction, with a strong emphasis on greater community self-reliance. The heavy dependence on Government handouts after recent disasters, coupled with high rehabilitation costs, has disrupted planned capital expenditure programmes. To address this problem, Government established a National Disaster Relief and Rehabilitation Fund, with a FJD2 million budget in 2004.

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

Table 4 summarizes the results of the DRR- and CCA-focused institutional and policy analyses for Fiji.

Table 4

Summary of Findings of the Institutional and Policy Analyses for Fiji

Level of mainstreaming of DRR in development planning processes	
National	**Local**
The People's Charter for Change, Peace and Progress outlines the need for Fiji to be environmentally sustainable; Fiji's draft Strategic Development Plan (SDP) 2007-20011 recognized the need to develop response plans and early warning systems for floods and other natural hazards; it also urged the mainstreaming of disaster risk reduction into sectoral development plans, policies and programs, noting this is crucial for sustainable development and community resilience; the Sustainable Economic and Empowerment Development Strategy (SEEDS) 2008-2010, adopted in 2007 by the Government, proposes integrating disaster risk reduction into political decisions and states that Government efforts are underpinned by a "risk management approach"; but no particular strategy is included to address the issue	The SDP notes that the disaster management legislations and plans that have since been completed should include a focus on community capacity building with an aim to reduce dependency and to achieve community resilience and sustainable development; it also notes the invaluable support provided by NGOs during emergency relief operations
Level of mainstreaming of CAA in development planning processes	
National	**Local**
The SDP acknowledges that climate change is a central challenge to governments of small island states such as Fiji; in the SDP it is considered to be a major "environmental problem"; the 2005 Environment Management Act had the potential provide legislative support for CCA efforts, but does not explicitly state this statutory authority In December 2007, the Climate Change Policy Paper adopted in 2007 committed the government to addressing governance issues, integration policies, data collection, and capacity building; however, the policy paper does not list targets or provide budget and action plans; as a result, it failed to have any significant impact	The draft SDP and the SEEDS are silent on the need to mainstream CCA for planning and related processes at the local level
Policies and plans for DRR and how they have been translated into programmes	
National	**Local**
The key policy and planning instruments for disaster management are the National Disaster Risk Management Act and supporting regulations, the National Disaster Risk Management Plan, the National Disaster Risk Management Policy, Hazard Contingency Plans and Agency Support Plans; these call for a safer and more resilient Fiji, using an all hazards approach – both natural and human-caused; focus is disaster risk management and not just disaster management; agencies are encouraged to incorporate hazard assessment into planning and budgeting processes; the National DRM Action Plan includes mainstreaming risk management into national development planning, as well a	Instruments for DRM in Fiji include Community Support Plans; Fiji has adopted the integrated Local Level Risk Management Approach (LLRMA) to reducing flood and other risks - disaster risk reduction at the local level is more likely to be sustainable when projects start by addressing local development issues, and integrating risk management into existing development initiatives. LLRM supports communities to manage and reduce disaster risk as well as foresee and control the emergence of new risks, such as those related to climate change; this is done through work on local governance, and community planning and preparedness, as well as through individual participation and motivation; once risk

budget processes and identification of potential donors; risk reduction is an obligatory requirement for all development policies and proposals; overseen by a national working group; risk management is mainstreamed into sectoral policies, plans and programmes, and into the national capital budget template and in the Ministry of Provincial Development Capital Budget Program Working Guide, as an appraisal tool; developing an all-hazard, integrated, people-focused Early Warning System, including a flood Early Warning System; National Disaster Relief Fund overseen by the National Disaster Committee (Cabinet Sub-Committee) manages the Fund; an allocation of FJD2 million provided in the National Disaster Management budget annually since 2004; educational and training programmes in DM are conducted at various levels; building codes are used on a voluntary basis as informal guidelines since there is no institution regulating and monitoring there implementation; the Building Code is being reviewed and enforcement is being enhanced; there is no evidence that land use regulations have been updated to incorporate DRR and CCA dimensions (World Bank, 2009)	sensitive development proposals are prepared, District Officers at the local government level submit them through the National Disaster Management Office to national counterpart ministries, leading to allocation of national-level funds to the community; The overall process of mainstreaming disaster risk reduction into community development has helped reduce disaster vulnerability; disaster risk reduction is also being integrated into provincial development planning and budgeting (UNISDR, 2010); an Emergency Management Volunteer Service has been established; volunteers provided with community-based training, including initial damage assessment and community-based DRM; structures extend as far down as village and settlement level; the aim is to eliminate dependency and complacency, strengthen community self reliance, motivate/encourage community participation in disaster risk management programmes and activities and to strengthen community resilience and sustainable development; river bank erosion, landslide and flooding risk reduction and mitigation projects are being implemented
Policies and plans for CCA and how they have been translated into programmes	
National	**Local**
A climate change policy paper developed in 2004 highlighted the constraints to climate change developments, elaborated a framework and provided policy statements and strategies, as well as the benefits for having a climate change policy paper; the resulting policy was approved by Cabinet in 2007; the view of the draft SDS was that climate change is an environment issue; however, the Department (now Ministry) of Environment focuses on environment impact assessment, waste management, pollution control, conservation, environmental information and education; recently Fiji reactivated its climate change country team in order to prepare a revised climate change policy, prepare the Second National Communication and oversee implementation of climate change projects; projects have been isolated from each other, with few synergies; climate change related policies incorporated in various sectoral policies of government; Fiji is active in assessing the linkages between climate change and biodiversity conservation	Many communities using the LMMA model have found practical solutions to emerging problems by reviving traditional knowledge, which can then be combined with modern tools; to decide the best combination, communities use an adaptive management approach; the goal of informed decision making on resource management is as important as the actual resource improvement; this will be increasingly valuable in a warming world; while LMMAs initially focused on food security issues and resource depletion, Fijian communities are learning important lessons about managing the impacts of climate change; examples of local projects are Climate Witness Programmes in Kabara, Tikina Wai, building coastal resilience to climate change in Tikina Wai and strengthening community marine resources management practices through ecosystem-based management and design;
Institutional arrangements for DRR	
National	
Overall coordination of the National Disaster Management Plan and the Disaster Management Act is the responsibility of the National Disaster Management Council; the National Disaster Management Office serves the Council; it has been transferred from the Ministry of Provincial Development and Multi-Ethnic Affairs to the Ministry of Defence, National Security, and Immigration and Disaster Management; the Office has the role to promote disaster risk reduction through all government sectors; as a sign of increased commitment to this effort, it has increased the number of staff; as the minister in charge of disaster management and the National Disaster Management Office, the Minister of Defence also chairs the Council (see also Figure 7)	

Institutional arrangements for CCA
National
The National Environment Council coordinates the formulation of environment-related policies and strategies; it was created under the 2005 Environment Management Act; climate change issues are primarily the responsibility of the Department (now Ministry) of Environment. The Ministry of Foreign Affairs and External Trade is the political focal point for climate change, particularly on issues related to international conventions and obligations; in 1999, the Fiji Climate Change Country Team was formed to implement the Pacific Islands Climate Change Assistance Program (PICCAP). With the ending of PICCAP, the Team became inactive. As noted above, it is now being reactivated; the Fiji Meteorological Service is arguably the best-resourced technical agency operating in the region, although with a minimally sustainable staffing level. The situation is more severe in the Hydrology and Mineral Resources Departments, responsible for monitoring landslides and other geological hazards; these and other line agencies are pursuing DRR and CCA activities, although it is largely on a site-specific and project basis; donor initiatives or regional programmes often drive these DRR and CCA projects
Level of integration of DRR/CCA policies and institutions, incl. drivers and barriers
National
To date there has been little integration of DRR and CCA initiatives at national level; there is more effective integration at community level, through the use of such tools and Vulnerability and Capacity Assessment. Significantly, the re-establishment of Fiji's Climate Change Country Team, and the use of that team to take the lead in preparing Fiji's Second National Communication, is providing an opportunity to advocate and implement more effective integration. However, there is still something of a pervasive view in government that disaster risk reduction and climate change are disaster management and environmental issues, respectively; as a result, effective DRR and CCA implementation may prove problematic without the pro-active involvement of, and leadership from, the Ministry of Finance and Planning; this might lead to more effective inclusion of risk reduction and adaptation initiatives in national planning and budgets; in addition, while the policy frameworks are reasonably strong, especially for DRR, their implementation through the institutional frameworks and the commitment of others requires further strengthening; greater project funding alone is not a viable solution for enhancing integrated DRR and CCA efforts; to a large degree, minimal investments in DRR and CCA projects in Fiji could be attributed to the prevailing political and economic situation; without appropriate assistance, Fiji will not be able to train staff with the basic required skills or have resources and general absorptive capacity to formulate and implement joint DRR and CCA initiatives and incorporate these in sector plans and projects (World Bank, 2009); currently there is limited research and technical expertise on ecosystem- and community-based DRR and CCA protocols, methodologies and practices; there are also limited cross-sectoral planning opportunities and planning forum at the national level.

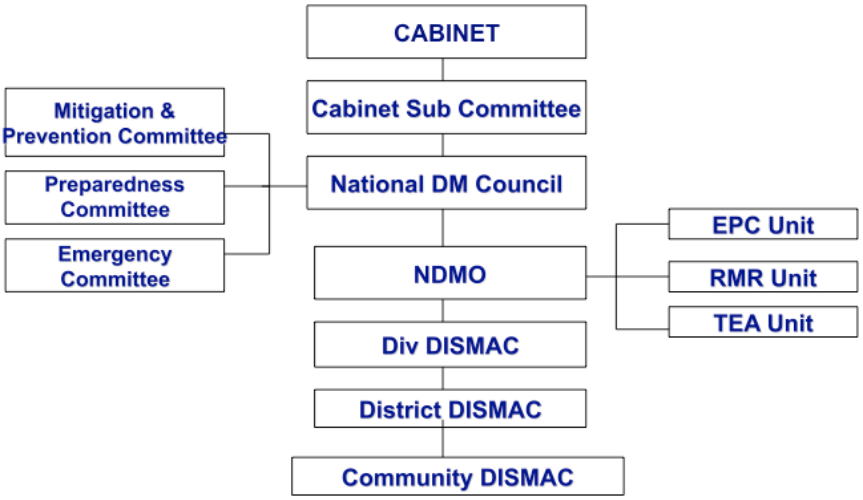

Figure 7 Institutional arrangement for disaster risk management in Fiji (source Fiji NDMO, 2008: National Disaster Risk Management Arrangements. Fiji National Disaster Management Office (NDMO) presentation to Agriculture, October, 2008).

3.3 Palau

Palau, like many other PICs, is particularly vulnerable to the effects of disasters, including those where the consequences are exacerbated by climate change. These can have a large impact on the economy and population. Over the past forty years, Palau has experienced disasters such as typhoons or tropical storms, droughts, and the collapse of the Koror-Babeldaob Bridge. Historically, such disasters have seriously impacted Palau's major assets and infrastructures, setting back national sustainable development and diverting the national budget for recovery purposes. In many instances natural hazards have compound the effects of human-induced hazards, such as a typhoon impacting on a solid waste disposal system, causing environmental damage.

Table 5 summarizes the results of the DRR- and CCA-focused institutional and policy analyses for Palau.

Table 5

Summary of Findings of the Institutional and Policy Analyses for Palau

Level of mainstreaming of DRR in development planning processes	
National	**Local**
The national development priorities of the Republic of Palau are provided for specifically in the 2020 Palau National Master Development Plan (PNMDP)	The vision of Palau's National Disaster Risk Management Framework is safe, resilient and prepared communities in Palau
Level of mainstreaming of CAA in development planning processes	
National	**Local**
As a signatory to the UNFCCC the Government is generally committed to climate change adaptation principles and activities; however, there is a key gap in the government's understanding and reflection of the anticipated impacts of climate change extremes and variability on overall economic development, livelihood security, food security and infrastructure resilience; there is no actual adaptation mainstreaming in government policies and actions, nor within private sector and NGO communities; there is a discrepancy between a lack of climate mainstreaming by government, and an increasing awareness of climate vulnerability and risk in civil society (ADB, 2009b)	These is a notable gap between the government's centralized climate change agenda, overseen by the Office of Environmental Response and Coordination and limited engagement and consultations with Palau's decentralized and very active environmental NGO networks and private sector tourism industry;
Policies and plans for DRR and how they have been translated into programmes	
National	**Local**
Preparation of the National Disaster Risk Management Framework (NDRMF) was completed in early 2010; it is supported by an Implementation Plan; the NDRMF is now awaiting Executive approval. The Framework treats disaster risk management as a sustainable development issue and thus is a critical consideration in the development planning and decision making processes; the Framework focuses on all types of hazards, human-induced and natural; the Framework establishes a mechanism for effective control, coordination, decision-making, accountability and organizational arrangements for all aspects of disaster management and disaster risk reduction; describes the organizational arrangements	As called for by the NDRMF, state-level disaster risk reduction programs and activities are being incorporated into the respective local government plans and budgets; at the community level, disaster risk reduction programs and activities are being developed and incorporated into programs that address community development and coping mechanisms in times of disasters – this would appear to limit the opportunities to implement DRR; relevant traditional knowledge and practices are being included in all national, state and community DRR plans;

that maximize the use of available resources to strengthen mitigation, preparedness, response and relief and recovery planning based on an 'all-hazards' basis and through an integrated approach, promotes integrated planning and collaboration for disaster management and disaster risk reduction across and within all levels of government, departments, sectors and communities and supports the successful implementation of existing and future relevant national, regional and international policy frameworks for disaster risk management and for sustainable development such as the PNMDP; the NDRMF calls for all national development programs and projects to be subject to the formal risk management process of risk identification, risk analysis and risk evaluation and that appropriate risk treatments be applied to the evaluated risks to ensure that identified risks are either eliminated (prevented) or reduced (mitigated) as far as is practicable; at the national level, this requires that disaster risk reduction programs and activities be incorporated into the various types of corporate and business plans and budgets; for Palau, the link between national development processes and disaster risk management reflecting the guiding principles is illustrated in Figure 8; DRR is the role of individual agencies that are mandated and responsible for development planning and implementation. The Bureau of Budget & Planning, part of the Ministry of Finance, is the national mechanism to confirm that DRR has been considered in national development programs, either through development projects or through sectoral plans, before making decisions on budget or resource allocation;	
Policies and plans for CCA and how they have been translated into programmes	
National	**Local**
Palau's First National Communication to the UNFCCC was completed in 2002. It proposed several vulnerability and adaptation strategies and actions, as did other assessment documents produced subsequently. Palau's Second National Communication has been completed, but cannot be made available until it is approved. Despite these initiatives, overall there is a surprising lack of understanding about adaptation to climate change and only a few isolated, donor-driven projects with some level of adaptation in the activities; the one notable exception is the Palau national component of the PACC project	Palau's States have special responsibilities for environmental protection, resource management, land-use planning, and health and welfare; thus they could be expected to play a major role in implementing adaptation to climate change; however, apart from Koror, the States lack significant administrative and operation systems independent of the national government; moreover, traditional governance systems are embedded in the country's modern governance structures; for these reasons, implementation of adaptation initiatives has not proceeded at a pace that might have been expected
Institutional arrangements for DRR	
National	
The institutional structure for implementation of the NDRMF is shown in Figure 9; there NDRMF provides for a tiered level of response to emergencies and disaster management; the highest tier is the Disaster Executive Council (DEC), and the second is that of the National Emergency Committee (NEC). Within the NEC is the Central Control Group (CCG). The membership of the CCG is situational and the Coordinator of the National Emergency Management Office (NEMO), as the National Disaster Coordinator, selects initial responding members during the response phase of a disaster; the tier which represents on-site management of emergency or disaster events, is the Incident Command Post; the DEC is chaired by the President; all Ministers are members of the DEC; the NEMO provides	

secretariat support to the DEC; the NEC is normally chaired by the Vice President; the NEC is comprised representatives of relevant ministries, bureaus, divisions and agencies, including the Office of Environmental Response and Coordination, which has oversight of climate change; the NEMO provides secretariat support to the NEC; a central mechanism to ensure the incorporation of DRM in development planning and decision-making is the Hazard Mitigation Subcommittee (HMSC) of the National Emergency Committee (NEC); the NEC provides the drive for integration of disaster risk management considerations for socio-economic and environmental risks into development planning, resource allocation and decision-making; the Hazard Mitigation Committee is a subcommittee of the NEC that is responsible (with the support of the NEMO) for providing advice and support to the NEC on matters relating to DRR priorities that should be integrated in national development planning and budgetary processes; the HMSC is a smaller group taken from all agencies that are responsible for various aspects of DRR, including the Office of Environmental Response and Coordination, which has oversight of climate change;
Institutional arrangements for CCA
National
The Office of Environmental Response and Coordination was established in 2001, with a mandate to ensure compliance with Palau's obligations under the UN conventions on climate change, biodiversity, ozone, and desertification, as well as to facilitate a coordinated approach to Palau's national level response to environmental degradation, protection, and rehabilitation of natural habitat.; the Office has established a working group, comprised 16 State Focal Points, national government offices, NGOs, the private sector and traditional leaders, to engage stakeholders on climate change and environmental matters; the Office also has responsibility to monitor Palau's Climate Change Plan – however, such a document was not sighted
Level of integration of DRR/CCA policies and institutions, incl. drivers and barriers
National
NDRMF is intended to establish the platform from which sector policies, plans, and programs can be developed, the NDRMF is also intended to complement the various efforts already being undertaken across various sectors in relation to DRR and DM, by providing a new national institutional and governance framework – the NDRMF introduces roles, responsibilities and powers that are required of various agencies in addition to any other roles, responsibilities and powers they may have under other plans, mandates or legislation; the intention is that the NDRMF also be supported by agency response plans, community plans, hazard-specific contingency plans, and standard operating procedures.; the Implementation Plan for the NDRMF identifies priorities including those which are appropriately complementing some existing initiatives across a range of sectors; this includes the initiative to address issues of climate change adaptation and mitigation as being spearheaded by the Office for Environmental Coordination and Response

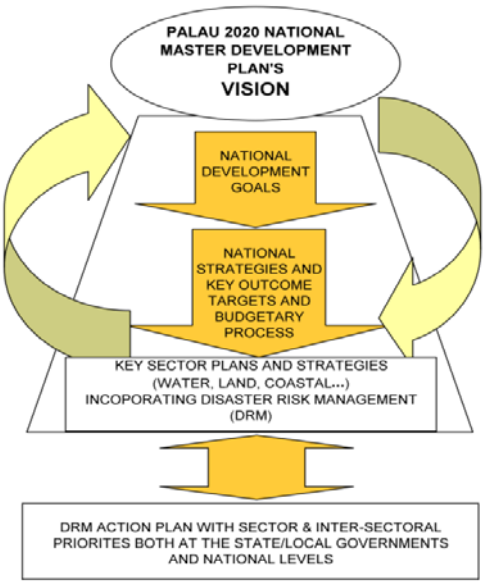

Figure 8. Palau's policy framework for disaster risk management. (source: Implementation Plan for Palau's National Disaster Risk Management Framework).

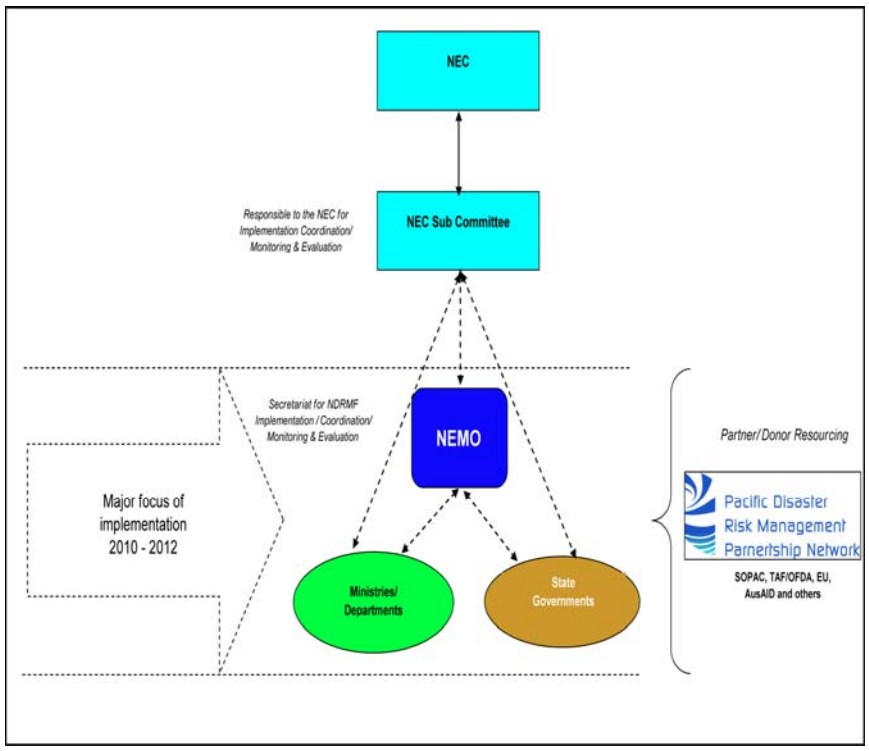

Figure 9. Institutional structure for implementation of Palau's National Disaster Risk Management Framework (source: Implementation Plan for Palau's National Disaster Risk Management Framework).

3.4 Vanuatu

Vanuatu ranks as one of the countries with the highest exposure to multiple hazards, according to the World Bank's Natural Disaster Hotspot study. Vanuatu is geographically located in the "ring of fire" and the "cyclone belt" of the Pacific. Almost 81 % of its landmass and 76% of its population is vulnerable to two or more hazards, including volcanic eruptions, cyclones, earthquakes, droughts, tsunamis, storm surge, coastal and river flooding and landslides. For this reason, Vanuatu has a UN Least Developed Country (LDC) status despite a per capita GDP above the LDC threshold.

Since 1939 a total of 124 tropical cyclones had affected Vanuatu, 45 (36%) of these were categorized with hurricane force winds (64+ Knots), 26 (21%) were of storm force winds (48 to 63 Knots) and 25 (20%) were of gale force winds (34 to 47 Knots). An additional 28 tropical cyclones were not categorized. Over six decades since 1939, the number of tropical cyclones in Vanuatu area has increased significantly from 9 to 29, consistent with evidence of increasing frequency of tropical cyclones.

Vanuatu's Comprehensive Reform Program (CRP), begun in 1997, was a major development initiative in response to fiscal fragility, political instability, economic stagnation, inefficient public administration and poor social service delivery in the mid to late 1990s. The Government's medium-term strategy for development is outlined in the Priorities and Action Agenda (PAA), 2005-2016. The priorities and approach it establishes are consistent with those in the CRP, with an overall objective of linking policy and planning with the limited resources under the control of the government.

The priorities include primary sector development, covering natural resources and the environment. The Government used the priority areas in the PAA as a starting point in the development of a four year strategy to address specific priorities, presented as Planning Long, Acting Short: Action Agenda for 2009-2012. Success in all of the areas identified by the government will require it to overcome the policy inertia that presently exists and to substantially improve policy implementation. A recent response to the need to implement meaningful reform was the implementation, in 2007, of the Governance for Growth (GFG) program. The GFG was designed and implemented in the context of a view that: "Vanuatu's overarching development challenge is to ensure that economic performance is translated into broad-based economic opportunities and improved service delivery."20 The governance obstacles to be addressed under the GFG are critical to improved economic and social outcomes.

The PAA recognizes Vanuatu's vulnerability to natural disasters and states that "the emphasis in disaster management has been on making communities aware of the need for preparedness and promoting the renewal of traditional knowledge of mitigation and preparedness". It further states that "the National Disaster Management Office, with the assistance of the National Disaster Committee, is mandated to develop strategies for the prevention of, preparation for, response to and recovery from, disasters." The Land Reform Policy which is currently under development will lead to a five-year action plan that includes land-use zoning maps and vulnerable area mapping, addressing both disaster risk reduction and climate change adaptation. Vanuatu was the first PIC to complete both a NAP for disaster risk reduction and a National Adaptation Program of Action (NAPA). In addition, a Disaster Risk Management Framework and arrangements flowchart was adopted by the government in early 2007 as the basis for developing new legislation, a new disaster management plan and new government organizational arrangements.

In accordance with the UNFCCC and the Kyoto Protocol the government places much of the national adaptation costs on assistance from the Convention process, and on bilateral and multilateral assistance from developed countries and major gas emitters.

Table 6 links DRR and CCA policies to these instruments and summarizes the other results of the DRR- and CCA-focused institutional and policy analyses for Vanuatu.

Table 6

Summary of Findings of the Institutional and Policy Analyses for Vanuatu

Level of mainstreaming of DRR in development planning processes	
National	**Local**
Disaster risk management is integrated in the PAA; a key priority and strategy is to prepare a Port Vila development plan which mainstreams climate change and disaster risk reduction measures; the National Disaster Act (2000) focuses primarily on preparedness and response arrangements for disasters; while the Act includes a definition of prevention, it is not specific about requirements and powers for addressing prevention measures	A key priority and strategy in the PAA is developing and implementing risk reduction programs in communities; Vanuatu is the only Pacific island country recipient of the USD 65.69 million Millennium Challenge Corporation funds which will focus on overcoming transport infrastructure constraints to poverty reduction and economic growth, specifically for rural areas
Level of mainstreaming of CAA in development planning processes	
National	**Local**

Vanuatu's NAPA was adopted by Government in 2007; this determines eligibility to apply for funding for implementation under the LDC Fund, which is managed by the Global Environmental Facility; Vanuatu has also prepared a discussion paper, Climate Change Policy and Implementation Strategy; its purpose is provide a summary on climate change development in Vanuatu including future areas that the government and other stakeholders need to address, to determine the issues that had been identified over the years in particular from the First National Communication that may form the basis for a climate change policy, and to develop a preliminary climate change policy framework for consultation purposes; the discussion paper proposes a policy framework that highlights the commitment of government, through the Environment and Meteorology Departments and other government ministries, civil society and the private sector to mainstreaming climate change issues in all its environmental, social, economic, planning structures and processes for sustainable development at the national and community level	The policy framework also highlights a commitment to proactively identify vulnerable communities, areas and assets at risk and develop adaptation options that are appropriate, cost effective and culturally sensitive in order to increase resilience; there is also a commitment to ensure effective provincial participation in the climate change process, with existing systems being used as the basis for local authority participation;
Policies and plans for DRR and how they have been translated into programmes	
National	**Local**
A number of ministries and agencies participate in disaster risk management, including Vanuatu's Meteorological Department which is responsible for day to day weather forecasting, cyclone and tsunami warnings and advisories, and long term seasonal forecasting; the Agriculture Department s involved in disaster response; the Department of Internal Affairs which coordinates responses between provincial authorities; the National Advisory Committee of Climate Change (NACC) assists in raising awareness on disaster risk reduction through its climate change core team; the Ministry of Lands and Natural Resources incorporates risk reduction into to land, water and energy planning; a National Water Strategy Plan has been prepared proposing risk assessments and vulnerability mapping; this work has commenced, but there is very little capacity to undertake it; he biggest impediment to the development of risk and vulnerability assessments and maps is a lack of climatic, hydrological and geophysical data	Both the NAP and its Implementation Plan include provisions for extending disaster risk management to the provinces; however, lack of funding prevents implementation of the NAP. Provinces are, in theory, also mandated to prepare their own Disaster Plans which should be approved by the NDMO Director, reviewed annually, and updated as needed; but lack of action on the central NAP has prevented the creation of provincial action plans; provincial authorities are responsible for coordinating responses under the guidance of the NDMO and NDC; each village should have a disaster management committee which coordinates response at the local level, works in consultation with the provincial level and is responsible for local level damage and loss assessments; most volunteer organisations or agencies that assist civil society organisations and/or rural communities to implement DRR are involved on a voluntary basis, with this as their secondary activity; their primary focus is on service delivery and technical assistance type of work right across all the provinces of Vanuatu; the situation is improving as a result of the recent expansion of the Foundation of the Peoples of the South Pacific International (FSPI), into Vanuatu; FSPI is a network of non-governmental organisations in the South Pacific who will start engaging communities in participatory methods of problem identification, risk analysis and action planning in Vanuatu; the initiative is for the development of people centred early warning system and community based DRR and DRM plans or for safer village plans; these will be documented through participatory research and wide

	dissemination of the traditional and modern vulnerability reduction methods, social conditions and skills that contributes to community resilience in PICs, including Vanuatu; the objective is for communities to be empowered to organise themselves for, and manage, disasters and to build risk reduction measures into their daily development activities; further, the projects are intended for improved linkages with key stakeholders at both national and regional levels to promote sustainability of community activities and to spread advocacy for community based vulnerability reduction
Policies and plans for CCA and how they have been translated into programmes	
National	**Local**
Vanuatu's NAPA identifies four priority sector areas: agriculture and food security, sustainable tourism development, community based marine resource management and sustainable forestry management; the EU announced mid 2008 that the Vanuatu NAPA qualified for funding under its Global Climate Change Alliance, with co-Financing by the World Bank totalling VT 800 million; the project, "Enhancing coastal and marine ecosystems resilience to climate change impacts through strengthened coastal governance and conservation measures" is being executed by SPREP; a GTZ project focusing on sustainable agro-forestry management as a means of building resilience to climate change is being executed by the South Pacific Commission and is funded by GTZ to a total of Euro 1.4 million	The main output of the Vanuatu Climate Change Adaptation Project is a rainwater harvesting project on the island of Aniwa in the southern province of Tafea; the Vanuatu component of the PACC project will focus on climate proofing coastal infrastructure with Epi island as the pilot site.
Institutional arrangements for DRR	
National	
Disaster risk management is housed in the Ministry of Internal Affairs, which supports the National Task Force (NTF) for Disaster Risk Reduction and Disaster Management; the NTF comprises representatives of departments with a role in disaster risk management and is co-chaired by the Director of the Meteorological Service and the NDMO; the NTF takes a proactive as well as reactive approach – thus it does not meet solely in response to a disaster events; the National Disaster Committee (NDC), established by the National Disaster Act, is tasked with developing the country's disaster risk reduction policy and strategy; it is made up of representatives of relevant government agencies and three NGO representatives; the National Disaster Management Office is its secretariat; the NDMO is tasked with implementing the strategies and policies of the NDC; however, the NDMO has no powers to require other agencies to act on any identified prevention measures; the NDC coordinates response and recovery activities including coordination with donors	
Institutional arrangements for CCA	
National	
Climate change activities are coordinated by the NACCC; the NACCC is essentially the only body that is formally recognized by the Vanuatu's Council of Ministers to implement a Multilateral Environmental Agreement for the government; NACC is made up of department heads, including the NDMO Director, and chaired by the Director of the Meteorological Service; the Director of the Meteorological Services is co-chair of the National Task Force for Disaster Risk Reduction and Disaster Risk Management; the Climate Change Unit in the Department of Meteorological Services functions as the Secretariat of the NACCC; there is a plan for the NACC to establish a National Group of Experts to do research on environmental change issues, particularly on climate change, affecting the country and periodically report to the NACCC on its findings	
Level of integration of DRR/CCA policies and institutions, incl. drivers and barriers	
National	
The NTF for DRR and DM is co-chaired by the Director of the Meteorological Service (who has overall responsibility for the governments climate change activities) and the NDMO Director; a key priority and strategy in the PAA is to prepare a Port Vila development plan	

which mainstreams climate change and disaster risk reduction measures; lack of understanding of climate change and variability issues and DRR in the higher echelons of governance is still a major constraint leading to a lack of coordinated approach to addressing climate related risks; financial and human constraints are a major concern to line departments such as both Meteorology and Environment that are dealing with climate related issues and at present have depended largely on donor assistance to fund on-going activities at the national and community level;

3.5 Other Pacific Island Countries

A recent study of the relationship between DRR and CCA (Mercer, 2010) shows that communities in Papua New Guinea (PNG) consider climate change as one factor amongst many that contribute to their vulnerability to hazardous events. Therefore, to focus solely upon climate change through CCA, rather than considering all contributory factors to community risk would be detrimental to communities concerned. There is an inherent danger of over-focusing upon a need to adapt to climate change, due to its prominence in the international arena, rather than focusing on vulnerable conditions identified by communities themselves. Whereas DRR evolved from both top-down and bottom-up perspectives, which are merging in some circumstances, CCA generally emerged from a top-down driven policy that was initially disconnected to a large extent from communities directly affected by climate change. Community-based DRR could thus provide an entry point for CCA, including more recent community-based CCA work. That would avoid separating community-based DRR and community-based CCA and would connect policy with practice and practice with policy. These findings have widespread applicability beyond PNG.

