

Mainstreaming Climate Change – a Guidance Manual for the Pacific Islands Countries and Territories



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List of Abbreviations and Acronyms

ADB	Asian Development Bank
AECEN	Asian Environmental Compliance and Enforcement Network
CARB	California Air Resources Board
CBDRM	community-based disaster risk management
CCIP	Climate Change Implementation Plan
CDM	Clean Development Mechanism
CEDRA	climate change and environmental degradation risk and adaptation assessment
CHARM	Comprehensive Hazard and Risk Management
CO ₂	carbon dioxide
COBP	country operations business plan
COPRAP	child-oriented participatory risk assessment and planning
CPS	Country Partnership Strategies
CRiSTAL	community-based risk screening tool – adaptation and livelihoods
CROP	Council of Regional Organizations of the Pacific
CV&A	climate vulnerability and adaptation
CVCA	climate vulnerability and capacity analysis
Danida	Danish International Development Agency

ECA	Economics of Climate Adaptation Working Group
EEPSEA	Economy and Environment Program for South East Asia
EIA	environmental impact assessment
EIRR	economic internal rate of return
EU	European Union
EVI	environmental vulnerability index
FIRR	financial internal rate of return
FSM	Federated States of Micronesia
GDP	gross domestic product
GEF	Global Environment Facility
GIS	geographic information system
GHG	greenhouse gases
IEE	initial environmental examination
IIED	International Institute for Environment and Development
IPCC	Intergovernmental Panel on Climate Change
NAPA	National Adaptation Programme of Action
NCEA	National Commission on Environmental Assessment, Netherlands
NCSA	National Capacity Self Assessment
NGO	nongovernmental organization
OECD	Organisation for Economic Cooperation and Development
PACC	Pacific Adaptation to Climate Change project
PADR	participatory assessment of disaster risk
PCVA	participatory capacities and vulnerabilities assessment
PICT	Pacific Island Countries and Territories
PIFACC	Pacific Islands Framework for Action on Climate Change 2006-2015
PIGGAREP	Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project
PVA	participatory vulnerability assessment
REDD	reduced emissions from deforestation and forest degradation in developing countries
RIVAMP	Risk and Vulnerability Assessment Methodology Development Project
SARD	systemic approach to rural development
SEA	strategic environmental assessment
SIDS	small island developing states
SOPAC	Pacific Islands Applied Geoscience Commission,
SPREP	Secretariat of the Pacific Regional Environment Programme
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WACC	weighted average cost of capital

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1. Introduction

1.1 Background

Pacific Island countries and territories (PICT)¹ are aware that climate change presents significant and growing risks to their sustainable development, including possible loss of some small atoll islands that are barely above sea level. PICTs have been among the strongest advocates globally to argue for an increased, coordinated international effort to reduce greenhouse gas (GHG) emissions and their plight has been recognized in ongoing global climate change negotiations. With the support of various development partners, the PICTs have also been active in developing climate change mitigation and adaptation strategies.

The Pacific Islands Framework for Action on Climate Change 2006-2015 (PIFACC) was endorsed by leaders in 2005. In 2006, the leaders stressed the importance of implementing PIFACC at the national level along with related regional plans such as the Regional Framework for Action on Disaster Risk Reduction and Disaster Management (2005-2015), and these regional priorities have been incorporated in the overall Pacific Plan.

Both PIFACC and the Regional Framework for Action on Disaster Risk Reduction and Disaster Management include strategies for mainstreaming climate change issues into national planning and budgeting processes, and improved sectoral decision making to ensure systematic and coordinated climate change programmes. The Council of Regional Organizations of the Pacific (CROP) agencies and development partners have been requested to assist in strengthening in-country capacity to implement these initiatives.

This report is not the first effort by the Secretariat for the Pacific Regional Environment Programme (SPREP) to address mainstreaming of climate change into development planning. In 2000, a report was produced on *Adapting to Climate Change: Incorporating Climate Change Adaptation into Development Activities in Pacific Island Countries – A Set of Guidelines for Policymakers and Development Planners* (Campbell 2000). That report identified three types of plans where adaptation and development need to be linked:

- (i) Main objective is development and adaptation is additional but necessary to ensure sustainability – e.g. infrastructure development, housing development, agriculture, tourism;
- (ii) Main objective is adaptation, implemented through development plans – e.g. coastal protection, developing drought/salt resistant crops, or public awareness campaigns; and

¹ PICTs refers to American Samoa, Cook Islands, Fiji Islands, French Polynesia, Guam, Kiribati, Commonwealth of the Northern Marianas, Marshall Islands, Federated States of Micronesia, Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Wallis and Futuna.

(iii) Capacity building for dealing with the effects of climate change – e.g. institutional development and human resource development.

These recommended strategies and mainstreaming steps remain sound and, therefore, this report encourages readers to refer to the earlier document. The main value-added of this updated report is to introduce a variety of tools and approaches, elaborated or developed since 2000, which will help to implement these strategies.

1.2 Objectives

The Pacific Adaptation to Climate Change (PACC) project intends to assist Pacific small island developing states (SIDS) to implement mainstreaming strategies by developing a guide to incorporate climate change into development planning, policy development, national decision making, budgetary planning processes, and implementation at all levels. The mainstreaming guide will “help map out linkages between climate change vulnerabilities, adaptation measures, and major national goals and policies, taking into account social, economic, and environmental considerations.” It is to be accompanied by a training module with supporting material for testing through pilot workshops and fieldwork. The PACC project is also developing a socioeconomic guide to aid in the integration of socioeconomic assessments in planning and project management, that will enable decision-makers to identify impacts and benefits of the projects for local communities (See Appendix 2).

Accordingly, the objective of this report is to “develop a mainstreaming guide and training module for the PACC project to incorporate climate change into development planning, policy development, decision making and budgetary planning processes at the national level and at the appropriate project administrative area.” While the PACC project is targeted at 13 independent Pacific SIDS, this mainstreaming guide will also be of substantial benefit to Kiribati and the 7 Pacific Island Territories.

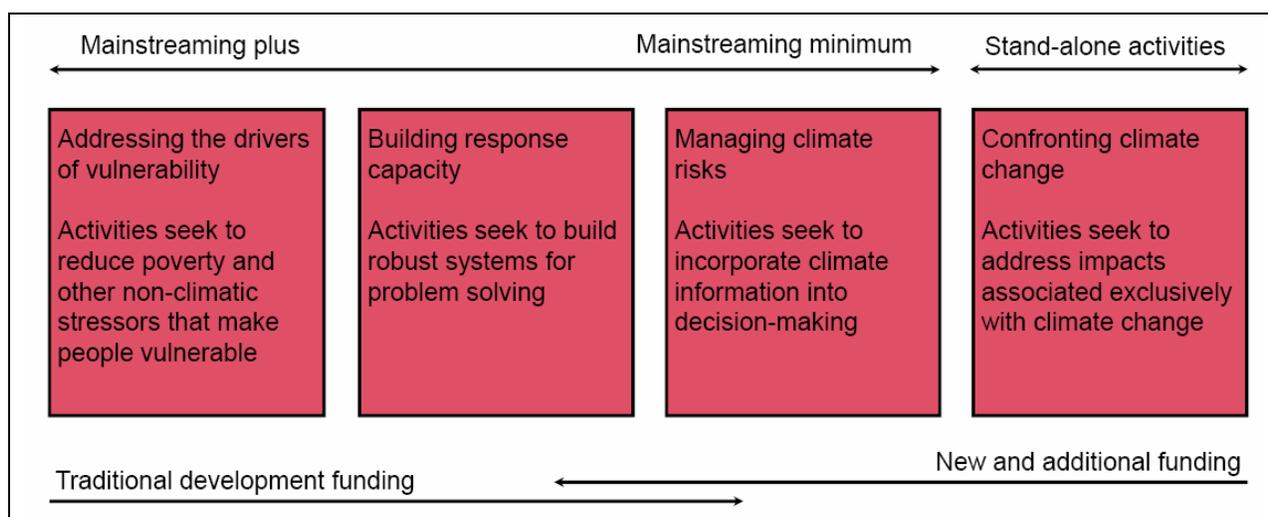
Rather than making this an instruction manual, necessitating a large volume of information, the intention is to provide an overall guidance framework and point the users to online and other resources. For the Pacific SIDS with slow internet connections the PACC Regional Project Adviser will assist with CD-ROM versions of these resources upon request.

1.3 Definitions

Mainstreaming is “the integration of policies and measures to address climate change into ongoing sectoral planning and management, so as to ensure the long-term viability and sustainability of sectoral and development investments” (Klein 2009). For the Pacific SIDS it is assumed that adaptation will be a higher priority than climate change mitigation, as the PICTs contribute a tiny proportion of global GHG emissions.

The Intergovernmental Panel on Climate Change (IPCC) defined mainstreaming to mean that “development policies, programmes and/or individual actions that otherwise would not have taken climate change mitigation into consideration explicitly include these when making development choices” (IPCC 2007). Note that the IPCC in 2007 did not include adaptation in this definition.

Figure 1 The Adaptation Continuum



Source: Klein (2009)

In relation to adaptation, Klein (2009) refers to an adaptation continuum (Figure 1) where an initial, minimal step of mainstreaming merely tries to incorporate climate change considerations into decision making to “mainstreaming plus” where decision makers attempt to address all of the drivers of vulnerability, thus simultaneously reducing poverty and other non-climatic stressors that contribute to vulnerability. For the Pacific SIDS, therefore, “mainstreaming plus” should be the overall ultimate goal, but possibly starting by incorporating climate information into decision making.

CARE Vietnam uses a simple definition of mainstreaming—“a process of considering climate risks to development projects, and of adjusting project activities and approaches to address those risks” (Huxtable and Yen 2009). However, it distinguishes between mainstreaming at the strategic level (addressing the organizational environment in which policies and programmes are developed and implemented) and the operational level, which “involves undertaking an evaluation of risks to poverty reduction activities associated with climate variability and change, and identifying effective, efficient and equitable adaptation measures to reduce those risks and harness opportunities for building adaptive capacity” (Huxtable and Yen 2009). At the strategic level, CARE proposes a simple “traffic light” system to measure progress towards mainstreaming in the organizational environment (red – low awareness, yellow – increasing awareness, green – full integration). At the operational level, a more complex approach is outlined in the methodological approaches below.

1.4 Methodological Approaches

The Organisation for Economic Cooperation and Development (OECD) has developed the most comprehensive guidance manual for integrating climate change considerations into national, sectoral, project and community levels (OECD 2009).

At the national level, the OECD recommends to (i) identify and engage key national actors; (ii) improve access to national level climate information; (iii) organize government structures to better address adaptation; (iv) build on and reinforce existing national mechanisms for disaster risk reduction; (v) modify regulations and standards to reflect current and anticipated climate risks; and (vi) enhance linkages between multilateral/regional commitments and adaptation. Mainstreaming needs to integrate adaptation into the entire policy cycle—policy formulation stage, planning stage, resource allocation stage, and programming/implementation stage.

At the sectoral level, the OECD identifies actions at the policy formulation stage to include (i) reflecting upon and further deepening action on climate change priorities established at the national level; (ii) clearly recognizing climate change and the need for adaptation within sectoral policies and strategies; and (iii) applying a climate lens in the formulation of sectoral policies and strategies, and making the necessary adjustments. At the sector planning stage (i) apply a climate lens in the formulation of the sectoral plan; (ii) build in sector level proactive adaptation activities and projects; and (iii) build in cross-sectoral adaptation activities and projects identified at the national level. At the sectoral programming and resource allocation stage (i) add climate change considerations to the range of criteria used to screen project proposals; (ii) incorporate adaptation activities and projects identified during the sectoral planning stage; and (iii) make room in the budget for climate change responses identified in the context of cross-sectoral plans. At the monitoring and evaluation stage for the sector (i) mobilize the necessary resources to strengthen monitoring and evaluation systems and capacities; and (ii) produce indicators to track performance against adaptation needs.

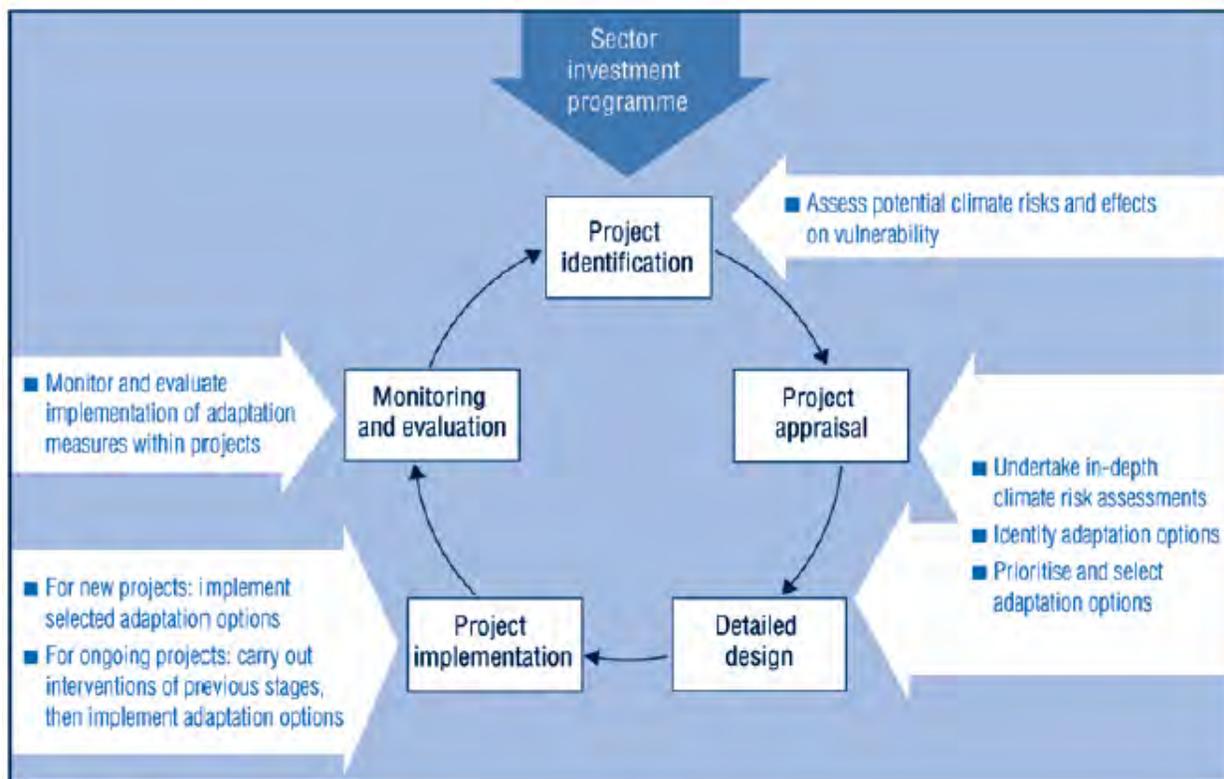
At the project level, the OECD guidance follows the standard project cycle (identification, appraisal, detailed design, implementation, monitoring and evaluation). Figure 2 shows a stepwise approach of (i) assessing potential climate risks and effects on vulnerability; (ii) undertaking in-depth climate risk assessments; (iii) identifying adaptation options; (iv) prioritizing and selecting adaptation options; (v) implementing selected adaptation options; and (vi) monitoring and evaluating adaptation measures within projects.

At the community level, OECD suggests four possible entry points (i) consideration of the implications of climate change in development planning processes of local governments; (ii) adjustment of local regulatory and service provision frameworks, including provision of information bases on likely local impacts of climate change; (iii) adjustment of local government accountability mechanisms; and (iv) engagement of private sector and civil society organizations and processes (OECD 2009).

In a recent stocktaking of mainstreaming tools, the United Nations Development Programme (UNDP) has consolidated the various steps of the OECD guidance into a comprehensive framework (Figure 3). The key steps are (i) awareness raising; (ii) pre-screening of climate risks and vulnerabilities; (iii) detailed climate risk assessment; (iv) identification of adaptation options; (v) prioritization and selection; (vi) implementation of adaptation options, including budget allocations; and (vii) monitoring and evaluation (UNDP 2010). These are linked to the essential

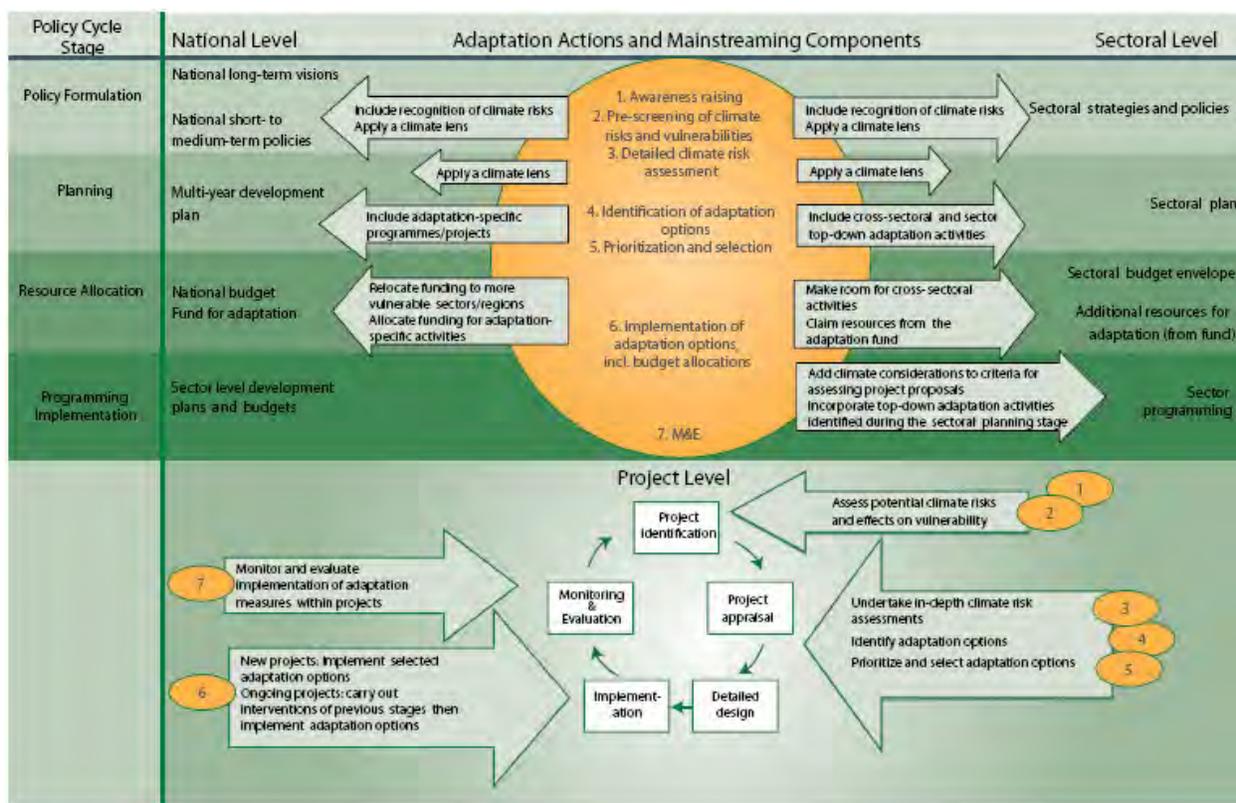
stages of the policy cycle—policy formulation, planning, resource allocation, and programming implementation.

Figure 2 Project Level Adaptation Processes (OECD 2009)



UNDP also provides a comprehensive assessment of definitions of the key terms like climate proofing, climate change and climate variability, vulnerability and resilience, so these are not repeated here. One point worth noting, however, is that maladaptation is cited as one of the main motivations for mainstreaming. If business as usual overlooks climate change, development plans may inadvertently increase exposure and/or vulnerability to climate change (UNDP 2010). UNDP also provides a comparison of climate risk screening tools, mainstreaming guidance, and portfolio screening approaches. Of interest to this guidance document, UNDP is also developing a set of quality standards to ensure that climate change risks are addressed adequately in the development of plans, programmes and projects. The standards will cover identification of (i) climate change risks to programmes and projects; (ii) a risk that a programme or project may be maladaptive; (iii) adaptation opportunities; and (iv) identification and assessment of potential adaptation measures. The draft standards are currently being piloted in 5 countries in Latin America and Africa (UNDP 2010).

Figure 3 Comprehensive Framework for Mainstreaming Climate Change (UNDP 2010)

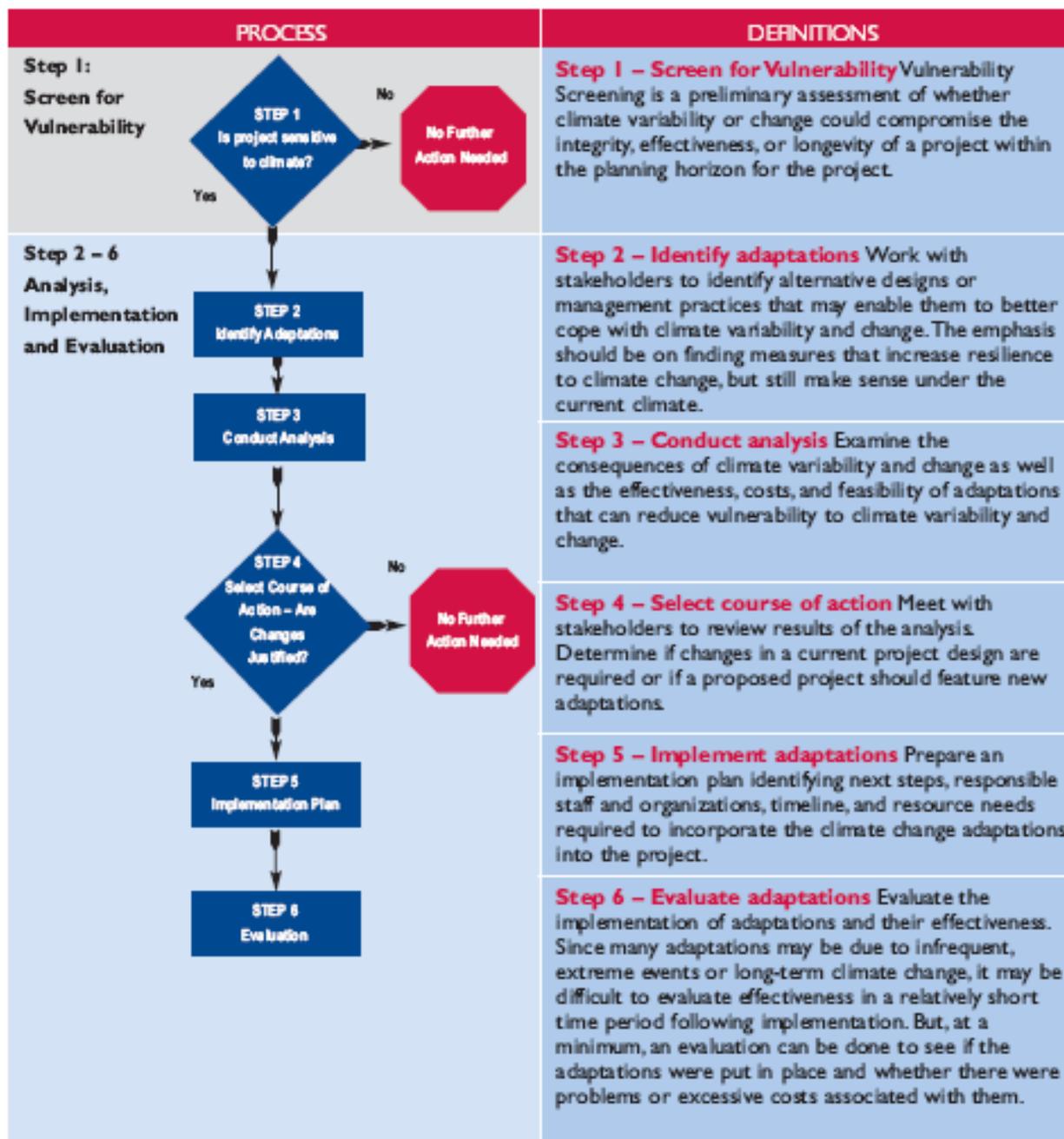


Also at the project level, the United States Agency for International Development (USAID) identifies six main steps in mainstreaming adaptation into development planning (Figure 4) (USAID 2007):

1. **Screen for vulnerability** – is the project likely to be affected by climate variability or climate change? What are the potential changes in climate parameters and, therefore, climate impacts? Which sectors or project activities are likely to be affected? Which project stakeholders are likely to be the most vulnerable? If the project is not assessed as vulnerable, then no further action need be taken.
2. **Identify adaptation options** – If the project is vulnerable, compile a list of possible adaptation options in a participatory manner and reach agreement on selection criteria. Eliminate options that are not feasible in the context of the project. Shortening the list to a few key interventions will assist in simplifying the next step.
3. **Conduct analysis** – Evaluate each option for its effectiveness in building resilience to climate change in the affected communities, as well as its fit for the budget and timeframe. A performance baseline needs to be established and then compare “without” and “with” provision for adaptation. Performance criteria, possibly weighted according to importance, could include (i) costs of action and inaction; (ii) effectiveness (benefits, damages mitigated, lives saved etc.); (iii) ease of implementation; (iv) acceptability to local and other stakeholders; (v) endorsement

by experts, in accordance with international good practice; (vi) timeframe for implementation; (vii) implications for the current climate; (viii) number of beneficiaries; and (ix) institutional capacity (need for capacity strengthening, technology and knowledge transfer). A matrix comparing options may be useful at this stage.

Figure 4 Mainstreaming Adaptation into Development Planning (USAID 2007)



4. **Select course of action** – Use the results from step 3 to carefully select the most appropriate interventions, bearing in mind that funding agencies might have differing priorities

than national governments, so “buy-in” from all key stakeholders is crucial. Selection factors must be in the context of the country’s own economic, social and environmental goals, not just the needs of the project.

5. **Implement the adaptations** – Implementation of adaptation interventions should follow the normal project processes – better definition of specific tasks, time schedule, roles of implementing partners, resource requirements, and fund mobilization. The identified capacity strengthening and training will also need to be undertaken at this stage. A plan for monitoring and evaluation will also need to be formulated, to undertake step 6.

6. **Evaluate the adaptations** – Monitoring and evaluation will determine if the project or adaptation intervention has delivered the intended benefits, or if it has caused unintended adverse impacts. As climate change may be more of a long-term risk, the lack of an immediate pay-off may make the climate change benefits more difficult to evaluate. In such cases, short-term success criteria may be needed, such as ease of implementation, no-regrets benefits (valuable benefits even if the climate doesn’t change as expected), and strengthened institutional capacities. If the project has not achieved its objectives or has caused unintended adverse impacts, it may be necessary to return to step 3 and re-assess adaptation options, select new adaptations, or modify the current set of adaptations.

As adaptation planning and implementation is relatively new, an additional role of evaluation is to assess the process itself, so that future planning and implementation of adaptation measures are improved.

As shown in Table 1, CARE Vietnam uses a 7-step climate vulnerability and adaptation (CVA) pathway to mainstream climate change at the operational (project or programme) level that broadly follows the normal project cycle (Huxtable and Yen 2009).

Table 1 Climate Vulnerability and Adaptation Pathway

Step	Tools	Participants	Key Outcome
1. Screen project activities for climate risk – using a summary of climate trends, forecasts and impacts undertake a preliminary assessment of whether climate variability and change could impact the effectiveness, longevity and integrity of the project.	Assess climate risk	Programme and component managers and project officers	A detailed table of the main climate change impacts that will affect project activities and results
2. Decide on the CVA pathway – decide whether to follow the CVA pathway, taking into account any existing risk management practices, human and financial resources, donor conditions and the local context.	Checklist – should the CVA pathway be followed?	Programme and component managers and project officers	List of projects that need to progress through the remaining steps of the CVA pathway.
3. Identify adaptation measures – work closely with implementation partners, local decision makers and stakeholders to identify a wide range of potential adaptation	Climate Vulnerability and Capacity Analysis (CVCA) Hand-book; Resource	Component managers, project officers, partner organizations and	List of potential adaptation measures for reducing climate risk and strengthening

measures for tackling climate change risks and opportunities for strengthening adaptive capacity.	table on best practice community-based adaptation experiences.	community members.	adaptive capacity.
4. Prioritise adaptation measures to address vulnerabilities in Step 1 – consider project timeframe, budget, and technical requirements of implementing different adaptation measures.	Priority Adaptation Matrix	Programme and component managers, partner organizations and project officers.	List of criteria for determining benefits and feasibility of adaptation measures; list of adaptation measures ranked in order of priority.
5. Select adaptation options for implementation – from step 4, select which options will be implemented; develop local ownership of the process and agreed measures.	Stakeholder workshop methodology	Project officers, partner organizations and community members.	Adaptation measure(s) selected by the community, along with community support and consensus.
6. Implement adaptation measures – actively engage stakeholders and partners, build capacity, and monitor and adapt the project according to any new conditions that arise.	Adaptation measures	Project officers, partner organizations and community members.	Community-based adaptation measures are implemented.
7. Evaluate adaptation and the CVA pathway – determine whether the project/programme delivers the intended benefits and/or causes any adverse outcomes.	Checklist – evaluating adaptation.	Programme and component managers and project officers	Organisational sharing and learning and applied case studies. Lessons learned to inform future project design/implementation.