National level climate change policies and plans were one of several outputs of the first Pacific regional project funded by the GEF, the PICCAP project. Implemented between 1997 and 2001, the project was designed to assist ten PICs (Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Marshall Islands, Nauru, Samoa, Solomon Islands, Tuvalu, and Vanuatu) to meet their national reporting requirements under the United Nations Framework Convention on Climate Change (UNFCCC). It was funded by the GEF, implemented by UNDP and executed by the Pacific Regional Environment Programme (SPREP). The national activities included undertaking studies on the possible impacts of climate change, identifying options on how best to adapt to the impacts of climate change and preparing a National Communication and national implementation strategy. In addition, the project assisted countries to consider the policy implications of these studies and integrate them, as much as possible, into each country's development plans as part of a broader climate change response strategy.

One of the enduring legacies of these activities is the Climate Change Country Team, or similar. In many countries it has since evolved into a wider and more influential national coordinating and technical support mechanism, often covering activities related to all the multi-lateral environmental agreements. But in most PICs the Country Team, or its equivalent, still plays a lead role at national level with respect to: (i) overseeing analytical studies on climate change issues; (ii) drafting national implementation strategies and/or National Communications; (iii) coordinating and implementing national workshops and conferences which focus on consultative meetings, training, public education and raising awareness; and (iv) preparing proposals for follow on projects.

The important role played by the Country Team, or its equivalent, is illustrated by the institutional arrangements in Samoa for CCA and other climate change related activities (Figure 10). It is an important coordinating as well as a policy-relevant technical mechanism for a whole-of-country approach to climate change, as is the

Ministry of Finance in terms of coordinating the flow of, and accountability of financial resources and the Ministry of Foreign Affairs for coordinating interactions with the UNFCCC and other international and regional institutions.

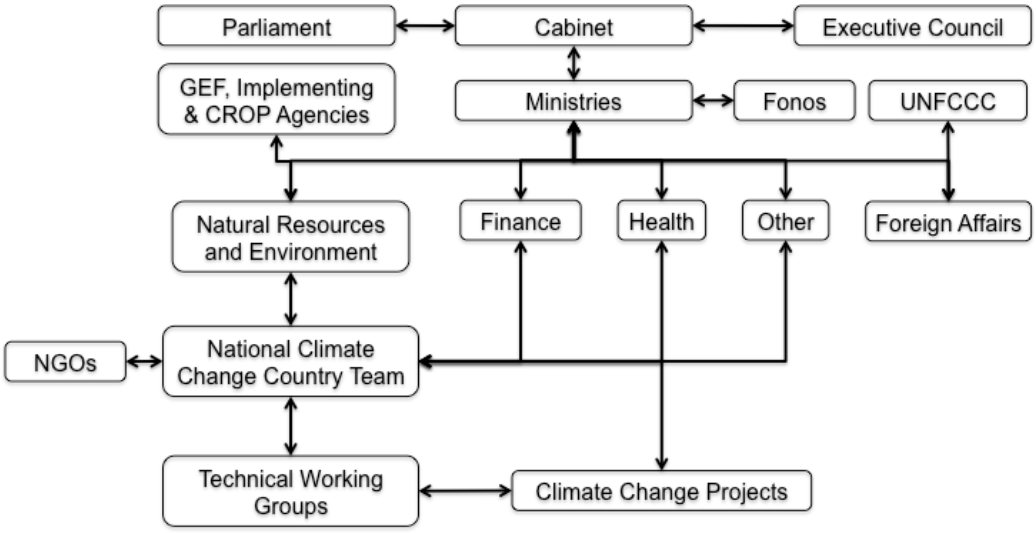

Figure 10. Institutional arrangements for CCA and other climate-related activities in Samoa.

At the national level some countries are now showing commendable leadership in planning and implementing integrated approaches to DRM and CCA. One of the more noteworthy and informative examples is provided by Tonga. As a result of many stakeholders recognizing the similar focus of DRM and CCA priorities and actions, and limited capacity in country to address both CCA and DRM, the Tongan National Emergency Management Office requested SOPAC to assist in preparation of a Disaster Risk Management and Climate Change Adaptation National Action Plan. Significantly, the Minister for the Environment and Climate Change endorsed development of a joint DRM and CCA National Action Plan. Officials in the Ministry for the Environment and Climate Change committed themselves to leadership of the NAP preparation and implementation processes jointly with staff of the National Emergency Management Office. Through the National Emergency Management Plan and the Emergency Management Act 2007, that Office is responsible for the coordination of DRM capacity building activities in Tonga (SOPAC, 2009b).

On the other hand, the Ministry of Environment and Climate Change (formerly the Department of Environment) is the coordinating agency for climate change. Tonga established a climate change policy in 2004, as part of the PICCAP project. It had close links to the relevant regional frameworks, including the PIFACC and supported implementation of the National Sustainable Planning Framework. Implementation was largely by way of the Corporate Plan of the then Department of Environment.

Therefore, rather than follow the original intention to prepare separate planning documents for CCA and DRM, a NAPA (overseen by the Ministry of Environment and Climate Change) and a DRM NAP (overseen by the National Emergency Management Office), the decision was made to prepare a joint plan – the Disaster Risk Management and Climate Change Adaptation National Action Plan. It was prepared by the Task Force for Disaster Risk Management and Climate Change

Adaptation, with the benefit of substantial reduction in the time and effort spent on consultations due to the joint approach. The Task Force is also responsible for implementation.

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

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

Goal 5 is noteworthy in that it relates to the reduction of greenhouse gas emissions ("mitigation"), rather than to CCA or DRM. Thus the joint Plan has merged the three major categories of response to climate change. For 1 to 3 there is full integration of CCA and DRM. As an example, the two objectives under Goal 1 are develop an enabling policy and capacity to strengthen planning and decision making processes with the incorporation of relevant climate change and disaster risk management considerations and strengthen institutional arrangements and capacity for climate change and disaster risk management in Vavaú, Haápai, Éua and in the Niuas.

As is to be expected, the integration of DRM and CCA planning and implementation in Tonga has resulted in revision and strengthening of the institutional arrangements. Figure 10 provides details of the new institutional arrangements.

Another instructive example is provided by FSM. Through consultations, the Office of Environment and Emergency Management (OEEM) confirmed the need for the development and implementation of a Disaster Risk Management and Climate Change Adaptation National Action Plan in order to maximise the benefits of investing its limited financial and human resources to address issues of vulnerability and risk caused by a range of hazards. The intention was for the plan to combine existing and future DRM and CCA efforts that should be integrated given the similarity in focus that each presents.

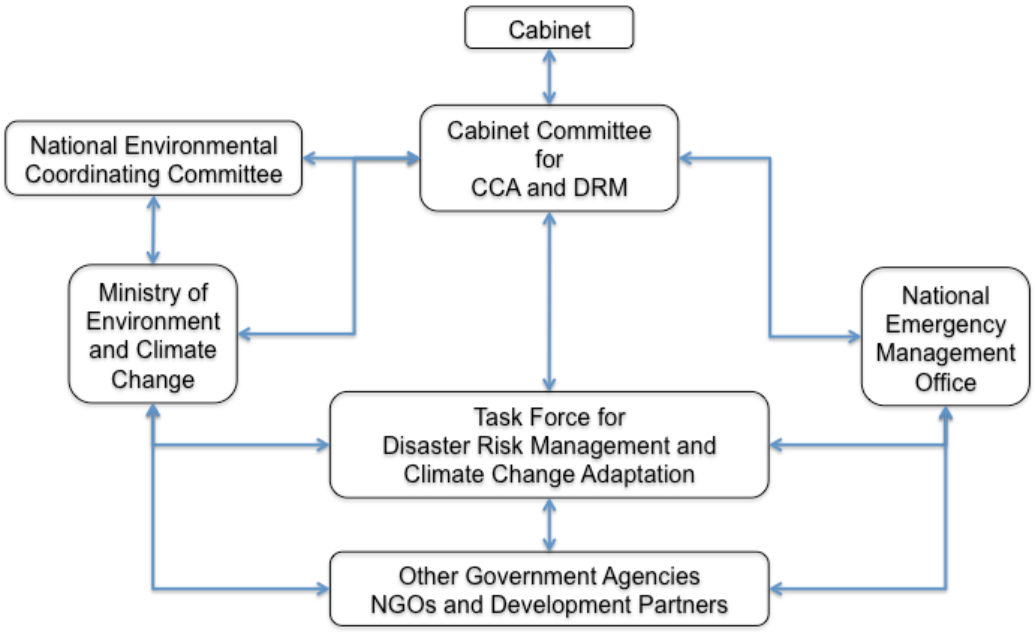

Figure 10. Institutional arrangements for implementation of Tonga's Disaster Risk Management and Climate Change Adaptation National Action Plan.

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

The 2005 MHMP was due for review in 2008 but this was not undertaken. Moreover, given the recent efforts underway by the OEEM and other Government stakeholders in relation to climate change and specifically the 2nd National Communication by FSM, it would be prudent for the Government to identify both climate change and disaster risk management actions (the former through national vulnerability and adaptation assessments and the latter through a review of the 2005 MHMP) and to capture these in a single strategic action plan. The OEEM thus embraced the concept of a combined NAP that addressed CCA and disaster risk management. The resulting work programme is illustrated diagrammatically in Figure 11.

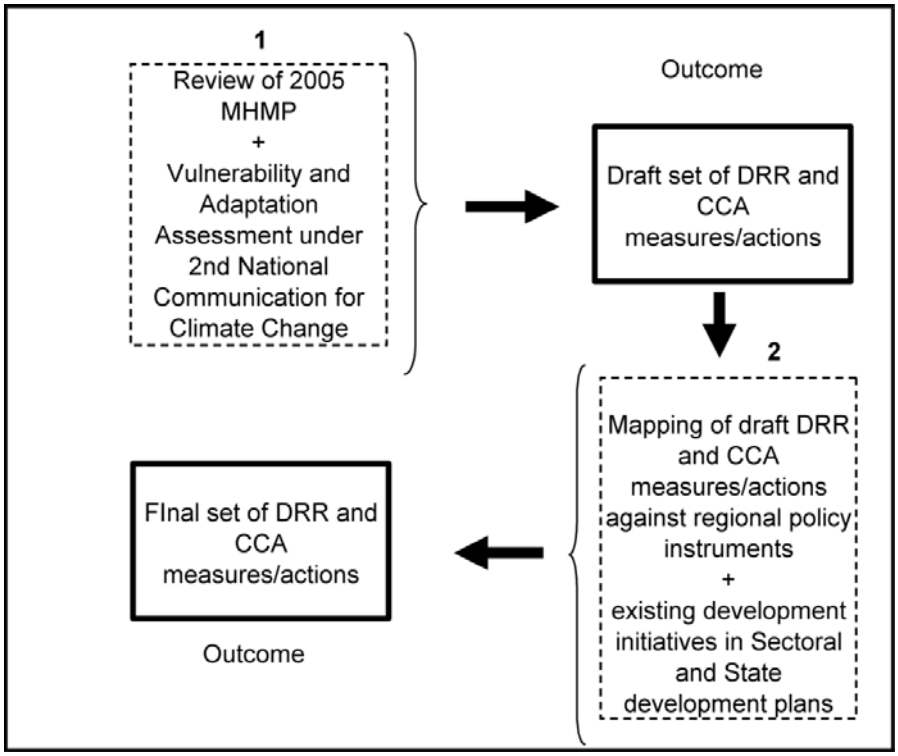

Figure 11. Diagrammatic illustration of the work flow pursued by FSM to prepare a NAP that addressed climate change adaptation and disaster risk management in an integrated manner (source: SOPAC, 2010c).

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

3.6 Regional Synthesis

In terms of DRR, and DRM more widely, major emphasis in recent years has been to adapt the Madang Framework by preparing DRM NAPs. This has been facilitated by the establishment of the Pacific Disaster Risk Management Partnership Network (PDRMPN). Guidelines for mainstreaming DRR, and DRM more widely, were developed by the PDRMPN, to facilitate the mainstreaming within national plans and policy, sectorally as well as cross-sectorally, and in the national budgetary planning and allocation processes. NAPs on DRR and DM have now been prepared for Vanuatu, RMI, the Cook Islands, Samoa, Solomon Islands, PNG and Palau. Recently Tonga and FSM have prepared NAPS that integrate DRM and CCA.

Additionally in terms of DRR at the national level, organizations such as the Interagency Standing Committee (the primary United Nations mechanism for inter-agency coordination of humanitarian assistance) and the International Strategy for Disaster Reduction (ISDR) have already developed tools to support governments to meet their responsibilities as part of global efforts to reduce disaster risk and to strengthen resilience of communities. Such assistance, and instruments such as the Hyogo Framework, are underpinned by existing global humanitarian funding mechanisms, including the Global Facility for Disaster Reduction and Recovery

(GFDRR) and the Consolidated Appeals Process. However, none of these mechanisms is currently sufficient to meet the added demands brought about by the need to adapt to CCA. But their combined institutional knowledge and experience could be a key component in ensuring timely, verifiable and accountable responses to this challenge.

While it may be easier to focus on the abundant evidence of divergent approaches to DDR and CCA in the Pacific islands region, the most productive approach is to focus on the achievements made to date with harmonizing both policies and practices. These achievements have been greatest at the community level. Individuals, families and villages alike want to improve their livelihoods by reducing their vulnerability and enhancing their resilience to environmental change and other pressures. They tend not to discriminate between the root causes of any decline in the quality of their lives and wellbeing. To those who are impacted by a flood it is largely immaterial if that event is classified as a disaster, attributed to longer-term climate change, or even to current natural variations in the climate. Parenthetically, one would also hope that the relevant government, donors and aid agencies would similarly ignore any classification or the like, and respond purely on the basis of need.

Development and humanitarian assistance partners working to reduce vulnerabilities and enhance resilience at the community level are similarly disinterested in such distinctions. Increasingly they prefer to take a much more holistic and longer-term approach. Their contributions are also relatively free of the dichotomy imposed by regional frameworks and international agreements, especially with respect to the sources of, and conditionalities on funding. Community-based adaptation, including DRR, is a powerful approach for transcending the unproductive distinction between CCA and DRR that pervades policies and planning at national and regional levels in the Pacific. This often includes adoption of ecosystem-based adaptation.

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

Another example also reinforces the points made above. The people of Korotarase, a village located on low-lying swampy land alongside a river and beach on Fiji's northern island of Vanua Levu. have joined with five other Fijian villages, in an innovative programme of community climate adaptation. In March 2007 the co-incidence of heavy upstream rainfall and a king tide from the ocean led to the village being flooded. The 2007 flood greatly increased erosion along the riverbank, and today some houses and the community hall are at risk of collapsing into the river. The problems are increased because sedimentation from upstream logging operations is changing the river's path.

The villagers are working to climate proof their homes and communities, in preparation for future impacts caused by tidal surges, coastal erosion or flooding caused by heavy rainfall after cyclones. They are trialling salt-resistant varieties of staple foods such as taro, planting mangroves, native grasses and other trees to halt coastal erosion, protecting fresh water wells from salt-water intrusion, and relocating homes and community buildings away from vulnerable coastlines. The initiative is

coordinated by the Institute for Applied Science of the University of the South Pacific in Suva.

In its Climate Change Implementation Plan for the Pacific (ADB, 2009a), the Asian Development Bank (ADB) has shown leadership at the regional level to facilitate a greater integration of DRR and CCA. The Pacific region poses complex adaptation challenges due to the widely varying geography among countries; government capacity to diagnose problems and design appropriate solutions; and economic, social, and environmental conditions. Because many of the effects of climate change will vary among countries and regions of each country, comprehensive and inclusive national strategies and action plans, supported by regional and international technical and financial assistance, are required. The Plan calls for increased emphasis on implementation of climate-proofing ongoing projects, building in climate resilient design for new projects, and CCA strategies and plans. The Plan identifies a key issue and gap related to adaptation as inadequate integration of adaptation and disaster risk management into policies, planning, and operations. There is also a lack of tools, guidelines, and documented good practices and lessons learned, especially those related to mainstreaming adaptation into national and sector policies, planning processes, and regulations. The Plan proposes greater emphasis on adaptation and new assistance to capture the synergies between adaptation and mitigation and between DRR and CCA.

In the Pacific both climate change and natural disasters have their greatest impact at the local level (see Section 1). This is due in part to the fact that most Pacific Islanders live close to the coast and interact daily with the environment, upon which they depend for their livelihoods. There is therefore high reliance on natural resources, most of which are in community ownership. The low capacity of individuals, families and communities to respond increases the vulnerability. This is a policy as well as institutional challenge, since for many decades the emphasis has been on building capacity at national level, largely through top-down processes driven by international agencies and donors. DRR and CCA programmes and activities at the community level need to be better integrated into community development and coping mechanisms so there is greater ability to live with climate change and reduce the adverse consequences of disasters. Especially in the Pacific there is a need to include relevant traditional knowledge and practices in all CCA, DDR and related efforts at community level.

The last decade has seen a rapid growth in community-based adaptation (CBA), initially facilitated by international, regional and local non-governmental organisations (NGOs). More recently, donors have helped progressed CBA even further by providing funding direct to communities or through NGOs and government agencies. Notable examples are the Small Grants Programme. This is funded by the Global Environment Facility (GEF), and in the Pacific by the New Zealand Agency for International Development (NZAID) and more recently by the Australian Agency for International Development (AusAID) as well as for the CBA project under GEF's Special Priority on Adaptation. The Small Grants Programme supports not only adaptation but wider environmental and natural resources management.

A key feature of these locally-focussed, on-the-ground CCA initiatives is that they are largely occurring in a policy vacuum and with little if any national budget support. Rather than being an integral part of national policies, planning and budgetary processes, they are being driven by the needs of communities, with the support of bi- and multi-lateral donors. Governments are of course aware of these activities, and in many cases provide useful support, especially technical assistance to communities through extension officers. But there are few, if any, examples of governments

providing direct financial support. In addition, because of the weak or missing linkages at the policy level, governments are missing out on opportunities to ensure that the national-level enabling environment is supportive of the adaptation efforts at community level. This is an important gap that needs to be addressed across the region.

Institutionally, CBA in the Pacific is dominated by community-based organisations, with communities often working in partnership with NGOs and, to a lesser extent, with local government agencies and government extension services. There are no systematic institutional arrangements. Rather, engagement with communities is very ad hoc and ephemeral. The need to increase the coordination and accountability of NGOs working at regional and/or national levels is highlighted in a recent study of the history and current situation of biodiversity conservation in Fiji (Austral Foundation, 2007). It found that the arrival of most of the 18 international organizations working on conservation in Fiji in the past ten years has not resulted in a commensurate increase in conservation success at the national level. Moreover, the study found that, while NGOs invest substantial resources engaging with communities or otherwise implementing projects, they are essentially unaccountable for their priorities, their methodology and their budgets, other than back to their own international offices and to donors. Few projects deliver benefits which continue after the project is completed.

The lessons learned in Fiji are transferable to the wider Pacific, and from biodiversity conservation to CBA. In the Pacific, NGOs are increasingly filling a gap created because most Governments have failed to provide the funding and other assistance needed to manage community-owned environment and natural resources in an adequate manner. In contrast, many NGOs have the resources and are proficient at undertaking and transferring applied research. They implement some worthwhile activities, and give communities a voice in the policy debate. But if these efforts are not carefully aligned to national priorities, the NGO projects also suffer the same fate as donor projects conducted in isolation – the outcomes and benefits cannot be sustained.

From a regional perspective the situation is in many ways very similar for DRM at the local level, other than that there are more formalised policies and plans, both regionally and nationally, for DRR at the local level. The Madang Framework adapts the principles of the Hyogo Framework to meet Pacific needs, with priority given to national and local actions to support community-based needs and initiatives. For example, it recognises that public awareness and education, incorporating traditional coping mechanisms and local knowledge, will enhance individual and community resilience. This emphasis on community-based approaches to DRM is further reflected in the national action plans (NAPs) for DRM, such as for the following principle Vanuatu's NAP: "empowering communities to address their risks through the development of capacity and knowledge (traditional and scientific) and through the provision of support for local involvement in developing and implementing risk reduction and disaster management strategies".

But this top-down, policy driven approach has problems delivering DRM outcomes at the local level. To continue with the Vanuatu example, which is representative of regional experience as a whole, one priority for action is to reduce the underlying risk factors, with a core indicator being social development policies and plans are implemented to reduce the vulnerability of populations most at risk. Vanuatu's recent national progress report on implementation of the Hyogo Framework (Napat, 2009) notes that, while government commitment has been attained, achievements are neither comprehensive nor substantial. Rather, Vanuatu relies a great deal on

partnerships with non-governmental actors, civil society and other community groups for its community relief, rehabilitation and recovery work, including building homes resilient to disasters.

Thus, as with CCA at the local level, governments have a heavy reliance on partnerships with NGOs and civil society groups, in part because of a greater ability to reach the more remote communities. Again, due to weak policy and planning oversight and relative lack of coordination that only comes through strong institutional frameworks, their relatively isolated and short term efforts do not deliver the full potential of DRR benefits. The 2007/9 regional progress report on implementation of the Hyogo and Madang Frameworks (SOPAC, 2009d) noted that, while community participation and practices in DRR and disaster management do occur in the Pacific, it is scattered amongst the villages of some PICS that have benefited from DRM initiatives that have been implemented right down to community level. The report called for community engagement to be coherent and strengthened, and the base of partners to be broadened.

Table 7 provides a further and wider regional perspective by presenting a synthesis of the findings of the institutional and policy analyses.

Table 7

Synthesis of Findings of the Institutional and Policy Analyses

Level of mainstreaming of DRR in development planning processes	
National	**Local**
An increasing number of the relevant planning instruments make reference to the need to consider DRR as an integral part of development planning and implementation; this includes national development strategies (or equivalent) and many sector policies and plans; there is very limited inclusion of DRR in national budgetary processes	As noted above, in general there well developed policies and plans related to implementing DRR at the local (provincial, community) level; this is principally through national legislation and DRM action plans; generally there is only limited extension of DRR planning into relevant sectors
Level of mainstreaming of CAA in development planning processes	
National	**Local**
The national development strategies of most countries make reference to the need to adapt to the changing climate and commit the country to taking action; often there are similar statements in sectoral and other sub-national policies and plans	Most national level development policies and plans acknowledge that climate change impacts will be significant for communities, including the natural resources they own and rely on; however, while there are well-informed and well-intentioned policies, the ability of national governments to reduce the vulnerability of communities is very limited
Policies and plans for DRR and how they have been translated into programmes	
National	**Local**
As a consequence of limited resources being allocated in the national budgetary processes, practical implementation of DRR at national and sector levels is very limited, relying mostly on donor funding, and hence being somewhat ad hoc, with ephemeral benefits	Implementation of DRR policies and plans, as part of wider DRM policies and plans, falls woefully short of needs; in some cases, and in many cases for a few countries, NGOs have endeavoured to fill the large gap; typically their work to enhance community resilience is effective, but their spatial coverage is limited due to resource constraints
Policies and plans for CCA and how they have been translated into programmes	
National	**Local**
The national and sectoral development plans of some countries (e.g. Samoa) make relatively comprehensive reference to	As noted above, there is a growing effort to enhance the resilience of vulnerable communities, not only by addressing climate

climate-related risks and have implemented programmes and projects to help stakeholder groups to reduce their vulnerability to climate change; but in all cases the site specific nature of adaptation, and the high costs, limit the benefits for sectors, communities and the like	change impacts (current and potential) but also by reducing other pressures on communities and exploiting opportunities to improve livelihoods and protect lives; much of this work is being undertaken outside conventional national planning and budgetary processes, through the efforts of NGOs and other such players
Institutional arrangements for DRR	
National	
Most countries have more conventional arrangements, as part of the institutional arrangements for DRM – this means a NDMO, or equivalent, as a standalone agency; variations are more in the way of in which ministry the NDMO is located; this is often dictated by historical or political factors; however, there are a few examples (e.g. FSM) where the same government agency has responsibility for both DRM and climate change initiatives; the robust national plans for DRM that exist in most countries establish well-defined sub-national institutional arrangements, often right down to community level; while the arrangements are excellent in theory, they often fall down in practice; many become operational only when there is a disaster; there is often poor communication between the various levels, especially between communities and provincial/district/island agencies; typically the level of resourcing decreases with separation from the national government and distance from the capital	
Institutional arrangements for CCA	
National	
Historically, and in many PICs even to the present day, climate change is considered to be an environmental issue, with the Ministry for Environment (or equivalent) being mandated to be the lead agency for climate change; in some countries the cross-cutting nature of climate change, and its growing importance, have resulted in the responsibilities for climate change being transferred to the Office of the Prime Minister (or equivalent) in order to improve coordination and to give higher visibility to the climate related initiatives being undertaken; seldom do such institutional changes result in increased resource mobilization, at least via the national budget; increasingly, individuals in other government departments and agencies are being given responsibilities related to climate change; this has always been the case for Foreign Affairs, due to the important international dimensions of climate change; at a somewhat slower rate, ministries of planning and finance are allocating specific staff to work with other parts of government in order to link policy making, planning and implementation with budgetary processes	
Level of integration of DRR/CCA policies and institutions, incl. drivers and barriers	
National	
The four pilot countries are typical with the low level of integration of DRR and CCA at the policy, institutional and operational levels; while there may be institutional and other arrangements that suggest some level of integration, the practical reality is that little is happening on the ground. This is certainly the case for the Cook Islands while Fiji has implemented some recent initiatives, including a joint approach to preparation of the Second National Communication; Palau's national action plan for DRM suggests greater engagement with and involvement of the climate change community in that country, but it is too early to tell if this is happening in practice; Vanuatu is showing the greatest potential of the four countries, with a proposal to co-locate the NDMO and Meteorological Services (where the Climate Change Unit is located), though with line management continuing to be through two different ministries, at least initially; there is also a plan to have the highly effective National Advisory Committee on Climate Change take on responsibility for DRM, with the statutory and emergency management requirements being met through a DRM sub-committee; elsewhere in the region, Tonga is clearly the lead example of integration of DRR and CCA, having developed an integrated plan for DRM and climate change; this serves as an excellent example to other countries, as do the institutional arrangements; but the proof of the effectiveness of this ambitious integrated approach will be in the implementation of the joint plan, and the effectiveness of the outcomes that are delivered; regionally the key drivers of integration include stakeholders questioning the duplication and redundancies that come with a separation of DRR and CCA, the desire to make more efficient use of scarce financial, human and other resources, and the increasing recognition, especially at community level and amongst the better informed, that on the ground there is little practical difference between the two, and what does occur can be addressed, as Tonga has done by developing a joint plan that encompasses the full range of climate change responses, including reduction of greenhouse gas emissions; a key lesson is that effective integration of CCA and DRM is based on the knowledge and commitment of individuals at the national level and on the willingness and ability of the responsible government agencies to work together closely	

3.7 Learning from the Caribbean

Caribbean countries and communities are facing increasing threats, similar to those in the Pacific Region. These include sea-level rise, more intense hurricanes, changing rainfall patterns, diminishing water availability, new health-related hazards, and adverse impact on livelihoods, especially of the most vulnerable people. Response efforts must link CCA and DRR strategies with development and poverty reduction. An early response was the Caribbean Risk Management Initiative (CRMI). Launched in 2004 the CRMI is an umbrella programme designed to build capacity across the Caribbean Region for the management of climate-related risks. It provides a platform for coordinating and sharing knowledge and experiences on risk management throughout the Caribbean, across language groups and cultures. The CRMI attempts to build relationships and share information between two distinct technical communities committed to building better practices related to climate change and disaster response and management. Historically these communities have not collaborated at a level that many feel is necessary to properly manage climate-related risks. Once the CRMI established a stronger regional presence, its relevance and importance came into clearer focus for its stakeholders, including the Association of Caribbean States, the Caribbean Disaster Emergency Management Agency (CDEMA), and the Caribbean Community Climate Change Centre (CCCCC). While not totally unanimous, there is now broad support for seeing the CRMI continue. Support is qualified by a desire to see changes take place toward establishing mechanisms that would provide greater autonomy and flexibility to establish country-to-country relationships that build relevant capacity.

In the Caribbean there is increasing awareness of the need for, and a growing movement to, develop sustainable linkages between DRM and climate change. This has resulted in new linkages between disaster management and climate change in institutional contexts, including development of a formal relationship between Caribbean Disaster Emergency Response Agency, the Caribbean Community Secretariat, and the Caribbean Development Bank. Since coping measures for climate variability and extremes already exist in the Caribbean, as in the Pacific, adaptation to future climate change focuses on identifying gaps in the current capacity for addressing present-day climate variability and extremes. Reducing vulnerability to near-term hazards is also considered to be an effective strategy for reducing long-term climate change risks. The CHARM tool developed by SOPAC for the Pacific Region (see Figure 12), has been adopted in the Caribbean as the framework in which the necessary future changes and adaptation initiatives can be implemented. The aim is to integrate climate change into the physical planning process using a risk management approach.

Recently the CCCCC prepared the Regional Framework for Achieving Development Resilient to Climate Change (Caribbean Community Climate Change Centre, 2009). This was at the request of CARICOM Heads of State, participating in the First Congress for the Environmental Charter and Climatic Change, held in 2007. The strategic vision driving the regional strategy is to lay the ground for a “regional society and economy that is resilient to a changing climate.” The seriousness of the challenge global climate change poses to the development prospects of small island and low-lying costal states is addressed in the Barbados Plan of Action, as the first of 14 priority areas for achieving sustainable development.

The Regional Framework provides a roadmap for action over the period 2009-2015, and builds on the groundwork laid by the CCCCC. The Framework is underpinned by a series of principles, namely:

- an integrated approach is important in minimizing the use and costs of limited technical, administrative, and financial resources; in reducing any potential conflicts in policy development; and in promoting coordination among all stakeholder groups in hazard risk reduction;
- effective and sustained involvement of civil society;
- stakeholder involvement and participation must be effectively coordinated so as to minimize duplication of effort and conflict, and ensure efficient use of resources and the creation of positive synergies;
- an effective institutional, administrative, and legislative environment is a *sine qua non* to effective and timely resilience-building to the hazard risks associated with a changing climate;
- investing in resilience-building to a changing climate is investing in sustainable development;
- investing in proactive resilience-building to a changing climate can significantly limit the immediate losses and future cost of recovery from climate events;
- an enabling environment for the adoption of appropriate technologies and practices is necessary to ensure that national, regional, and international commitments with respect to the causes and effects of a changing climate are fulfilled;
- effective collaboration with other regional and international state actors and organisations must be an integral part of resilience-building to a changing climate;
- reducing the singular and cumulative impacts of natural disasters can alleviate development challenges; and
- access to information and transparency in planning and implementation.

While it is difficult to estimate the potential economic consequences of climate change on CARICOM countries, due to varying global climate change scenarios, limited geographical projections for the region, and an inadequate inventory of vulnerable assets and resources in these economies, a recent study suggests that in a “no-adaptation” scenario, such losses could be on the order of 5 to over 30 percent of GDP on average (annualized values), with an even broader range for some specific countries. Global warming and associated climate change, together with the consequent rise in sea levels, is going to increase the economic and social vulnerability of CARICOM countries in most cases. The rationale for advocating greater investment in comprehensive and effective measures to address the impacts of a changing climate and reduce the region’s vulnerability is that this approach builds the resilience of countries to respond in a comprehensive manner to the economic, environmental, and social challenges that will accompany a changing climate. The Framework is aimed at incorporating climate change as part of the national planning process for both social and economic development.

The Framework envisages that the financing of DRR initiatives will be treated as a development priority within the budgeting process, and that all government entities will advance the goals and objectives of the framework by ensuring that DRR is taken into account in the design of development programmes and projects. In addition to the current financing arrangements for post-disaster rehabilitation and reconstruction, provided through external loans and local revenue, the CARICOM governments will explore the feasibility of establishing a Natural Hazard Risk Management Fund to finance prospective disaster risk management initiatives. It is envisaged that such a fund could be patterned on the environmental levy concept and/or could be built around user fees, charges on polluters, special-purpose lotteries, and licenses. It is also envisaged that the creation of such a fund should be linked to a review of the use of available financing mechanisms, such as fiscal incentives for various economic stakeholders.

The CCCCC and CDEMA and other regional institutions are strategic partners in charting an integrated approach to DRR and CCA. On top of this, the Caribbean has a novel governance mechanism in the form of the Comprehensive Disaster Management Coordination and Harmonisation Council (CDMCHC). The CDMCHC provides the overall management and technical guidance needed to ensure that comprehensive disaster management implementation activities within and between countries, and across different sectors and disciplines, are coordinated and harmonized. Climate change is recognised as a cross-cutting theme in comprehensive disaster management. The CDMCHC's supporting mechanism, includes six Sub-Committees, each coordinating comprehensive disaster management-related activities in the agriculture, civil society, education, finance, health, and tourism sectors (Roche Mahon, personal communication).

The Caribbean Development Bank's 2009 Disaster Management Strategy and Operational Guidelines are an excellent example of regional stakeholder organisations mainstreaming an integrated approach into their operations. It is a revised strategy, replacing the 1998 version. This was seen as necessary in light of:

- Changes in international, regional and national disaster risk reduction agendas, including CDEMA's own Enhanced Comprehensive Disaster Management Strategy;
- The emergence of climate change as a major consideration due to the increasing the frequency and magnitude of natural hazards, and
- The Caribbean Development Bank's own focus on DRM and climate change and its inclusion as a strategic theme in its internal funding operations and mechanisms.

The Strategy directly references the region's Enhanced Comprehensive Disaster Management Strategy and Framework. An important theme (Theme 3) of the Guidelines is harmonised donor interventions and in this regard the Caribbean Development Bank will seek to collaborate with the CDMCHC. In addition, the Bank offers proactive assistance for DRM and CCA work.

Many international development organisations, both governmental and non-governmental, that traditionally work in the Caribbean in DRM have adopted a similar integrated approach. including UNDP and the Red Cross. Aside from the Projects implemented by the CCCCC, and the CRMI implemented by UNDP, there are other projects and programmes that are notably relevant to the theme of integration of DRM and CCA. These include:

- Mainstreaming Climate Change into Disaster Risk Management for the Caribbean Region, currently being implemented by CDEMA; the Project's three outcomes relate to: (i) improved coordination and collaboration between community disaster organisations and other research/data partners including climate change entities for undertaking comprehensive disaster risk management; enhanced community awareness and knowledge on disaster management and climate change adaptation procedures; and (iii) enhanced preparedness and response capacity (technical and managerial) for sub-regional and local level management and response.
- Adaptation for Climate Change and Disaster Mitigation: Township Planning Strategies for Storm Surge in the Caribbean, implemented by the then Caribbean Disaster Emergency Response Agency; this Project was an effort to assist Caribbean countries with the development of adaptation strategies needed to deal with the impact of natural disasters and severe weather events anticipated to

occur as a consequence of climate change and to strengthen their capacity for adaptation to such phenomenon;

- South-South Cooperation between the Pacific and Caribbean SIDS on CCA and DRM, administered by the UNDP Pacific Centre; there has been a similar sharing exercise between the Caribbean and small island and coastal nations in Southeast Asia;
- The Canada Caribbean Disaster Risk Management Fund is an eight year programme that started in September 2008; it makes the link between funding and the local level; the Fund works with Caribbean-based NGOs, civil society organizations, and community based not-for-profit organizations on projects designed to reduce disaster risk in vulnerable communities; a wide range of organizations benefit from the resources available through the Fund; they include, but are not limited to, youth groups, women's groups, church organizations, service clubs, fisher associations, farmers groups, district disaster management organizations, environmental groups, and associations for the aged; grant funding is provided to projects in the CDN25,000 to CDN75,000 range; projects may range in duration from a few months to a maximum of two years; and
- The Caribbean Catastrophe Risk Insurance Facility, regional risk financing mechanism; the Facility is being positioned as an essential component of a regional CCA strategy.

3.8 Moving Forward

Tonga is clearly in the lead in the Pacific in terms of the integration of DRM and CCA. The innovation extends not only to developing a joint national action plan for DRM and CCA, but to also encompassing mitigation of greenhouse gas emissions, making it in fact a joint plan covering both DRM and climate change. This development will serve as an inspiration and guide to other PICs, and perhaps beyond the region. It is interesting to note that these developments have occurred without any substantive institutional reorganization. Rather operational and political leaders have taken and supported the joint initiative. FSM, on the other hand, has undertaken its integration initiatives from a common institutional platform – from the Office of Environment and Emergency Management. This has responsibility for both DRM and climate change policies and work programmes. Another source of inspiration for integration of DRM and CCA is provided by Vanuatu. It is moving, albeit slowly, towards both integration across policy, institutions and work programmes.

It is worthwhile noting that the three countries which are taking the lead in the region cover the full spectrum of ethnic (Polynesian, Melanesian and Micronesian) and political systems (American- and Westminster-based) systems. This gives some hope that all PICs will eventually have more integrated approaches to DRM and CCA, not only at the policy and institutional levels, but also in terms of work on the ground. In this respect, the three leading countries still have a long journey to travel. But at least they have made a start, and a major one at that.

4. Regional Frameworks: International Linkages and Implementation

The Pacific Islands Framework for Action on Climate Change (2006-2015) (PIFACC) was endorsed by Pacific leaders at the 36th Pacific Islands Forum held in 2005. They recognized the importance of Pacific island countries and territories taking action to address climate change through their national development strategies, which are linked to national budgetary and planning processes. The Framework builds on The Pacific Islands Framework for Action on Climate Change, Climate Variability and Sea Level Rise 2000-2004. The 2006-2015 timeframe of the Framework is consistent with

the timeframes of the Millennium Declaration, the Johannesburg Plan of Implementation and the subsequent work of the UN Commission on Sustainable Development.

In 2005 a Pacific Islands Climate Change Roundtable (PCCR) meeting was convened to review the Framework. One outcome was a proposal to develop an action plan for implementation of the Framework. The Action Plan for the Implementation of the Framework for Action on Climate Change was subsequently prepared. In the Plan, national activities are complemented by regional programming. The Plan also provides an indicative menu of options for action on climate change. In order to ensure appropriate coordination of activities under the Framework, the PCCR was reconstituted in 2008, with SPREP being called upon to convene regular meetings of the PCCR inclusive of all regional and international organizations and civil society organizations with active programmes on climate change in the Pacific region. This was a timely and appropriate development. It went some way to addressing the identified need for improved donor coordination and harmonization of efforts. Development Partners for Climate Change (DPCC), comprising governmental and related agencies located in Suva, meet regularly to facilitate coordination of development partner activities in the Pacific related to climate change.

The Pacific Regional DRM Framework reflects the increased national and regional commitment to DRR and disaster management on an 'all hazards' basis and in support of sustainable development. These commitments derive from the Pacific Forum Leaders decision in Madang 1995 and the Auckland Declaration in 2004. The Framework contributes to the implementation of the Mauritius Strategy and the global Hyogo Framework.

As indicated Table 8 there is significant complementarity and congruence between the two regional frameworks, despite the separation indicated in Figure 12. Many of the key players (e.g. donors, NGOs, regional organizations) are involved in implementing both DRM and CCA. The two frameworks have common linkages with the Pacific Plan for Strengthening Regional Cooperation and Integration. On the other hand, at the level of implementation there is considerable separation. This has its origins at the highest levels. The Hyogo Framework, which has been endorsed by 168 governments, is promoted especially by the ISDR system of partners. The objectives and work programmes of many DRM initiatives in the Pacific are strongly guided by the Hyogo Framework and the Pacific Regional DRM Framework, as are the supporting institutional structures. A similar situation exists for climate change initiatives in the Pacific, with these being influenced by UNFCCC processes and funding (through the GEF) and to a lesser extent by the PIFACC. All PICs are Parties to the UNFCCC.

Table 8

Comparison of the Guiding Principles of the Madang Framework and the PIFACC

(source: adapted from World Bank, 2009)

Madang Disaster Management Framework	***Regional Climate Change Framework***
Governance: organizational, institutional, policy and decision-making frameworks	Governance and decision-making
	Partnerships and cooperation
Knowledge, information, public awareness	Education, training and awareness

and education	
Analysis and evaluation of hazards, vulnerabilities and elements at risk	Improving our understanding of climate change
Planning for effective preparedness, response and recovery	
Effective, integrated and people-focused early warning systems	
Reduction of underlying risk factors	Implementing adaptation measures

Figure 12 shows that DRM and CCA are supported by different funding streams, with a single donor often funding DRM and CCA activities separately. An interesting development in this regard are funding proposals currently under consideration for both DRM and CCA. The 2009 meeting of the PCCR called for a study to consider the feasibility of establishing a Pacific Regional Climate Change Fund or funding modality, including assessing the need for a technical backstopping and facilitation mechanism. The meeting requested SPREP to develop a draft Terms of Reference for such a study in consultation with members of the PCCR before they are finalised. It also noted that a similar proposal for setting up a Pacific Adaptation Fund was explored in 2002 – 2003. As part of this earlier initiative there was an extensive feasibility study conducted and the findings of which were the subject of much consultation with member countries, including some high level meetings. The work currently being undertaken by the Asian Development Bank for climate change adaptation within ADB projects in the region will also be taken into account.

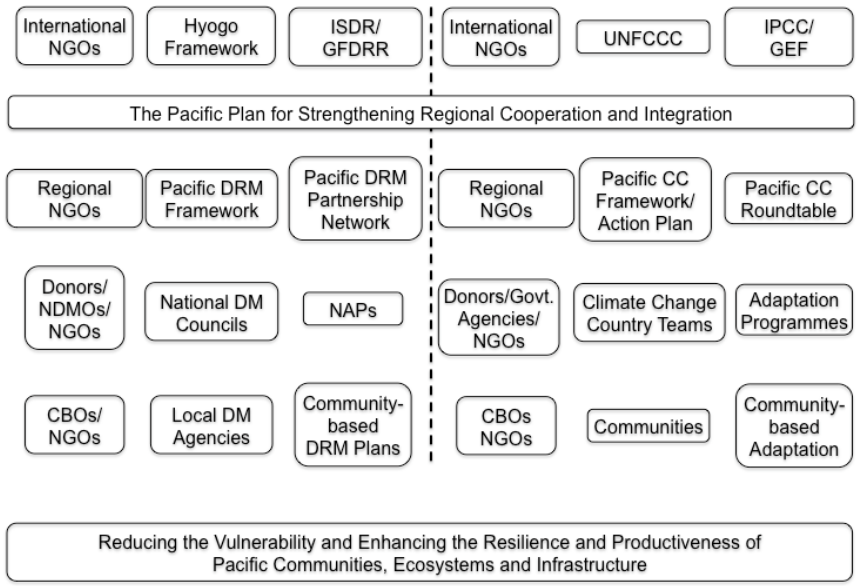

Figure 12. Comparison of DRR and CCA organizational and operational structures, from global through to community levels.

The study will assess the feasibility of establishing a Pacific Regional Climate Change Fund or Facility with the objective of harmonizing donor assistance in this area and reducing the administrative burden and other constraints Pacific island countries are experiencing with accessing and utilizing climate change overseas development assistance. It will further assess the need for a Technical Backstopping Mechanism in relation to the constraints PIC's are experiencing with the development

of project proposals for accessing resources and the administrative and management responsibilities associated with such access. The study will review similar or alternative options available or practiced in the region and elsewhere, especially through a regional approach, including potential linkages with funding mechanisms that already exist. It will also assess the costs and benefits of establishing a technical backstopping mechanism that may provide assistance to PICs in accessing climate change funding. It will explore appropriate institutional and organizational arrangements for identified options. The study will build on the findings of the 2003 feasibility study organized by SPREP and considered by Leaders at their 2003 Forum in New Zealand where they "noted the work that had been done in relation to the concept of a regional adaptation financing facility as of July 2003 and the need for further work and direction to advance this concept further."

A Pacific Disaster Reserve Fund is being considered amongst a range of disaster risk financing options, including the vision that it could potentially provide PICs with a regional vehicle to access immediate post-disaster financing for their recovery and reconstruction activities and as well to incentivise them to invest in DRR. These options are being considered as part of the Pacific Disaster Risk Assessments project which SOPAC is facilitating, with joint funding from the Asian Development Bank and the World Bank. The project is also aimed at developing a regional Geographic Information System exposure database and probabilistic catastrophe risk models to help Pacific Island Countries assess their risks and guide them in implementing disaster risk reduction programmes.

The significant downstream consequences of the historic and current separations described above are highlighted in Figures 13 and 14. With reference to Figure 14, a core indicator of Theme 3 of the Pacific DRM Regional Framework, Analysis and Evaluation of Hazards, Vulnerabilities and Elements, is adopt and apply the Comprehensive Hazard and Risk Management (CHARM) process to assist decision making in disaster risk reduction and disaster management planning. As a result, a key activity of SOPAC has been to assist its member countries in the review of their disaster risk management arrangements. Within most of the new disaster risk management arrangements of these countries, CHARM has been advocated or suggested to be the tool that assists in disaster risk reduction and disaster management planning (SOPAC, 2009d). However, the CHARM methodology is no longer considered the standard risk assessment methodology in the Pacific. It has not been taken up by many PICs (Sikivous, personal communication).

Until recently there has been a substantial and counterproductive disconnect between SOPAC and SPREP in relation to assisting countries address their climate-related risks by implementing DRR and CCA. The two frameworks, and the associated differences in the mandates of these two regional organizations, mean that major opportunities to reduce risks and build resilience on the ground in the Pacific have been missed. The Pacific Plan has done little to help bridge the gap, and neither did the recent Regional Institutional Framework processes. Fortunately, new leadership at both SPREP and SOPAC is now providing a favourable environment for increased coordination and cooperation between the two agencies, especially with respect to DRR and CCA.

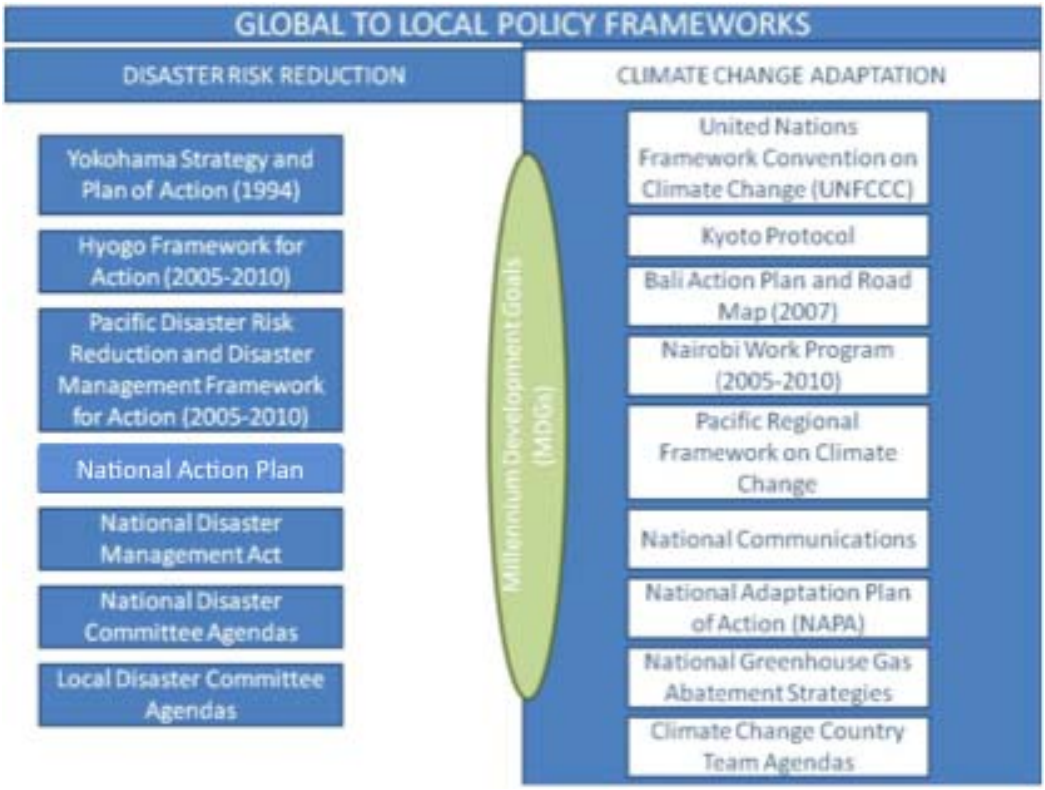

Figure 13. Global to Local Policy Frameworks for DRM and CCA (source: adapted from Gero et al., 2009).

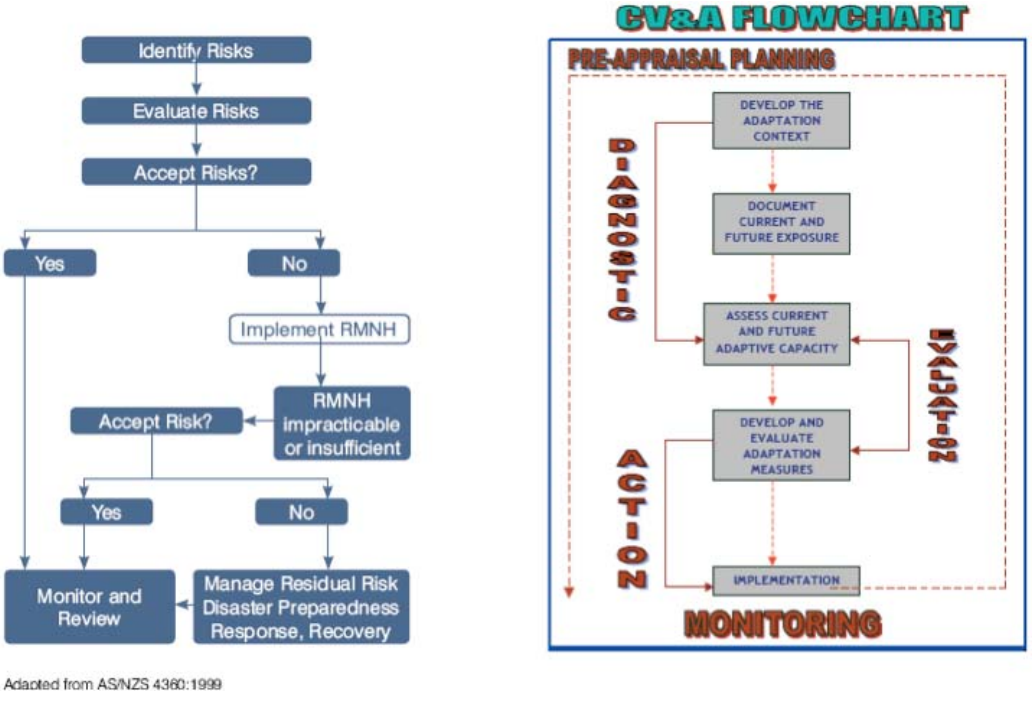

Figure 14. The separate methodologies which have been used in the Pacific for DRM (left) and CCA (right).

However, even at the global level there has been considerable effort recently to bring convergence and gain synergies between CCA and DRR. The UNISDR, the UNFCCC Secretariat and the IPCC have all highlighted the desirability of the two streams working together in a more coordinated and harmonized way, from the global to community levels. But the separate frameworks at the global and regional levels results in distinctive policy, funding and institutional arrangements at all levels, making it exceedingly difficult to achieve convergence at a practical level.

Increased integration of DRM and CCA in the Pacific will require improved functionality of the Pacific Climate Change Roundtable (PCCR) and the Pacific Platform for DRM. The latter is the coordinating institution for the Pacific DRM Partnership Network. Both the PCCR and the Pacific Platform are currently being reviewed, the latter being part of the mid-term review of the Pacific Regional DRM Framework. This is, in turn, part of the mid-term review of the Hyogo Framework.

Hay (2009a) highlighted a widely held view that the PCCR overall, and the meetings which have been held, are largely ineffective in terms of contributing to the intended purpose of the PCCR. This includes it acting as a monitoring and evaluation mechanism for the PIFACC, serving as a coordinating body for activities under the Framework, and sharing lessons learned from best practices in the implementation of climate change and related initiatives. However, there he also noted widespread agreement on the need for greater regional coordination in implementing not only the PIFACC but also the Pacific Regional DRM Framework. As highlighted in Table 2 there are many commonalities between the two Frameworks. The numerous synergies should be exploited in a more considered and comprehensive manner.

As noted above, the recent Regional Institution Framework processes, leading to changes in the region's institutional arrangements for addressing both climate change and natural disasters, also reinforce the need for more effective coordination of CCA, greenhouse gas emission reduction and DRR in the region. The comparable role and comparative success of the Roundtable for Nature Conservation in the Pacific Islands, suggests that a "roundtable" mechanism is a logical way to enhance coordination and provide oversight of monitoring and evaluating implementation of the PIFACC and the Pacific Regional DRM Framework, preparing lessons learned and documenting good practices. The level of investment in climate change, including reducing the risks of climate-related disasters, as well as the multiplicity of partners and implementing agencies, highlight the need for improved oversight of implementation of the PIFACC as well as improving coordination and harmonization at the project level.

Hay (2009a) noted that the timing and locations of the PCCR and Pacific Platform meetings are generally determined by the availability of funding, often related to a offer from a country to host a meeting. Hence arrangements are largely reactive and not necessarily optimum in terms of timing, location and logistic arrangements. A more desirable approach would be to hold the PCCR and Pacific Platform meetings at the same location, and with reasonable overlap in terms of timing, allowing the opportunity for a small number of joint sessions and the convening of joint working groups. Even more benefits would arise if these meetings were held back-to-back with another event linked to a climate or DRM theme. The PCCR meets bi-annually while the Pacific Platform meets annually. This suggested arrangement would allows the Pacific Platform flexibility regarding meeting location and timing in the intervening years.

An example of international support for DRM in the Pacific is the mobilisation of funding and technical support under the agreement reached between the ACP/EU

Natural Disaster Facility of the 9th European Development Fund. The European Union and ACP Secretariat concluded a Contribution Agreement with SOPAC in May 2009. The 4-year Facility has been established to adopt a coherent approach to assist Pacific ACP states to effectively build their resilience to the long-term impact of natural disasters through the development and strengthening of regional and national DRR and disaster management activities. The Facility will support the development and implementation of Disaster Risk Management National Action Plans consistent with the Madang Framework. The Facility will also enhance development decision-making in Pacific countries by strengthening the capacity of a DRM web information portal, the Pacific Disaster Net. SOPAC will work in close coordination and cooperation with other members of the Pacific DRM Partnership Network to provide support to Pacific ACP states through this Facility. The responsibility for the Facility within SOPAC rests with its Community Risk Programme.

As indicated in Figure 12, the GEF is a major source of adaptation funding for the Pacific. It supports adaptation interventions at the community level, as well as nationally and regionally, within an overall programmatic approach termed the GEF Pacific Alliance for Sustainability. As noted previously, the main adaptation effort in the Pacific is now focused on national and, more especially, community implementation. Even the recently commenced Pacific Adaptation to Climate Change (PACC) Project focuses on national and more local activities that will reduce risks to the sustainability of national and sectoral development initiatives arising from climate change. The Project is the de-facto regional adaptation programme, considering its size, comprehensiveness and regional scope. It is now the main means to share practical adaptation experience, as well as to pool related expertise and leverage other initiatives.

PACC implements a framework of action that fuses the top-down (mainstreaming) and bottom-up approaches to climate change vulnerability assessments and action. This is an important development, regionally as well as globally. Most other adaptation projects have pursued only one or other of these two complimentary approaches. The dual approach of PACC encourages and facilitates new modes of action that are consistent with community, sectoral and national priorities and plans. Specific measures to reduce vulnerabilities of key investments are being implemented in the form of demonstrations, including implementing specific measures to address anticipated climate change risks for priority development areas through policy interventions and capacity support. Regional support is being provided by backstopping countries in relation to technical capacity building, financial administration and meeting other support requirements.

The PACC Project has decided to use the Pacific Centre for Environment and Sustainable Development (PACE-SD) Integrated Assessment and Action Methodology for Climate Change, Disaster Risk Management and Sustainable Development. Explicit links between CCA, DRR and sustainable development are explored by this methodology. As such, it is an excellent initiative to role out an integrated tool on a regional scale. In addition, PACC country-level projects will enhance and build on existing frameworks rather than waste time to develop a new framework. However, further development of the methodology will be required due to the diversity of specific situations in which it will be used (Hay, 2009b).

5. Evaluation of Climate Change Interventions Supported by UNDP

The aim of this section is to report on an analysis of available information on how national climate change priorities have been addressed by countries with the assistance of UNDP.

The assistance provided by UNDP to PICs can be seen in the context of the overall regional effort to address climate change. Hay (2009b) reports on the findings of an analysis in which information provided by countries, development partners and other sources was merged into a single database covering the period 1991 through to 2009. Every reasonable effort was made to ensure the database was complete, up to date and consistent. Given the nature of the original information sources all information is input focused. This represents a major constraint on any analysis. The database contains information on 499 projects implemented between 1991 and 2009, with a total value of USD 1,860 million. There are significant information gaps despite the database being derived from a large number of information sources.

The number of projects has increased rapidly in recent years while the average duration of the projects has decreased slightly[2]. However, calls for a programmatic approach have gone largely unheeded, the one notable exception being the Global Environment Facility's Pacific Alliance for Sustainability. On the other hand, the average value of a project has increased slightly, though the trend is obscured by large deviations in individual years. In recent years there has also been a rapid growth in the thematic diversity of projects. There has been a move away from multi-sectoral adaptation projects to those with a sector focus. Management of climate-related disasters has received increasing attention over time, while the number of capacity building projects has remained relatively high. Greenhouse gas mitigation efforts have focused on investments in renewable energy, with some action on energy efficiency in recent years. Sustainable transport has received minimal attention. Australia and the UN are key development partners in relation to assisting Pacific island countries to address climate change, but a variety of agencies implement climate change and DRR projects in the region (Table 10). But often there is more than one source of funding and more than one implementing agency. The data in the table reflect the principal funding source and the highest level implementing agency.

Table 10

Principal Sources of Project Funding for Projects (1991-2009)
(source: Hay, 2009b and present study)

Principal Funding Sources	Number of Projects	
	Funded by	Implemented by
Australia	96	50
UNDP	56	80
European Union	49	24
New Zealand	44	22
Global Environment Facility	40	0
Asian Development Bank	35	32
FAO	26	22
Japan	24	13
Other UN Agencies	23	20
World Bank	13	26
SOPAC	N/A	77
Governments	N/A	37
SPC	N/A	16
SPREP	N/A	14
USP	N/A	12
Red Cross	N/A	11
Oxfam	N/A	9
WWF	N/A	5
FSPI	N/A	5

[2] Selected results of the analysis, in the form of diagrams, are presented in Annex 3.

Table 11 presents the breakdown of the 80 projects implemented by UNDP between 1991 and 2009. These had a total value of USD62.5 million. The majority of projects, by far, had a renewable/sustainable energy focus (31 projects), with the next most common categories being adaptation (22 projects) and support and capacity building (22 projects). Somewhat understandably, the adaptation projects focussed on the coastal sector (7 projects) and DRR (6 projects).

Table 11

Number of UNDP Implemented Projects by Thematic Category and Sector
(source: present study)

Thematic Category	Sector	Number of Projects
Support & Capacity Building	Multi-sectoral	22
Adaptation	Multi-sectoral	4
	Food Security	1
	Water Security	0
	Health	2
	Coastal	7
	Infrastructure	0
	Policy Mainstreaming	2
	Disaster Risk Reduction	6
Mitigation and/or Adaptation	Land Management	1
Mitigation	Energy Efficiency	3
	Renewable/Sustainable Energy	31
	Sustainable Transport	1
Total		80

The above analysis is totally input focussed, due to the nature of the databases that have been compiled by international and regional agencies. In order to provide some insight into the outputs and outcomes of these activities, more detailed analyses were conducted for the four pilot countries, the Cook Islands, Fiji, Palau and Vanuatu. Relevant multi-country and regional projects are included in the national numbers. The results are summarized in Table 12.