Source: Huxtable and Yen (2009)

To a large extent, mainstreaming of climate change into national development processes has built on the former agenda of mainstreaming “environment” and “disaster management” into national development. For example, in Kenya, the Danish International Development Agency (Danida) has been working with the Kenyan Government on environmental mainstreaming in the context of its long term strategic plan, Vision 2030 (Krassowska 2009). To realize Vision 2030, Kenya’s leaders must recognize environment and natural resources as the foundation of stability and growth, assess its economic importance to all sectors, and build on existing laws that link national development to environment through the National Environmental Action Plan. Strategic Environmental Assessment (SEA) is seen as a key tool for environmental mainstreaming. The elements of environmental mainstreaming are seen as (i) widespread awareness of the environment-development relationship; (ii) high level political interest and willingness to act; (iii) analytical data and tools, such as SEA; (iv) mandates for active engagement of all stakeholders; (v) champions to lead the process; (vi) capacity to change attitudes, adapt and adopt new practices; (vii) communication strategy for different sector “languages”; and (viii) funding to implement changes, channelled through sector budgets.

UNDP and UNEP are undertaking a global initiative called the Poverty Environment Initiative (PEI) mainly to support country-led efforts to mainstream poverty-environment linkages into national development planning. Methodological guidance is provided in “Mainstreaming Poverty-Environment Linkages into Development Planning: a Handbook for Practitioners” (UNDP/UNEP

2009) available at <http://www.unpei.org/Knowledge-Resources/PEI-Handbook.asp>. This handbook adopts a programmatic approach with three main components (i) finding entry points and making the case for mainstreaming; (ii) mainstreaming poverty-environment linkages into ongoing policy processes, based on country-specific evidence; and (iii) meeting the implementation challenge by integrating poverty-environment linkages into budgets, project implementation, and monitoring processes (UNDP-UNEP 2009).

The International Institute for Environment and Development (IIED) defines environmental mainstreaming as “the informed inclusion of relevant environmental concerns into the decisions of institutions that drive national, local and sectoral development policy, rules, plans, investment and action” (Dalal-Clayton and Bass 2009). IIED launched an initiative in 2007 to produce a User Guide to Environmental Mainstreaming. Through user surveys IIED found that respondents were more concerned with “institutional and contextual” challenges than the advantages or disadvantages of individual tools. The challenges to environmental mainstreaming include (i) a development paradigm that treats environment as an institutional and economic externality; (ii) chronic lack of data, information, skills and institutional capacity; (iii) few successful precedents of environmental mainstreaming; and (iv) lack of political will. While stressing that environmental mainstreaming is not a standardized, boiler plate process, several steps have proven useful in practice, as follows.

1. Scope the political economy and governance affecting environment and development;
2. Convene a multi-stakeholder group to steer the mainstreaming process;
3. Identify positive and negative links between development and environment,
4. Propose desirable environment-development outcomes;
5. Map institutional roles and responsibilities for each outcome;
6. Identify institutional, governance and capacity challenges;
7. Identify entry points in key decision making processes;
8. Conduct expenditure reviews and make the business case for environmental inclusion;
9. Engage with existing forums and mechanisms to reach consensus;
10. Reflect agreed changes in mainstream policy, plan, and budget documents;
11. Promote investment in development-environment links;
12. Develop integrated institutional systems and capacities; and
13. Establish criteria/indicators and accountability mechanisms for monitoring and continuing improvement in development-environment links.

The authors make a strong point to be recalled in developing this guide—that “experience with truly high-level and cross-sectoral environmental mainstreaming (in advocacy, analysis, planning, investment, management, and monitoring) has been limited and scattered to date. There has been little sharing of experience. In contrast, there is perhaps too much untested guidance on how to go about the tasks, often pushed as conditionalities by funders” (Dalal-Clayton and Bass 2009). They also point out that a wide spectrum of outcomes can be expected from mainstreaming:

1. Greater participation and interaction between environment and development stakeholders;

2. Integrated environment-development policy and associated political leadership;
3. Inclusion of development-environment linkages in national and sector plans;
4. Inclusion of development-environment linkages in budgets and fiscal instruments;
5. Strengthened institutions and capacities to mainstream environment;
6. Improved domestic and foreign resource mobilization for environmental investments;
7. Sustained behavioural change by individuals, institutions and society, in both public and private domains, with improved production, consumption, and waste management; and
8. Ultimate impacts of these outcomes on human and ecosystem wellbeing.

In the context of the PICTs, stepwise implementation of a mainstreaming program may need to start with the simpler outcomes, such as improved interaction between the development and environment communities of practice.

UNDP has described a useful phasing of mainstreaming for dryland management (UNDP 2008), divided into five phases (Table 2).

Table 2 Mainstreaming Dryland Management into Development Planning (UNDP 2008)

Phase	Steps
Strategic assessment	<ol style="list-style-type: none"> 1. Identify and analyse the status of land issues and their environmental, economic and social impacts, taking into account the various direct and indirect drivers of change. 2. Identify and fill information needs/analysis. 3. Assess the legal, political and institutional environment for mainstreaming. 4. Conduct stakeholder analysis and define roles, responsibilities and obligations. 5. Carry out capacity assessment.
Awareness, participation and partnership building	<ol style="list-style-type: none"> 1. Draw up a communication and awareness creation strategy. 2. Build partnerships for mainstreaming. 3. Plan for participation and consultation processes.
Planning	<ol style="list-style-type: none"> 1. Undertake iterative and integrative planning. 2. Link the plans to budgets and funding mechanisms.
Implementation	<ol style="list-style-type: none"> 1. Build sufficient capacity. 2. Implement the plans.
Learning, monitoring and evaluation	<ol style="list-style-type: none"> 1. Monitoring and evaluation of planning frameworks for impacts. 2. Evaluate the effectiveness of mainstreaming processes. 3. Revise the planning frameworks.

2. Experience in the Pacific Region with Mainstreaming Climate Change

To date there has been relatively little experience with mainstreaming climate change into national development planning in PICTs. However, some tentative approaches have been

made and they are outlined in this section. Prominent amongst the earliest efforts are the multi-stakeholder processes involved in the National Adaptation Programmes for Adaptation (NAPA), National Capacity Self-Assessments (NCSA)² and the national communications to the UNFCCC.

NAPAs have been prepared by Kiribati, Samoa, Solomon Islands, Tuvalu, and Vanuatu ([http://unfccc.int/cooperation support/least developed countries portal/submitted napas/items/4585.php](http://unfccc.int/cooperation%20support/least%20developed%20countries%20portal/submitted%20napas/items/4585.php)). Initial National Communications have been submitted to the UNFCCC by Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tuvalu, and Vanuatu. Samoa has submitted its second National Communication ([http://unfccc.int/national reports/items/1408.php](http://unfccc.int/national%20reports/items/1408.php)).³ NCSAs have been completed by Cook Islands, Fiji, Niue, Palau, Samoa, Solomon Islands. Progress is underway for Federated States of Micronesia, Kiribati, Papua New Guinea, Tonga and Vanuatu (<http://ncsa.undp.org/index.cfm>).

Three examples are illustrated below to demonstrate how these important documents have provided entry points to full mainstreaming of climate change into national development planning.

Samoa's second national communication was compiled by the Climate Change section in the Ministry of Natural Resources and Environment, with the assistance of the National Climate Change Country Team, comprising about 10 organizations and nearly 40 individuals. It provides a detailed assessment of the country circumstances, trends in GHG inventory, and discusses vulnerability and adaptation, plus mitigation, among other related subjects. It outlines the National Climate Change Policy adopted by Cabinet in early 2008, which provides strategic direction for the government's climate change initiatives. The policy includes "a commitment to enhance Samoa's response to the impacts of climate change in support of national sustainable development efforts." It notes that the national policy requires mainstreaming climate change into national planning and environmental policies and assessment. The communication also notes the synergies between the Strategy for the Development of Samoa 2008-2012 priorities and climate change responses. Excellent sections on existing adaptation strategies, additional adaptation needs, and mitigation are also provided, which should provide useful entry points for integration with future five-year social and economic development plans.

The Kiribati NAPA, completed in 2007, was compiled by the Kiribati Climate Change Study Team comprising representatives of eight government agencies, under the Chairmanship of the Permanent Secretary of the Ministry of Environment, Land and Agricultural Development (MELAD). At the same time, Kiribati was also implementing the World Bank funded Kiribati Adaptation Project, so there was good coordination and collaboration across these two related

² The NCSAs, supported by GEF, identify priority capacity development issues to conserve biodiversity, combat land degradation, and mitigate against the impacts of climate change.

³ Globally, 136 initial national communications have been submitted, while only 22 second national communications have been submitted to the UNFCCC.

activities, especially by ensuring that there was one multi-disciplinary technical team reporting to a steering committee of senior government officials and NGOs. Implementing the two activities caused a realization that a national climate change policy was needed. The policy statement stresses that Kiribati needs to be better prepared for adaptation, and needs to collect baseline data that will enable investments to be climate proofed. The NAPA was endorsed by Cabinet on 10 January 2007.

Over a 2 year period, Samoa's NCSA team, led by the Ministry of Natural Resources, Environment and Meteorology (MNREM), evaluated Samoa's existing environmental programs and projects in the three priority areas (biodiversity, land degradation, and climate change) using an integrated approach. It involved a participatory process drawing on expertise from eleven government, business, educational and NGO stakeholder groups, comprising a National Steering Committee and Technical Working Groups.

Three thematic reports outlined Samoa's capacity to fulfill its obligations under the relevant UN conventions, and in the synthesis report, the team identified twelve cross-cutting issues. One of the most critical issues identified is effective land management in agriculture, infrastructure development, forestry and settlements. Also, unsustainable coastal zone management makes Samoa more vulnerable to severe weather events such as cyclones and droughts, which will be exacerbated by climate change. Inevitably, the NCSA concluded that "greater levels of cross-sector collaboration are needed to address these challenges."

In Samoa, the NCSA identified that national expertise is lacking in botanists (for biodiversity planning), soil and landscape experts (for combating land degradation), and climate scientists and energy specialists (for climate change). These capacity gaps identified are now being addressed under various projects and the Samoan government is looking at the NCSA recommendations for appropriate follow-up.

In addition to the national communications, NAPA and NCSA processes, a number of PICTs are engaged in regional and/or national climate change activities that are partially linked to national planning processes. For example, the Canadian Development Agency (CIDA) funded Capacity Building for the Development of Adaptation Measures in Pacific Island Countries (CBDAMPIC) 2002-2005 project proposed three entry points for mainstreaming: (i) to use the community vulnerability and adaptation (CV&A) assessment and action guideline (developed by SPREP and used by the National Community Vulnerability and Adaptation Assessment Teams) as one of the main tools for governments to carry out community vulnerability and adaptation assessments; (ii) to institutionalise a Multi-Sectoral CV&A Assessment Team that would work at the community level to carry out vulnerability and adaptation assessments and develop adaptation recommendations that would be mainstreamed into the planning and budgeting machinery of government; and (iii) to use existing community channels within government to route their community adaptation recommendations for funding assistance and implementation.

UNDP is assisting the Government of Samoa to use an integrated approach to address climate change impacts in the agriculture and health sectors. The project focuses on enhancing the organizational and technical capabilities of the Samoa Meteorology Division "to monitor climate trends and provide regular, timely and accurate climate risk and early warning information to agricultural extension and public health services." The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP) promoted the use of renewable energy to reduce GHG emissions by removing the major barriers to the widespread and cost-

effective use of commercially viable renewable energy technologies. The Pacific Islands Energy Policy and Strategic Action Planning project aims to improve national capacity to develop practical energy policies, and strategic action plans to implement those policies.

Finally, the PACC Project itself (of which this guide forms part) aims to significantly improve the effectiveness of the response to climate change in the Pacific. The project will improve technical capacities to support appropriate adaptation policies, demonstrate cost-effective adaptation practices in key sectors, promote regional cooperation, as well as laying the framework for future investment on climate change adaptation.

3. Experience in Other Countries⁴

3.1 Building Climate Change into National Legislation

Several countries have responded to the climate change challenges by mainstreaming mitigation and adaptation responses into existing laws or by formulating new laws. For example, Japan's Climate Change Policy Law supplements the 1993 Basic Environment Law, which set out the national goal of establishing a sustainable society. The Law Concerning the Promotion of the Measures to Cope with Global Warming (or Climate Change Policy Law), enacted in 1998, provided for the Kyoto Protocol Target Achievement Plan, subsequently approved by the Cabinet in 2005. This plan not only aims at ensuring the 6% reduction in GHG emissions under the Kyoto Protocol but also pursues long-term, continuous emissions reduction. Japan also legislated for and/or amended laws on (i) energy conservation (1979 Law Regarding Rationalization of Energy Use, revised in 1998, 2002 and 2005); and (ii) renewable energy (2002 Law Concerning Special Measures for the Use of New Energy etc. by Electric Utilities) (King and Wirutskulshai 2009).

Despite the limited attention to climate change issues by the Bush administration, the US State of California passed the Global Warming Solutions Act in 2006 which requires the California Air Resources Board (CARB) to develop regulations and market mechanisms that will reduce California's GHG emissions by 25% by 2020, with mandatory caps for significant sources starting in 2012⁵. This was followed up in 2008 with subsequent legislation (Senate Bill 375) to curb urban sprawl, by setting regional emissions reduction goals, setting regional GHG emission reduction targets for transportation for 2020 and 2035, and aligning transportation, housing and land use plans to prepare a sustainable communities strategy. California also requires all fuel providers to reduce the carbon content in transportation fuels by at least 10% by 2020, and more thereafter.⁶ Other initiatives include (i) the one million solar roofs initiative; (ii) a renewable portfolio standard (Senate Bill 107) that requires 20% of California's energy to come from renewable sources by 2010; (iii) a low emissions vehicle program that requires 10% of sales by 2003 and 16% by 2018 to be zero emissions vehicles; and a 2002 Assembly Bill that requires

⁴ Most of this section is based on an unpublished document by King, P. and U. Wirutskulshai (2009) Integration of Climate Change into National Planning in Asia-Pacific.

⁵ Even without the passage of legislation from the US Congress, the USEPA has been granted the right to regulate GHGs under the Clean Air Act from an endangerment finding.

⁶ Other US and Canadian states have adopted similar legislation modeled on California.

CARB to adopt by 2005 a maximum carbon dioxides (CO₂) pollution standard for light duty vehicles (King and Wirutskulshai 2009).

The UK passed a revised Energy Act and a Climate Change Act in 2008, which makes the government commitment to reduce carbon emissions by 80% by 2050 a legal requirement, binding future governments. The Climate Change Act paves the way for introduction of an emissions trading scheme. The Energy Act provides for feed-in tariffs, a renewable heat incentive, increased weight to be given to sustainable development, and other measures. British Columbia, Canada, adopted a Greenhouse Gas Reduction Targets Act in 2007 that requires an emissions reduction target 33% below 2007 level by 2020 and 80% below 2007 levels by 2050. All public sector organizations are required to become carbon neutral by 2010 and to report on their emissions, actions taken, and future plans towards carbon neutrality.

Australia enacted a National Greenhouse and Energy Reporting Act in 2007, plus associated regulations. The Act requires reporting of GHG emissions, energy consumption and production by large companies and public disclosure, to underpin the planned Carbon Pollution Reduction Scheme. The State of South Australia introduced their Climate Change and Greenhouse Emissions Reduction Act in 2007. This legislation sets a target of reducing GHG emissions to 40% of 1990 levels by 2050, and aims to increase the proportion of renewable energy generated and consumed in the state to at least 20% by 2014 (King and Wirutskulshai 2009).

3.2 Mainstreaming into National Development Strategies

A review of 46 national sustainable development strategies that are under implementation found that only 8 did not directly refer to climate change (UNDESA 2007). Most countries have addressed climate change directly and indirectly, with developing countries emphasizing co-benefits and developed countries more focused on mitigation strategies. Adaptation generally features less prominently in the national strategies to date. It is important to note that national development strategies encompass not only sustainable development strategies but also sectoral strategies, such as national energy strategies, or national food security strategies.

For example, Bangladesh, in its most recent National Sustainable Development Strategy (2008) identifies climate change as a strategic priority and specifically refers to the Bangladesh Climate Change Strategy and Action Plan (2008) as a guiding document to address climate change. It also refers to the NAPA and the National Capacity Self Assessment (NCSA), plus other national strategies as containing “noteworthy strategies and action plans.” Bangladesh’s National Strategy for Accelerated Poverty Reduction (2009-2011) also recognizes climate change as one of the emerging issues. A multi-donor trust fund to deal with climate change adaptation and mitigation has been set up, with the Government contributing \$43 million.

The Republic of Korea’s National Strategy for Sustainable Development (2006-2010) deals extensively with climate change (14 pages of a 209 page document). Anticipating future global pressure for Korea to do more than other “developing” countries beyond 2012, it states that “it is necessary to formulate a systematic and comprehensive plan to change to a type of economic structure that produces a low level of greenhouse gas emissions so as to realize sustainable

development of the national economy and prevent and minimize damages caused by climate change.”

Singapore’s sustainable development strategy (A Lively and Livable Singapore: Strategies for Sustainable Growth 2009) mentions climate change in several places. It refers to the need to “do our part in global efforts to address climate change and reduce greenhouse emissions.” Contributing co-benefits include empowering consumers to make resource smart choices, setting minimum performance standards, expansion of the National Recycling Program, incentives for “green” buildings (Green Mark Certified), more eco-friendly public housing (including solar test-beds and improved resource efficiency), a cleaner and greener transport system, improved resource efficiency, and a city “nestled in greenery.”

3.3 Climate Change Strategies and Action Plans

Many countries have formulated and are implementing national climate change adaptation plans as stand-alone plans, with limited mainstreaming into other national development planning processes. All such plans, however, need to be implemented through sector plans and processes.

The US Climate Change Action Plan (1993), under President Clinton, was one of the first such action plans and aimed to return US GHG emissions to their 1990 levels by 2000. It included 50 new and expanded initiatives, backed by \$1.9 billion in new and redirected funding (from 1994 to 2000), as well as leveraging \$60 billion in private investment, covering a wide range of sectors.

Australia’s Climate Change Strategy is based around (i) reducing GHG emissions; (ii) adapting to unavoidable climate change; and (iii) helping to shape an acceptable global solution. The main target is to reduce GHG emissions by 60% below 2000 levels by 2050, partly through a cap and trade scheme. Adaptation measures such as the \$200 million Great Barrier Reef Rescue Plan and the \$12.9 billion Water for the Future Plan are the first steps to deal with the likely impacts of climate change in Australia, thus linking climate change to water resources and coastal zone management.

India’s National Action Plan on Climate Change (2008-2017), gives overriding priority to economic development and raising living standards, while also yielding co-benefits that will help address climate change. Eight national missions are identified (solar, energy efficiency, sustainable habitats, water, sustaining the Himalayan ecosystem, reforestation, sustainable agriculture, and strategic knowledge for climate change), with a specific government agency charged with developing detailed actions for each of these missions.

China’s National Program on Climate Change 2007 set specific targets for 2010 including (i) reducing energy consumption per unit of gross domestic product (GDP) by 20%; (ii) raising the proportion of renewable energy to 10% (from 7%); and (iii) increasing the forest coverage rate to 20% (from 18%). Key measures included are increasing nuclear power, promoting clean coal

technology, developing biofuel, and international collaboration in technology transfer and capacity building.

Bangladesh's Climate Change Strategy and Action Plan (2009-2018) recognizes the specific needs of the poor and vulnerable, including women and children, with six priority areas in the first five year period (i) food security, social protection and health; (ii) comprehensive disaster management; (iii) infrastructure; (iv) research and knowledge management; (v) mitigation and low carbon development; and (vi) capacity building and institutional strengthening.

Some states and cities have developed their own climate change action plans independently of the national government. One US example is the Arizona Climate Change Action Plan (Arizona Department of Environmental Quality 2006). This plan contains 49 policy recommendations for addressing and reducing GHG emissions. These focus on energy efficiency, renewable energy, mainstreaming climate considerations into infrastructure, and cleaner transport modes, technologies and fuels. The state goals are to reduce GHG emissions to 2000 levels by 2020 and to 50% below 2020 levels by 2040.

Nearly all least developed countries have prepared a NAPA with Global Environment Facility (GEF)-funding. To date, 44 NAPAs have been received by the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat, including Afghanistan, Bangladesh, Bhutan, Cambodia, Kiribati, Lao PDR, Maldives, Samoa, Solomon Islands, Tuvalu, and Vanuatu in Asia-Pacific. NCSAs, which evaluate capacity to implement the key multilateral agreements, including the UNFCCC, have been completed by Afghanistan, Bhutan, Cambodia, China, DPR Korea, Indonesia, Malaysia, Maldives, Mongolia, Philippines, Samoa, Sri Lanka, Timor Leste, and Vietnam in Asia-Pacific.

As just one example, Cambodia's NAPA identifies the country's vulnerability to climate change, the links with the national development strategy, key adaptation needs, and 39 priority projects (MOE 2006). Project profiles for the 20 most urgent activities are included as an annex, although many of these appear to be priority development projects that should be undertaken anyway (such as rehabilitation of multiple use dams, water supply, flood protection, health projects and promotion of integrated agriculture). Other examples from the Pacific region are discussed below.

4. Mainstreaming at National Planning and Programming Levels

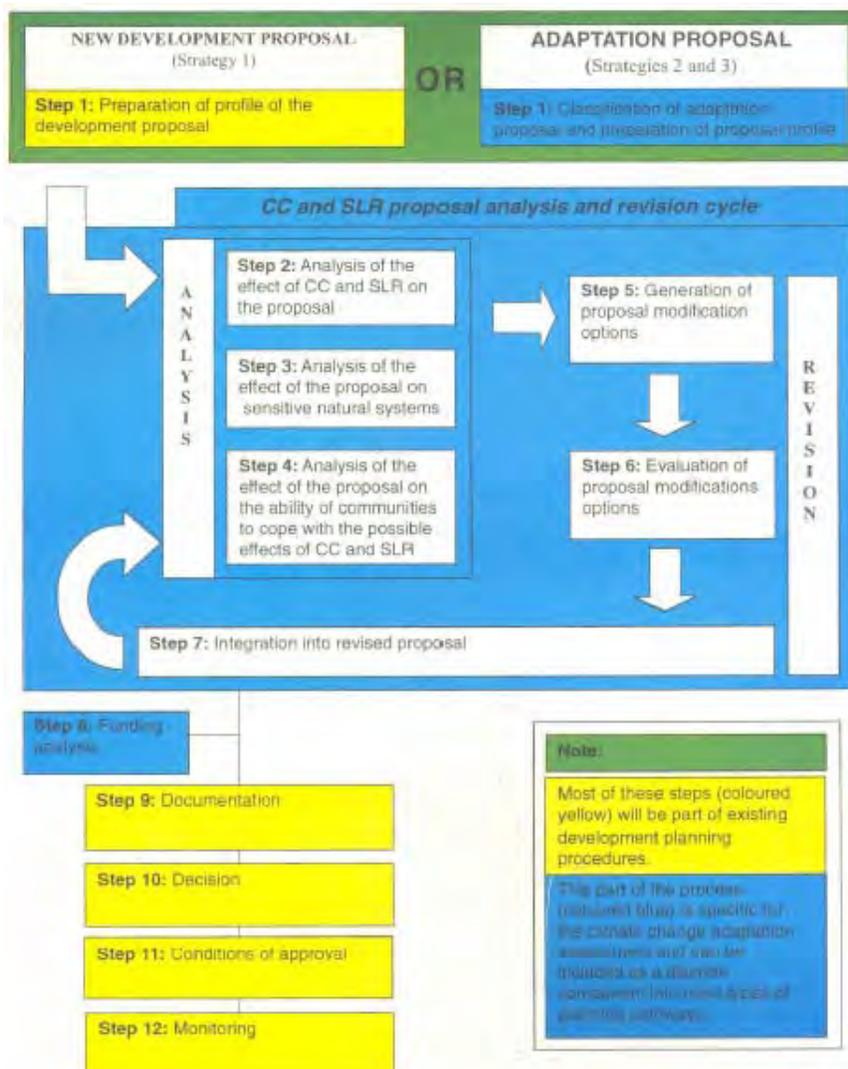
4.1 Building on a Firm Foundation

The report on Adapting to Climate Change: Incorporating Climate Change Adaptation into Development Activities in Pacific Island Countries – A Set of Guidelines for Policymakers and Development Planners (Campbell 2000) proposed three main strategies (i) incorporating climate change and sea level rise in all new development proposals; (ii) developing proposals specifically addressing the possible effects of climate change and sea level rise; (iii) developing proposals aimed at building institutional and technical capacity (Figure 5).

PIFACC (2006-2015) states that the PICTs are already “taking action to address climate change through their national sustainable development strategies or their equivalent, which are linked to national budgetary and planning processes.” The Framework also sets as an expected outcome by 2015 that “climate change considerations (will be) mainstreamed into national policies, planning processes, plans and decision making at all levels and across all sectors.” The corresponding Pacific Islands Action Plan on Climate Change (2006-2015) identifies the specific national and regional actions to achieve this outcome. Accordingly, this report draws from the regional framework and its associated actions. Among others, these actions at the national planning and programme level include:

- (i) Mainstreaming adaptation into economic planning, policies and regulations, and programmes;

Figure 5 Incorporation of Climate Change into Development Proposals (Campbell 2000)



(ii) Promoting higher levels of decision-making by assisting countries with the development of national mechanisms that promote adaptation action at the national policy level and at the community level;

(iii) Developing country specific national sustainable development strategies or their equivalent, incorporating adaptation considerations of risks and effects to climate change; and

(iv) Where national sustainable development strategies or their equivalent exist, adopting explicit prioritization and resource allocation processes and mechanisms that also reflect considerations of risk and effects of climate change.

Accordingly the priority needs for mainstreaming at this level relate to economic planning, policies and regulations, national programmes, and resource allocation. The primary climate change focus is clearly on adaptation, at all levels from the national level to the community level, and risk assessment.

RECOMMENDED ACTION

- Review previous climate change mainstreaming strategies proposed by SPREP and others to identify strengths and weaknesses;
- Elevate mainstreaming of climate change into national development planning to the highest levels of government, possibly through a climate change summit; and
- Make a national policy decision to incorporate climate change and sea level rise into all new development proposals.

4.2 National Economic Planning

Based on the various approaches outlined in Sections 1 and 2, Pacific SIDS are advised to commence the mainstreaming process by forming a task-force or special unit within the national economic planning agency (often a national planning ministry in the Pacific region) with the requisite skills to understand the implications of climate change on the national economy and the range of options that are available to respond to those impacts. In some countries, the task-force members may need additional capacity building, or external technical assistance, in areas outside their own expertise and experience (such as vulnerability assessment or modelling climate change). A learning-by-doing approach, assisted by external consultants, may be one of the best ways to strengthen the mainstreaming capacity of economic planners. The task force should work closely with existing climate change units, inter-governmental coordination units, parliamentary development committees, or other relevant institutions, such as country teams established for National Communications to the UNFCCC, or project teams established for climate change projects.

The objective of the task-force should be along the lines of “mainstreaming plus”—addressing all of the drivers that influence poverty and vulnerability, rather than simply trying to add in

selected climate change responses (Klein 2009). Given the existing uncertainty about the extent and timing of climate change effects, the World Bank's recommendation of adopting "no-regrets" adaptation measures should be followed in the first instance (World Bank 2000).

The economic planning task-force needs to ensure that it has access to the latest information on climate change. Fortunately, SPREP now has an excellent on-line clearinghouse of climate change information at <http://www.sprep.org/publication/climate.asp>. Additional information is available from the Intergovernmental Panel on Climate Change (IPCC) at http://www.ipcc.ch/publications_and_data/publications_and_data.htm, the Climate List-serve at <http://climate-l.org>, and the UN Climate Gateway at <http://www.un.org/wcm/content/site/climatechange/gateway>. A Climate Change Explorer tool that enables access to downscaled climate data is available at <http://www.weADAPT.org>. The task-force should also have copies of the relevant national climate change strategies and plans, such as Communications to the UNFCCC, NAPAs and NCSAs, most of which are included on the SPREP website. National disaster prevention and management strategies, biodiversity strategies, sustainable development strategies, energy strategies, and relevant regional and global climate change plans and strategies should also be consulted, in line with the intention to aim for "mainstreaming plus."

The task-force should then work through previous national economic plans and strategies to gauge the extent to which previous national plans may have had adverse impacts and could have been amended to mainstream climate change considerations. Armed with this information, the task-force can seek a mandate from the national political leaders to conduct a similar mainstreaming exercise in the next national plan. This effort, however, would need to be a much more consultative and participatory process and bring in the private sector and civil society. Many countries already have experience with this approach in developing national sustainable development strategies (and occasionally mainstreaming disaster prevention and reduction), so it should not be too much of a stretch to undertake a similar process in mainstreaming climate change into national economic plans and programmes. In some cases this may require implementing legislation to be drafted in order to ensure that the task force has the appropriate level of access to information and data and other government reports of relevance.