Table 12

Detailed Analysis of Findings for the Four Pilot Countries

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

<table>
<tr><td></td><td></td></tr>
<tr><td rowspan="2">Fiji</td><td>
<table>
<tr><th>Support/CB</th><th>Adaptation</th><th>Land Mgmt</th><th>Mitigation</th></tr>
<tr><td>8</td><td>11</td><td>1</td><td>11</td></tr>
</table>
Since ratifying the UNFCCC, policies adopted in successive Development Plans, prepared with UNDP support, have recognized the critical importance of managing the environment and natural resources, to ensure social and economic prosperity in the present and for the future. The implementation of these policies, however, has not been adequately supported with the required budget.
UNDP has supported development of container deposit legislation and sustainable solid waste management in Suva. The aim of the assistance is to help establish a sustainable recycling system in Fiji. This is a pilot study for implementation in other municipalities of Fiji. Container Deposit Legislation puts in place a system of deposits and refunds to give a financial incentive to consumers and industries to recycle containers and that complements the existing regulations, passed by Cabinet The assistance will also help establish a solid waste management facility, and associated collection arrangement within Suva, increase public awareness of the environmental degradation due to waste, prevent further degradation of the environment within the Suva City Council area, reduce the volume of waste being disposed of, and hence extend the life of the Naboro Landfill, generate employment, inclusive of women, and increase the capacity of the local City Council to handle solid waste management issues.
Fiji's Draft National Action Plan on Combating Desertification was completed in 2006. The development and approval in 2006 of the National Energy Policy by Cabinet provides a common framework for both the public and private sector to work towards the optimum utilisation of energy resources for the overall growth and development of the Fiji economy.
Country specific assistance provided by UNDP includes recovery following severe floods in western, central and northern divisions. UNDP proposes to use TRAC 3 funding to provide support and contribute to the government efforts to undertake technical needs assessments following the disaster and to help formulate a transitional recovery plan.
Assistance has been provided by UNDP to help Fiji develop capacity to monitor, evaluate and communicate climate change adaptation. Benefits of the ongoing community-based climate change adaptation initiative includes strengthening of the monitoring, evaluation and communications component. The assistance supports efforts towards internalizing climate change adaptation within rural communities of Fiji and enabling the replication of best practices from the six pilot sites to other rural communities through mobilized resources using cost-sharing arrangements with UNDP, or parallel funding.
Other assistance includes promoting sustainability of renewable energy technologies and renewable energy service companies, Fiji bio-fuels, piloting climate change adaptation to protect human health and capacity building for sustainable land management. The overall objective of last area of assistance is to minimize land degradation and improve agricultural productivity through better land use planning, sustainable land management technology transfer and promotions through increased awareness and training.
Support has also been provided for UNFCCC enabling activities and a national capacity self assessment. The latter project assessed Fiji's capacity to address global and local environmental issues and plan for implementing key activities to achieve capacity building needs identified through a country-driven consultative process that takes into account Fiji's obligations under the three global conventions on biodiversity, climate change and desertification/land degradation. The findings provide national decision-makers and funding agencies with essential information about Fiji's specific capacity needs to meet its international environmental obligations.
UNDP has provided assistance to review Fiji's MDG Reporting process use the findings to improve the next round of process, contents, quality and utility of Fiji's National MDG Report 2009. The second National MDG Report will allow Fiji to review its progress to date and what it needs from 2010 onwards to achieve its 2015 MDG targets.
The Fiji National HIV/AIDS Spending Assessment, funded by UNDP, provides a more systematic approach to HIV resource management, monitoring and expenditure tracking through the introduction of a National Aids Spending Assessment. This is a comprehensive and systematic resource tracking methodology used to determine the flow of resources intended to respond to HIV and AIDS in a given country.
The National Initiative on Civic Education has also been supported by UNDP. The major objective is to create an informed, responsible and active citizenry through information, advocacy and awareness raising amongst the adult population of the principles and institutions of democratic governance in Fiji. It also facilitates the participation of people in public policy development through empowerment and organization of public debates, discussions, and consultations.
The Human and Civic Education in Schools project is being implemented with UNDP assistance. It will assist in the development of a human rights and civic education curricula; develop relevant teaching and learning resources and train teachers for teaching of the new curricula.</td></tr>
<tr><td rowspan="2">Palau</td><td>
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<tr><th>Support/CB</th><th>Adaptation</th><th>Land Mgmt</th><th>Mitigation</th></tr>
<tr><td>6</td><td>7</td><td>0</td><td>9</td></tr>
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UNDP has provided country-specific support for two projects, capacity building for sustainable land management and sustainable economic development through</td></tr>
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	renewable energy applications. All other support has been through multi-country or regional projects. UNDP has assisted Palau to prepare and implement sectoral and national plans and sustainable development strategies aligned with the MDGs and linked to national budgets. National statistical information systems and databases have been established, strengthened (to support information systems), upgraded and harmonized. They focus on demographic disaggregated data and poverty indicators. UNDP as also helped Palau to improve the capacity of the Parliament of Palau as well as strengthen its systems to enable the efficient and effective performance of oversight, accountability, legislative, representative functions and roles. This includes improved capacity for equitable representation and participatory democracy through civic and human rights education. Increased use of feasible renewable energy technologies has also occurred as a result of UNDP assistance. This has included establishing a national policy and programme for renewable energy, increase investments in renewable energy at the utility level and increased application of renewable energy at household and village levels. UNDP has assisted Palau to develop the capacity of government officials to be able to carry out projects that will help eradicate land-induced poverty, especially in rural development agendas. The assistance is also directed at enhancing the National Action Plan for Sustainable Land Management and completing a medium-term National Investment Plan and its coordinated Mobilization Plan.
Vanuatu	**Support/CB** | **Adaptation** | **Land Mgmt** | **Mitigation** 6 | 7 | 0 | 7 UNDP was one of the sources of support for preparation of the DRM National Action Plan for Vanuatu. UNDP also assist Vanuatu by assessing current capacities and needs for DRR and helping to build DRR and DM into the PAA. In 2005, the Government, recognising that the current PAA does not fully address disaster risk reduction and disaster management issues and challenges, requested the UNDP and other development partners to help develop a supplementary PAA on DRR and DM, to complement the current PAA, 2005-2007. The draft supplementary PAA focuses on an additional strategic priority of 'Safety, Security and Resilience' of Vanuatu. DRR and DM considerations also need to be reflected in the national Vision, Medium Term Strategic Framework and the Strategic Priorities. The necessary changes are included in this supplementary PAA, together with a detailed strategic priority on 'safety, security and resilience'. The Building Resilient Communities Towards Effective Governance Project, supported by UNDP, assists Vanuatu to have an effective and inclusive governance system, creating accountability to communities for performance by government, with particular focus on the provision of essential services, including DRM strengthened/established; local participation in decision making, involving traditional leaders/chiefs, church, women, youth, indigenous communities facilitated; access to information and communications technologies by communities to enable civil society, particularly the poor and disadvantaged to participate fully in discussions that affect their lives, promote better understanding, peace and stability provided and coordination and central-provincial-community linkages for better service delivery to populations in greatest hardship particularly isolated rural/island communities improved. UNDP has assisted Vanuatu to prepare both is First and Second National Communications to the UNFCCC. All signatories to the UN Framework Convention on Climate Change (UNFCCC) are required to prepare a National Communication comprising three major elements: a national greenhouse gas inventory, abatement analysis, and vulnerability and adaptation assessments. MDG support provided to Vanuatu by UNDP aims to support to Vanuatu in the country's achievement of the MDGs through MDG-based planning and costing and targeted capacity building and updating of their National MDG Report in 2010. This includes scoping, initiating and maturing; and focus on the review/development of national development planning and budgetary processes and the links to sector strategies; prioritisation of activities and budget allocation; better linking of aid coordination and management with national priorities; and strengthening information system for monitoring the effectiveness of national planning and budget implementation at the national, sectoral and local levels; as well as monitoring and reporting. The programme of support would be led by the Government and facilitated by UNDP in coordination with other organizations of the United Nations system and development partners. The Sustainable Land Management Project, also supported by UNDP, will strengthen local and national capacity for sustainable land management, including completion of a National Action Plan for combating land degradation; capacity building and strengthening legislative and policy frameworks; mainstreaming into national development strategies and policies; and the development of a Medium Term Investment Plan and its Resource Mobilization. The project is collecting, acquiring and generating land resources information and raising awareness of land administrators and

	users of better land use management technologies through research, technology transfer, training, generation and compilation of reliable data. The project is strengthening and reinforcing institutional capability, providing a basis for comprehensive national land use planning and initiate practical on-farm sustainable land management technologies. UNDP supports sustainable energy interventions, with emphasis on improving cooking and lighting conditions, health, financial savings and community participation. Key activities include site survey and awareness raising (quantity of livestock, current cooking and lighting conditions, health related cases, household income, promotion of renewable resources, project benefits) and the purchase of equipment and materials, construction (installation of at least one bio-gas digester, animal shed, piping methane gas distributor) and commissioning (testing of system). The Vanuatu Solid Waste Management Project, supported by UNDP, aims to establish a sustainable recycling system in Vanuatu and raise the environmental awareness of ni-Vanuatu. The initial phases of the project evaluates the logistics, costs and feasibility of establishing solid waste management facilities in Port Villa and Luganville in Vanuatu. Trade integration and capacity building is being supported by UNDP. This project is to facilitate institutional reform, address appropriate policy and national capacity needs in context of evolving trade reforms and poverty/human development needs in Vanuatu and to strengthen the delivery mechanisms of services and functions of the Cooperatives Department in the six provinces, in particular those of microfinance and entrepreneurship development. The project also aims to facilitate and improve the trade facilitation role of the Customs department through legislative reforms and enhanced space capabilities. The Biodiversity Project supported by UNDP focuses on strengthening local resource management initiatives by traditional landholders, chiefs and their communities and to strengthen local, provincial and national capacity to support local biodiversity conservation activities. The work refines strategies to enable Vanuatu to achieve biodiversity conservation objectives given traditional land and resource ownership.

6. Practical Lessons Learned

The practical lessons learned cover both the success factors and the importance of barriers to increased integration.

6.1 Success Factors

The foregoing assessment and analyses led to identification of several factors that can contribute to greater integration of CCA and DRR in policy, planning and implementation.

Practical Reasons for Encouraging Greater Integration

For capacity-constrained national entities, giving priority to mainstreaming processes working in an integrated way can help ease the burden of programming development assistance. For example, this will happen if finance and planning ministries and planning ministries are committed to taking an integrated approach to national planning through budget processes and aid coordination. Ensuring there is a mechanism in place which increase the chance that community needs to reduce vulnerability and enhance resilience are reflected in the operational plans of government ministries and departments, as well as in the work plans of relevant international agencies, will also assist integration.

It is preferable to have a single government agency responsible for CCA and DRM. It, or both agencies if such an arrangement is not possible, is best located within an influential ministry and should be adequately supported, financially and in other ways. The shared development, use and maintenance of comprehensive national databases on past, current and planned DRR and CCA activities can facilitate the implementation of integrated approaches, including the through the learning and other information they generate. But these databases need to be kept up to date and

be highly accessible to all relevant parties, both within and outside government; this can help promote joint planning, assessments and other activities and also feed into a similar regional database.

Approaches that Facilitate Integration

Risk management is an integrating concept that explicitly helps bring together the different time-dimensions of DRM and CCA, including ongoing and future changes in risks, as well as uncertainties. Thus a risk management approach ranges from preparedness and disaster mitigation to broader adaptive activities related to livelihoods, natural resources management, as well as migration and human security and conflict prevention. A risk-based approach also facilitates objective and more quantitative methods, including cost benefit analyses that evaluate the incremental costs and benefits of interventions and prioritize options.

At a practical level, integrating DRM and CCA in this way focuses efforts on reducing both present and future risks related to climate variability and extremes - in many instances current levels of climate risk are already unacceptably high. Moreover, adapting to current climate extremes and variability is an essential step to being able to withstand the pending changes in climate, while also preventing precious financial and other resources being squandered on disaster recovery and rehabilitation.

Integration of DRM and CCA is further facilitated when there is a clear understanding of the scientific, financial and socio-economic arguments for such integration, as well as how best to reflect this understanding in relevant policies, plans and actions. Natural disasters, while undesirable, do provide a benefit of a learning opportunity for DRM and CCA, including quantifying the relative costs and benefits of DRR. At these and other times, central and local government officials can engage with communities and assess opportunities and the need for more integrated approaches to CCA and DRR.

As has been shown, CCA and DRR activities take place at many levels. Therefore, initiatives need to be linked across the full range of time frames, spatial scales and sectors. In the Pacific an approach that has proven to be effective includes a mix of top-down national and sectoral capacity building to strengthen the enabling environment, such as by climate and disaster proofing policies, plans and regulations and mobilizing financial resources, and bottom-up project implementation which reflects the fact that in the Pacific much CCA and DRR takes place at the local level – in communities, households, businesses etc.

Experiences from the Pacific (see, for example, Lane and McNaught, 2009) clearly show that efforts to work with communities to generate gender-sensitive responses to and strategies for addressing climate change are more successful when they involve a number of responses from a number of partners. It is also vital that these multi-stakeholder responses be well coordinated. Success also depends on recognition that climate change is a dynamic process, and that the men and women of the Pacific are not victims of climate change, but active agents; through their own gendered knowledge and actions, individuals, households and communities can exacerbate or minimise the likely impact of weather and climate extremes. Development practitioners need to both understand the gendered knowledge and actions of individuals, households and communities and develop the confidence of people at community level to meet the challenges that climate change represents (Lane and McNaught, 2009).

A more integrated approach should include identification and exploitation of the co-benefits between CCA, DRM, development, and environment protection, and focus on maximizing the benefits of taking a no regrets approach. The small size, and highly integrated nature and sensitivity of Pacific island economies, societies and natural ecosystems make this a priority. For these and other reasons development assistance partners who are active in both DRR and CCA take a strong position to advocate for the integration of DRR and CCA programming and ensure they follow up on every opportunity do so in their own programming.

Addressing Capacity Constraints

As has been emphasised, PICs face significant capacity constraints, in all facets of CCA and DRM. These become even more apparent when there is a move towards integrating CCA and DRR. There are significant barriers to increased integration. Countries and individuals need to be provided with the added knowledge, skills and motivation to overcome them. They also need to be empowered, which therefore calls for the strengthening of the enabling environment so it supports a more integrated approach.

Capacity building needs to be seen as an ongoing, but evolutionary process which involves developing the capacity of all ministries, sectors and communities to carry out DRR and CCA activities, jointly wherever possible and practical. Capacity building is much more than training. It also includes development of tools and institutional systems and processes.

Strengthening the enabling environment, as well as the capabilities of individuals, will also help increase the absorptive capacity – the ability to make efficient and effective use of development and other external assistance provided to countries and sub-national entities such as communities.

6.2 Important but not Insuperable Barriers to Greater Integration of CCA and DRR

The main barriers include the two separate, and well-established regional frameworks for DRM and climate change in the Pacific. These are supported by their associated international agreements and institutions. The regional frameworks and their related international agreements have given rise to separate regional and national institutional arrangements, policies, action plans as well as two separate regional networks - the DRM Pacific Platform and the PCCR; the pervasive nature of the separation generates enormous resistance to change.

On top of this, the frameworks and agreements are, in themselves, insufficient to coordinate the efforts of many individual government agencies and development partners. A more systematic whole-of-government and whole-of-country approach to both planning and implementation is required, with a balance between pre-determined activities and adaptive approaches. The latter is better able to accommodate learning and surprises but requires well-developed monitoring, reporting and evaluation procedures. This is a major challenge for Pacific island governments and other players, requiring substantial effort to ensure a strong enabling environment.

A widely held view amongst many development practitioners is that increased emphasis on DRR and CCA does not add value to their work, even when an integrated approach is taken. This is because Pacific communities and ecosystems, especially, have a high inherent resilience and a long history of coping with extreme

events and variability, as well as long-term, systematic changes. While strongly held, such views ignore the growing vulnerability of both human and natural systems due to a increasing number of stresses on these systems, with many of the stresses escalating over time, and expected to do so into the foreseeable future. The reality is that many development practitioners seem unaware of the hazards that communities may face in the future. For example, few understand that intense rainfall raises groundwater levels and triggers landslides and fewer still understand storm surges and the likelihood that these will become more frequent and more damaging in the future.

Quantifying the benefits of a particular initiative to reduce climate-related risks is very challenging, especially when working at community level where a subsistence economy dominates. Another example is measuring in economic terms the human suffering avoided by preventive measures such as the allocation of an additional 10% allocation to the budget in order to make a hospital disaster-resilient and climate proof. Often the benefits of prevention go unseen and unappreciated, while disasters win sympathy and immediate responses nationally and from across the world. To promote DRR and CCA the case needs to be made in economic terms. Although efforts have begun to close this gap, this remains an important challenge.

In a summary of the key emerging good practices, lessons learned, challenges and opportunities related to reducing disaster risk that is applicable for adapting to climate risk and extreme events, the UNFCCC (2009) noted development of national adaptation strategies represents an important opportunity to integrate DRR and CCA, as has been achieved in both Tonga and FSM. However, the reality is that more human and financial resources are expended in response to crises rather than in their prevention, and much energy is spent on shifting blame. Political interest in natural hazards is at its highest during and shortly after a disaster — when it is too late, although a commitment to “build back better” can help salvage some of the lost opportunities.

Funding for prevention measures and preparedness is hard to come by when there has not been a devastating cyclone or prolonged drought for a while, even though prevention is much more cost-effective. In a crisis, policy-makers are under pressure to be seen to be doing something. Poorly conceived or expensive initiatives are announced and enacted, sometimes with unintended consequences. Then initiatives are quietly forgotten as the crisis declines and political agendas move on. Successful DRR is rarely noticed. Only failures and disasters hit the headlines and gain political attention. It is much harder to demonstrate that economic losses have been prevented and lives saved than to count deaths and debts.

7. Building Capacity for Integration, and for more Effective Implementation of Integrated DRR/CAA Interventions

Most practical initiatives incorporating CCA and DRR take place at the individual level – a person, a family, a community, or a business enterprise. Singly and collectively they need to be equipped and empowered with the knowledge, skills, tools and financial and other resources necessary to work efficiently and effectively. Governments and their development partners play an important role by helping to ensure that the necessary capacity exists. But this requires a high level of coordination and integration between levels of government, something that is often lacking. The consequences of poor coordination are often exacerbated by poor communication between governments and local communities. Moreover, CCA and DRR initiatives are frequently undermined or rendered less effective by a lack of political will, insufficient funds, or the absence of expertise or guidance. Government

officials need to develop a supportive and productive rapport with community leaders in order to achieve timely and efficient flow of information and assistance.

Governments need to ensure that the assessment activities and relevant scientific institutions are well funded, that they act on the advice with informed decision making, and that hazards remain on the agenda at all times. Short-, medium- and long-term action is required to help reduce the current and future risks and vulnerabilities of different groups and communities. This action requires strengthened capacities, greater awareness and information, better targeted and more effective policies, and increased financing.

Structures should be built that allow long-term provision of scientific advice, and analysis of hazards, risks and mitigation strategies in between disasters. For example, finance ministries need to be shown that the costs of adaptation, while appearing large, are actually much lower than the damages that will be suffered without adaptation, as shown by Stern (2007). Rigorous economic studies are needed to back up these assertions at national (or sub-national) levels, where budgets are actually set. When undertaken to a high professional standard, environmental impact assessments and public consultations that address weather- and climate-related risks can greatly improve the quality of projects – and even save money. Unfortunately many development practitioners still consider such activities as 'obstacles' to be overcome, rather than value adding.

There is an urgent need for cooperation between social and natural scientists, as it is human activities, infrastructure and behaviour that control vulnerability and can turn hazards into risks, resulting in major disasters. Both DRR and CCA need to expand beyond specialist/academic circles to be mainstreamed into all development work. Experts in both fields need to raise awareness of DRR and CCA outside a small group of specialists, using a language that their counterparts in infrastructure, finance, agriculture and other line ministries understand. DRR and CCA specialists need not only to explain risks to other development actors, but also to propose practical responses. These should focus on 'no regrets' measures – actions that deliver benefits, even under today's climatic conditions. It is important to show that disaster and climate resilience represent good value, and that they help – not hinder – national development. At the same time it is important to avoid mal-adaptation – for example building structures that are too expensive for communities to maintain, and which actually increase risks when they fall into disrepair. The best responses need not be expensive – and are frequently based on indigenous knowledge that has been neglected by 'progress'.

8. Good Practices for Integrating CCA and DRR

The integration of DRR and CCA brings together individuals working in the fields of socio-economic development, humanitarian assistance, climate risk management and DRR. As noted above, there is an urgent need to develop a common language and understanding between these groups. Effective communication is a prerequisite to coordination and harmonization. One impediment is the way in which weather and climate change information is packaged, delivered and presented. Often it is not immediately usable in everyday decision-making that shapes the lives, livelihoods and responses of ordinary people to climate extremes, variability and change. Packaging and communicating information in the local context and vernacular, and facilitating interaction between communities and other actors to increase awareness, understanding and responsiveness are vital preconditions for more successful integration of DRR and CCA.

More emphasis should be placed on bottom-up approaches that combine DRR and CCA. In this respect, CBA and CBDRM are already showing considerable success in the Pacific, as is ecosystems-based adaptation. Use of existing social networks to integrate adaptation and risk reduction into ongoing development efforts is also proving effective at the community level. Grounding policy at the local level cannot be done by international and regional organizations, but rather must be owned by local civil society. Practice should influence policy. In this respect, local-level case studies are useful in informing the development of higher-level policies, including national climate change strategies and sectoral climate change policies. The use of such procedures helps to overcome the trust and confidence gap between communities and central government.

There is, however, a need for resources to follow the delegation of any responsibilities to local levels. This will require decisions on the allocation of assets to be made at the local level, through semi-formal decision-making processes. As a result, new funding models and incentive structures need to be explored. Local monitoring frameworks for vulnerability and resilience tracking and reporting will also be required. Increased accountability of both government and NGOs vis-à-vis communities and donors is critical to long-term effectiveness – and can only be achieved by improving both transparency (i.e. giving an account of: decisions, information etc.) and responsiveness (i.e. taking an account of: communities perspectives etc.). An effective way to increase transparency and responsiveness is to establish, at the local level, an independent monitoring function for development plans and budgets that include DRR and CCA, with strong participation from at-risk groups, and from civil society at large.

At the national level, the process leading to the preparation of a NAPA has been found to be a successful way to integrate adaptation into national development plans. Selection of the NAPA priority projects is always consistent with national poverty reduction goals, while the completed National Communications to the UNFCCC, along with the NAPAs, have allowed planning decisions to be based on a sound knowledge of climate change and its potential impacts. Funding for NAPA preparation has been available to Least Developed Countries only. But the success of the NAPAs has resulted in many other countries preparing a national adaptation plan, or similar

The scaling up of CBA and community-based disaster risk management (CBDRM) projects has been facilitated by the creation of partnerships with local community groups and the use of local development plans. Strengthening institutions at local and central government level, and the sharing of information and experiences through district- and national-level networks, also contribute to the up-scaling of project outcomes.

Recent experience with both CBDRM and CBA has highlighted that people-centred strategies are more cost-effective for reducing weather and climate-related disaster risk, and can be more equitable than large-scale structural measures. People-centred strategies that enhance access to, and understanding of, information and promote livelihood diversification are more likely to provide a robust defence against a number of stresses, not just those related to extreme weather and climate events.

Successful reduction of climate risks requires close interaction and coordination across relevant institutions. This is facilitated by advocacy and leadership by the overseeing ministries, such as those concerned with finance and planning, as well as specific mechanisms such as interdepartmental committees and joint planning to systematically link policies on CCA and on DRR. CBA and CBDRM will be effective

only if communities, civil society (including private sector, academia) and governments work in real partnership. These partnerships ensure that resources and skills are pooled, thus optimizing outcomes. Developing these partnerships requires an enabling environment for participation, and significant investment in capacity-building and resourcing of local government.

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

Figure 14 showed that in the Pacific the current separation of CCA and DRM includes the use of separate tools to assess climate and other risks and identify the most appropriate way to manage them. More integrated approaches have been developed. These include Vulnerability and Capacity Assessment (VCA) (Figure 18), a set of tools developed by the International Federation of Red Cross/Red Crescent to help communities assess and address the risks they are facing.

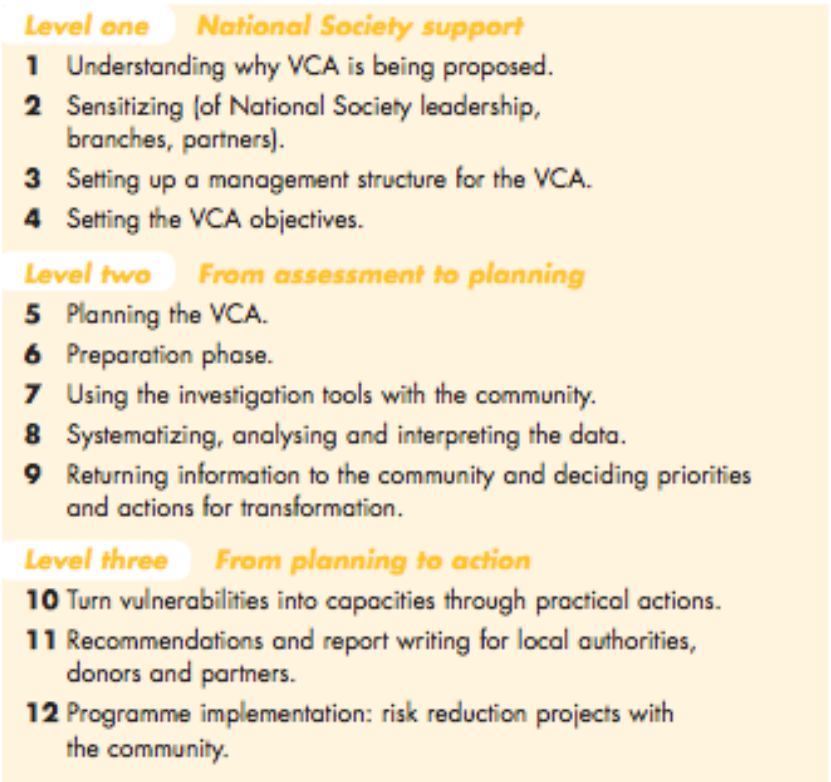

Figure 18. The steps of the Vulnerability and Capacity Assessment approach (source: International Federation of Red Cross and Red Crescent Societies, 2006).

CARE has developed the Climate Vulnerability and Capacity Analysis (CVCA) methodology, based on a framework of "enabling factors" for CBA (Dazé et al., 2009). CARE's approach to CCA is grounded in the knowledge that people must be empowered to transform and secure their rights and livelihoods. It also recognizes the critical role that local and national institutions, as well as public policies, play in

shaping people's adaptive capacity. By combining local knowledge with scientific data, the process builds people's understanding about climate risks and adaptation strategies. It provides a framework for dialogue within communities, as well as between communities and other stakeholders. The results provide a solid foundation for the identification of practical strategies to facilitate community-based adaptation to climate change.

8.1 Role of the Enabling Environment

The critical role of the enabling environment in achieving more integrated implementation of CCA and DDR is illustrated in Figure 16, using a risk-based approach to adaptation in order to harmonize DRR and CCA as much as is practicable and desirable. This is regardless of whether the initiatives are at community of national level. But at national level, governments in particular have the important responsibility of ensuring a strong enabling environment, as well as benefiting from that enabling environment when undertaking CCA and DDR measures themselves. As indicated in Figure 16, a critical aspect of the enabling environment and a foundation for knowledgeable decision making is to have access to relevant hazard information. Thus national meteorological and hydrological services have an important role to play ensuring access to reliable and long-term natural resource data.

The responsibility of government to ensure a strong enabling environment is of critical importance to communities since this is where most CCA and DRR activities are focused. Communities will see more value in pursuing an integrated approach if it is already reflected in national and sectoral development policies and plans. Communities will benefit from a more coordinated and harmonized approach that is consistent across all government agencies. Governments can help ensure that communities are equipped with the requisite knowledge and skills required to support decision making and implementation, and have access to proven technologies which are consistent with their needs and values.

Figure 16. Policy framework for CCA and DRR, made possible though a risk-based approach to adaptation.

Few et al. (2006) have used examples from Mexico, Kenya and Vietnam to provide insights into how a more integrated approach to DRM and CCA can contribute to sustainable poverty reduction and other development outcomes. Main emphasis In the analysis was placed on institutional capacity as well as on constraints and

opportunities within the policy process. Thus while the three countries are very different to any of the PICs, the focus on institutions and policies makes their work exceedingly relevant to the current study.

Figure 17 summarizes their findings in terms of commonalities in enabling factors in the implementation of integrated DRM, CCA and poverty reduction. The findings highlight the importance of incorporating livelihood resilience, information packaging, communication, coordination, financing and supporting an enabling environment.

8.2 Entry Points

Few et al. (2006) also show that a key step in demonstrating through operational work that DRR addressing climate change is possible and beneficial is to find relevant entry points that can showcase how action is feasible and worthwhile, building on current capacity (Figure 17). These entry points can also be used to show how benefits can be linked to current vulnerabilities and to high-level policy goals such as poverty reduction strategy targets and the MDGs.

Environmental and health impact assessments are effective entry points for inter-sectoral cooperation on DRR and CCA. As they are typically high policy priorities, assessments and activities designed to enhance food, water and human security also provide useful entry points as all are sensitive to climate change and are usually important dimensions of natural disasters. Holistic but practical and locally-focussed approaches, such as an ecosystem-based planning, also provide excellent opportunities to promote the integration of DRR and CCA.

Other relevant entry points include:

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

9. Self Assessment Tool

The self-assessment tool presented below is intended to be used by countries, and specifically by DRR and CCA managers and their teams, on a regular (e.g. annual basis to assess progress in understanding, policy making, programming, institutional strengthening and delivery of practical outcomes for the target beneficiaries of DRR and CCA. The focus of the assessment is on policy design and institutional effectiveness.

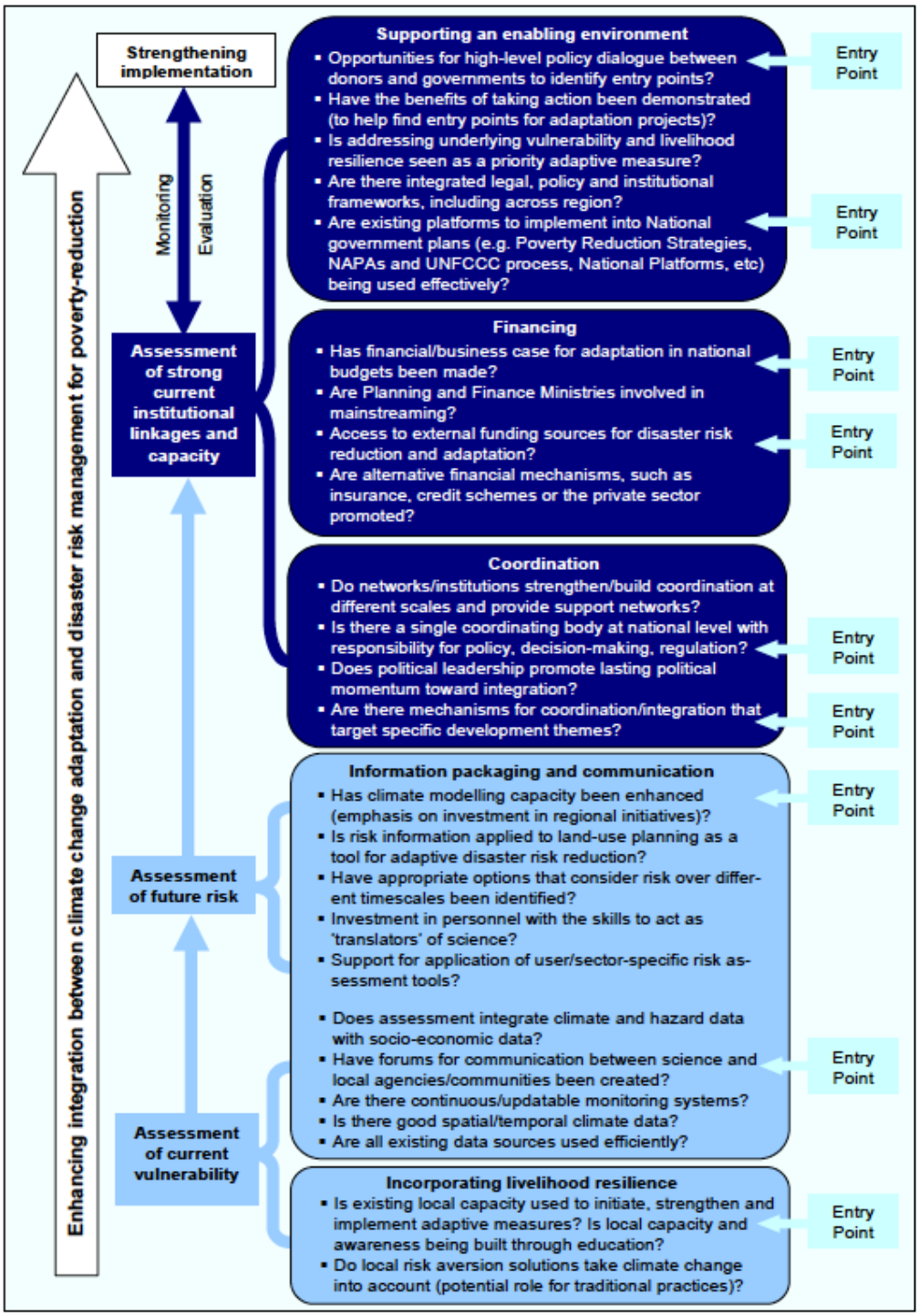

Figure 17. Commonalities in enabling factors in the integration of DRM, CCA and poverty reduction, and relevant entry points (source: Few et al, 2006).

This is a tool for adaptive management of DRR and CCA – determining what is working in order to reinforce successful efforts, and what is not working as expected, in order to refocus or halt the initiatives being undertaken. In the process of the assessment, barriers and gaps will be identified, along with lessons learned, success factors and success stories. The tool can be used by a single person who has good access to, and understanding of, the necessary information. But it can also be used as an analytical framework for more extensive assessments that involve one or more of the following: desk reviews, interviews, focus groups, and informal or formal questionnaires.