Vulnerability assessment should underpin any proposed changes to the national economic plans and programmes as the most vulnerable communities, ecosystems and infrastructure should be given priority for protection. Vulnerability is defined as "the degree to which a system is susceptible to, or unable to cope with the adverse effects of climate change, including climate variability and extremes." Vulnerability should be defined in socio-economic terms as well as environmental. The basic approach to vulnerability assessment could follow the methodology used by the Economy and Environment Program for South East Asia (EEPSEA 2009) in assessing the vulnerability hotspots in South East Asia, which involved the following:

- (i) Assess past exposure to climate hazards as the best proxy for future climate risks;
- (ii) Map climate hazards for tropical cyclones, floods, landslides, droughts, and sea level rise;

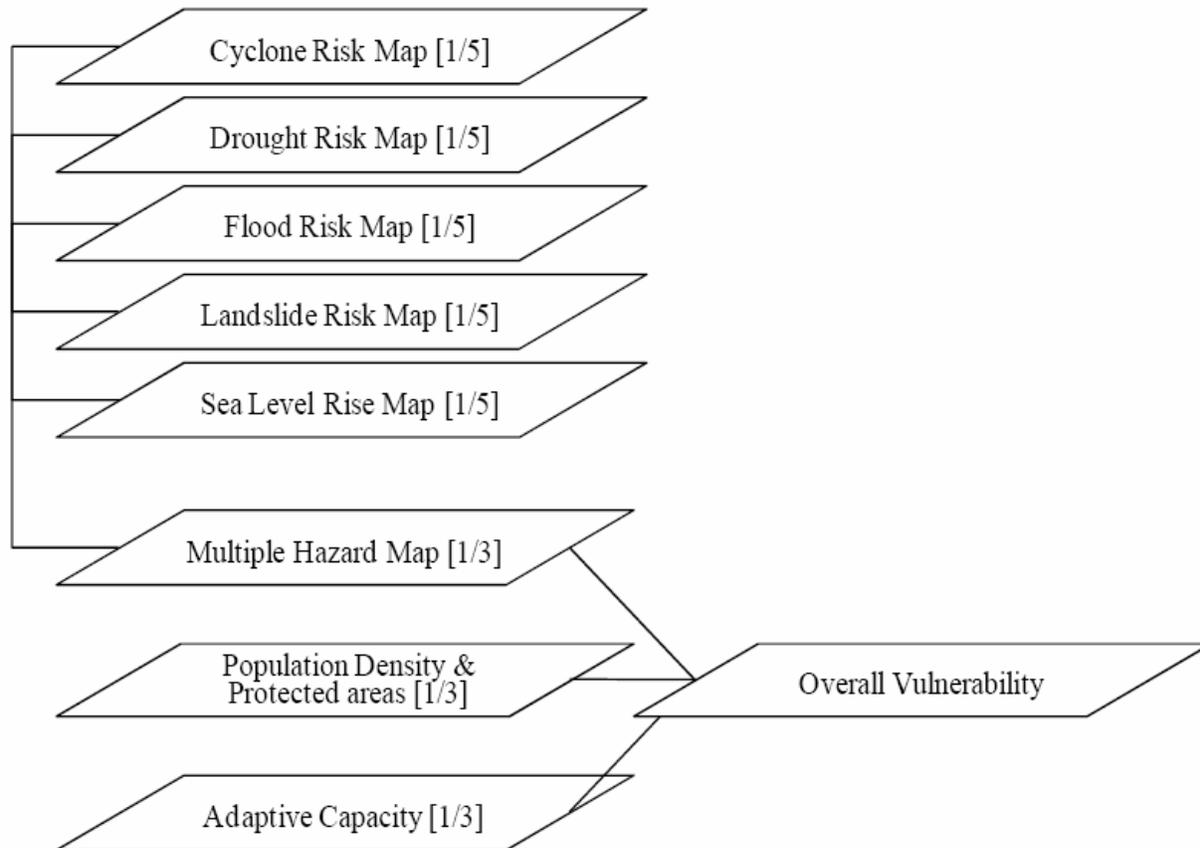
(iii) Use population density as a proxy for human sensitivity to climate hazard exposure, possibly combined with poverty incidence mapping⁷;

(iv) Map ecological sensitivity, using biodiversity information as a proxy variable, on the assumption that a biodiversity rich area is likely to be more vulnerable to climate change than other areas⁸;

(v) Construct an index of adaptive capacity as a function of socio-economic factors (such as GDP per capita, income inequality, education levels, and human development index), technology, institutional capacity, and infrastructure;

(vi) Overlay the different layers in a geographic information system (GIS), or even manually, if such GIS capacity doesn't exist in the task-force (see Figure 6), to derive an overall climate change vulnerability index, which can then be divided into 3-4 classes of vulnerability.

Figure 6 Methodology for Deriving a Climate Change Vulnerability Index (EEPSEA 2009)



Note: The figures in parenthesis are the weights given to each factor.

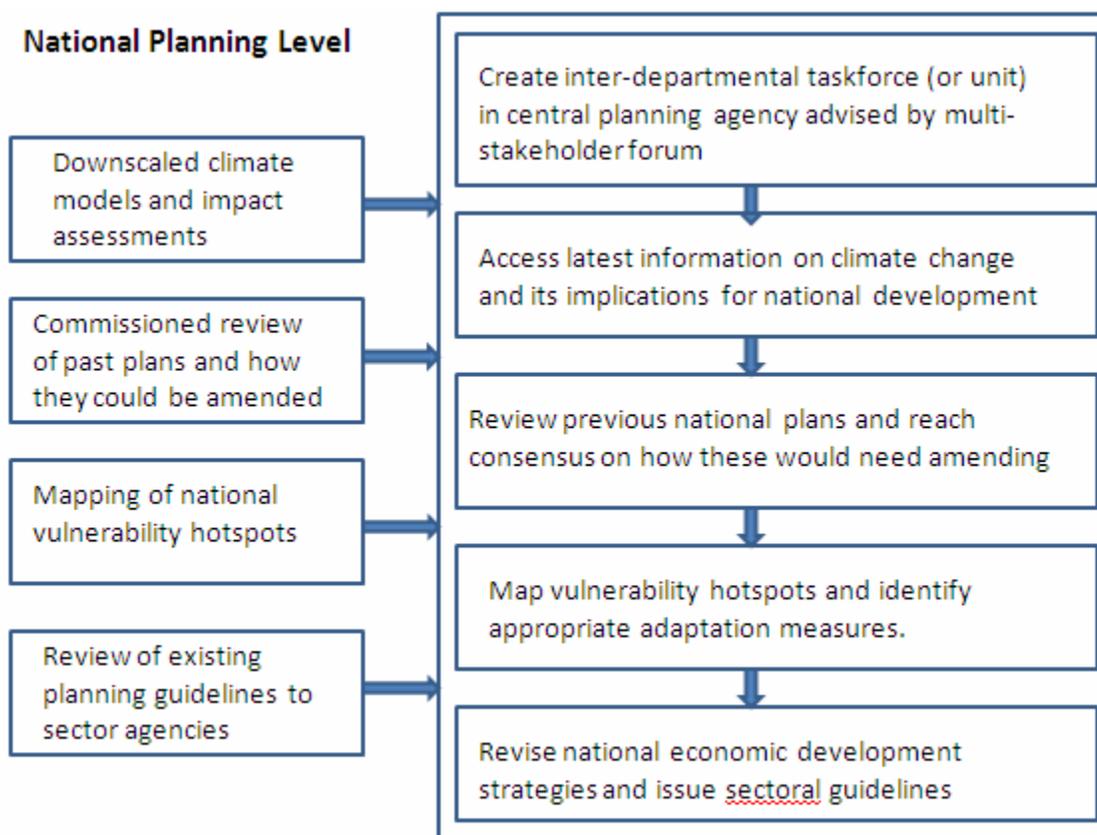
⁷ People living close to the coastline may be a better indicator in the Pacific Islands region

⁸ In some cases in the Pacific Islands, biodiversity rich areas are very remote from human influence, so other biodiversity indicators may be better.

Further details of this methodology are available from http://www.idrc.ca/eepsea/ev-148556-201-1-DO_TOPIC.html. Once the most vulnerable areas are identified, then the task-force should (i) examine whether any of the proposed economic development plans will improve or worsen the vulnerability and exposure of communities and ecosystems to climate hazards in these areas, and (ii) identify specific measures that need to be added to the development plans to minimize or reduce vulnerability in these hotspots. The revised economic development strategies should then be conveyed to the sector agencies for modification of sector plans and to assist in preparing budget submissions based on those plans. In some cases, Cabinet approval may be needed for the climate proofed economic plans and it will be necessary to prepare briefing documents for the Ministers, along with a public outreach programme.

A stylised summary of the main activities at the national planning level is shown in Figure 7. The steps shown are not intended to provide a “boiler plate” methodology, however, as PICTs should be encouraged to test different approaches that suit their current national development planning system.

Figure 7 Stylised Approach to Mainstreaming at the National Planning Level



RECOMMENDED ACTION

- Form a national task-force or special unit with a mandate to mainstream climate change into national economic plans;
- Assess the capacity of the task-force and add expertise from academia, private sector, or consultants as necessary;
- Access the latest information on climate change and its likely impacts on the country and on specific sectors and communities;
- Identify all the drivers that influence poverty and vulnerability and conduct an extensive vulnerability assessment to identify hotspots;
- Check that economic development plans will not have adverse impacts on vulnerable communities and ecosystems;
- Identify measures that need to be added to development plans to minimize or reduce vulnerability in the hotspots;
- Seek Cabinet approval for climate proofed economic development plans, along with public outreach; and
- Convey these revised strategies to sectoral agencies to develop specific implementation plans.

4.3 National Policies, Legislation, and Regulations

The review of the national development plans will highlight that some existing national policies, legislation, and regulations are outmoded and that new policy measures are needed. The national task-force should commence this review process by undertaking a comprehensive mapping of the relevant policies, legislation, regulations and standards to determine the extent to which they reflect broad policy decisions in relation to climate change or are adequate to deal with the likely consequences of climate change.

Amended and new policy measures will need to be drawn up and debated within the national political system. A wide range of policy options are available and implementation experience from other countries and regions should be tapped before proposing specific policy measures at the national level. For possible policy options, one source of useful information is the Pew Centre on Global Climate Change (<http://www.pewclimate.org>). The journal Climate Research is another good source (<http://www.int-res.com/journals/cr/cr-home/>). A systematic approach to design of adaptation strategies, along with several case studies, which has been used widely in drawing up NAPAs, is provided by UNDP at the Adaptation Policy Frameworks for Climate Change website (<http://www.undp.org/climatechange/adapt/apf.html>). In addition, national climate change policies are being developed in some Pacific SIDS, and these could be shared with other countries in the region.

Policy options generally fall into the following categories (i) stand alone adaptation policies, typically designed to maximize assistance from the UNFCCC processes and new funding available; (ii) no-regrets adaptation policies, which are policy measures that should be

undertaken with or without climate change, that also have climate change benefits; and (iii) policies that seek to integrate adaptation measures with new development proposals. For example:

- (i) **Stand-alone policies** – implementation of NAPAs, participation in UNFCCC-related adaptation institutions, requirement for sectoral agencies to consider adaptation in future budget submissions etc.
- (ii) **No-regrets policies** – malaria and dengue control, water security and improved access to water and sanitation, rural electrification using renewable energy, location of infrastructure in non-vulnerable areas, securing utilities infrastructure from climate related impacts, etc.
- (iii) **Integration policies** – integrated assessment of development proposals, integration of NAPAs into development planning etc.

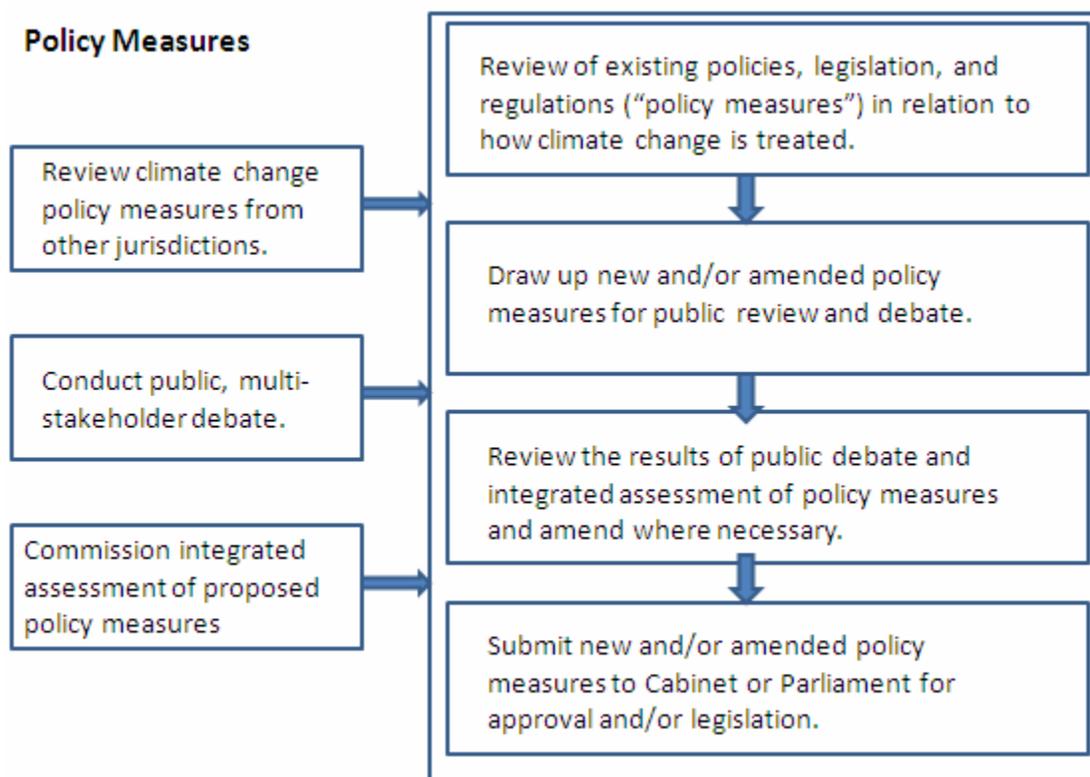
Integrated Assessment is a particularly valuable tool for ensuring that the environmental, social, and economic aspects of any new policy are acceptable. Integrated Assessment is defined as “a participatory process of combining, interpreting and communicating knowledge from various disciplines so that a cause-effect chain—involving environmental, social, and economic factors—associated with a proposed public policy, plan or programme can be assessed to supply adequate information to decision makers” (UNEP 2009).

Existing legislation and regulations may also need to be amended. As for policies, the task-force should base proposed changes on a comprehensive mapping of existing laws, regulations and standards and the extent to which they already consider climate change. As legislation typically takes a long time to process, priority may be given to revising regulations and standards, which can often be undertaken at the executive level rather than through the political process. In particular, a wide range of standards may need to be reconsidered, including building standards, engineering standards, flood zoning standards, coastal zone setbacks, allowable slopes for buildings, and location of emergency infrastructure. In general these standards will need to allow for a greater margin of error to accommodate the uncertainty surrounding the future climate conditions.

Consideration may also be given to a framework climate change law that would provide the necessary mandates for changes in this whole of government approach to climate change (i.e. where all government agencies are expected to contribute to a common goal). Several similar laws have been enacted in other countries that could provide a useful guide to law makers in the Pacific SIDS (see Section 2.1). Social and human rights protections may be incorporated into such legislation.

As for the national planning level a stylised summary of the suggested approach is given in Figure 8. If the country has an existing policy preparation approach that differs from this stylised approach, then the existing procedure may need to be followed. The key point is that each policy measure needs to be examined through the climate change “lens.”

Figure 8 Stylised Approach to Mainstreaming Climate Change Policy Measures



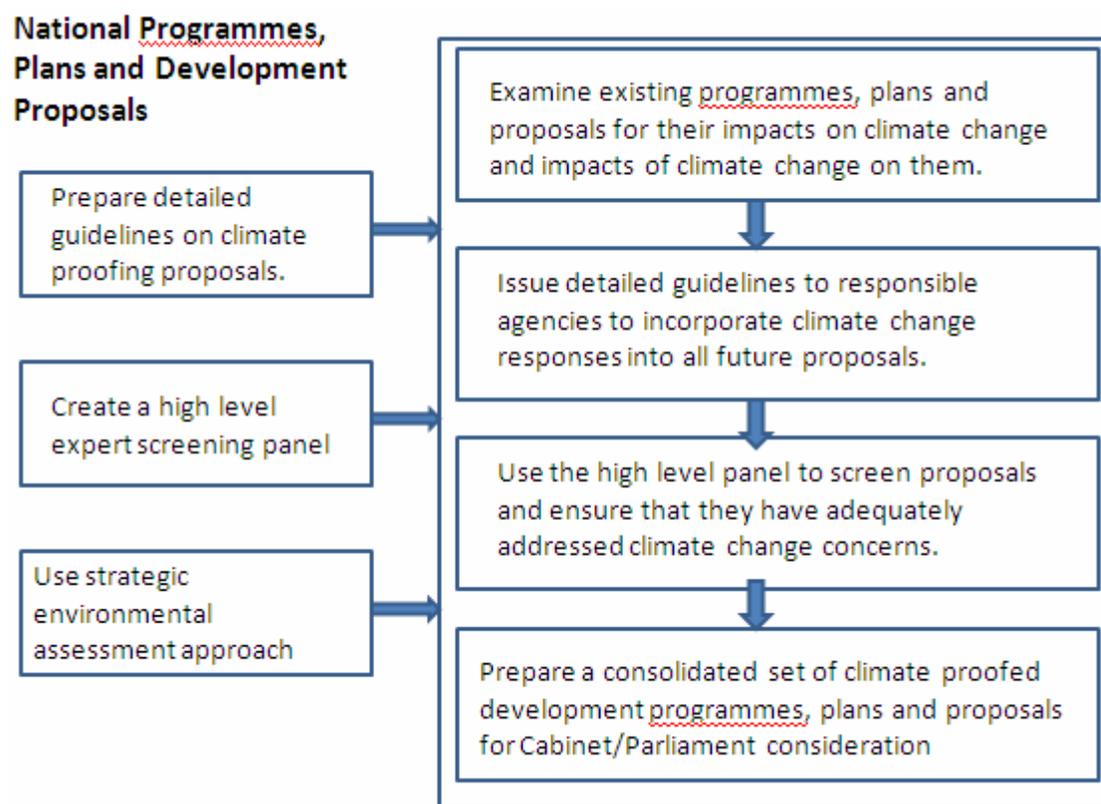
RECOMMENDED ACTION
<ul style="list-style-type: none"> • Review existing policies, legislation, regulations and standards to determine which need to be amended to prepare for expected climate change impacts; • Draw up new or amended policies and debate within the national political system; • Use an integrated assessment approach to examine the social, economic, and environmental implications of new policy measures; and • Consider the need for a framework climate change law.

4.4 National Programmes and Development Proposals

Climate change will also have a major impact on prioritizing national programmes and development proposals, particularly those that anticipate external funding support. The taskforce should examine the current national strategies and priority proposals and determine the need for change. They should also prepare guidelines for the responsible agencies to incorporate climate change into any future submissions to the national government. The UNDP’s guidance manual, currently being piloted tested in Latin America and Africa, may be useful in this context (UNDP 2010).

The government may wish to consider forming a high-level screening panel and/or a multi-stakeholder panel (representing a cross section of society) to ensure that all new development programmes have adequately considered climate change implications. Some countries have formed a National Climate Change Council that could take on this role, or alternatively existing National Sustainable Development Councils could be given this role. One example from the Pacific region is Samoa where its most recent Strategy for the Development of Samoa (2008-2012) specifically relates climate change and disaster management, especially in relation to implementation of the Disaster Management Act 2007. The Strategy states that “resilience to the adverse impacts of climate change will be addressed through continuation of work on coastal management and adaptation programs for vulnerable villages and other coastal locations and through such activities as promotion of energy efficient building design.”

Figure 9 Mainstreaming at the Programme, Plan or Development Proposal Level



A stylised summary of one possible approach to developing climate proofed programmes, plans and proposals at the programmatic level is shown in Figure 9. Note that the use of SEA has proven to be a very useful tool at this upstream planning level, but some modifications may be needed to ensure that climate change is adequately incorporated. As noted in the text above, rather than a new high level expert panel, a National Climate Change Council or National Sustainable Development Council might take on this role, depending on existing institutional arrangements in each country.

RECOMMENDED ACTION

- Examine current national strategies, priority programmes and development proposals to assess if they need to be changed to accommodate climate change considerations;
- Issue guidelines to responsible agencies to assist in the design of future programmes and proposals in the face of expected climate change impacts;
- Consider establishing or assigning a high level panel and/or multi-stakeholder body to review development proposals; and
- Arrange for high level endorsement of new development strategies and programmes that fully accommodate climate change considerations and facilitate public outreach.

5. Mainstreaming at Sectoral Levels

Typically, sector agencies are expected to develop medium term sector strategies, (which may be summarized in the national development plan), as well as annual plans, which are used for budget submissions. Climate change considerations need to be built into both medium term and short term sector strategies and plans.

The Pacific Islands Action Plan on Climate Change (2006-2015) refers to several national actions at the sectoral level including:

- (i) Identify, assess and implement integrated adaptation measures and responses to climate change effects, through a cross-sectoral and multi-disciplinary technical team, together with community consultation and participation;
- (ii) Enhance an integrated approach to extreme weather events by promoting close links between National Disaster Management Units, Meteorology, and Climate Change teams;
- (iii) Mandate risk assessment requirement as part of project appraisal, together with Environmental Impact Assessment (EIA) for all major infrastructure and economic development projects;
- (iv) Implement project development and assessment process that incorporates considerations of risks and effects of climate change across sectors affected by, or that may affect climate change; and
- (v) Adapt, or develop and implement economic, social and environment impact assessment process to ensure risk and effects of climate change are explicitly considered in decision-making by government; and
- (vi) Identify, assess and implement suitable regulatory and incentive based strategies and instruments supported by appropriate legislation and informal institutions required to climate proof communities and physical infrastructure.

Specific adaptation measures referred to include (i) intercropping and increased diversity of crops, diversified subsistence crops, sustainable practices and new economic opportunities; (ii) breeding and protection of salt tolerant crops, drought resistant cultivars and crops; (iii) combating introduced and invasive species; (iv) improved soil and water conservation; (v) addressing climate change impacts on public health; (vi) cyclone proof houses and other buildings; (vii) protection from storm surges and flooding; (viii) coastal protection; and (ix) limiting development in vulnerable zones.

In relation to mitigation measures, the Action Plan refers to national actions on (i) voluntary targets; (ii) renewable energy and energy efficiency; (iii) carbon sequestration through national forestry management schemes; (iv) elimination of ozone depleting substances; and (v) increased public information and awareness.

Accordingly, emphasis needs to be placed on cross-sectoral integration, linkages to disaster prevention and management, integrated assessment of infrastructure and economic development projects, and regulatory and incentive-based strategies to climate proof communities and physical infrastructure. Specific attention needs to be paid to (i) developing and implementing adaptation measures that are crucial for the PICTs, in the agriculture, forestry, tourism, and housing sectors, among others; and (ii) contributing to global mitigation efforts, through no-regrets measures, like carbon sequestration in the forestry sector. In addition, measures such as coastal forestry and mangrove replanting, where appropriate, can have both mitigation and adaptation benefits.

5.1 Cross-sectoral Integration

Climate change is a cross-cutting phenomenon. What happens in one sector can affect other sectors. Cross-sectoral integration operates vertically and horizontally—vertically from national to local level within the same sector, and horizontally across different sectors at the same level. As adaptation is primarily conducted at the local level, both forms of cross-sectoral integration are important. Multi-sector integration is regarded as a synthesis step, where the impacts of climate change are summed up across all sectors.

Examples of the need for cross-sectoral integration include:

- (i) **Health and industry** – increased morbidity and mortality as a result of climate change may increase absenteeism or labour shortages;
- (ii) **Agriculture and urban water supply** – increased incidence of drought may cause agriculture and urban areas to compete over increasingly scarce sources of water;
- (iii) **Tourism and infrastructure** – increased vulnerability of coastal zones may require roads to be relocated inland, thus preventing linear development of tourism facilities along beaches; and

(iv) **Forestry and health** – increasingly dry forests may increase the incidence of forest fires with the resulting decline in air quality having an adverse impact on health of affected communities.

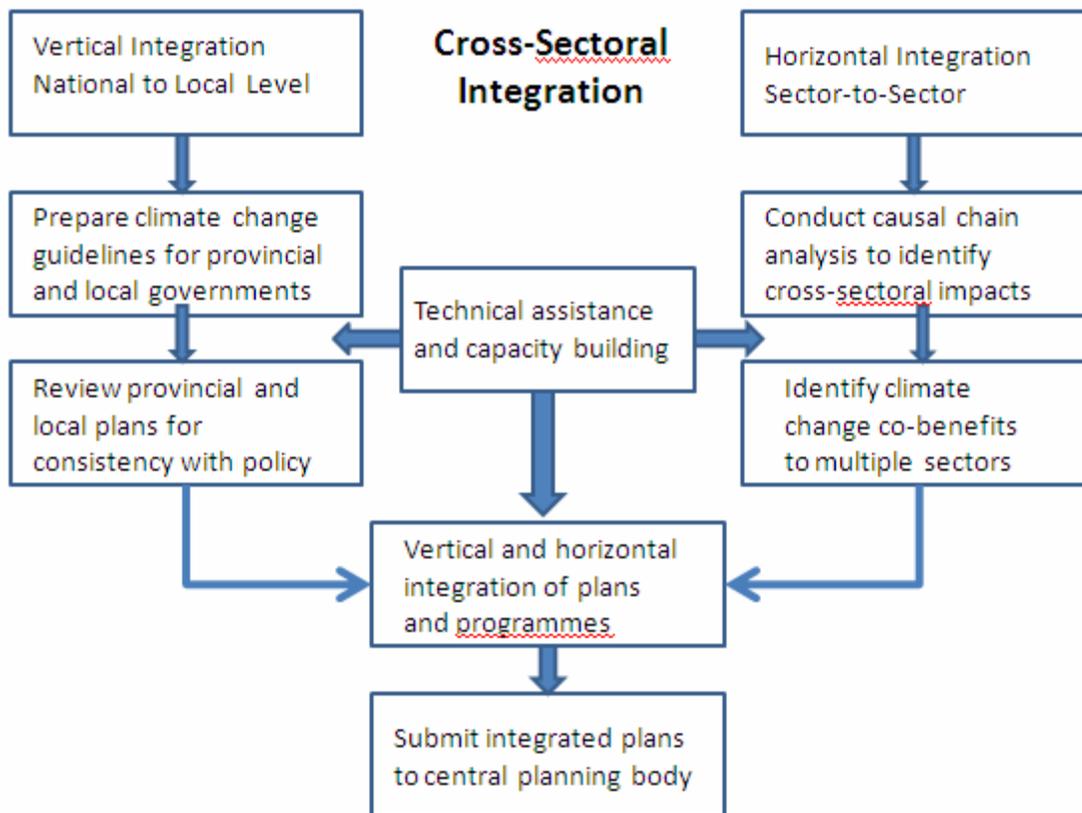
One of the best tools for illustrating and evaluating these cross-sectoral linkages is causal chain analysis, which essentially creates a long chain of cause-effect relationships. For example, climate change→increased drought incidence→reduced runoff in the dry season→reduced water for irrigation→competition for water among competing users→urban users pay more for water→impacts on poor communities. Simply stating that increased drought incidence will impact on urban poverty is not immediately obvious unless the intervening cause-effect relationships are mapped out.

For very important cross-sectoral impacts identified by these qualitative methods increasingly sophisticated economic models, such as computable general equilibrium models, are available that predict the effect on multiple sectors as a result of a specific change in one sector (Zhai et al 2009, Kremers et al 2001). Complex models may also be used to estimate the likely economic costs of damage across all sectors. The institutional capacity in the Pacific SIDS to undertake complex computer modelling may constrain this option, but there are well equipped research institutions in other countries that can undertake this work.

Figure 10 summarizes the need for and the basic approach to vertical and horizontal cross-sectoral integration. National processes and procedures already in place for cross-sectoral integration should be followed, where they exist, rather than creating new processes. However, in many countries there are only *ad hoc* approaches to cross-sectoral integration so more formalized approach may be warranted.

RECOMMENDED ACTION
<ul style="list-style-type: none">• Identify the horizontal and vertical linkages between different climate change impacts using causal chain analysis;• Consider if the likely linked impacts are sufficiently serious to warrant more sophisticated computer modelling, which can be outsourced to universities;• For priority cross-sectoral impacts, form focussed multi-agency working groups to provide recommended actions to the national planning agency mainstreaming task-force; and• Ensure that cross-sectoral social and environmental impacts are accommodated in the national economic development plan.

Figure 10 Vertical and Horizontal Cross-Sectoral Integration



5.2 Linkage to Disaster Risk Reduction and Disaster Management

Many of the expected impacts of climate change will be very similar to current extreme events such as tropical cyclones, flooding, drought, storm surges which too often already result in disaster in the Pacific SIDS (Bettencourt et al 2006, Dasgupta et al 2007). These hazards will become more severe and possibly more frequent as climate change progresses, so there may be no clear dividing line between existing climate-related disasters and those caused by climate change, but rather a steady progression that will only be detected in hindsight. At the same time, slow onset disasters such as sea level rise, coral bleaching and ocean acidification will also increasingly threaten Pacific countries as additional effects of climate change. These incremental changes are of acute concern to SIDS with limited resources and capacities.

Over the five decades (1950-2004) more than 200 natural disasters were reported, on average four per year. Worryingly, there has been an apparent increase in the number of reported disasters in the Pacific region since the 1950s, with millions of people affected, more than 1,700 deaths, and billions of dollars in economic damage (Bettencourt et al 2006). For example, the number of hurricane strength cyclones has increased in the south-west Pacific over the past 50 years and a direct hit on a major population centre is increasingly likely. Disasters have major economic and social impacts, with GDP losses up to 46% and up to 40% of the population affected in a typical disaster year. The lessons learned from this prior experience of disasters in

the Pacific include (i) prevention pays off in the long run; (ii) risk reduction is more effective than waiting and repairing the damage; (iii) risk management is most cost-effective when introduced early into planning investments; (iv) no regrets adaptation measures can reduce vulnerability significantly; and (v) focusing on vulnerability may be the best way of integrating disaster risk reduction and climate change adaptation (Bettencourt et al 2006, Gero et al 2010). Additional details on disaster risks and their management in the Pacific region can be accessed at <http://www.pacificdisaster.net/pdn2008/>.

For the Second World Conference on Disaster Reduction, held in Kobe, Japan in January 2005, a Pacific regional position paper, which aimed to regionalize the Hyogo Framework for Action, emphasized the need to mainstream risk management into national development planning. Subsequently, an action plan, titled Disaster Risk Reduction and Disaster Management: A Framework for Action 2005-2015, was endorsed by Pacific Islands Forum leaders. This action plan notes that “an integrated framework will involve a whole of government approach to disaster risk reduction and disaster management, with key agencies coordinating closely with relevant local, national, regional, and international stakeholders.”