While the assessment tool itself is based on specific questions, they are endeavouring to address higher level considerations, namely:

- Policy objectives – are these being supported and achieved by strategies, activities, available information and the institutional arrangements?
- Inputs - are inputs at national level and community levels timely, targetted and adequate to needs?
- Strategies/Activities – do these contribute to policy objectives?
- Outputs/Outcomes – what are the targets for effective integration of DRR and CCA, and is progress being made in achieving them?

If the assessment of these higher level considerations is aligned with an analytical framework such as the self assessment tool, then the assessor(s) should be able to reach a conclusion on what exists in terms of policies and the extent of their integration; on institutions in terms of what they contribute to policy implementation, the impact of the policies and their implementation for vulnerable communities and other stakeholders, and where there are gaps in information and other requirements to achieve the intended outcomes.

The following focus questions are offered as a simple, practical tool for assessing progress and further opportunities for integrating DRR and CCA.

Is there the ability to analyse information on climate variability, extremes and risks, and to use the results in ways that lead to effective DRR and CCA, to safeguard society, development, economic growth and the natural environment?
Is there adequate knowledge and understanding of the groups of population, sectors, localities and ecosystems considered most vulnerable to climate change as well as to current climate variability and extremes?
Is there sufficient information as to why are they at greatest risk (e.g. inappropriate development, poverty, degraded natural resources)?
Are the links between the impacts of climate change, natural disasters and vulnerability being utilized in ways that maximize the benefits of an integrated approach to DRR, CCA and development?
Is there adequate knowledge and understanding of why, how and where climate change will exacerbate existing vulnerabilities?
Are the implications of identified climate risks for national and sectoral development policies and plans adequately understood and addressed?
Are synergistic opportunities between DRR and CCA already being exploited?
What aspects of DRR and CCA make it inappropriate to consider their integration?
Is sufficient advantage being taken of the links between disaster preparedness and response plans, or emergency activities in general, on the one hand, and CCA and DRR efforts or longer-term development programmes on the other?
Are CCA and DRR harmonized, or implemented separately at the following levels? - national policy and planning - sector policies and plans - community development plans - legislation and regulations - steering and or advisory committees - institutions - budget allocation processes

What are the critical gaps in the existing information, analysis and understanding related to integration of CCA and DRR?
What opportunities exist to build on past and current initiatives related to the integration of DRR and CCA?
Who are likely to be the key players and leaders in achieving greater integration?
Are regional and international organizations providing adequate assistance to ensure effective integration of DRR and CCA?
What needs to be done to ensure they are more successful in their endeavours?
Have any new synergistic opportunities been identified explicitly?
Does the existing country analytic work suggest that additional opportunities exist?
If so, what needs to be done to take advantage of these opportunities?
What resources are already approved for CCA and DRR initiatives?
What can be done to mobilize any additional resources that are needed?
Does the ability exist to ensure that development initiatives will not result in maladaptation?
Do disaster risk and meteorological agencies collaborate and share information?
Are disaster early warning systems a collaborative effort?
What are the anticipated impacts of planned development initiatives on climate change vulnerability and disaster risk?
What added value would occur if these impacts were implemented in an integrated manner?
Can the existing legal, institutional and policy frameworks help your country to respond effectively to climate change impacts, risks and opportunities?
How can climate risk management best be incorporated into sector policies and plans?
How might such action help ensure that climate-related risks do not impede achievement of national development priorities (i.e. MDGs) and meeting obligations under MEAs?
Is there adequate understanding of other development needs that should be given higher priority due to the impacts of climate change and natural disasters?

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

The following are identified as areas of DRR and CCA practice in the Pacific region that would benefit from the preparation of guidance notes and other tools:

- guidance to national and local government on strengthening the enabling environment to support greater integration of DAA and CCA at national and local levels;
- making the economic case for increased integration of DRR and CCA, especially at community level;
- use of participatory policy making and planning to achieve greater effectiveness and efficiency in DRR and CCA, especially at community level;
- Pacific case studies on coordination and harmonization of DRR and CCA, with a focus on work at community level and on the enabling environment for DDR and CCA.

11. Recommended Steps and Follow-up Actions for Strengthening the Integration of DRR and CCA

11.1 Regional and International Stakeholders

For immediate consideration and action:

1) The PPCR, through its secretariat (SPREP) should establish and continually maintain a single, online data base of past, current and planned DRR, CCA and related projects which have multi-country involvement, with information on tangible benefits and learning they will or have generated, in order to promote joint planning, evaluation assessments and other activities;

2) The PPCR, through its secretariat (SPREP) should establish and continually maintain an online date base of Pacific-focussed case studies, good practices, lessons learned, methodologies and tools which can be used to enhance the

integration of DRR and CCA at regional, national and community levels, as well as all relevant materials and information, such as documents, contacts, and meeting calendar;

3) The PCCR and the Pacific Platform should make every reasonable effort to convene their meetings at times and locations that maximize the coordination and integration opportunities while also delivering the greatest environmental benefits in terms of minimizing greenhouse gas emissions;

4) With the support of relevant agencies, the University of the South Pacific should consider developing the capacity to assist relevant regional organisations to provide practical technical and other support to PICs on how best to maximize efficiency and effectiveness by taking an integrated approach to DRR and CCA;

5) As part of the upcoming reviews of the Pacific Regional DRM and Climate Change Frameworks, the opportunities for greater integration of DRR and CCA should be explored, while recognizing that the former Framework deals with disasters other than those related to weather and climate extremes while the latter Framework deals with the reduction of greenhouse gas emissions as well as with adaptation;

6) Donors, PIC governments, NGOs and relevant Regional Organizations should agree on how they might, working collectively, promote the greater integration of DRR and CCA; development assistance partners who are active in both DRR and CCA should take a strong position to advocate for the integration of DRR and CCA programming and ensure they follow up on every opportunity do so in their own programming.

11.2 National Stakeholders

For immediate consideration and action:

7) Each country should ensure that all their DRR, CCA and related programming is included in the regional database (see 1 above) along with relevant case studies, good practices, lessons learned, methodologies and tools which can be used to enhance the integration of DRR and CCA at regional, national and community levels (see 2, above);

8) Each country should assess, in a general way and for the national context, the broader costs and benefits of taking a more integrated approach to DRR and CCA, relative to business as usual, including assessing the ongoing effectiveness of current DRR strategies in the face of a highly variable climate which may also undergo considerable change in the near future;

9) Each country should assess, in the national context, the synergies between humanitarian, development, environmental and climate change, especially at community level, and use the insights to strengthen DRR and CCA strategies, individually as well as collectively;

10) Each country should implement, improve and maintain local monitoring frameworks for vulnerability and resilience tracking and reporting; and

11) PIC governments should strengthen national policy and planning processes to reflect the importance of a strong enabling environment for CCA and DRR initiatives at local (e.g. community and enterprise) levels.

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Annex 1

An Annotated Bibliography on Integrating CCA and DRR

The following bibliography first considers the literature that considers the integration of DRR and CCA from a more conceptual perspective, identifies studies which consider the topic from a more practical and experiential point of view and then lists studies which focus on the Pacific islands region.

Conceptual Contributions

African Development Bank; Asian Development Bank; Department for International Development: United Kingdom; Directorate-General for International Cooperation: the Netherlands; Directorate General for Development: European Commission; Federal Ministry for Economic Cooperation and Development: Germany; Organization for Economic Cooperation and Development; United Nations Development Programme; United Nations Environment Programme; World Bank, 2003: Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation. 56pp.

Climate change provides an additional threat that adds to, interacts with, and can reinforce existing risks, placing additional strains on the livelihoods and coping strategies of the poor. Strategies to strengthen capacity to cope with cur- rent climate variability and extremes and to adapt to expected future climatic conditions are mutually supportive and will have immediate benefits. They will also help identify and take advantage of the positive impacts of climate change. There is much experience to date of coping with climate variability and disasters from which useful lessons for adaptation can be drawn. Ensuring that the poor are able to adapt to current and imminent climate variability is the first step. The task ahead for the development community is to enhance the adaptive capacity of the poor and poor countries and to help to implement specific actions for addressing climate change impacts. The report discusses lessons learned from past experience with coping with climate variability.

Christoplos, I., Anderson, S., Arnold, M., Galaz, V., Hedger M., Klein, R., K. Le Goulven, 2009: The Human Dimension of Climate Adaptation: The Importance of Local and Institutional Issues. Commission on Climate Change and Development, Ministry for Foreign Affairs, Sweden, 39pp.

This paper presents a conceptual framework that turns the mainstream adaptation discourse upside down, with understanding and respect for autonomous adaptation as the starting point for a new agenda to manage the human dimensions of climate change. It suggests that adaptation should be built on efforts to more effectively support individuals, households, and businesses as they struggle to adapt to climate change and that this should be done with a deeper awareness of the social, economic, cultural, and political factors that frame their actions, incentives, opportunities, and limitations for action. Neither CCA nor DRR can remain obscure technical processes. Both should become integral parts of development while ensuring that adaptation priorities are set by those who must adapt and providing room for national and local politicians and communities to develop and coordinate their own agendas. Priority must be given to facilitating demand from those affected by climate change. The paper concludes by offering a set of principles to ensure a focus on the human dimension of climate change.

Davies, M., Leavy, J., Mitchell, T., Tanner, T., and B. Guenther, 2008: Climate Change Adaptation, Disaster Risk Reduction and Social Protection: Complimentary Roles in Agriculture and Rural Growth. IDS report for DFID, 15pp.

This briefing note argues that comprehensive social protection that aims to prevent impoverishment and protect, promote and transform livelihoods and social relations, provides significant opportunities for adaptation and disaster risk reduction. By exploring the relationship between CCA, DRR and social protection, the Institute of Development Studies (IDS) researchers have developed the concept of "adaptive social protection". Adaptive social protection involves examining the role of social protection in strengthening adaptation, for example, in developing more climate-resilient livelihoods. This paper outlines linkages between the three fields and assesses good practice within current social protection mechanisms. Recommendations for policy-makers are made including issues to be examined further, challenges to be met and gaps in knowledge to be filled.

Few R. et al., 2006: Linking Climate Change Adaptation and Disaster Risk Management for Sustainable Poverty Reduction: Synthesis Report. A study carried out for the Vulnerability and Adaptation Resource Group, VARG, Washington DC, 36pp.

The study used grounded examples in Mexico, Kenya and Vietnam and exchange of experiences across those contexts to provide insights into how a more integrated approach to disaster risk management and climate change adaptation can be built. Although risk assessments formed part of the studies, main emphasis was placed on analysing the institutional capacity and constraints/opportunities within the policy process. One area within each country was also selected for more detailed investigation to help ground and inform the national-level institutional analysis.

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

This document presents a brief summary of the discussions that took place and the recommendations made by participants. There are evolving perspectives on the nature of CCA, with increasing emphasis on risk management and integrated planning as well as a need for better coordination between different stakeholders. Addressing the topics of regional cooperation, local dimensions, and private markets presents a significant challenge for the international community.

Helmer, M and D. Hilhorst, 2006: Disasters, 2006, 30(1), 152pp.

This special issue of Disasters explores the commonalities and synergies between the science and policy communities concerned with adaptation to climate change and the communities of disaster studies and disaster reduction. The potential for cross-fertilisation between disciplines is considered obvious, considering the way in which climate change is altering disaster risks, and the contributions that DRR can make to CCA. While there are shared concerns and methodologies between the networks, it is also important to recognise their internal diversity. Importantly, misconceptions exist about their respective concepts, aims and applications. A core insight disaster studies can bring to climate-related research is that vulnerability is critical to discerning the nature of disasters. Since the 1980s, disasters have not been regarded as purely physical happenings requiring largely technological solutions but primarily as the result of human actions. Social processes generate unequal exposure to risk by making some people more prone to disaster than others and

these inequalities are largely a function of power relations in every society. This can be understood in terms of the vulnerability of an individual, household, community or society. Vulnerability is thus a key concept in bridging understanding of, and the response to, climate change-related risks and the impact of disasters.

The primary message of climate change for disasters management is that vulnerability reduction is even more urgent than before. When the frequency and the scale of devastation of disasters increase, it becomes a prerequisite of disaster management and CCA to enhance capacity-building and resilience. Given that climate-related disaster trends inflate the need for attention to community- based approaches, it becomes all the more important to assess critically their strengths and weaknesses. The growing body of community-based disaster management experience highlights the need to refine the study of climate-related disasters and to consider their impact at much smaller scales than is typically done by climate change models. Integrated approaches means:

- better coordination among the climate change, disasters and development communities;
- even-handed attention to the reduction of greenhouse gases and of the risks associated with climate change, including through enhanced disaster management; and
- improved conceptual and methodological approaches to understand and respond to local manifestations of disasters while simultaneously addressing underlying complex and partly global processes.

Heltberg, R., Jorgensen, S., and P. Siegel, 2008: Climate Change, Human Vulnerability, and Social Risk Management. Social Development, The World Bank, Washington, DC, USA, 56pp.

There are important gaps in the literature on climate change: lack of attention to how risks associated with climate change might affect households; inconsistent use of key terms such as risk, vulnerability, and adaptation; and lack of clarity on the relationship between risks associated with climate change, adaptation, and vulnerability. These factors limit the ability to effectively formulate adaptation strategies aimed at reducing human vulnerability. Risks associated with climate changes could increase household vulnerability to poverty, hunger, disease, mortality, displacement, and violent conflict in many developing countries. Threats to household well-being stem from both the direct risks (changes in climate variables) and the indirect risks (e.g., increased prevalence of pests and diseases; degradation of natural resources; food price and employment risks; displacement; potential conflicts) associated with climate change. Many interventions, however, tend to focus on direct risks and direct impacts with insufficient attention to indirect risks and to impacts on households. The report proposes and applies a social risk management and asset-based conceptual framework to help design interventions that can increase the capacity of society to manage climate risks with a view to reduce the vulnerability of households and maintain or increase the opportunities for development. This framework offers a unifying lens to examine the links between risks, adaptation, and vulnerability. The framework is used to identify adaptation interventions at household, local, national, and international levels, and their linkages. Several social policy interventions are “no-regrets” contributions to equitable risk management and springboards for growth. The role of social protection and insurance instruments are discussed in this context.

IFRC, 2009: Climate Change Adaptation Strategies for Local Impact: Key Messages for UNFCCC Negotiators. Technical Paper for the IASC Task Force on Climate

Change. Prepared by the International Federation of Red Cross and Red Crescent Societies (IFRC), Red Cross / Red Crescent Climate Centre and ProVention Consortium, in collaboration with Ken Westgate, 11pp.

This paper argues that the proof of effective CCA strategies will be in improved resilience of the hundreds of millions of people living in communities most vulnerable to the impacts of climate change. Involvement of local authorities and community based organisations in the development of adaptation strategies will be crucial. Risk reduction and risk management are key elements of adaptation. Humanitarian organisations bring decades of experience in working with local actors to support local stakeholders to lead adaptation measures to protect their communities against impending climate risks. Sustainable development, CCA and DRR agendas need to come together to maximize impact on the ground in reducing vulnerabilities and strengthening resilience. Even with the effective application of CCA integrated into long-term development planning and programming, climate change related disasters are very likely to increase and humanitarian action will be both necessary and appropriate. Humanitarian action can also provide the foundation for future CCA by creating the enabling environment for improved early warning, information management and community-based disaster preparedness. Ultimately, responding to disaster should be seen as a development action, the advocacy potential from the disaster's profile itself offering opportunities to build longer-term agendas.

Within the framework of DRR there have already been efforts to integrate the development and humanitarian perspectives through key policy commitments like the Hyogo Framework for Action (HFA). What is needed now is a scaling up of investment at the local level in the achievement of both development goals incorporating the outcomes of the HFA. The Stockholm Plan of Action for Integrating Disaster Risks and Climate Change Impacts in Poverty Reduction (Oct 2007), with participation from governments, bilateral and multilateral agencies, civil society organisations, experts and researchers, outlines five recommendations for linking these related fields.

Informal Taskforce on Climate Change of the Inter-Agency Standing Committee and the International Strategy for Disaster Reduction, 2008: Disaster Risk Reduction Strategies and Risk Management Practices: Critical Elements for Adaptation to Climate Change. Submission to the UNFCCC Ad hoc Working Group on Long Term Cooperative Action, 16pp.

The submission addresses the risk-related elements referred to in the Bali Action Plan, namely disaster reduction strategies and risk management including risk sharing and transfer mechanisms. Within the risk management section it provides a particular focus on humanitarian response to disasters, as this has received little attention in the climate change negotiations to date and is very relevant to climate-related risks. Given that climate change impacts will almost certainly lead to more disasters it is an area that requires further consideration. The submission proposes that efforts to reduce vulnerability and build resilience to extreme events should be made a priority in the immediate and short term. This prioritization would help avoid humanitarian and economic losses in the short term, as well as secure development gains and provide a more sustainable basis for other adaptation action over the long term. It would capitalize on currently available knowledge and capacities, especially in the DRR and risk management fields. It is also proposed that actions to develop institutional enabling environments and regional supporting mechanisms for knowledge sharing, scaling up existing good practices, capacity building and technology support, should build on existing mechanisms, institutions, tools and capacities. In the areas of risk reduction, risk management and emergency

preparedness and humanitarian assistance, there are well-established institutional mechanisms and frameworks, at national, regional and international levels, that encompass the relevant organizations and address relevant matters of policy, planning and field-based practice. Each will need strengthening as the impact of climate change increases.

Lemos, M.C and E. L. Tompkins, 2008: Responding to the risks from climate-related disasters. id21. Institute of Development Studies, University of Sussex, p 3.

Climate-related risks come not only from direct exposure to natural hazards such as floods or droughts, but also from the vulnerability of social and economic systems to the effects of these hazards. Responses to these risks should combine two approaches: short-term measures to react to hazards when they occur, and structural reforms that enhance the capacities of communities to adapt.

McGray, H., Hammill, A. and R. Bradley, 2007: Weathering the Storm: Options for Framing Adaptation and Development. World Resources Institute, 66pp.

Effective development and planning process will need to take climate adaptation into account and, conversely, adaptation efforts themselves will often require development interventions to succeed. This paper explores the link between the climate adaptation agenda and the development agenda, building on evidence from more than 130 case studies in developing countries. While climate impacts are increasingly observed, the debate over managing adaptation has progressed very slowly. This in part is due to confusion about the relationship between adaptation and development—a definitional problem that has hindered not only project design, but also the allocation of funding for adaptation efforts.

Two roughly distinct perspectives inform how people approach the challenge of adaptation: one focuses on creating response mechanisms to specific impacts associated with climate change, and the other on reducing vulnerability to climate change through building capacities that can help address a range of challenges, including the effects of climate change. In practice, many instances of adaptation fall between these extremes of orientation toward impacts or vulnerability.

As understanding of climate risk improves, adaptation experience grows, and the effects of climate change are felt more strongly, impacts-oriented approaches—especially climate risk-management approaches—seem likely to be implemented more widely. However, the effectiveness of climate risk management depends heavily upon the ability to reduce uncertainties linked with climate risk to a level at which risk management tools can be reliably implemented. Unfortunately, many of the most vulnerable populations will not be able to approach climate risks in a standard risk-management sense; their core adaptation task will instead be to build the capacity to cope with uncertainty. Moreover, even when good climate risk information is available, it does not necessarily make adaptation decisions easier or better. A society's adaptation decisions inevitably involve many intersecting —and often competing —values and interests. Fair and effective processes for weighing and resolving these play a central role in adaptation across the full spectrum of vulnerability- and impacts-based approaches.

McKenzie Hedger, M., Mitchell, T. Leavy, J., Greeley, M., Downie, A. and L. Horrocks, 2008: Desk Review: Evaluation of Adaptation to Climate Change from a Development Perspective. A study commissioned by the GEF Evaluation Office and financed by DFID. Institute of Development Studies, 60pp.

One distinctive feature of adaptation to climate change is that it involves the development of adaptive capacity and a learning process. Increasingly, DRR approaches are becoming embedded within development programming and the progress of 'mainstreaming' DRR appears to be ahead of efforts to 'mainstream' CCA. With a strong emerging realisation that DRR interventions must simultaneously tackle poverty and disaster risk at the same time to be successful, efforts to build evaluation frameworks around the Hyogo Framework for Action41 are increasingly drawing on indicators and methods from the evaluation approaches to measuring the success of mainstream poverty and development projects and programmes. If, as many suggest, the starting point for CCA is reducing the risk to current climate variability then it makes sense for the evaluation of CCA interventions, at least at a project and programme level, to take DRR evaluation and indicator frameworks as a starting point.

Mitchell, T. and M. van Aalst, 2008: Convergence of Disaster Risk Reduction and Climate Change Adaptation: A Review for DFID, 22pp.

OECD estimates show that up to 50% of development assistance may be at risk because of climate change. In managing such risks to development there is significant overlap between DRR and CCA. However, these agendas have evolved independently until now. DRR can deal with current climate variability and be the first line defence against climate change, being therefore an essential part of adaptation. Conversely, for DRR to be successful, it needs to take account of the shifting risks associated with climate change and ensure that measures do not increase vulnerability to climate change in the medium to long-term.

So far there has been limited integration of DRR and adaptation despite the two agendas sharing similar goals and conceptual overlaps, and both struggling to be mainstreamed into regular development planning. At stake is policy coherence and effective use of resources, as continued separation results in administrative inefficiencies, duplication of efforts and damaging competition between different inter-sectoral coordination mechanisms.

Mitchell, T. and M. van Aalst, 2008: Disaster risk reduction and climate change adaptation: Closing the gap. id21. Institute of Development Studies, University of Sussex, p 1.

There is significant overlap between the practice and theory of DRR and CCA. However, there is limited coherence and convergence in institutions, organisations and policy frameworks. Both struggle to be incorporated into regular development planning and this aspiration is slowed down by duplicated activities, ineffective use of resources and confusing policies.

O'Brien, K., L. Sygna, R. Leichenko, W. Neil Adger, J. Burnett, T. Mitchell, L. Schipper, T., Tanner, C. Voggel and C. Moretreux. 2008. Disaster Risk Reduction, Climate Change Adaptation and Human Security. A Commissioned Report for the Norwegian Ministry of Foreign Affairs. Report 2008-3. Global Environmental Change and Human Society, University of Oslo, Norway. 76 pp.

The findings of this report suggest a timely need to undertake a more thorough assessment of the role that disaster risk reduction and climate change adaptation can play in minimizing threats to human security. Although the relation- ship between disaster risk reduction and climate change adaptation is increasingly recognized by researchers, policy makers and practitioners within both communities, the two communities have yet to develop coordinated efforts to- wards reducing climate

change risks and vulnerability, which includes increasing the capacity to cope with and adapt to rapid changes, complex emergencies, and considerable uncertainty about the future. Thus far, many of the discussions taking place on adaptation to climate change are not well-informed by disaster risk reduction strategies, tools, frameworks and experiences. At the same time, the disaster risk community has not fully incorporated climate change dimensions and information on climate impacts into its work. The risk of more complex, frequent, intense or unpredictable extreme weather events associated with global temperature increases, changing precipitation patterns and sea- level rise, coupled with both gradual and non-linear changes to ecosystems and natural resources, suggests the need for a renewed focus on the ways that disaster risk reduction and adaptation can influence the context in which climate change occurs. Rather than creating or perpetuating contexts for disaster, it is possible to use disaster risk reduction and adaptation strategies to create a context that promotes human well-being and security.

Oxfam, 2007: Climate Alarm: Disasters increase as climate change bites. Oxfam Briefing Paper 108, Oxfam, London, 28pp.

Climatic disasters are increasing as temperatures climb and rainfall intensifies. A rise in small- and medium-scale disasters is a particularly worrying trend. Yet even extreme weather need not bring disasters; it is poverty and powerlessness that make people vulnerable. Though more emergency aid is needed, humanitarian response must do more than save lives: it has to link to climate change adaptation and bolster poor people's livelihoods through social protection and disaster risk reduction approaches.

Pelling, M., 2007: Making Disaster Risk Reduction Work: Report on the 2007 Provention Forum, Dar es Salaam, Tanzania, April 2007, Provention Consortium, 24pp.

The aim of the report is to record the state-of-the art and identify key challenges and opportunities for progress in fields of disaster risk reduction based on the discussions held at the Forum. The Forum was structured around six key policy areas. These included the emerging challenges of rapid urbanisation and climate change for disaster risk; new opportunities for risk reduction coming from a growing body of work and experience on risk transfer; and, established areas of practice that continue to provide challenges as well as opportunities for risk reduction – local level working, risk governance and translating knowledge into action.

The following are the key lessons learned from the workshops and from discussions:

- better integration of DRR into urban planning requires long-term commitment and careful analysis of urban land markets, livelihoods and demographics before DRR or response and reconstruction activities are undertaken to avoid missed opportunities and the erosion of local capacity;
- climate change raises new challenges for making DRR work. Long-term planning to reduce disaster risk needs to consider future climatic and social scenarios;
- insurance and risk reduction are most effective when undertaken in partnership. Support for initiatives that seek to build such partnerships and report on lessons learnt are important first steps in developing this agenda for coupled action in disaster risk management;
- making DRR work within mainstream development policy requires strong partnerships with line-ministries that can negotiate for national budget support. National platforms and international and national civil society are potentially important as champions for DRR and to hold government to account;

- the horizontal exchange of information and ideas for practice can help improve performance and strengthen local self-reliance. Horizontal links built between community groups, or at another scale, between national NGOs can also compliment (and potentially act as an alternative to) predominant organisational forms that are hierarchically structured with international organisations or donors at the apex; and
- effort is needed to champion applied research and to enable academics to sharpen their analytical work and inform practice through partnerships with practitioner organisations of all kinds. Innovative teaching, including distance learning, will also be strengthened through closer ties between researchers and practitioners.

Schipper, L. and M. Pelling, 2006: Disaster Risk, Climate Change and International Development: Scope for, and Challenges to, Integration'. Disasters 30(1), Blackwell Publishing, Oxford, pp19–38.

Reducing losses to weather-related disasters, meeting the Millennium Development Goals and wider human development objectives, and implementing a successful response to climate change are aims that can only be accomplished if they are undertaken in an integrated manner. Currently, policy responses to address each of these independently may be redundant or, at worst, conflicting. We believe that this conflict can be attributed primarily to a lack of interaction and institutional overlap among the three communities of practice. Differences in language, method and political relevance may also contribute to the intellectual divide. Thus, this paper seeks to review the theoretical and policy linkages among disaster risk reduction, climate change and development. It finds that not only does action within one realm affect capacity for action in the others, but also that there is much that can be learnt and shared between realms in order to ensure a move towards a path of integrated and more sustainable development.

Sperling, F. and F. Szekely, 2005: Disaster Risk Management in a Changing Climate. Discussion Paper prepared for the World Conference on Disaster Reduction on behalf of the Vulnerability and Adaptation Resource Group (VARG). Reprint with Addendum on Conference outcomes. VARG, Washington DC, 45pp.

When dealing with climate change risks it is important to recognize that the starting point for adaptation measures is the existing vulnerability to climate variability and extremes. Improving the capacity of communities, governments or regions to deal with current climate vulnerabilities is likely improving also their capacity to deal with future climatic changes, in particular if such measures take a dynamic approach and consequently can be adjusted to further changes in risks and vulnerabilities. To promote an integrated approach to disaster risk management it is necessary to:

- identify and appreciate the information, experience and methodologies that disaster risk, climate change and development experts can provide and design a system to share such experience and knowledge; and
- Overcome some institutional barriers (structural, managerial, information, financial) to facilitate the integration of experience, information and knowledge of development, climate change and disaster risk management experts.

Task Force on Climate Change, Vulnerable Communities and Adaptation, 2003 Livelihoods and Climate Change: Combining Disaster Risk Reduction, Natural Resource Management and Climate Change Adaptation in a New Approach to the Reduction of Vulnerability and Poverty. The International Institute for Sustainable Development, Winnipeg, 24pp.

In 2001, IUCN – The World Conservation Union, the International Institute for Sustainable Development (IISD) and the Stockholm Environment Institute (SEI) joined forces to launch an international research and policy initiative on Climate Change, Vulnerable Communities and Adaptation. Guided by a multi-disciplinary Task Force, this initiative represents a confluence of four distinct, yet decidedly relevant, communities working on vulnerability reduction in the face of climate change. These experts—from the fields of disaster risk reduction, climate change, conservation and poverty reduction—first met following the release of the IPCC Working Group II's latest assessment of climate change impacts, adaptation and vulnerability and the conclusion of the Marrakech Accords to the United Nations Framework Convention on Climate Change (UNFCCC). In view of the expanding body of knowledge on climate change impacts and new funding opportunities for climate change adaptation, the Task Force set in motion a collaborative effort to inform and influence how the world undertakes and invests in climate change adaptation.

Tearfund, 2008: The Role of Disaster Risk Reduction in Adaptation. Tearfund submission on the Bali Action Plan (Para 1), 9pp.

Section 1 describes the similarities and differences between adaptation and DRR while Section 2 discusses the rationale for adopting a more integrated approach to adaptation and DRR. Section 3 includes recommendations for the climate change and disaster risk management communities.

Thomalla, F., Downing, T. E., Spanger-Siegfried, E., Han, G. and M. Rockstro, 2006. Reducing Hazard Vulnerability: Towards a Common Approach Between Disaster Risk Reduction and Climate Adaptation. Disasters, 30(1), pp. 39–48.

Over the past few decades, four distinct and largely independent research and policy communities—disaster risk reduction, climate change adaptation, environmental management and poverty reduction—have been actively engaged in reducing socio-economic vulnerability to natural hazards. However, despite the significant efforts of these communities, the vulnerability of many individuals and communities to natural hazards continues to increase considerably. In particular, it is hydro- meteorological hazards that affect an increasing number of people and cause increasingly large economic losses. Arising from the realisation that these four communities have been largely working in isolation and enjoyed only limited success in reducing vulnerability, there is an emerging perceived need to strengthen significantly collaboration and to facilitate learning and information exchange between them. This article examines key communalities and differences between the climate change adaptation and disaster risk reduction communities, and proposes three exercises that would help to structure a multi-community dialogue and learning process.

UNDG, 2009: Integrating Disaster Risk Reduction into the CCA and UNDAF: A Guide for UN Country Teams. United Nations Development Group, 80pp.

In 2009 the UNDG revised its Guidelines for UN Country Teams on Preparing a CCA and UNDAF (the "CCA/UNDAF Guidelines"). They highlighted the importance of DRR as a cross-cutting theme. The present guidance note is for UNCTs engaged in the CCA/UNDAF process in countries where disaster risk is considered a significant challenge to national development and poverty reduction. Its purpose is to provide step by step advice, including links to resources, on how to integrate DRR into the process of CCA/UNDAF preparation, formulation, and monitoring and evaluation. The guidance note may also be of use to the wider development community when

undertaking comprehensive development assessment, planning, programme management, and monitoring and evaluation. The note focuses on disasters caused by vulnerability to natural hazards rather than those related to conflict or civil unrest. Because of the close relationship between climate change and disaster risk, and the fact that DRR is an essential element of CCA, the guidance note is also helpful to UNCTs wishing to address climate change impacts in their analysis and future plans. It will also be useful for UNCTs dealing with related risks, like food insecurity and technological risk.

UNFCCC Secretariat, 2009: Report on the Technical Workshop on Integrating Practices, Tools and Systems for Climate Risk Assessment and Management and Disaster Risk Reduction Strategies into National Policies and Programmes. Subsidiary Body for Scientific and Technological Advice, Thirty-first Session, Copenhagen, December, 2009, 11pp.