Among the plan’s expected outcomes by 2015, governments are expected to “integrate economic, social and environment risks and management of all hazards in national planning and budgetary processes.” The Pacific Islands Applied Geoscience Commission’s (SOPAC) development of the Comprehensive Hazard and Risk Management (CHARM) process (<http://www.sopac.org/Community+Risk+Programme+Risk+Management>) and the Environmental Vulnerability Index (EVI) (<http://www.vulnerabilityindex.net/>) provides key tools to assist decision making in this area. An ecosystem-based approach to risk assessment is being developed by UNEP in its Risk and Vulnerability Assessment Methodology Development (RIVAMP) Project (UNEP 2010). Governments are also encouraged to adopt risk assessment, codes of practice and design standards by key sectors (industry, health, transport, communication, construction and agriculture) to improve their resilience.

The experience of Vanuatu in attempting to mainstream climate change and disaster management into its medium term national economic development plan is evidence of the comprehensive approach that must be taken to mainstreaming. Vanuatu, along with most other PICTs, released its Disaster Risk Reduction and Disaster Management Action Plan (2006-2016), which has a specific objective to “integrate disaster risk reduction into policies, plans and programs of all ministries and departments and all levels of government in order to assist communities reduce the risk and vulnerability to disasters.” Unfortunately the main medium term economic development plan, the Priorities and Action Agenda (2005-2007) had recently been endorsed by the Council of Ministers but disaster risk reduction and disaster management was not sufficiently reflected in that plan, as the Action Plan came several months later. Recognizing this defect, the Government requested a Supplementary Priorities and Action Agenda, with an additional strategic priority of safety, security and resilience. This Supplementary Priorities and Action Agenda found that because disaster management is a cross-cutting issue, like climate change, significant changes needed to be made to every chapter of the national economic plan.

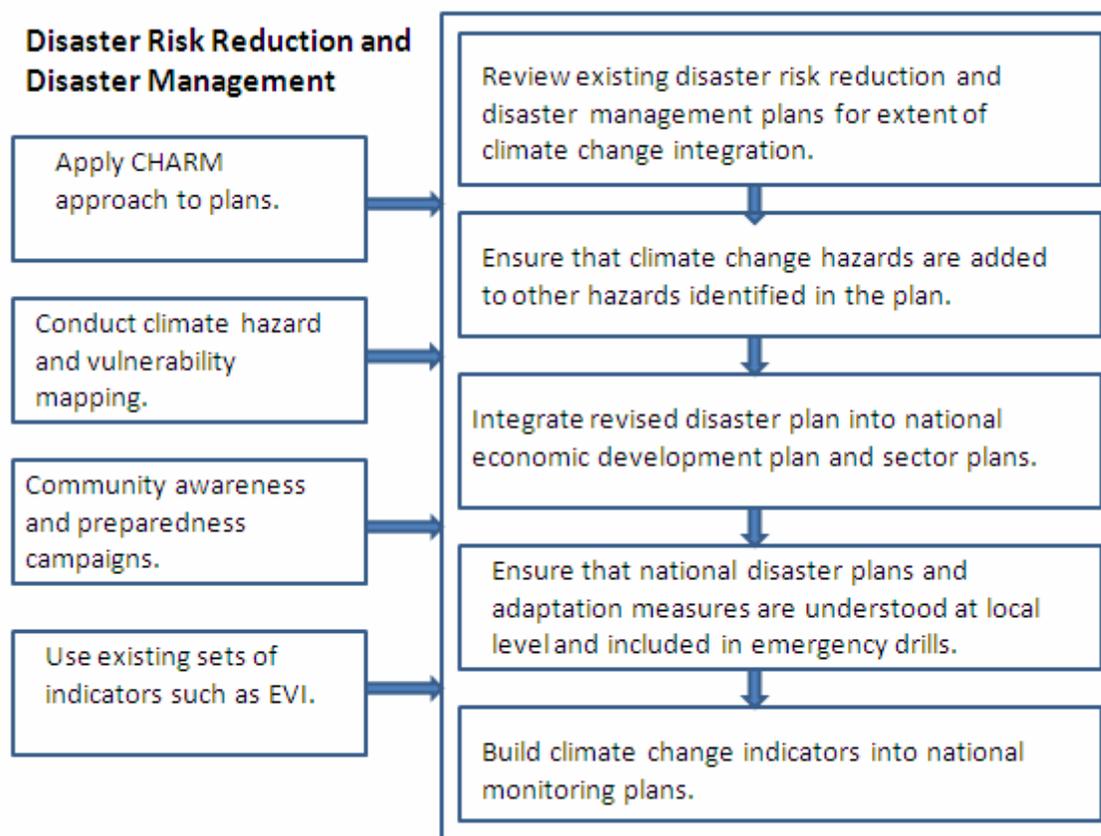
It was intended that when the next Priorities and Action Agenda was formulated, then the Supplementary document would be fully integrated, although the current status is unclear.

The 2006-2015 Priorities and Action Agenda for Vanuatu recognizes that one of the roles of the Meteorological Service is “to build climate change issues into national development plans” but apart from a brief mention in the section on infrastructure, climate change is not covered in detail elsewhere in the document. Policy objectives include integrating hazard and risk management into policies and promoting traditional and indigenous disaster management knowledge and self-reliance within the community. Despite brief mentions of the importance of disasters in Vanuatu, however, this treatment falls far short of the comprehensive integration attempted in the Supplementary Priorities and Action Agenda.

RECOMMENDED ACTION
<ul style="list-style-type: none">• Review the extent to which current national disaster risk reduction and disaster management plans address the evolving understanding of hazards emerging from climate projections;• Examine how disaster management is reflected in current national economic development plans;• Use an all hazard assessment technique, like CHARM, to check that current and future disaster risks are adequately identified;• Build climate change and disaster management indicators into national monitoring plans, using indicators like EVI;• Conduct a comprehensive effort to identify opportunities to incorporate climate change responses and disaster management into future economic development plans.

Figure 11 summarizes the overall approach to mainstreaming combined climate change and disaster risk reduction and disaster management plans into national economic development planning processes.

Figure 11 Mainstreaming Climate Change and Disaster Plans



5.3 Integrated Assessment of Projects

The United Nations Environment Programme’s (UNEP) Guidance Manual on Integrated Assessment: Mainstreaming Sustainability into Policymaking outlines ten tools that used in combination should ensure that sustainable projects are selected at the development planning level (UNEP 2009). These tools are (i) stakeholder analysis and mapping; (ii) expert panels; (iii) focus groups; (iv) household surveys; (v) sustainability framework and indicators; (vi) causal chain analysis; (vii) root cause analysis; (viii) trend analysis; (ix) scenario building; and (x) multi-criteria analysis. Social impact assessment (SIA), SEA and cumulative impact assessment can also be used at this upstream planning level.

Once specific projects have been identified/selected consistent with such a comprehensive sustainability assessment, the main task remaining is to ensure that climate change considerations are incorporated into project feasibility studies and associated EIAs. While EIA is a long accepted best practice in relation to project assessment, there is still relatively little experience in mainstreaming climate change considerations into EIA practice (CDB 2004). One source of information that is trying to consolidate best practice in this area is the State of Hawaii which is conducting a review of its EIA process (<http://sites.google.com/a/hawaii.edu/climate-change-and-eia/>). The Netherlands National Commission on Environmental Assessment

(NCEA) requires consideration of greenhouse gas emissions if a proposed project is part of a class of projects that have been determined to contribute significantly to total emissions (e.g. industrial projects, power stations, infrastructure projects, agricultural projects, greenhouses, housing projects, waste processing projects, groundwater abstraction projects, and airport projects). The NCEA also requires consideration of adaptation measures depending on local climate impacts, nature of the project area, estimation of the risks, and the relationship between additional short term costs to avoided long term costs. EIA experience from a UK perspective is provided at <http://www.environmentalassessment.eu/>.

The Australian Government is also undertaking a review of its EIA processes, in part to accommodate climate change, with a proposed interim GHG trigger of 500,000 tonnes of CO₂ equivalent (Hawke 2009). The review also proposed a requirement to consider cost-effective climate change mitigation opportunities in strategic assessments and bioregional plans. Adaptation is proposed to be addressed as an emerging threat, particularly to biodiversity (Hawke 2009).

General information on EIA processes can be accessed through the International Association for Impact Assessment index of EIA links at <http://www.iaia.org/resources-networking/eia-index-of-websites.aspx>. A recent summary of the status of EIA in Asia and donor agencies by the Asian Environmental Compliance and Enforcement Network (AECEN) Secretariat is given at <http://www.aecen.org/regional-studies-and-trainings>. Online training modules are available at <http://eia.unu.edu/index.html>.

The standard steps for an EIA (AECEN 2009) and how climate change considerations may be integrated are as follows:

- (i) **Screening** – a rapid assessment of whether a full EIA, initial environmental examination (IEE), or no EIA is needed, and a categorization of the project into typically one of three (or more) classes (A, B, C) – add a climate change trigger, such as additional amount of GHG emissions, or number of vulnerable people affected.
- (ii) **Scoping** – determining the project boundaries and the types of impacts that will be considered (and eliminating minor concerns) so that only the most significant consequences will be assessed, thus leading to drafting of the terms of reference for an environmental impact statement (EIS) to be carried out by the project proponent and their consultants – climate change impact scope includes impact of the project on climate change as well as impact of climate change on the project.
- (iii) **Baseline study** – documenting the current state of the environment in the project area and any expected changes under a “without project” scenario – climate change will alter the baseline conditions without a project, so project impacts (and impacts on the project) need to consider the future climate conditions for the life of the project.
- (iv) **Assessment of impacts** – impact identification, impact analysis and/or prediction, and quantifying the significance of the impacts – downscaling of global climate change models to the local level or using existing climate profiles, calculation of GHG emissions, estimates of

vulnerable populations and ecosystems, damage assessments, costs of action and inaction, and adaptive capacity need to be included in the assessment of impacts, where appropriate.

(v) **Mitigation measures** – redesign of project components or impact management to mitigate the significant environmental impacts and an assessment of the residual impacts if these mitigation measures are implemented – voluntary actions to limit GHG emissions, adaptation measures to cope with climate change impacts, and capacity/resilience strengthening measures may need to be included in the project design.

(vi) **Assessment of alternatives** – can the same functions or services provided by the project be satisfied in alternative ways or in alternative locations or by using alternative technologies – alternative mitigation and adaptation measures, plus optimal approaches by combining both approaches need to be considered as part of the array of project alternatives.

(vii) **Reporting** – preparing the EIS report, with a proposed environmental management plan (EMP) and environmental monitoring plan, as attachments – specific sections on climate change should be built into the standard table of contents for the report.

(viii) **Review process** – usually by an environmental agency or other EIA regulatory body, with or without public involvement – climate change aspects may need to be reviewed by an expert group that is not part of the environment agency (in some countries, special climate change agencies have been created).

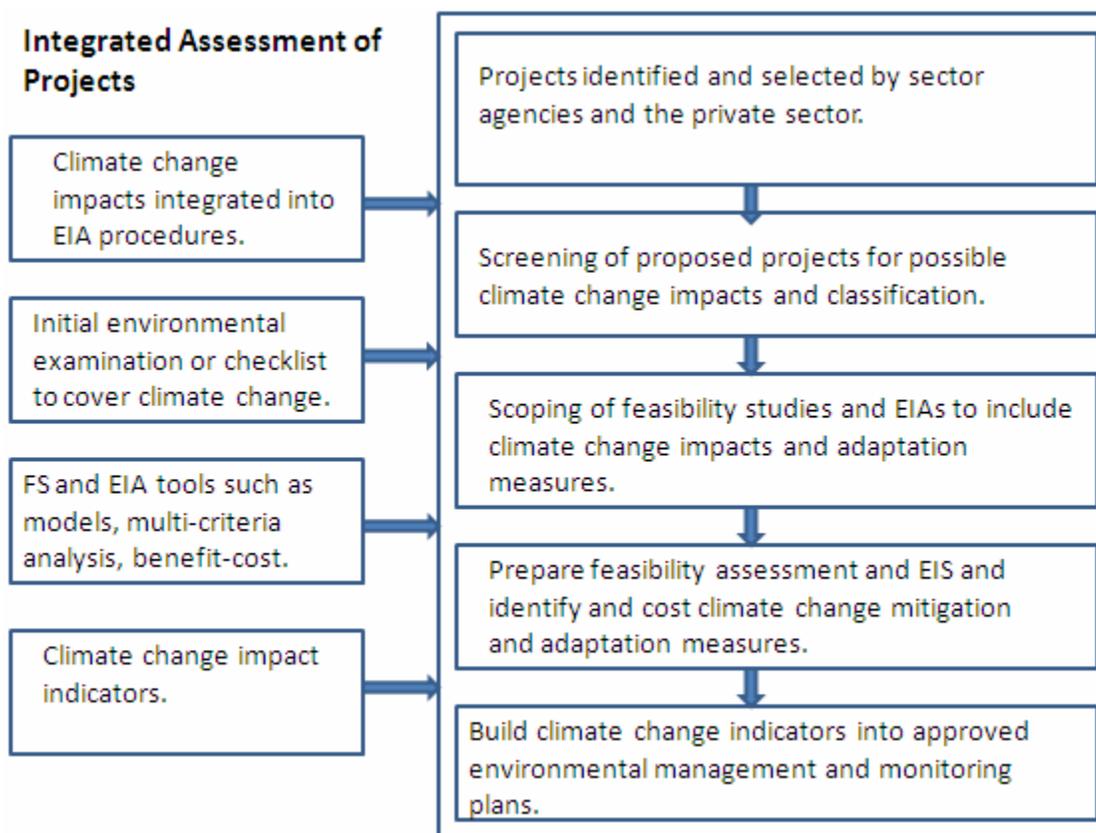
(ix) **Decision-making** – the EIA regulator decides on whether to allow the project to proceed as designed, to require changes in design, or to collect additional information on specific impacts. The decision to proceed may involve a specific legal permit or certification, plus approval of the environmental management and monitoring plans. Time limits may be imposed for this stage – the environmental management plan may need to include specific adaptation measures and the permits may include zoning considerations so that vulnerable areas are avoided.

(x) **Project implementation** – the mitigation measures and environmental management and monitoring plans are built into project budgets and contract documents, and a specific project staff may be assigned to supervise implementation of these plans – project implementation plans should ensure that personnel with appropriate skills in climate change related measures are included in the project team.

(xi) **Audit and evaluation** – the EIA regulator (and occasionally a third party, such as a community watchdog) assesses the extent to which the environmental management plan was implemented as designed and if the residual impacts were as predicted. This may lead to some changes in project implementation or operations and is intended to draw out lessons learned for future EIAs of similar projects – as climate change impacts tend to be long term, the approved period for monitoring may be longer than normal, depending on the type of project and climate change response measures.

Figure 12 summarizes the standard approach to project feasibility studies and EIAs, while injecting climate change considerations into all steps of the process.