This note provides a summary of the technical workshop held under the Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate Change. Discussions at the workshop focused on practical tools and systems, good practice and successful examples, opportunities and barriers. The note includes a summary of the key discussion points, including the main challenges in integrating risk assessment and management and risk reduction strategies into national policies and programmes, as well as recommendations and issues for follow-up and further consideration.

UNISDR, 2008: Climate Change and Disaster Risk Reduction. Policy Briefing Note 1, Geneva, 12pp.

This Briefing Note outlines the nature and significance of climate change for disaster risk, as well as the main perspectives and approaches of DRR and how they can support adaptation strategies. It is aimed at experts and practitioners as well as non-specialists such as teachers and students, journalists and the interested public.

UNISDR, 2008: Proposals for the AWG-LCA Chair's Assembly Document on Enhanced Action on Adaptation. Submission by the International Strategy for Disaster Reduction (ISDR) System, Paper No. 6: United Nations International Strategy For Disaster Reduction. United Nations Framework Convention On Climate Change Ad Hoc Working Group On Long-Term Cooperative Action Under The Convention, Fourth Session, Poznan, December 2008, pp 24-27.

The paper provides a set of suggested concrete actions in response to the Bali Action Plan's call for enhanced action on adaptation through consideration of DRR strategies, risk management and risk transfer mechanisms. It was developed in consultation with a number of UN and international organizations concerned with DRR and humanitarian response. The paper proposes that efforts to reduce vulnerability and build resilience to extreme events should be prioritized in the short term. Actions should build on and scale up existing widely available good practices. This prioritization will help avoid humanitarian and economic losses in the short term, as well as secure development gains and provide a more secure basis for other adaptation action over the long term.

UNISDR, 2008: ISDR Strategy to Support the Bali Action Plan Process. UNISDR, Geneva, Switzerland (Draft 26 February), 2pp.

The inclusion of disaster risk reduction in the Bali Action Plan is a major success that will have positive repercussions for reducing disaster risks in future. The negotiations

guided by the Bali Action Plan will dominate all aspects of climate change policy making over the next two years. Many positions will be formulated over the coming months. Urgent action is therefore required to support national actors, particularly the climate change policy teams in capitals, to develop the disaster risk reduction aspects of the Plan. Three important areas of action are evident: (i) better collaboration between climate change bodies, focal points and experts and their disaster risk reduction counterparts; (ii) provide practical information and guidance on disaster risk reduction and risk management, covering concepts, tools, measures, policies, etc, and sources of information; and (iii) draft adaptation plans, drawing on the Hyogo Framework for Action.

UNISDR, 2009: Global Assessment Report on Disaster Risk Reduction: Risk and Poverty in a Changing Climate. UNISDR, Geneva, Switzerland, 207pp.

The report is the first biennial global assessment of disaster risk reduction prepared in context of the implementation of the International Strategy for Disaster Reduction (ISDR). It stresses that disaster risk reduction can contribute to poverty reduction, development, and climate change adaptation; and consequently to global stability and sustainability. It finds that disaster risk is disproportionately concentrated in developing countries, which have more vulnerable economies, often weak governance structures and high poverty levels. Therefore developing countries, including many small island developing states (SIDS) and land-locked developing countries (LLDCs) “suffer far higher levels of mortality and relative economic loss than developed countries when disasters occur. Weather-related hazards, poorly managed urban growth and territorial occupation, environmental mismanagement, declining ecosystems and climate change are identified in the report as driving factors for disaster risk. They disproportionally affect the poor, who are “less able to absorb loss and recover, and are more likely to experience both short- and long-term deteriorations in income, consumption and welfare,” the report notes.

The report urges a paradigm shift in disaster risk reduction, as currently “efforts to reduce disaster risk, reduce poverty and adapt to climate change are poorly coordinated” and hardly linked to each other. It underlines the need to link and focus the policy and governance frameworks for disaster risk reduction, poverty reduction and climate change adaptation in a way that can bring best practice local and sectoral approaches and tools into mainstream development thinking on disaster risk reduction. For this to occur, more international attention and consolidated political and economic support and commitment for disaster risk reduction are identified as necessary in the report. The report concludes with various recommendations, among which a 20-point action plan to reduce risks in the future. This action plan calls for accelerated efforts to avoid dangerous climate change; increase the economic resilience of small and vulnerable economies; adopt high-level development policy frameworks to reduce risk; focus development policy on addressing the underlying risk drivers; adopt an approach supportive of local initiatives; invest to reduce risk; and to build on existing systems for public administration to incorporate innovations into the governance of disaster risk reduction.

UNISDR, 2009: Reducing Disaster Risks through Science: Issues and Actions, The Full Report of the ISDR Scientific and Technical Committee. UNISDR Secretariat, Geneva, Switzerland, 32pp.

The basic facts of climate change are now well established, which itself represents an outstanding achievement for science and for policy-relevant international scientific cooperation. Projected increases in intensity or frequency for several types of extreme weather conditions, such as heat waves, droughts, storms, tropical cyclones

and heavy rainfall, and their impacts will be compounded by other projected effects, such as sea level rise and reduced water supplies that will reduce the capacities of communities to cope with extreme events. There is an urgent need to systematically link DRR and CCA policies. This connection is recognised in the UNFCCC Bali Action Plan, which is guiding the preparations for a new agreement on climate change at the end of 2009 in Copenhagen.

UNISDR and GFDRR, 2007: Stockholm Plan of Action for Integrating Disaster Risks and Climate Change Impacts in Poverty Reduction, 3pp.

The Plan of Action outlines five recommendations for linking DRR and CCA, namely: (i) DRR and CCA cannot be dealt with in isolation; (ii) risks due to disasters and climate change must be known and measured; (iii) disaster and climate change risk analysis must be integrated into national planning processes, including the poverty reduction strategy process, in each country; (iv) DRR and CCA are not sectors but need to be factors in all sectors; and (iv) capacity building is required at local, national, regional and global levels.

van Aalst, M., 2009: E-Discussion Final Summary: Exploring an Integrated Approach to Disaster Risk Reduction and Climate Change Adaptation for Development Programming, 11pp.

The objective of the e-Discussion was to engage UNDP practitioners, UN-wide partners and external experts in a discussion about the strategic and practical benefits of an integrated approach to DRR and adaptation to climate change. Although the links between these two areas are increasingly acknowledged by practitioners, there is need for greater coordination between the emerging CCA community and the well-established DRR community. With the increasing focus on climate change, its associated risks and potential impacts for development, and in the light of an emerging 'One UN' operational context, the e-Discussion was intended to support UNDP's ongoing efforts to ensure informed, coherent, coordinated and efficient development planning and programming. The discussion took place around three topics: (i) synergies between the DRR and CCA practice areas; (ii) joint integration of DRR and CCA into development programming; and (iii) mechanisms for integrated DRR and CCA programming.

Venton, P. and S. La Trobe, 2008: Linking Climate Change Adaptation and Disaster Risk Reduction. Tearfund, 19pp.

CCA and DRR have similar aims and mutual benefits. However, to date the climate change and disaster risk management communities have operated largely in isolation from each other – for a number of reasons. This situation must change as a matter of urgency. Adaptation and DRR policy makers, experts and practitioners must communicate and collaborate with each other effectively to ensure a comprehensive risk management approach to development at local, national and international levels of government. This could result in the following benefits: (i) reduction of climate-related losses through more widespread implementation of DRR measures linked with adaptation; (ii) more efficient use of financial, human and natural resources; and (iii) increased effectiveness and sustainability of both adaptation and DRR approaches. The recommendations in this report are focused on improving communication and collaboration between the CCA and disaster risk management communities. Some are relevant to both communities, while others are more specifically directed at one or the other.

VOICE, 2009: Disaster Risk Reduction and Climate Change Adaptation in

Humanitarian Aid. Voice Policy Recommendations. Voluntary Organisations in Cooperation in Emergencies (VOICE), Brussels, Belgium.

It is anticipated that the global cost of disasters could exceed $300 billion annually by the year 2050. Similarly, estimates from the OECD show that up to 50% of development assistance in some countries may be at risk because of climate change impacts. There is deep concern about the upward global trend in 'natural' disasters and associated human and economic losses. Climate change is increasing the number, unpredictability and severity of extreme events. These trends have made the international community realize how urgent it is to significantly increase efforts to reduce risk and vulnerabilities and prevent further disasters. There continue to be weak linkages and inadequate coordination between DRR and CCA policies and practices at EU and international levels, although it is widely accepted that considerable benefits would be achieved through better integration. Both DRR and CCA strategies aim at reducing vulnerabilities to future disasters and closer cooperation would improve effectiveness and quality of DRR and CCA programmes. VOICE makes the following recommendations: (i) DRR must evolve to meet the needs of a changing climate; (ii) CCA must learn from and build upon the experience of DRR; and (iii) Coordinated strategies must be designed and implemented.

West, J., 2007: Linking Vulnerability, Risk Reduction and Response Capacity: Report on Workshop on Climate Change, Humanitarian Disasters and International Development. April, 2007, Oslo, Norway. Centre for International Climate and Environmental Research, Oslo, Norway, 29pp.

In recent years climate-induced natural hazards, such as hurricanes, floods and droughts, have resulted in humanitarian disasters that have reversed years of development progress. These trends are likely to intensify in the future unless concerted action is taken. The suggested focus on moving toward an integrated agenda suggests that, if local, national and international actors are to successfully prepare for, respond to and recover from weather-related disasters and reduce poverty, strategies for managing disaster risks and climate impacts must be integrated into international development and humanitarian policies. However, achieving an integrated approach is not without its challenges. Excessive integration, or 'integration for the sake of integration' - should be approached with caution. There are legitimate concerns within the DRR community, for example, that CCA and general development activities are drawing funding away from needed DRR activities and programmes. This leads to competition, rather than cooperation. Regardless, there remains a broad scope and a real need for more and better cooperation and integration across these disciplines to achieve positive and long-lasting outcomes. Integrated approaches to climate change, humanitarian disasters and poverty reduction must move beyond definitions of potential synergies, toward defining realistic divisions of roles, responsibilities and funding. It is also important to consider human security in efforts to minimise the effects of climate change and the incidence of poverty and humanitarian disasters. Vulnerability to both climate change and natural hazards is increasing in many parts of the globe due to a range of social, economic and environmental changes, including rising poverty, increased urbanization, loss of agricultural incomes, spread of infectious diseases including HIV/AIDS, and violent conflict. Climate change presents new challenges to how disasters are managed, and particularly to how vulnerability is reduced and in the long term. Therefore, reducing the vulnerability of human populations to climate change and humanitarian disasters is a key to achieving successful adaptation to climate change as well as improvements in human security and human development.

World Bank Group, 2006: Managing Climate Risk: Integrating Adaptation into World Bank Group Operations. World Bank Group, Global Environment Facility Program, 42pp.

Studies show that besides lack of attention to the risks associated with a changing climate, many strategies, programs, and projects also fail to take into account the risks of natural hazards under current climate conditions. Even as countries and there development partners are making substantial investments to foster economic development and poverty alleviation, their efforts are frequently diluted or even erased by the effects of natural disasters. Some of the damages from these natural hazards are unavoidable, as it is neither feasible and nor economical to strive for protection against all risks, but many damages and casualties simply result from poor planning. Even worse, the well-intended rapid reconstruction efforts after a disaster often recreate the same vulnerabilities that allowed the hazard to cause such havoc in the first place.

This illustrates the large overlap between the challenge facing CCA and that facing DRR. Hazards become disasters as a result of the day-to-day development decisions that are responsible for the high levels of vulnerability. Most of the hazards facing developing countries are recurrent, rather than one-off events, and they should be treated as risks to development rather than as acts of God. Although disaster management covers many hazards, such as earthquakes and volcanoes, that are not related to climate, and CCA must also address gradual changes in average conditions, there is clearly a strong overlap between both agendas. The impacts of climate change on increased droughts and floods, stronger hurricanes, and sudden outburst floods from glacial lakes, to name a few consequences, clearly represent higher levels of disaster risk.

Both the CCA and the DRR constituencies face similar challenges in integrating risk management into various domains of development, as they are seldom considered part of core business by key players in sectoral or national planning. Given the rising climate risks and disaster losses, these constituencies should together make the case that appropriate hazard risk management, including adaptation to climate change, is not a luxury for development planning but is pure due diligence.

Practical Contributions and Perspectives

ADPC, 2009: Regional Training Manual on Disaster Risk Reduction for Coastal Zone Managers. Asian Disaster Preparedness Center (ADPC), Bangkok, Thailand, 59pp.

Module 3 of this course introduces DRR and its linkages with CCA. The module covers the terminologies, concepts and framework for DRR by explaining the Hyogo Framework for Action (HFA) and its Five Priorities for Action. For each of the priorities, concepts are explained through examples from coastal environment; systems, stakeholders and concerns. Linkages between CCA and DRR are highlighted.

Anuchiracheeva, S., and T. Pinkaew, 2009: Oxfam Disaster Risk Reduction and Climate Change Adaptation Resources: Case Study - Jasmine Rice in the Weeping Plain: Adapting Rice Farming to Climate Change in Northeast Thailand. Oxfam, 14pp.

Oxfam has been working with a local organisation - Earth Net Foundation (ENF) - since 2004, promoting organic agricultural production and fair-trade marketing with farmers in Yasothorn Province, Thailand. Compared with conventional chemical-

based farming, organic farming is less dependent on off-farm inputs, requires less energy, and is more environmentally sound. A combination of scientific findings and observed changes by communities and programme staff prompted Oxfam to take action to safeguard the livelihoods of farmers. In consultation with farming communities and ENF, Oxfam decided to implement an initial one- year pilot climate-change adaptation project for organic rice (May 2008 – March 2009). Fifty-seven out of the 509 organic-farming households decided to join the scheme. The case study describes the work and finding, including:

- Support farmers to recognise and understand the impacts of global warming and climate change;
- Support farmers with appropriate water-management systems for their organic farms
- Promote selected farmers as role models and catalysts for change, by means of sharing their knowledge and experience with other farmers in Yasothorn; and
- Study the impact of climate change on women.

Broekhuijsen, M., 2009: Towards a Resilient Future: Experiences with Community Managed Disaster Risk Reduction and Climate Change Adaptation. Cordaid, Netherlands, 45pp.

The publication is based on a selection of the many stories and experiences from partners in community managed DRR and CCA. It includes details of the global declaration on community managed DRR (CMDRR) and climate change, signed by more than 80 partners and participants in Lilongwe, Malawi. The declaration and the stories provide insights into the CMDRR process, achievements with CMDRR so far and set out its potential. The stories highlight the good practices that have been developed, identify the challenges in further developing CMDRR and future opportunities to do so.

Couldrey, M. and M. Herson, 2008: Climate change and displacement. Forced Migration Review, Issue 31, October 2008, Refugee Studies Centre, Oxford Department of International Development, University of Oxford, Oxford, UK, 80pp.

Adaptation may be an unfamiliar concept but its methods and tools look very similar to those of DRR – risk maps, improved zoning of land, enforcement of building codes, safer hospitals and other critical facilities, better early warning systems, accessible insurance schemes, and programmes to enable communities to assess and manage their own risks. There are many examples of DRR initiatives that have high benefit-cost ratios and therefore offer no-regrets actions for adaptation. As a result, there is a new opportunity to simultaneously reduce disaster risks and adapt to climate change. Happily, climate change negotiators have begun to think along these same lines. The Bali Action Plan's directions for adaptation call for the consideration of: "...risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance; and disaster reduction strategies and means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change." However, the convergence is easier said than done, as the two issues of disaster risk and climate change are usually dealt with as separate policy processes and by different government departments. Ministries responsible for climate change policy, such as ministries of environment, will need to talk with those responsible for DRR, such as ministries of civil protection or the new DRR offices that are increasingly being established to tackle the root causes of disasters and to cut national disaster risks. And vice versa: ministries and offices concerned with disaster

reduction and response will need to engage with climate change groups in order to prepare for the changes in future risks.

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

The CVCA methodology provides a framework for analysing vulnerability and capacity to adapt to climate change at the community level. It prioritises local knowledge on climate risks and adaptation strategies in the data gathering and analysis process. The CVCA methodology is based on a framework of "enabling factors" for Community-Based Adaptation (CBA). The Handbook presents a set of guiding questions for analysis of information at national, local and household/individual levels. The CVCA focuses on understanding how climate change will affect the lives and livelihoods of target populations. It examines hazards, vulnerability to climate change and adaptive capacity with a view to building resilience for the future. The CVCA attempts to combine good practices from analyses done for development initiatives, which tend to focus on conditions of poverty and vulnerability, and those done within the context of DRR, which tend to focus on hazards. The framework of the CVCA facilitates analysis of the information gained from both types of assessments from a climate change perspective. It examines both hazards and conditions, and analyses the interactions between the two. While the primary purpose of the CVCA is to analyse information, the methodology is designed to balance the research agenda with a process of learning and dialogue among local stakeholders. This can yield a greater understanding within communities of the resources available to them to support adaptation, and can promote dialogue among stakeholders on adaptation actions that make sense.

Hedger, M. and J. Cacouris, 2008: Separate Streams? Adapting Water Resources Management to Climate Change. Tearfund, 60pp.

The report uses empirical evidence from research in Niger and north-east Brazil to identify how CCA can be integrated within the water sector to benefit the most poor and vulnerable people. It draws on primary research at the community level, and policy and institutional reviews at the national level. The report shows that climate variability can have a real and lasting impact on how people manage their water resources, and that the dynamics of changing patterns of water availability have knock-on effects that reach far beyond just water. Traditional cultural norms, agricultural methods and wider livelihood approaches are also affected. Despite the challenges faced, communities have demonstrated resilience and are adapting to the variable climate with a number of water- and economic-related responses. The case studies are very different in their contexts. Yet, in terms of the interface between local-level issues and national policy and planning, there is a common theme: the need for communities to be able to access and engage with the political systems that affect their water rights. At the national level, climate risk considerations are not being factored into water sectoral planning and implementation in a systematic way. Furthermore, the institutional structures required for this to happen are currently inadequate.

IIED, 2009: Community-based Adaptation to Climate Change. Participatory Learning and Action, 60th Edition. International Institute for Environment and Development (IIED), 48pp.

The focus of this special issue is community- based adaptation to climate change. It is now increasingly recognised that, for poor communities, adaptation approaches that are rooted in local knowledge and coping strategies, and in which communities

are empowered to take their own decisions, are likely to be far more successful than top-down initiatives. In addition, communities have the right to participate in decisions that affect them. The first section of the publication includes reflections on participatory processes and practice in community-based adaptation to climate change. These have a variety of entry points, including participatory vulnerability analysis, DRR frameworks, and Farmer Field Schools. The case studies provide a rich source of experience and lessons for CBA practitioners. The second section focuses on participatory tool-based case studies. These describe a participatory process with an emphasis on the use of a particular participatory tool, such as participatory video or participatory mapping. They also reflect on the strengths and limitations of these tools. The third section, participatory tools, includes shorter, step-by-step descriptions of how to facilitate a particular tool in a community, for example, rain calendars and mental models of the drivers and effects of climate change.

Pettengell, C., 2009: Climate Change Adaptation: Enabling People Living in Poverty to Adapt. Oxfam Discussion Document, Oxfam International, 2pp.

There are three major challenges that climate change brings to bear on rural communities: undermined sustainability of current livelihood strategies; increased pressure on already depleted natural resource bases; and increased disaster risk from climate hazards. Effective adaptation must therefore bring together sustainable livelihoods, natural resource management, and DRR approaches to secure and enhance assets within the analysis of climate change. To achieve this, a variety of measures will be needed for adaptation, ranging from those focused on addressing specific impacts to activities that reduce vulnerability and manage risk when the scale and direction of climatic changes are less certain. There are no off-the-shelf, one-size-fits-all strategies for adaptation to climate change, as they must consider these many local factors. But there are many tools and techniques that if tailored correctly to the local context, we know can deliver benefits to communities.

ProAct Network, 2008: The Role of Environmental Management and Eco-Engineering in Disaster Risk Reduction and Climate Change Adaptation. 68pp.

Review of the growing body of evidence that sound environmental management has a potentially important role to play in reducing many of the risks posed by natural hazards. Provides an overview of practical experiences that deal with environmental management in relation to climate change, DRR and CCA. Essentially a collection of field data and literature that has a highly practical flavour, highlighting the multiple benefits that adaptation can offer. The case studies provide specific first hand accounts of how different environmental management and eco-engineering techniques have been tried and tested under different conditions and situations – although to date with an emphasis on developed countries. The findings caution that in some instances there might well still be a need for at least some complementary form of hard engineering, as well as locally tailored early warning systems. Opportunities for combining these complementary approaches should be further explored in the future.

Tanner, T., Lazcano, J., Lussier, K., Polack, E., Oswald, K., Sengupta, A., Murphy, L. and F. Rajabali, undated: Children, Climate Change and Disasters: An Annotated Bibliography. Children in a Changing Climate Research, Climate Change and Development Centre, Institute of Development Studies, University of Sussex, UK, 17pp.

Research and advocacy on children has been relatively marginalised in debates around climate change and disasters. There is a growing body of research on the

impacts of disaster events and gradual climate change on children, especially on child health. Studies have shown that children are among the worst affected in the aftermath of natural disasters. With increasing number of disasters being linked to changing climatic conditions, and the escalating frequency of droughts, floods, water scarcity, malaria and vector–borne diseases, children are likely to be adversely affected both as children and in their adult lives. Recent research has attempted to move away from focusing on children as passive victims of climate change and disasters, instead advocating for children as active participants in efforts to reduce the adverse impacts of disaster events and climate change. This includes their participation in adapting to climate change and preventing disasters through DRR, as well as in post disaster emergencies and rehabilitation efforts.

UNFCCC Secretariat, 2008: Physical and Socio-economic Trends in Climate-related Risks and Extreme Events, and their Implications for Sustainable Development. Technical Paper. FCCC/TP/2008/3, November 2008, 58pp.

The Fourth Assessment Report of the Intergovernmental Panel on Climate Change concludes that warming of the climate system is unequivocal, as evidenced by increases in global average temperatures, widespread melting of snow and ice, and rising sea levels as a consequence of climate change. These physical trends in the climate are projected to intensify into the future. This paper, prepared in the context of the Nairobi work programme on impacts, vulnerability and adaptation to climate change, draws on the information provided by the IPCC in outlining the physical and socio- economic trends in climate-related risks and extreme events for developing countries, particularly for the least developed countries and small island developing States, and the implications for sustainable development. Physical and socio-economic trends are compounding each other to undermine sustainable development and the ability to achieve the Millennium Development Goals in the poorest regions of the world through increased poverty, loss of livelihoods, and compromised health and education.

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

This publication aims to provide a succinct and user-friendly synthesis of the major outputs and their practical impacts of those actions pledged and implemented by Nairobi work programme partner organizations to date, as well as key emerging good practices, lessons learned, challenges and opportunities. The wide range of activities included in the action pledges and reported by partner organizations have been grouped into the seven themes, reflecting the nature of the activities in delivering adaptation actions: (i) Improving the provision of climate data and information; (ii) Developing and disseminating methods and tools; (iii) Assessing the impacts of, vulnerability and adaptation to, climate change; (iv) Communicating climate risks; (v) Scaling up community-based adaptation actions; (vi) Reducing risks of extreme events and climate-related disasters; and (vii) Promoting knowledge sharing and learning.

UNISDR, 2007: Building Disaster Resilient Communities: Good Practices and Lessons Learned. A Publication of the “Global Network of NGOs” for Disaster Risk Reduction, UN System for Disaster Reduction, Geneva, Switzerland,

This publication showcases the essential roles played by NGOs in addressing disaster risks at the local community level. It makes the case for increased community-oriented DRR action, and is aimed to stimulate more interest in the subject from donors, policy makers, as well as other stakeholders. It includes close to 100 case studies from different parts of the world. Most of the good practices were or are implemented by local NGOs, with support from international NGOs, donors, and regional organizations. All of the cases involve disaster-vulnerable communities, either directly or through community-based structures. The good practices selected also reflect the way DRR is "understood" and implemented in different regions, and offer unique perspectives of and approaches to community-based DRR.

UNISDR, 2008: Gender Perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation - Good Practices and Lessons Learned. United Nations, secretariat of the International Strategy for Disaster Reduction, 87pp.

This publication points out the vital nexus between women's experiences of natural resource management, CCA and DRR, and how they can come together to make whole communities strong and sustainable. It also provides case studies of grassroots women's leadership, and of ways to support and encourage women's full participation as citizens in risk reduction, CCA, development, and disaster preparedness. The case studies also point to practical tools for implementing gender equality and mainstreaming gender perspectives. Despite the clear connection between climate change, DRR, and gender-focused approaches to development, there still needs to be an increased awareness of this important nexus. The publication highlights the importance of this key entry-point to sustainable development.

UNISDR, 2009: Applying Disaster Risk Reduction for Climate Change Adaptation: Country Practices and Lessons. United Nations International Strategy for Disaster Reduction (UNISDR) Secretariat, 4pp.

This short note reports on recent experience from six countries where national and local governments, with civil society participation, have worked to reduce disaster risks as part of their adaptation efforts. Based on these examples and other countries' experience, four key lessons are developed.

USAID, 2009: Adapting to Coastal Climate Change: A Guidebook for Development Planners. Global Climate Change Team and Water and Coastal Team of the United States Agency for International Development (USAID) Bureau for Economic Growth, Agriculture, and Trade, 149pp.

Community-based disaster risk management (CBDRR) is an overarching strategy comprised of structural and non- structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of natural hazards. Communities engage in a systematic process of administrative decisions, apply organizational and operational skills, and implement policies and strategies to enhance their coping capacities to the impacts of hazards and related disasters. With increased frequency of storms and climate variability due to global climate change, local level preparedness is increasingly important as a key adaptive capacity and an essential component to community resilience. CBDRR is practiced and applied worldwide, especially as the number of people affected by coastal hazard events has grown in the last decade. There is a heightened recognition of the need to reduce vulnerability and risk before an event happens. As global experience repeatedly shows, the net benefits of preparedness are positive and the net costs of a lack of preparedness can be devastating. The United Nations has estimated that globally on average of

100,000 lives are lost and properties worth $300 billion are damaged each year due to natural disasters. These damage estimates do not take into account the many indirect and secondary effects on economic activities.

van Aalst, M., 2008: Communicating Changing Risks. Climate Change and Displacement, FMR31, pp 57-58.

Communicating about climate change is crucial for effective disaster risk management. Climate change is increasing disaster risk, particularly for the most vulnerable people. Instead of starting new programmes to address these new risks by themselves, the challenge is to integrate them into our humanitarian work. The international community needs to understand and accept that traditional ways of thinking about disaster response no longer apply. Preparing for, reducing the risk of and responding to natural hazards is what many humanitarian actors already do, in collaboration with those most at risk. In the face of climate change, we just need to do more, and do it smarter, shifting from response to risk reduction, and making use of relevant climate information. Many strategies for CCA are indistinguishable from conventional risk management. The important difference is not so much in the outputs but rather in the process; in a changing climate, we have to reassess risk patterns, and communicate and address those changing risks rather than prepare for the disasters we have witnessed in the past, or wait to respond to the steadily rising number of disasters.

van Aalst, M.K., T. Cannon, and I. Burton, 2008: "Community level adaptation to climate change: the potential role of participatory community risk assessment." Global Environmental Change 18: 165-179.

Assesses the use and applicability of participatory community risk assessment methods to understanding adaptation and disaster risk preparedness under situations of global and local climate change. Reviews of a number of standard DRR methodologies including participatory rapid appraisal, vulnerability and capacity assessment, and community risk assessment.

World Bank, 2008: Climate Resilient Cities: A Primer on Reducing Vulnerabilities to Climate Change Impacts and Strengthening Disaster Risk Management in East Asian Cities. World Bank, Washington, D.C., USA, 176pp

A guide for local governments in the East Asia Region to better understand the concepts and consequences of climate change; how climate change consequences contribute to urban vulnerabilities; and what is being done by city governments in East Asia and around the world to actively engage in learning, capacity building, and capital investment programs for building sustainable, resilient communities. The Primer is applicable to a range of cities – from those starting to build awareness on climate change to those with climate change strategies and institutions already in place.

Contributions Focused on the Pacific Islands

ADB, 2008: Regional Partnerships for Climate Change Adaptation and Disaster Preparedness. Regional Technical Assistance (TA) Report, Project Number 41187, Asian Development Bank, 11pp.

The TA is designed to contribute to work being pursued by several development partners (including ADB) and led by World Bank to assess the feasibility of a catastrophe insurance scheme for the Pacific. There have been consultations

between ADB and World Bank to discuss the scope of the work under the TA. Additional discussions have been held with insurance industry representatives and with development partners regarding a stronger approach to managing natural catastrophes in the Pacific region. ADB and its Pacific Member Countries have agreed on the intended impact, outcome, and outputs; and on the implementation and financial arrangements, cost, and terms of reference of the TA. The impact, outcome, and outputs are summarized in the design and monitoring framework. Cost and financing arrangements are summarized in the cost estimates and financing plan.

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

The Climate Change Implementation Plan (CCIP) for the Pacific Department (PARD) of the Asian Development Bank (ADB) describes the areas of focus for PARD's operations and identifies key gaps between country and ADB actions, as well as opportunities for scaling up ADB assistance related to mitigation, adaptation, and associated cross-cutting needs. The Pacific region poses complex adaptation challenges due to the widely varying geography among countries; government capacity to diagnose problems and design appropriate solutions; and economic, social, and environmental conditions. Because many of the effects of climate change will vary among countries and regions of each country, comprehensive and inclusive national strategies and action plans, supported by regional and international technical and financial assistance, are required. Mainstreaming of CCA is a challenge for all countries, and PDMCs are worried about the additional burden of responding to climate change on top of existing development challenges. However, the emphasis must now be on implementation of climate-proofing ongoing projects, build-in climate resilient design for new projects, and CCA strategies and plans. Key issues and gaps related to adaptation include inadequate integration of adaptation and disaster risk management into policies, planning, and operations. In addition, it is difficult to measure, report, and verify actions related to adaptation, such as technology transfer, financing, and capacity building. There is also a lack of tools, guidelines, and documented good practices and lessons learned, especially those related to mainstreaming adaptation into national and sector policies, planning processes, and regulations. Technology transfer must be enhanced, including offering incentives to the private sector to change from conventional designs. In the future, there should be greater emphasis on adaptation and new assistance to capture the synergies between adaptation and mitigation and between DRR and CCA.

Anderson, Cheryl, 2002: Gender Matters: implications for climate variability and climate change and for disaster management in the Pacific Islands', InterCoast Newsletter, University of Rhode Island's Coastal Resource Center, # 41, Winter, 2002.

The most successful strategies for adapting to Pacific Island climate – both climate change and climate variability – depend on the inclusion of multiple perspectives, knowledge, and skills, that draw from science, technology, social science, indigenous knowledge, business and private sector skills, and a gender perspective.

Bettencourt, S, Croad, R, Freeman, P, Hay, J, Jones, R, King, P, Lal, P.N., Mearns, A, Miller, J, Psawaryi-Riddhough, I, Simpson, A, Teuatabo, N, Trotz U & Van Aalst, M 2006, 'Not If But When: Adapting to Natural Hazards in the Pacific Islands Region: A Policy Note', The World Bank, East Asia and Pacific Region, Pacific Islands Country Management Unit, Washington DC, 43 pages,

The goal of this Policy Note is to influence policy makers and development partners in the Pacific Islands region to undertake risk management of natural hazards and minimize the future impacts of natural disasters, climate change and sea level rise. As a short-term objective, the Policy Note aims to review the disaster trends and lessons learned from pilot risk management of natural hazards initiatives, and recommend a strategic way forward. Particular attention is paid to the three 'I's' of risk management of natural hazards: Incentives, Institutions and Instruments. The Policy Note targets high-level decision makers in the Pacific Islands region, regional organizations and major development partners.

Campbell, John 2006, Traditional Disaster Reduction in Pacific Island Communities. GNS Science Report 2006/38, Institute of Geological and Nuclear Sciences Limited, Petone, New Zealand, 44 pp.

Pacific Island communities had a wide range of traditional measures that enabled them to ameliorate the effects of natural disasters. This study identifies four clusters of coping measures. Most important among these was food security made possible particularly through the production of surpluses. Not only were there many systems of food preservation and storage, but communities also maintained a diversity of food plants in addition to using wild or feral species. Fragmentation of garden land also enabled a diversity of food production sites reducing the likelihood of complete loss of food production following events such as tropical cyclones. A second important element in traditional disaster reduction was inter- community and intra-community cooperation. Cooperation was encouraged by building ties through feasting, ceremony and exchange of goods. This was also underpinned by the production of surpluses but enabled a wide range of co-operative strategies to be called upon in times of hardship. The third category of traditional disaster response included features of buildings in some parts of the Pacific region where hipped roofs, sennit bindings, deeply embedded hardwood posts and well sealed walls and roofs helped reduce damage from tropical cyclone force winds. Finally, traditional knowledge systems underlay all of the features above and also included strategies for predicting adverse weather events. Together these elements of disaster reduction enabled communities to be sustained for millennia in Pacific Island environments.

Galloway McLean, K., 2009: Advance Guard: Climate Change Impacts, Adaptation, Mitigation and Indigenous Peoples – A Compendium of Case Studies. United Nations University, Institute of Advanced Studies, Traditional Knowledge Initiative, Darwin, Australia, 124pp.

The compendium presents a wide-ranging overview of more than 400 projects, case studies and research activities specifically related to climate change and Indigenous Peoples, including 26 from the Pacific islands region. It provides a sketch of the climate and environmental changes, local observations and impacts being felt by communities in different regions, and outlines various adaptation and mitigation strategies that are currently being implemented by Indigenous Peoples – the world's "advance guard" of climate change – as they use their traditional knowledge and survival skills to trial adaptive responses to change. This condemium incorporates material from different disciplines and covers a diversity of approaches to data collection and project reporting drawn from the literature. Whilst the compendium of projects and case studies does not claim to provide an exhaustive list of ongoing activities related to climate change and Indigenous Peoples, it does contain a representative and illustrative survey of current effects and adaptive responses, including DRR.

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

Development agencies and international donors have long assisted Pacific Island countries to address risk as natural disasters regularly affect the region and because of the perceived high vulnerability of Pacific Islanders. The enhanced risks associated with climate change have now led to an influx of new policies, initiatives and development partners aiming to reduce vulnerability and increase resilience. This paper investigates how community based DRR and CCA approaches are becoming the common methodology employed by development agencies to increase resilience to disasters, as local communities are able to work with development partners and identify risks themselves, thereby addressing vulnerability issues using local knowledge. Furthermore, by introducing a participatory approach, where community members become the leaders and implementers of the project and contribute in meaningful ways, a sense of ownership is generally achieved leading to longer term sustainability of the project's outcomes. This approach also sets the project in the appropriate cultural setting, which is particularly important in the Pacific. Despite the increasing push of Western culture in the urban centres, many Pacific Islanders still identify with their local culture first and foremost. The research further examines how local cultures, communities and global development agencies forge relationships in the field of DRR and CCA using participatory approaches at the community level. It aims to answer the questions: Who drives DRR and CCA at the local level? What is the role of national governments? How do local systems of governance in the Pacific fit in with global agency's approach, or vice versa? These questions are answered through extensive research in DRR and CCA in the Pacific, using specific case studies and through interviews and focus groups with relevant development partners and community members.

Gero, A., Méheux, K. and D. Dominey-Howes, 2009: Integrating Participatory Disaster Risk Reduction and Climate Change Adaptation in the Pacific. Pacific Insight, 1(3), 2pp.

Discusses the similarities and differences between DRR and CCA, presents brief descriptions of some Pacific island case studies, and provides comments on the issue of funding, with an example of DRR vs CCA.

IFRC Pacific Delegation, 2007: Pacific Communities and Climate Forum. Forum Report, November 2007, Suva, Fiji. Red Cross/Red Crescent Climate Centre, 18pp.

A number of recent analyses for small islands of the Pacific suggest that a prudent way to deal with climate change is through a portfolio of actions at all levels aimed at mitigation, adaptation and improvement of knowledge. The field of adaptation to the effects of climate change is a relatively new one that is often associated with many 'hard' solutions such as sea walls and other costly infrastructure. However, there are many steps or 'soft options' that can be taken at the community level, to build resilience and reduce vulnerability against the effects of extreme events and climate change based on a culture of prevention. These actions are often low cost and termed as 'no regrets' because they will also assist the vulnerable to be better prepared for climate variability and health related risks that already exist. There are two global frameworks for Climate Change Adaptation and Disaster Risk Management. One of the linkages between the two sectors is that they are both trying to address vulnerability in communities affected by climate risk. While DRR focuses more on current risk and adaptation focuses on future risk, both

acknowledge that risk is changing - there is much opportunity to work together on both current and future climate risks. Community perceptions of the risks they face are unlikely to make distinctions between current and future risks. For this reason communities will benefit greatly from a `no regrets' approach that makes efforts to address all risk simultaneously. Regionally there is still work that can be done to bring together practitioners from various sectors that work with Pacific Island communities to address the climate risks they face in a spirit of collaboration, co-operation, information sharing and partnership. A stronger understanding of how climate change and extreme weather events can affect Pacific Island communities will enable civil society to develop stronger risk reduction and adaptation programmes.

Lal, P. N., Singh, R. and P. Holland, 2009: Relationship Between Natural Disasters and Poverty: A Fiji Case Study. SOPAC Miscellaneous Report 678, 84pp.

Increased disaster risks due to climate change are also expected to exacerbate poverty. The effects of disaster on the poor of Fiji will be different across regions and between the two ethnic communities because the poor are differently distributed across regions and ethnic groups. To assess the relationship between disaster and poverty in Fiji, a combination of qualitative and quantitative approaches was adopted. DRR benefits the poor more than disaster management does. For every dollar invested in DRR, between two and four dollars are returned in terms of avoided or reduced disaster impacts.

Lal, P. N., Kinch, J. and F. Wickham, 2009: Review of Economic and Livelihood Impact Assessments of, and Adaptation to, Climate Change in Melanesia. SPREP, Samoa, 84pp.

In many countries, including Solomon Islands and Vanuatu, the two frameworks of action (DRR and CCA) have largely been implemented independently of one another, usually with the assistance of external agencies. Regional partners, too, have had difficulty in integrating the strategies and coordinating their assistance. With limited capacity, PICTs are struggling to integrate these two external sets of assistance, often targeted at the two different parts of the government. There is thus an urgent need to integrate the two streams of assistance to countries to develop a single risk minimisation and risk management plan of action that deals with natural disasters, whether they have their origins in natural climatic events or those induced by human induced climate change.

Government of Australia, 2009: Engaging our Pacific Neighbours on Climate Change: Australia's Approach. Department of Climate Change, Commonwealth of Australia, 30pp.

Australia will assist Pacific island countries to adapt to the unavoidable impacts of climate change through an ongoing commitment to the region, including through programs such as the International Climate Change Adaptation Initiative (ICCAI), which will lay the foundation for future adaptation work in the region. Because climate change will affect many sectors, including food, water and health infrastructure, it will be essential to integrate support for adaptation with the broader development agenda, including DRR strategies. Integration will help to make Pacific nations less vulnerable to natural disasters such as cyclones and storm surges, which could become more intense with climate change. Australia contributes to a range of risk reduction measures, including improved building construction practices, early warning systems, disaster education, and mapping the occurrences of natural hazards. *Investing in a Safer Future: A Disaster Risk Reduction Policy for the*

Australian Aid Program highlights this approach. The policy is consistent with the *Hyogo Framework for Action 2005—2015*, which calls on countries to reduce underlying risks by integrating risk reduction measures and CCA.

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

Experiences from the Pacific clearly show that efforts to work with communities to generate gender-sensitive responses to and strategies for addressing climate change are more successful when they involve a number of responses from a number of partners; it is also vital that these multi-stakeholder responses be well coordinated. Success also depends on recognition that climate change is a dynamic process, and that the men and women of the Pacific are not victims of climate change, but active agents; through their own gendered knowledge and actions, individuals, households and communities can exacerbate or minimise the likely impact of weather and climate extremes. Development practitioners need to both understand the gendered knowledge and actions of individuals, households and communities and develop the confidence of people at community level to meet the challenges that climate change represents.

Morrell, W., 2009: Opportunities to Scale Up Climate Change Support to Pacific Island Countries. UN System in the Pacific, 9pp.

While there is a multitude of climate change activities being carried out in the Pacific region, there is a strong call from PICs for development partners to implement "concrete" adaptation measures at the community level that focus on initiatives that deliver both short-term development outcomes and longer term resilience to climate change (e.g. food and water security, disaster risk management). Furthermore, there is a call for a holistic community-based approach to CCA and for the development of information tools and case-studies that can be used widely within the Pacific region by PIC Governments and communities alike. Impacts of climate change on the tourism, health and the agricultural sectors will also require the joint support of multiple development partners in the region. Furthermore, the integration of disaster risk management and DRR into CCA initiatives, and the development of policy frameworks and contingency planning for communities facing displacement from rising sea-levels and exacerbating environmental conditions, warrant decisive and increased support from the UN System.

It is logical to strengthen the Pacific Climate Change Round Table as a formal stakeholder coordinating mechanism for the implementation of the *Pacific Islands Framework for Action on Climate Change (PIFACC)* that maintains strong linkages with the *Pacific Platform for Disaster Risk Management and the Pacific Regional Disaster Risk Management Framework for Action: 2005 – 2015,* allowing for the discussion and coordination of CCA and DRR activities at regional, national and community levels. Under such an approach, development partner activities on climate change in the Pacific can be fully mapped-out, discussed and coordinated. Further substantive resourcing, clear division of labour, and a strongly collaborative approach amongst stakeholders, including PIC Governments, CROPS, development partners and the UN System, will be essential to ensure that the Pacific Climate Change Round Table is adequately equipped to meet the demanding role expected of it.

Oxfam Australia and Oxfam New Zealand, 2009: The Future is Here: Climate Change in the Pacific. Oxfam Briefing Paper, Oxfam Australia and Oxfam New Zealand, 44pp.

Governments, civil society and local communities have a critical role to play in planning and implementing adaptation strategies in the Pacific in order to ensure adaptation funds are spent wisely, and the effective use of traditional knowledge. A greater proportion of adaptation funding should be allocated to basic resilience programs at a community level in the Pacific to ensure that vital resources are not soaked up by consultants and scientific studies before reaching those most in need. A central priority for adaptation work should be supporting civil society and communities in their efforts to develop community resilience through DRR and "climate proofing" villages. There also needs to be a focus on developing community responses to issues of food and water security to ensure continuing access to the staples of life. Pacific communities urgently need support to adapt to the impacts of climate change they are already experiencing. Governments, civil society and local communities have a critical role to play in planning and implementing adaptation strategies in the Pacific. This will help to ensure the best use of adaptation funds and the effective use of traditional knowledge.

While initial support from the Australian and New Zealand governments has been welcome, the scale of the problem means that much more money is needed. Moreover, financial support for adaptation in the Pacific must be in addition to existing aid commitments so that crucial efforts to alleviate poverty and promote development across the region are not compromised. At least double the current level of adaptation funding is required simply to address the most urgent adaptation needs. Meeting these needs will require between AUD $365 million/NZD $455 million and AUD $668 million/NZD $834 million. It is critical to ensure these funds are spent effectively. To this end, a greater proportion of adaptation support for the Pacific must be allocated to basic resilience programs at a community level. There is also a need to safeguard access to food and water for Pacific communities.

Scott, G. and A. Simpson, 2009: Disaster Risk Reduction and Climate Change Adaptation in the Australia-Pacific Region. Invited Paper, Eighteenth United Nations Regional Cartographic Conference for Asia and the Pacific, Bangkok, October 2009, 14pp.

This paper describes Australia's progress in the areas of DRR and CCA in the past 3-4 years, and reports on a number of 'best practice' activities in the Australia- Pacific region. Australian Government engagement with the Pacific on climate change to 2015 will be guided and informed by the following set of principles:

- An effective global solution to climate change that includes mitigation, adaptation and financing, and ensure that Pacific views are represented in international forums, by highlighting the challenges faced by the Pacific region due to climate change and by supporting organisations that articulate regional views.
- Support and recognise Pacific regional and national priorities and work in partnership to help achieve them.
- Support the Pacific island countries' stated priority to contribute to global greenhouse gas reductions.
- Provide support for practical adaptation programs to increase resilience and reduce vulnerability in support of sustainable development.
- Assist Pacific island governments to build their institutional arrangements and skills to respond to and integrate climate change into development policy and planning.
- Help meet the needs of policy makers by improving the quality of and access to accurate, localised and relevant data necessary for effective decision making.
- Contribute to better development coordination by supporting regional organisations that have a coordination role, taking an integrated and cooperative

approach to assistance for climate change in its own programs, and encouraging other donors to do the same.

Simpson, M.C., Scott, D., New, M., Sim, R., Smith, D.,Harrison, M., Eakin, C.M., Warrick, R., Strong, A.E., Kouwenhoven, P., Harrison, S., Wilson, M., Nelson, G.C., Donner, S., Kay, R., Geldhill, D.K., Liu, G., Morgan, J.A., Kleypas, J.A., Mumby, P.J., Christensen, T.R.L., Baskett, M.L., Skirving, W.J., Elrick, C., Taylor, M., Bell, J., Rutty, M., Burnett, J.B., Overmas, M., Robertson, R. and H. Stager, 2009: An Overview of Modeling Climate Change Impacts in the Caribbean Region with contribution from the Pacific Islands, United Nations Development Programme (UNDP), Barbados, West Indies, 268pp.

This report provides an overview for all CARICOM member states of the risks from climate change and includes a section on the common threats of climate change for Pacific island countries. The report focuses on: climate change projections for the Caribbean region under +1.5°and +2°C global warming scenarios; the implications of ice sheet melt for global sea level rise (SLR); the projections and implications of SLR for the Caribbean region; evaluation of the differential impacts of +1.5°and +2°C on coral reefs, water resources and agriculture in the Caribbean, with additional analysis for the Pacific islands. The impacts of a changing climate on the Caribbean and the islands of the Pacific are increasingly being manifested in economic and financial losses. While there is limited information on the economic impacts of climate change in the Pacific islands, predictions of SLR and other climate related impacts present significant risks to water, food security, coastal settlements, infrastructure and economic development, particularly for those small low lying atoll countries. The lack of long-term datasets and high-resolution elevation data in the Caribbean region and Pacific islands provides a fundamental barrier to the improved quantification of the impacts of climate change and SLR.

There is an urgent need for data collection and investment that would facilitate detailed risk mapping and more accurate evaluations of the impacts of climate change, as well as thorough cost-benefit analyses of different adaptation options and their abilities to cope with different levels of climate change and SLR. This would also help to secure assistance from the international community who are interested in supporting evidence-based adaptation strategies. Despite a significant and evolving effort to understand climate change impacts on small island states and developing nations, there remains the need for further assessment of practical outcomes and approaches that enhance adaptive capacity and resilience. This report provides the first thorough assessment of the consequences of projected SLR and storm surge leading to coastal inundation (+1m to +6m) for the people and economies of the 15 CARICOM nations, gives an overview of the impacts of climate change in the Caribbean region and Pacific islands, and provides recommendations for urgent future work required to enable adaptation to climate change.

SOPAC, 2009: Guide to Developing National Action Plans: A Tool for Mainstreaming Disaster Risk Management Based on Experiences from Selected Pacific Island Countries. SOPAC Joint Contribution Report 196, 76pp.

The NAP development process described in this guide results from experiences obtained by a core team of the PPN who, over the period 2006-2008, assisted Vanuatu, Marshall Islands and Cook Islands develop whole-of-country and fully-costed DRM national action plans. This guide represents the accumulated knowledge from these experiences.

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

Most progress of the implementation of the Madang Framework within PICs has been possible with the assistance and/or the leadership of DRR and disaster management development partners. In instances where implementation is quite successful in country, this is largely through the collaboration of the different government agencies of the implementing countries and or through strong partnership with community organisations or civil society organisations. However in the compilation of this report, one of the major challenges was in the obtaining of information and data from the National Disaster Managers Officers throughout the region. This however is not a reflection that there has not been any implementation in country, as from the experiences of in-country work of the PDRMPN that such work in DRR and disaster management does exist.

SPREP, 2007: Capacity Building for the Development of Adaptation Measures in Pacific Island Countries. Final Project Report, Prepared for Canadian International Development Assistance (CIDA), 62pp.

The Capacity Building for the Development of Adaptation Measures in Pacific Island Countries (CBDAMPIC) project successfully achieved its main purpose, which was to increase the resilience of 16 communities in four Pacific Island countries to the adverse effects of climate change. The project has developed and successfully demonstrated a framework of action that fuses the top-down and bottom-up approach to climate change vulnerability and adaptation assessments and action. This is an important development globally as some adaptation projects only promote either of the approaches for very good reasons. From such approaches, new models of action at the community level emerge that are specifically useful to particular cultural and geographical situations in the Pacific region or globally.

The CBDAMPIC project exhibits several innovative ways of project management building on the foundation that Pacific Islands Climate Change Assistance Programme (PICCAP) put in place. Although it is regionally executed, the bulk of implementation is carried out at the national level. Resources are made available to the national governments for their management and direct implementation of planned activities. The regional coordinating mechanism of the Secretariat of the Pacific Regional Environment Programme (SPREP) is therefore focused more on backstopping countries on technical capacity building, financial administration and other support needed from time to time. This is a slight departure from other regional projects where most project activities are carried out at the regional level and mostly by consultants.

United Nations Development Programme and AusAID, 2008: The Gendered Dimensions of Disaster Risk Management and Adaptation to Climate Change - Stories from the Pacific. United Nations Development Programme Pacific Centre, Suva, Fiji, 48pp.

Until recently, the DRR and CCA sectors in the Pacific have worked along parallel lines and paid little attention to gender. The report describes strategies for integrating gender, DRR and climate change into resource management programming in the Pacific, as well as the ways expert practitioners in the region can collaborate in these areas, paying particular attention to understanding the gender dimensions of their

respective fields. The report also highlights that successful strategies require women and men in rural and urban communities to be engaged in decision making at all levels.

Wickham, F., Kinch, J. and P. N. Lal, 2009: Institutional capacity within Melanesian countries to effectively respond to climate change impacts, with a focus on Vanuatu and the Solomon Islands. SPREP, Samoa, 76pp.

The assessment involved a review of literature on global climate change agenda and issues; capacity development; institutional capacity; national programmes and projects and vulnerability and adaptation (V&A) assessment work undertaken in Melanesia; and in-country consultations in the two archipelagic countries of Melanesia – Vanuatu (Port Vila) and the Solomon Islands (Honiara). The report begins with an overview of vulnerability situation in Melanesia, establishes working definitions for the main terms and concepts used in the assessment and presents a summary review of institutional capacity in the independent states of Melanesia to respond to climate change impacts on the coastal and marine environments including identification of the main institutional capacity impediments and gaps. This is followed by recommendations on opportunities and options to develop institutional capacity which are grouped into immediate/short-term and on-going measures. Recommendations are also provided as to the types of assistance that will be needed to implement institutional capacity initiatives and key institutional variables that can be used in a spatially derived vulnerability assessment to gauge institutional resilience.

A well coordinated, sustained, incremental and catalytic approach to capacity development is needed to scale up vulnerability and adaptation assessments and begin adaptation work across sectors and different levels in society. Over the coming years the influx in numbers, types and different size of CCA projects in Melanesia will place strain on government resources and there is the danger that this likely "overload" may actually weaken overall institutional capacity. This in itself can lead to another form of vulnerability but can be countered if institutional capacity is strengthened. While the important enabling capacity issues such as legal frameworks, policies and mainstreaming will continue to be a challenge, taking a catalytic approach to institutional capacity development which includes strengthening awareness, participation, partnerships knowledge management and V&A capacity, can go a long way to minimise vulnerability and enhance resilience in Melanesia.

World Bank, 2009: Reducing the Risk of Disasters and Climate Variability in the Pacific Islands: Regional Stocktake and Country Assessment Reports. The World Bank, East Asia and the Pacific Region, 266pp.

This report highlights arrangements for supporting hazard and climate change risk management leading to DRR and CCA measures in Pacific island countries. Specifically the report identifies country and regional needs for supporting risk reduction programs, the primary players who are supporting such programs, gaps in delivering support and possible synergies, and comparative advantages among agencies active in this activity. The focus is on risk reduction, as opposed to disaster management measures to prepare for, respond to, and recover from disaster events when they occur. The report reviews regional mechanisms supporting in-country government arrangements and activities and identifies potential improvement measures. While several specific sector activities are addressed as they were encountered, the report does not provide a comprehensive summary of sector-by-sector activities.

In the seven country assessment reports (Fiji, Kiribati, Marshall Islands, Papua New Guinea, Solomon Islands, Timor-Leste, and Vanuatu) the focus on in-country government arrangements arises from clear evidence of systemic difficulties from many Pacific is- land countries in establishing an enabling environment and cross-sector focus for DRR and CCA activities despite clear leadership commitment at the national and regional levels. In many countries it is becoming clear that, in spite of several promising starts, sustainable and systematic risk reduction (i.e., on other than an ad hoc basis) will not occur without stronger government commitment and efforts at the policy and regulatory levels. Among the priorities of the Hyogo Framework for Action (HFA), one factor is to promote in-country government arrangements demanding risk reduction considerations across all sectors and promoting community-based, risk reduction initiatives through provincial and local government and through civil society and all stakeholder groups. While there is increasing interest in dealing with many common issues and challenges from a regional perspective, much more nurturing is still needed.

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

Presents profiles of the DRR/CCA systems in the seven countries reviewed in the Regional Stocktake. From these profiles as well as the other works it is clear that both a national and regional perspective are needed among all stakeholders in order to have a comprehensive operational framework. At the same time, given several factors (distance, size, socio-economic linkages, cultural, institutional and other characteristics), it should be acknowledge that in the early phase the potential for regional DRR and CCA initiatives among the Pacific islands is not as promising as it is for individual country initiatives.

Annex 2

Terms of Reference and Study Methodology

A. Terms of Reference

1. Background:

Climate Change Impacts in the Pacific:
The Pacific is projected to experience major changes to the ecosystems that people depend on for food and livelihoods. The 4th Assessment Report of the Intergovernmental Panel on Climate Change indicates that changing precipitation patterns, intensification of extreme weather events, ocean acidification, increasing air and ocean temperatures and sea-level rise all threaten to seriously undermine development in many Pacific Island Countries through reductions in productivity of fisheries and agriculture and job losses associated with coastal infrastructure including tourism. In some cases, climate change may even lead to the displacement and dislocation of Pacific Island peoples, customs and cultures. Changing environmental conditions are also expected to increase the risk of water-borne and mosquito-borne diseases, especially in rapidly growing urban areas.

In response to this challenge, the Pacific Island Framework for Action on Climate Change (PIFACC) was endorsed in 2006 demonstrating the regions commitment to climate change mitigation and adaptation. Pacific Leaders reconfirmed this commitment at the 40th Pacific Island Forum meeting in Cairns in 2009 by adopting the Pacific Leaders Call for Action on Climate Change, recognizing at the highest political level. Further acknowledgement "that climate change impacts, coupled with the vulnerability of Pacific Island countries will undermine sustainable development efforts" and in particular with differentiated impact on women who make up a large part of the agriculture workforce in the Pacific was registered at the Rarotonga Climate Change Declaration (November 2009). At this meeting, it was further reiterated that "adaptation is an additional burden on Pacific Island countries. In addition, the Rarotonga meeting further recalled the Pacific Island Forum Leader's Niue Declaration on Climate Change (2008), the UN General Assembly Resolution on "Climate Change and its Security Implications" and the Alliance of Small Island States (AOSIS) Climate Change Declaration of September 2009. The meeting called on the international community to shore up a package of actions, including "support to regional & national efforts to address climate change in the Pacific".

Disaster Impacts in the Pacific:
Since the 1950s, PICs have reported 207 disaster events, affecting almost 3.5 million people with over USD 6 billion reported losses. Cyclones and floods alone accounted for 80 percent of reported events with over 80% of total costs and fatalities. According to the Global Assessment Report on Disaster Risk Reduction (2009), SIDS have the highest proportion of their population exposed to tropical cyclones. In particular, SIDS have a far greater relative exposure to highly destructive Category 3 and 4 storms than larger countries. This is also reflected in the Mortality Risk Index for Cyclones, where two Pacific Island Countries feature amongst the top ten countries (Fiji and Vanuatu). Pacific Island countries are also represented amongst the top ten countries on the Mortality Risk Index for Landslides (Papua New Guinea and Solomon Islands), which are known to be more deadly when triggered by high precipitation. Thus, being already highly vulnerable to the impacts to extreme weather events, Pacific island countries are expected to suffer even more when

extreme weather events are increasing in frequency and intensity due to global climate change.

Also disaster risk reduction was recognized as a regional policy priority through the adoption of the Pacific Disaster Risk Reduction and Disaster Management Framework for Action (Madang Framework) in 2005, which is in line with Hyogo Framework for Action (HFA) and one of the first regional adaptations of the HFA.

The Convergence of Disaster Risk Reduction and Climate Change Adaptation:
The above shows that disaster risk reduction and climate change mitigation and adaptation share a common space of concern, i.e. reducing the vulnerability of communities and achieving sustainable development. The importance of disaster risk reduction for reducing the adverse impacts of climate change was also recognized in the Bali Action Plan which was endorsed at the 13th COP of the UNFCCC (2007). Many governments, including Pacific island countries, are acknowledging the need and have even started to take action to coordinate disaster risk reduction and climate change adaptation and to integrate both considerations into development and poverty eradication programmes.

However, there are still challenges and barriers that need to be overcome before true synergy and convergence between the two fields can be achieved. A number of studies on such challenges and barriers for incorporating disaster risk reduction into climate change adaptation have already been carried out at the global level and recommendations on how to overcome these were identified. The range of factors identified by these studies include (not all inclusive):

- Division of institutional responsibilities at national level;
- Separate policy frameworks at international, regional and national levels;
- Different perceptions on the temporal scales of disaster risk reduction and climate change adaptation;
- Spatial scale differences;
- Confusion over similarities and differences between disaster risk reduction and climate change adaptation;
- Use of different methods, approaches, tools, and terminology;
- Vagueness over how to achieve integration at institutional, policy and programmatic level;

Some of these challenges are also experienced in the Pacific region. At the strategic and coordination levels, the Pacific region is guided by separate regional strategy frameworks for disaster risk management and for climate change adaptation which are housed in different sub-regional intergovernmental organizations, i.e. SOPAC and SPREP. This regional divide appears to make integration at the national level more difficult as mentioned by many disaster risk management practitioners in the Pacific as a major impediment for reaching out to their climate change colleagues. Notable also in the Pacific is the lack of an overall picture of concrete results from climate change development interventions which has escalated over the last decade, and how these have impacted on critical priorities of countries in the Pacific region to provide information that would guide and direct implementation of climate change activities to adapt to climate change for a decent life. Nevertheless, some advances have been made, e.g. in Samoa where approaches to village disaster awareness and preparedness are designed to address both natural hazard and climate related risks, or in Tonga and Federated States of Micronesia where the government has committed to pursue National Action Planning for DRR and CCA through a combined plan.

2. Study Rationale:

In order to progress more swiftly and to better understand what enabled these advances, a thorough analysis of the institutional and policy context of DRR and CCA is recommended for Pacific island countries. Such an analysis is considered instrumental for implementing the following recommendations of the Pacific Platform for Disaster Risk Management (Nadi, May 2009) pertaining to the integration of DRR and CCA, i.e.: to strengthen institutions and governance arrangements in Pacific island countries that can facilitate mainstreaming of DRR and CCA into development; to jointly implement the National Action Plans (NAPs) for DRM and Climate Change Adaptation Plans of Action (NAPAs); and to carry out a mid-term review of the Madang Framework for Action in preparation of the Mid-term Review of the HFA in 2010. Synergies can be created with a range of ongoing adaptation initiatives at the regional level (e.g. Pacific Adaptation to CC – PACC), at the national level (e.g. Sectoral NAPA follow up projects), and at the community level (e.g. the MAP-CBA-SGP programme, or the Community Centered Sustainable Development Programme - CCSDP). The ongoing process of the 2nd National Communications in most PICs, especially their Vulnerability and Adaptation Components, represent good opportunity to promote the integration of CC-A and DRR policies and processes.

This will be undertaken in close collaboration with the planned evaluation of climate change service line of the United Nations Development Programme Multi-Country Office in Fiji that will collate and analyze information on how national climate change priorities have been addressed. This approach will avoid duplication, and provide a more holistic picture of systemic and institutional challenges affecting climate change interventions in the region.

3. Study Objectives:

Whilst climate change covers a broad area of interventions, there is a growing urgency and awareness in the Pacific of the need to link disaster risk reduction and climate change adaptation. This study will provide timely support to Pacific island countries when considering what package of institutional responsibilities and policies is adequate to confront risks from multiple hazards, i.e. natural hazards and climate change, across multiple development sectors. Responsibilities for managing disaster or climate-related risks may be distributed across multiple agencies and departments with inadequate clarity on mandates and unclear division of labor. Furthermore, many countries are only recently beginning to reconfigure government institutions and policies to pursue preventive, as opposed to reactive, disaster reduction strategies. Climate risk-related responsibilities in particular may be fragmented, with climate change falling under the jurisdiction of environment ministries while shorter-term variability is addressed by entities dealing with disaster risks and disasters. Many critical policies may be outdated. In most Pacific Island Countries there are emerging inter-ministerial coordination mechanisms on climate change (National CC Country Teams, Committees), or specific CC Offices (e.g. PNG) and Ministries (e.g. Tonga) are being set up. Similar coordination mechanisms also exist since several decades for disaster risk management (National Disaster Management Councils, Committees and Offices). Linkages amongst these offices and functions is questionable.

Against the above background, the UNISDR Sub-Regional Office for the Pacific, in collaboration with the United Nations Development Programme, Fiji Multi-Country Office, is commissioning this study inselected pilot countries, with the aim to:

- Analyze the current status of linking disaster risk reduction and climate change adaptation at the institutional and policy level in selected Pacific Island countries;
- Analyze and document results from climate change interventions sponsored through UNDP and their alignment with/impacts on identified national priorities in areas such as sustainable livelihoods, agriculture and food security, disaster risk reduction, planning & management, to name a few.
- Analyze local level implementation of national policies and plans for DRR and CCA with a focus on convergence and divergence at district and community level;
- Identify the concrete challenges and barriers encountered in bringing about greater convergence between the two areas;
- Document good practice in strengthening institutional and policy linkages between DRR and CCA;
- Recommend concrete steps and follow-up action for regional and national stakeholders to strengthen the application of disaster risk reduction in climate change adaptation.

The study is expected to shed light on a number of pertinent questions, such as:

- To what extent have climate change interventions supported national priorities, what are the strategic challenges and gaps? This would focus largely on UNDP supported initiatives over the last 10 years.
- What is the current understanding of the similarities and differences between DRR and CCA among policy makers and practitioners in the Pacific?
- To what extent do climate projections inform in disaster risk reduction measures in Pacific island countries?
- How are local climate scenarios developed, what standards are they based on?
- What are the entry points for mainstreaming DRR/CCA into development planning?
- How are DRR and CC-A policies and plans being implemented at the district and community levels?
- To what extent DRR/DRM practices are integrated into adaptation plans and measures in key vulnerable sectors (e.g. coastal management, water, agriculture, housing, health) ?

4. Study Outputs

The main output of this study will be a published report (max. 80 pages) with a succinct analysis of the key issues and practical recommendations for next steps at the regional and national level. It will include the following deliverables:

- A short summary document to be made available to all stakeholders making the case for DRR/CCA integration for ISDR advocacy purposes in the Pacific (well designed with clear messages).
- Document review and annotated bibliography that could be used as a reference tool.
- Criteria for the selection of participating pilot countries.
- Local, national and sub-regional institutional and policy maps outlining who, what, where and subsequent gaps (annotated, linked to source + resources).
- An analysis of challenges and barriers encountered in bringing about greater integration and implementation of interventions;
- A synthesis on results of climate change interventions, results and impacts on national development priorities and gaps, including disaster risk reduction;

- A collation of documented or yet to be documented initiatives or good project examples of CCA that is inclusive of DRR and an indication of the enabling environment that facilitated this work (useful practical examples linking CCA and DRR).
- A set of conclusions that indicates "what defines good CCA that incorporates DRR at the practical level in the Pacific"
- A set of recommended steps and follow-up action for regional and national stakeholders to strengthen the application of disaster risk reduction in climate change adaptation, including suggested priority areas for which Guidance Notes or other tools could be developed in future.

5. Application and Usage

The report findings will be widely disseminated to regional and national stakeholders through various channels and media, such as presentations at key regional meetings (Pacific Platform meeting, Pacific Climate Change Round Table, Development Partners in Climate Change (DPCC), FEMM, Global Platform PACC project meetings, Development Partners in Climate Change, UNDAF OG4 etc.) and national events, high-level advocacy missions, mail and web-based. It is envisaged that the report's recommendations will be taken up and put into practice:

- In advocacy initiatives with national and regional level policy makers.
- In identifying DRM and CCA policy, as well as regional, national and sub-national priorities.
- In the design and implementation phase of ongoing and planned DRR and CCA programmes in the region.
- In the development, review and implementation of CCA and UNDAFs, NAPs for DRM/CCA, NAPAs, and regional, national and community-based climate change projects.
- In the mid-term review of the Madang Framework in 2010.
- In the strategic streamlining of UNDP's climate change service line in future programmes
- In developing knowledge products and practical guidance materials, and inclusion in existing knowledge networks (e.g. UN Adaptation Learning Mechanism).

6. Methodology

The analysis methodology will comprise the following key elements:

- **Review of existing documents**, studies, research on DRR and CCA integration in the Pacific or elsewhere which are useful for fine tuning the analysis methodology and data collection process.

- **Analysis of the main regional policy and project documents** on DRR and CCA in the Pacific: Where do they overlap? Where do they differ? Are there potentials for integration? How appropriate are they for strengthening greater synergies?

- **Analysis of national policy and project documents** on DRR and CCA in selected pilot countries: Where do they overlap? Where do they differ? Are there potentials or signs for integration? To what extent are they linked/mainstreamed into regional development policies?

- **Stakeholder or network analysis**[3] identifying key national and regional institutional and individual partners engaged in country-level DRR/CCA work: What is their contribution to the management of disaster and climate risks? What is the extent/quality of their collaboration and coordination? What are the barriers and opportunities for collaboration and coordination? How are they linked with other development stakeholder sectors? What are their key capacity constraints? What is their understanding/awareness of DRR and CCA and how they are linked (both high-level policy makers and practitioners)?

- **Review of experiences with DRR/CCA project implementation**. What are the experiences with implementing integrated DRR/CCA programmes?[4] What are the challenges and barriers? What are the key factors for success?

- **Review of climate change project/programmes assessments and reports**, undertaken in identified pilot countries over the last 10 years through UNDP support.

The analysis methodology may require the following data collection methods, including (but not limited to):
- Desk review of key documents;
- Interviews with regional and national partners (also by phone as required);
- Visits to pilot countries to carry out interviews, focus group discussions, small workshops, and project site visits.
- Consultation workshops with regional partners in Fiji/Samoa.

7. Implementation Arrangements:

UNISDR is providing advocacy, information and guidance on disaster risk reduction as a tool to manage climate risks and adapt to the impacts of climate change. UNDP comes with its long experience in the region on implemented climate change programmes/projects and will provide available documentation to complement those of UNISDR. UNDP Fiji has assisted ten Pacific island countries, whilst UNDP Samoa has assisted four, in accessing financing of climate change and other projects to meet national obligations to the UN Convention of Climate Change as well as other UN Multi-Lateral Agreements. In addition, UNDP's administration and finance support will be provided to this activity. UNISDR's efforts have been in support of international policy deliberations and to assist governments and other ISDR system partners to reduce climate related vulnerabilities and risks, in line with the Hyogo Framework for Action and its various regional/national adaptations

Technical advisory support will a be provided by the UNISDR Sub-Regional Coordinator for the Pacific, UNDP Fiji MCO and Pacific Regional Center, the UNISDR Senior Regional Coordinator for Asia and Pacific, the UNISDR Climate Change Focal Point in Geneva, the UNDP Technical Advisor for Climate Change Adaptation in the Pacific, Environmental specialists at UNDP Country Offices and the World Bank Disaster Risk Management Focal Point for the Pacific.

Inputs and comments will be solicited from Pacific island country governments and relevant regional partners representing the DRR and CCA community in the Pacific during the preparation, consultation and review of the study.

b. Methodology

[3] At least one stakeholder institution with a special focus on gender and women must be included.
[4] At least two national policy reviews should also analyze the whether they are gender sensitive.

The main activities in undertaking the study were as follows:

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

The methodology is described further in the following table.

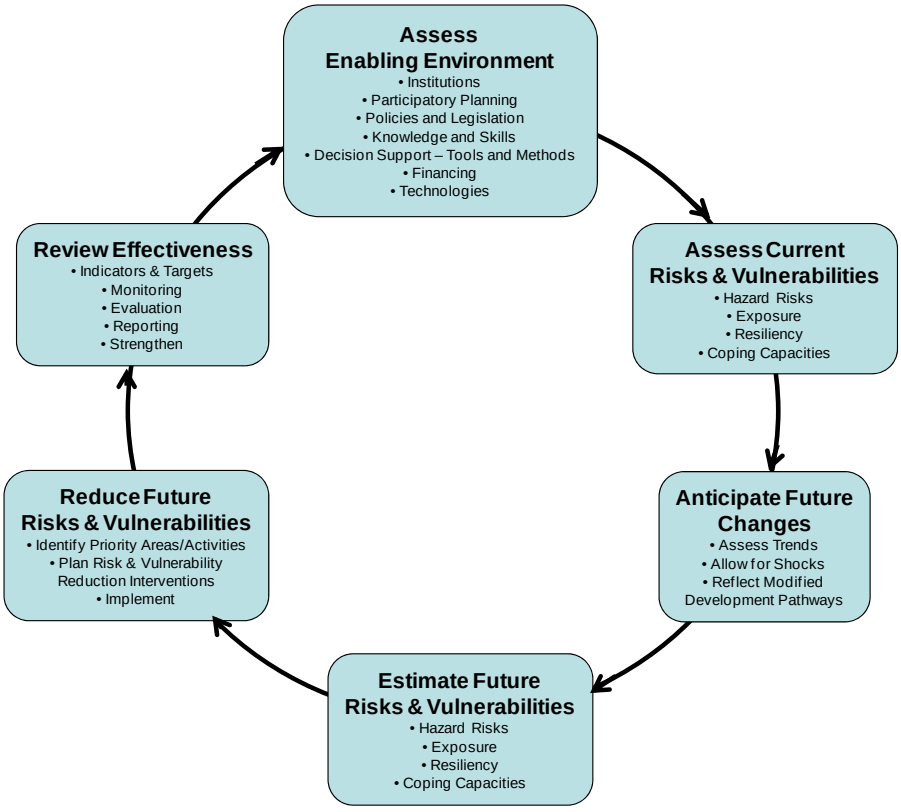
<table>
<tr><td rowspan="2">Step 1</td><td colspan="3">Key question: To what extent have CCA and DRR interventions supported national priorities, and what are the strategic challenges and gaps?</td></tr>
<tr><td>Inputs</td><td>Methods</td><td>Resulting Understanding</td></tr>
<tr><td></td><td>Relevant information and expert opinion on the integration of DRR and CCA in the Pacific and elsewhere</td><td>Desk top study, with inputs from key informants, involving acquisition, critical analysis and subsequent synthesis of substantive information and expert opinion on integration of DRR and CCA; focus largely on UNDP-supported and SOPAC initiatives over the last 10 years</td><td>Emerging understanding of:
▪ the relevant literature;
▪ institutional and policy maps, including responsibilities, operational services and gaps;
▪ relevant interventions in the Pacific;
▪ impacts on national development;
▪ good practices in CCA, including DRR; and
▪ challenges and barriers, including gaps</td></tr>
<tr><td rowspan="3">Step 2</td><td colspan="3">Key question: Which PICs will provide, through site visits and other means, the most useful experiential and other information on the policies and institutional arrangements, responsibilities and operational services which can strengthen the capacity to address, in a proactive manner, the risks from multiple natural hazards and climate change, across multiple development sectors?</td></tr>
<tr><td>Inputs</td><td>Methods</td><td>Resulting Understanding</td></tr>
<tr><td>Understanding resulting from Step 1</td><td>Develop criteria for the selection of four pilot countries in the Pacific region; seek feedback from UNISDR and UNDP</td><td>Identification of four countries where detailed studies and consultations can be undertaken to add value to a desk top study of:
▪ local level implementation of national policies and plans for DRR and CCA with a focus on convergence and divergence at district and community levels;
▪ extent to which DRR/DRM practices are integrated into adaptation plans and measures in key vulnerable sectors (e.g. coastal management, water, agriculture, housing, health);
▪ results from climate change</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td>interventions sponsored through UNDP and their alignment with/impacts on identified national priorities in areas such as sustainable livelihoods, agriculture and food security, disaster risk reduction, planning and management;
▪ the current status of linking disaster risk reduction and climate change adaptation at institutional and policy levels;
▪ institutional and policy maps, including responsibilities, operational services and gaps;
▪ lessons learned and good practices in CCA, including DRR; and
▪ challenges, barriers and gaps</td></tr>
<tr><td>Step 3</td><td colspan="3">Key questions: To what extent do climate projections inform in disaster risk reduction measures in Pacific island countries? How are local climate scenarios developed? What standards are they based on? How are DRR and CCA policies and plans being implemented at the district and community levels? To what extent DRR/DRM practices are integrated into adaptation plans and measures in key vulnerable sectors (e.g. coastal management, water, agriculture, housing, health)? To what extent are they linked with and mainstreamed into regional development policies? In terms of national policies and projects related to DRR and CCA, what are the overlaps and key differences? Is there potential for greater integration?</td></tr>
<tr><td></td><td>Inputs</td><td>Methods</td><td>Resulting Understanding</td></tr>
<tr><td></td><td>National policy and project documents on DRR and CCA in pilot countries;
Opinions of key informants in pilot countries;
observations made during site visits</td><td>Prepare TOR for pilot countries, including questions that will be asked of key informants and in the critical analysis
Use above questions to develop a self assessment tool that can be applied by countries on a regular (e.g. six monthly or annual) basis Synthesis of key findings from a critical analysis of national policy and project documents on DRR and CCA in pilot countries as well as of opinions of key informants in those countries</td><td>Understanding of:
▪ local level implementation of national and regional policies and plans for DRR and CCA, with a focus on convergence and divergence at district and community level;
▪ extent to which DRR/DRM practices are integrated into adaptation plans and measures in key vulnerable sectors (e.g. coastal management, water, agriculture, housing, health);
▪ results from climate change interventions sponsored through UNDP and their alignment with/impacts on identified national priorities in areas such as sustainable livelihoods, agriculture and food security, disaster risk reduction, planning & management;
▪ the current status of linking disaster risk reduction and climate change adaptation at institutional and policy levels;
▪ institutional and policy maps, including responsibilities, operational services and gaps;
▪ good practices in CCA, including DRR; and
▪ challenges and barriers</td></tr>
<tr><td>Step 4</td><td colspan="3">Key questions: What is the current understanding of the similarities and differences between DRR and CCA among policy makers and practitioners in the Pacific? Is</td></tr>
</table>

	there potential for greater integration and will this deliver greater synergistic benefits?		
	Inputs	**Methods**	**Resulting Understanding**
	Findings from Steps 1 through 3	Stakeholder network analysis; at least one stakeholder institution with a special focus on gender and women will be included	Roles and responsibilities of key national and regional institutional and individual partners engaged in country-level DRR/CCA at both policy and operational levels are identified, including: ▪ the linkages between those working at policy and operational levels ▪ their contribution to the management of disaster and climate risks; ▪ the extent/quality of their collaboration and coordination; ▪ the barriers and opportunities for collaboration and coordination; ▪ their links with other development stakeholder sectors; ▪ their key capacity constraints; and ▪ their understanding/awareness of DRR and CCA
Step 5	Key questions: What are the experiences with implementing integrated DRR/CCA programmes? What are the challenges, barriers and existing and emerging opportunities? What are the key factors for successful integration?		
	Inputs	**Methods**	**Resulting Understanding**
	Findings from Steps 1 through 4	Critical analysis of national policy and project documents on DRR and CCA in the Pacific and of the opinions of key informants, as well as site visits; review experiences with implementation of DRR and CCA projects; at least two national policy reviews will consider the extent to which they are gender sensitive	Understanding of challenges, barriers and opportunities to greater integration and more effective implementation of DRR/CAA interventions
Step 6	Key questions: What are the key factors for successful integration of DRR and CCA? What are the entry points for mainstreaming integrated DRR and CCA into development planning? What are the critical aspects of the enabling environment?		
	Inputs	**Methods**	**Resulting Understanding**
	Findings from Steps 1 through 5	Assessment of documents and opinions of key informants to draw out good practices and lessons learned	Understanding of good practice and lessons learned in strengthening institutional and policy linkages between DRR and CCA, including key entry points and the role of the enabling environment
Step 7	Key question: What are the critical steps and actions to strengthen the integration of CCA and DRR at various levels (regional, national, community, sector) in the Pacific?		
	Inputs	**Methods**	**Resulting Understanding**
	Findings from Steps 1 through 6	Assess earlier findings and develop recommendations	Recommended steps and follow-up action for regional and national stakeholders to strengthen the inclusion of DRR in CCA, including priority areas for which Guidance Notes or other tools could be developed in future
Step	Key question: What are the critical elements of the case for greater integration of		

8	DRR and CCA, and the steps for achieving this?		
	Inputs	**Methods**	**Resulting Understanding**
	Findings from Steps 1 through 7	Summarize critical understanding developed in earlier steps	Key content of a short summary document that makes the case for the integration of DRR and CCA

The following diagram provides the overall framework for the assessment, and for and follow-up assessments. The focus is on vulnerability reduction, and highlights the importance of both the enabling environment and on the ground implementation.



Criteria were developed to help identify the four PICs which were to provide, through site visits and other means, the most useful experiential and other information on the policies and institutional arrangements, responsibilities and operational services which can strengthen the capacity to address, in a proactive manner, the risks from multiple natural hazards and climate change, across multiple development sectors.

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

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

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

	Assessment of Implementation of the Pacific Islands Framework for Action on Climate Change (PIFACC). South Pacific Regional Environment Programme (SPREP), Apia, Samoa, 20pp.	
Existence of institutional and policy maps, including responsibilities, operational services and gaps	Information sources used include: ▪ SOPAC, 2009: Implementation of the Hyogo Framework for Action and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015: Report for the Period 2007-2009. Community Risk Programme, Pacific Islands Applied Geoscience Commission (SOPAC), SOPAC Secretariat, Suva, Fiji Islands, 52pp. ▪ Hay, J.E., 2009: Preparedness, Planning and Prevention: Assessment of National and Regional Efforts to Reduce Natural Disaster and Climate Change Risks in the Pacific. Prepared for the World Bank, 61pp.	Cook Islands - Low Fiji – Low FSM - Low Kiribati – Moderate Nauru – Low Niue - Low Palau - Low PNG – Low RMI - Low Samoa - Moderate Solomon Islands – Low Tonga - Low Tuvalu – Low Vanuatu – Low
Existence of lessons learned and good practices related to integration of DDR and CCA	Information sources used include: ▪ Hay, J.E., 2009: Technical Report. Implementation of the Pacific Adaptation to Climate Change (PACC) Project: Process, Status and Assessment. Prepared for the Pacific Regional Environment Programme (SPREP), December, 2009, 48pp.	Cook Islands - Low Fiji – Moderate FSM - Low Kiribati – Moderate Nauru – Low Niue - Low Palau - Low PNG – Low RMI - Low Samoa - Moderate Solomon Islands – Low Tonga - Low Tuvalu – Low Vanuatu – Low
Understanding of challenges, barriers and gaps	Information sources used include: ▪ Hay, J.E., 2009: Technical Report. Implementation of the Pacific Adaptation to Climate Change (PACC) Project: Process, Status and Assessment.	Cook Islands – Moderate Fiji – Moderate FSM - Moderate Kiribati – Moderate Nauru – Low Niue - Low Palau - Moderate PNG – Moderate RMI - Low

	Prepared for the Pacific Regional Environment Programme (SPREP), December, 2009, 48pp. ▪ Hay, J.E., 2009: Preparedness, Planning and Prevention: Assessment of National and Regional Efforts to Reduce Natural Disaster and Climate Change Risks in the Pacific. Prepared for the World Bank, 61pp.	Samoa - Moderate Solomon Islands – Moderate Tonga - Low Tuvalu – Moderate Vanuatu – Moderate
Risk and Vulnerability	Perez, R. and Mimura, N, 2009: The Selection of Countries to Participate in the Pilot Program for Climate Resilience (PPCR). Report of the Expert Group to the Subcommittee of the PPCR. Supplementary Report on Country Risks in the South Pacific Region. Prepared by on behalf of the Expert Group for the Pilot Programme on Climate Resilience, 13pp. World Bank, 2009: GFDRR Project, Reducing the Risk of Disasters and Climate Variability in the Pacific Islands: Regional Stocktake, 36pp. GNS Science, 2009: Pacific Exposure Database Inception Report. ADB TA 6496-REG: Regional Partnerships for Climate Change Adaptation and Disaster Preparedness. GNS Science Consultancy Report 2009/321, December 2009, 88pp.	Cook Islands - High Fiji – High FSM - High Kiribati – High Nauru – High Niue - Moderate Palau – Moderate to High PNG – Moderate to High RMI – Moderate to High Samoa - High Solomon Islands – Moderate to High Tonga - High Tuvalu – High Vanuatu – Moderate to High
Logistic barriers	Flight times, frequency and costs	Cook Islands – None Fiji – Minor FSM - High Kiribati – High Nauru – High Niue - Minor Palau – High PNG – Moderate RMI – High Samoa - Minor Solomon Islands – Minor Tonga - Minor Tuvalu – High Vanuatu – Minor

Based on the above analysis four pilot countries were selected to provide an excellent opportunity to assess a wide range in vulnerability, approaches and progress in implementing CCA and DRR. In addition, they also cover the main sub-regions, political systems and institutional arrangements.

a) Cook Islands

Overall environmental vulnerability is classed as "extreme"; this country contrasts with most other PICs; it is one of the few PICs with recent more positive experience with infrastructure projects because of in-country government commitment to including risk management in development and planning processes and sustained institutional support for engagement with communities; one of two PICs where a risk-based approach to adaptation was initially piloted – this now forms the basis of the new GEF-funded Pacific Adaptation to Climate Change project; for the main island groups of the Southwest Pacific, one of the lowest incidences of the average number of tropical cyclones per year passing within 555 km over the cyclone season (compare with Vanuatu which has one of the highest); guidelines for mainstreaming DRR and disaster management developed by PDRMPN used to produce the National Action Plan (approved in 2008); SOPAC has assisted with reviewing and recommending of institutional arrangements for National Disaster Management Offices and for national disaster management systems; one of five PICS where the World Bank Pacific Catastrophe Risk Financing Initiative has developed a country-specific loss risk profile and assessed the feasibility of catastrophe risk financing and insurance options; logistic requirements minimal.

b) Fiji

Overall environmental vulnerability is classed as "high"; one of five PICs identified at risk from high sea levels; Fiji is in the tropical cyclone belt and on average one cyclone passes through Fijian waters each year; since 1978 several droughts have also had a major impact on the economic productivity and subsistence livelihoods; the social and economic implications of weather and climate risks are considerable across all primary production sectors, especially for cash and subsistence agriculture; DRR and CCA policies are currently in place but the institutional arrangements for implementation are ineffective and lack national and sector planning and budgetary provisions; to address disaster risk reduction and disaster management, the Government of Fiji adopted the Strategic Development Plan 2007-2011, based in large part on the regional Framework for Action 2005-2015; in 2007 the Interim Fiji Government promulgated the Sustainable Economic and Empowerment Development Strategy (SEEDS) 2008-2010, One key goal of the new policy strategy is to reduce vulnerability to disasters and risks, while promoting sustainable development; adequate legislative steps have been taken (e.g. redrafting the Disaster Management Act); but are not followed with action; hazard monitoring and data collection has regressed in the past decade; existing data and risk information on threats to life, infrastructure and property are not readily accessible across and between sectors making effective DRR and CCA responses difficult; logistic considerations are favourable due to location of UNDP MCO and UNISDR in Suva.

c) Vanuatu

Vanuatu was ranked sixth (the highest ranked PIC) amongst all countries assessed for exposure to multiple hazards in the World Bank's Natural Disaster Hotspot study; of the main island groups of the Southwest Pacific, Vanuatu has the highest incidence of the average number of tropical cyclones per year passing within 555 km

over the cyclone season; a tropical cyclone hazard model, determining return periods for wind speeds using a 5,000 event synthetic catalogue, has been developed for Port Vila; one of three PICs to be recently mapped using airborne radar, which might allow production of higher resolution digital terrain models; in comparison to most PICs, the government has a heightened level of awareness and appreciation of the constraints to sustainable development posed by its particularly high level of exposure to natural hazards; guidelines for mainstreaming DRR and disaster management developed by PDRMPN used to produce the National Action Plan (approved in 2008); SOPAC has assisted with reviewing and recommending of institutional arrangements for National Disaster Management Offices and for national disaster management systems; Vanuatu has also completed a National Adaptation Program of Action; policy that external technical assistance should be aimed at building the in-country capacity required for sustained risk reduction; remarkable headway in establishing influential task forces and committees for implementation and cross-sectoral coordination; but a decline in the coverage and reliability of the climate and hydrological data collection networks subsequent to independence; existing examples of explicit risk reduction activities (e.g. relocation of a village at risk from coastal flooding; roof water-harvesting systems against the risk of droughts); one of five PICS where the World Bank Pacific Catastrophe Risk Financing Initiative has developed a country-specific loss risk profile and assessed the feasibility of catastrophe risk financing and insurance options; logistic requirements favourable.

d) Palau

Overall environmental vulnerability is classed as “high”; the increasing number of La Nina/El Nino events, drought, and tropical storms has significantly increased the need for and demand of services and expertise of the National Emergency Management Office; it works closely with the private sector and civil society to ensure that natural disaster information is distributed in a timely manner, shelters are equipped and maintained, national water rationing is effectively enforced during times of drought, and the private sector is equipped to respond to public demand during a crisis; Palau has announced that it will develop an integrated National Action Plan for DRM and CCA, with the support from SOPAC; also with SOPAC support, Palau is working on a new disaster plan to replace the existing National Disaster Plan 1999 and to improve DRM; the new plan has been designated as the Palau National Disaster Risk Management Framework 2009. It is in its final draft form and will soon be presented to the National Emergency Committee; the new disaster plan articulates institutional arrangements at national level to support improved DRM; the new arrangements are intended provide Palau with better and more effective platform to address issues in relation to the vulnerability of Palau’s communities to hazards and disasters; the new institutional arrangements reflect a growing commitment in national development policies and as well as commitments that government has made at a regional level within the Pacific. While travel to Palau presents a number of logistic and financial challenges, these are considerably offset by the ability to include not only a Micronesian country, but also one that is at an early stage in integrating CCA and DRM.

c. Individuals Interviewed in Person

Country	
Cook Islands	Pasha Carruthers, Climate Coordinator, Nat Environment Services
	Arona Ngara, Director, National Meteorological Service
	Charles Carlson, Director, Emergency Management Cook Islands
	Garth Henderson, Head, Aid Coordination, Ministry of Finance
Vanuatu	Brian Philips, National Climate Change Coordinator

	Members of the National Advisory Committee on Climate Change
	Johnston Naviti and others in Office of the Prime Minister
	Padma Lal, IUCN
	Job Esau, Director, National Disaster Management Office
	Christopher Bartlett, GTZ
	Ruben Markward, Director, Min. Agric., Quarantine, For. and Fish.
	Albert Rigley, Ministry of Environment
	Staff of Fisheries Department
	Staff of Energy Department
Palau	Maylene Joshua, National Emergency Management Office
	Gustav Atario, Ministry of State
	Donald Dengokl, Environmental Quality Protection Board
	Reagan Belechl, Office of Environmental Response & Coordination
Fiji[1]	Pajiliai Dobui, Director, National Emergency Management Office
	Aisea Quminakelo, National Emergency Management Office
	Ropate Rakadi, National Emergency Management Office
	Moortaza Jiwanji, Disaster Management Adviser, UNDP
	Cristelle Pratt, former Director of SOPAC

[1] Work in Fiji was prematurely halted by Cyclone Tomas

In addition, the climate change and DRM focal points in other PICs were contacted by email and, using a series of focus questions, asked to contribute responses and other relevant information that would contribute to the study. Similar requests were sent to individuals in relevant regional organizations and other agencies and institutions.

Annex 3

Additional Information Supporting the Regional Analysis

The following figure shows that the number of climate change projects has increased rapidly in recent years while the average duration of the projects has decreased slightly. On the other hand, the average value of a project has increased slightly, though the trend is obscured by large deviations in individual years. In this respect, 2003 is interesting – the number of new projects decreased slightly, while their average value increased. Project duration was at an all time high for the decade. These are signs of a move to longer, higher value projects, but the change was not sustained.

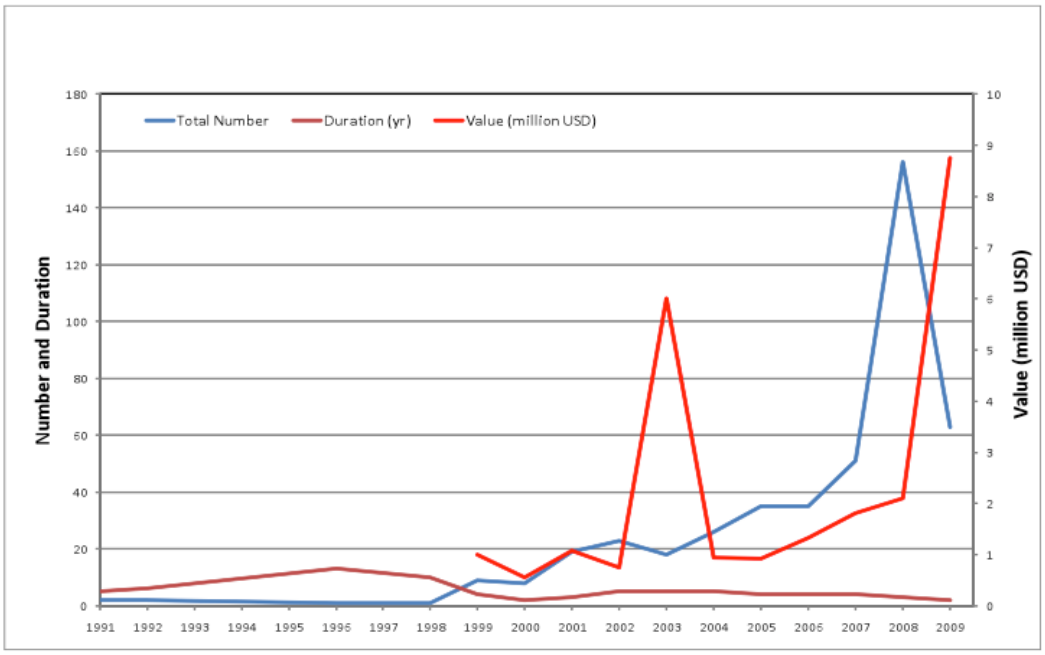


Figure 1. Total number of projects, and average duration and value of projects, by year.

There has been a move away from multi-sectoral adaptation projects to those with a sector focus. Management of climate-related disasters has received increasing attention over time, while the number of capacity building projects has remained relatively high. Mitigation efforts have focused on investments in renewable energy, with some interest in energy efficiency in recent years. Sustainable transport has received minimal attention.

These general patterns are shown in the following figure. The six sectoral adaptation categories have been combined, as have the three mitigation categories. There has been a move away from multi-sectoral adaptation projects to those with a single sector focus. The number of mitigation projects has grown rapidly in recent years, as have projects related to the management of climate-related disasters.

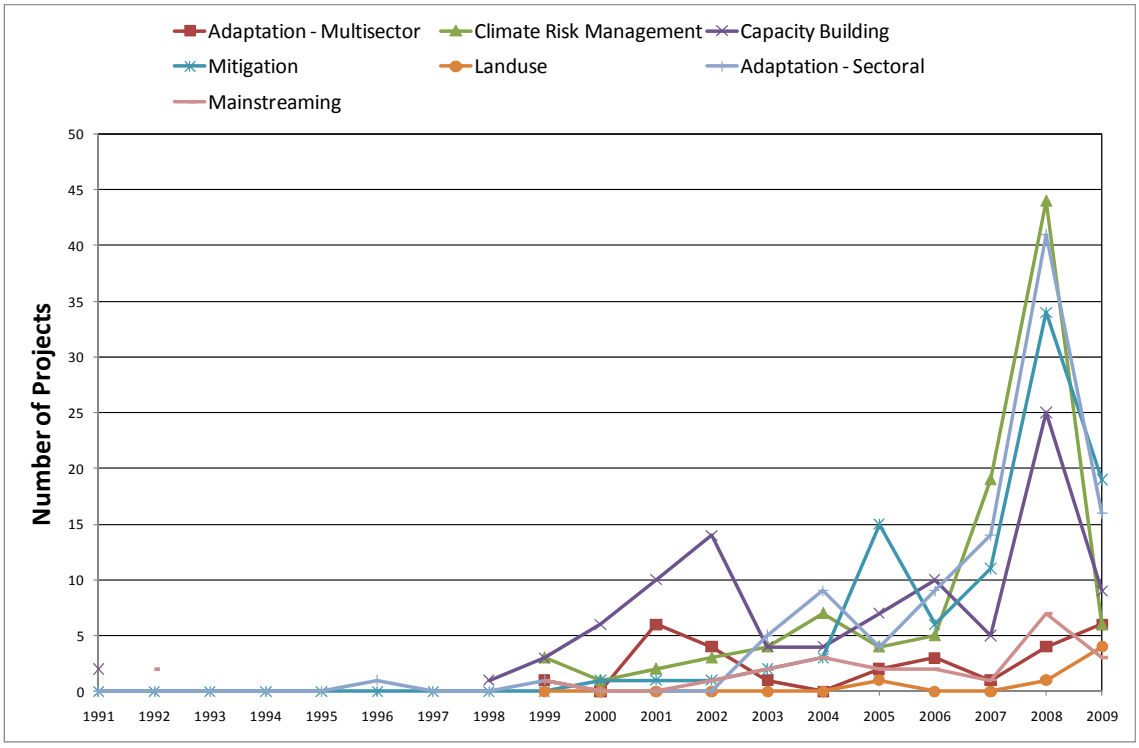


Figure 2. Number of projects in given thematic categories, by year.

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