Figure 12 Stylized Summary of Integrated Assessment of Projects



RECOMMENDED ACTION
<ul style="list-style-type: none"> • Use the UNEP Guidance Manual on Integrated Assessment to help select sustainable projects; • Consider whether national EIA guidelines need to be amended by including one or more specific climate change triggers; • Build climate change considerations into all phases of the EIA process, including impact of the project on climate change as well as impact of climate change on the project; and • Attempt to build climate change adaptation measures into the design of all major projects.

5.4. Regulatory and Incentive Based Strategies

An important aspect of mainstreaming climate change into development plans is to ensure that the balance of incentives and disincentives is right for the national circumstances. Disincentives may be in the form of (i) taxes and tariffs for undesirable activities; (ii) regulations that limit or prohibit certain activities; (iii) performance standards that ensure a minimum level of

compliance; and (iv) reporting requirements that prevent inappropriate activities from continuing unabated. A combination of command and control measures, economic instruments, and information-based controls is generally needed, many of which will be outside the jurisdiction of the government agency mandated to be in charge of climate change matters.

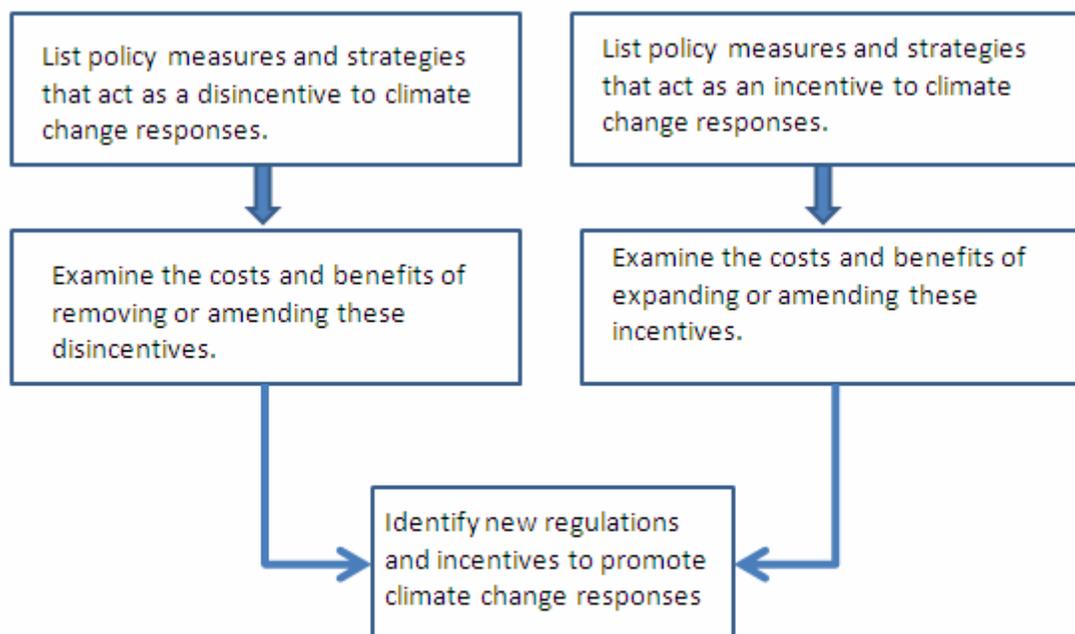
Incentives may be in the form of (i) tax relief or rebates for desirable activities; (ii) zoning plans that permit climate resilient projects to proceed in relatively safe areas; (iii) subsidies to promote climate friendly activities; (iv) publicly funded insurance schemes; (v) public procurement to provide seed funding for new technologies; and (vi) research and development grants, among others.

A simple matrix that lists the various regulations and incentives and allocates them to columns labelled “positive for addressing climate change”, “negative for addressing climate change” and “neutral or uncertain” is one simple way to assess the question of balance. Each entry may be assigned a high, medium, or low ranking. A more complex assessment would require that the costs of, or revenues attached to, each entry be calculated, so that the sum of costs and revenues could give a “net” outcome. Systematic assessment of the various incentives and disincentives will also help to identify the unintended positive and negative impacts of policy decisions that impinge on climate change. Depending on the outcome of this assessment, additional incentives or disincentives may need to be recommended and debated with the relevant stakeholders.

RECOMMENDED ACTION
<ul style="list-style-type: none">• List the various incentives and disincentives in relation to climate change;• Prepare a simple matrix of incentives and disincentives and their impacts on climate change; and• Depending on the revealed balance, consider amending the current mix of incentives and disincentives to ensure an adequate degree of coherence in all regulations and incentives (so that all government policies are moving society in the same direction).

Figure 13 summarizes the idea of creating a simple matrix of incentive and disincentive measures and strategies, so that the balance between these can be redressed and all government policy measures will be seen as coherent and moving society towards a more climate resilient status.

Figure 13 Summary of Mainstreaming Regulatory and Incentive Based Strategies



Regulatory and Incentive Based Strategies

5.5 Develop and Implement Adaptation Measures

A wide range of adaptation measures has been developed over the past decade, although integration into development plans is at an early stage. UNDP has developed an Adaptation Policy Framework that takes the user through five stages (UNDP 2004):

- (i) Scoping and designing an adaptation project;
- (ii) Assessing current vulnerability of development objectives to climate;
- (iii) Assessing future climate change risks to the development objectives;
- (iv) Formulating an adaptation strategy; and
- (v) Continuing the adaptation process through monitoring and evaluation of implementation.

Many of the region's adaptation action programmes (e.g. NAPAs) have utilised this framework and its extensive technical papers (UNDP 2010). Typical projects identified in Pacific Islands NAPAs include:

- (i) Coastal zone protection, both hard and soft;
- (ii) Salt tolerant agricultural crops;
- (iii) Water collection, storage and conservation;
- (iv) Control of water-borne and climate related diseases;
- (v) Community-based management of ecosystems;

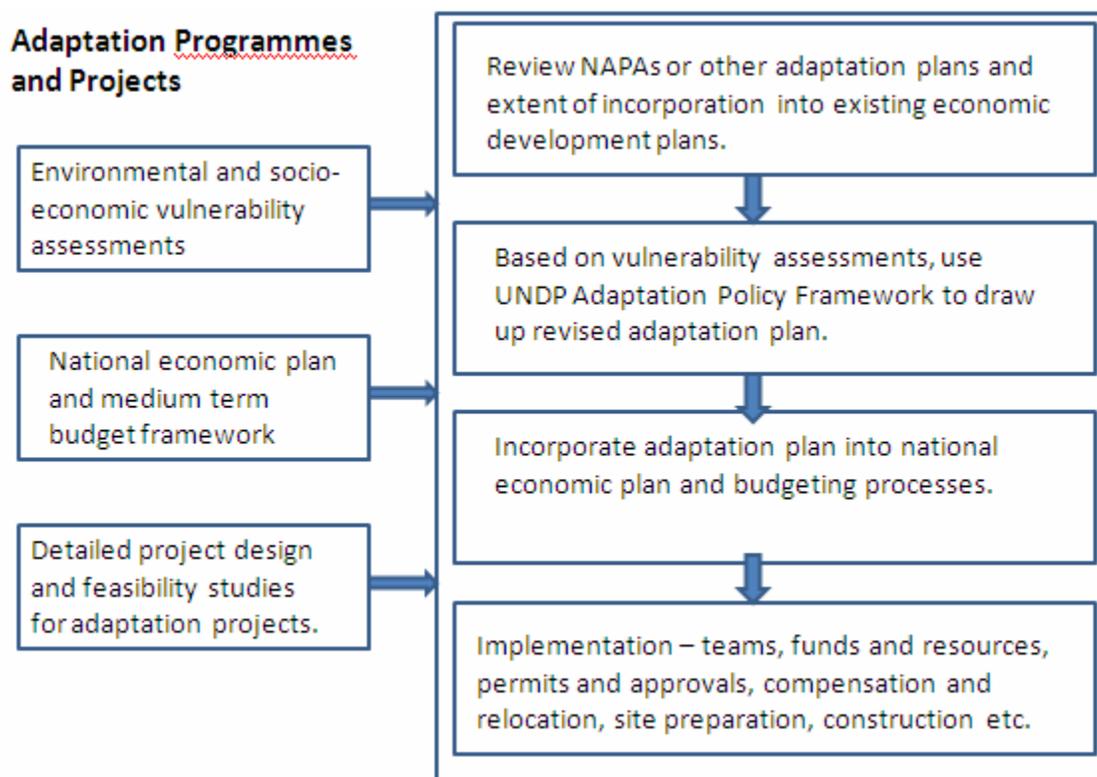
- (vi) Disaster preparedness and management;
- (vii) Increased productivity of coastal resources;
- (viii) Coastal zone planning and zoning;
- (ix) Solid and liquid waste management; and
- (x) Climate proofing infrastructure.

Implementation involves (i) forming an implementation team; (ii) mobilizing funds and assembling resources (e.g. materials and equipment); (iii) obtaining the necessary approvals and permits to proceed; (iv) compensating and/or relocating project-affected people, including vulnerable communities likely to be impacted by climate change; (v) site preparation, such as clearing vegetation or removing and stockpiling topsoil; (vi) construction or assembly, where physical assets are involved; (vii) implementing environmental mitigation measures, including adaptation measures; (viii) monitoring project impacts; and (ix) evaluating impacts and outcomes, as well as deriving lessons learned for subsequent projects of a similar nature.

RECOMMENDED ACTION
<ul style="list-style-type: none"> • Review the extent to which national economic development plans and annual budgets have incorporated the NAPAs or other adaptation plans; • If the current adaptation plans are inadequate, use the UNDP Adaptation Policy Framework to draw up a new (revised) adaptation strategy in conjunction with relevant economic and planning agencies; and • Systematically work through the various implementation steps and ensure that lessons are extracted for the design of future adaptation programmes.

Figure 14 summarizes the proposed actions for mainstreaming adaptation measures. Note that this calls on several other mainstreaming activities such as vulnerability assessments and identification of hotspots, review of national plans, annual budgets and medium term expenditure frameworks, and the normal features of the project cycle such as feasibility studies, SIAs, EIAs, detailed design, implementation plans, implementation processes, and monitoring and evaluation.

Figure 14 Mainstreaming Adaptation Programmes and Projects



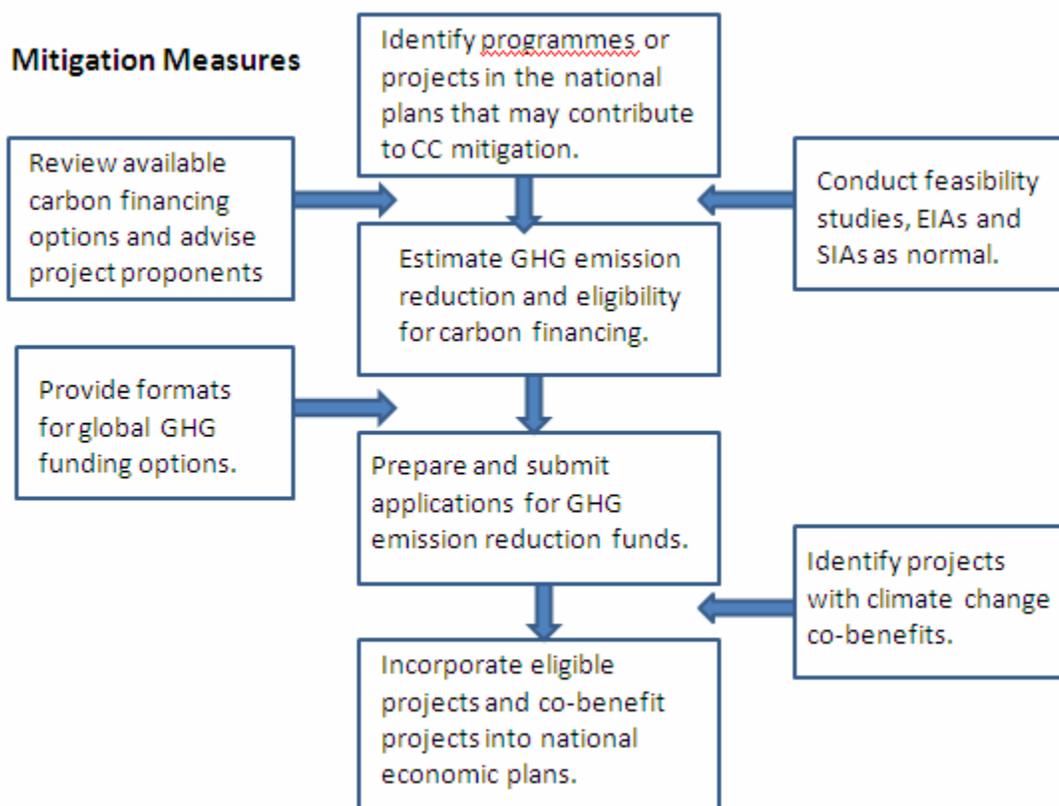
5.6 Contribute to Global Mitigation Efforts

While Pacific SIDS have no obligation to mitigate GHG emissions and generate a tiny proportion of global emissions, there are two main avenues to voluntarily contribute to the global mitigation efforts: (i) where cost-effective mitigation measures are available in the SIDS that allow developed countries to purchase certified emission reductions under the flexible mechanisms of the Kyoto Protocol; and (ii) where co-benefits are available that make sense economically, in the context of energy security, and local environmental considerations, with or without climate change considerations (such as renewable energy instead of expensive, imported fossil fuels). Under the former category are projects such as solid waste management and methane capture, reforestation and forest carbon sequestration (through reduced emissions from deforestation and forest degradation in developing countries – REDD). The latter category includes renewable energy (such as wind, biomass, geothermal, and solar energy), energy efficiency and energy conservation.

There has been some concern among developing countries that mainstreaming climate change may effectively “hide” these contributions to mitigation in “normal” national development plans and thereby miss the opportunity for external financing. This is a legitimate concern but can be overcome by highlighting climate change contributions in the national plan, either by a recognizable code (e.g., CC) against the specific programme or project, or by extracting all of the climate change related programmes and projects into a separate “box” or annex.

Figure 15 summarises the approach to identifying eligible projects for carbon financing (such as CDM) and projects in the national plan that also have climate change co-benefits (which may help to attract external funding).

Figure 15 Mainstreaming Climate Change Mitigation Projects



RECOMMENDED ACTION
<ul style="list-style-type: none"> • Identify cost-effective mitigation measures that will allow developed countries to purchase certified emission reductions; • Identify climate change co-benefits that make sense, with or without climate change considerations (no-regrets measures); and • Package suitable projects for external financing, using the defined formats of the various funding agencies.

6. Mainstreaming in National Budgets

In relation to financial management issues, the Pacific Islands Action Plan on Climate Change (2006-2015) refers to the following priority national actions:

- (i) Provide for implementation of adaptation measures in national budgetary processes;
- (ii) Secure increased resources for climate change assistance including international and regional financing, lending and research institutions, the private sector, and nongovernmental organizations (NGO);
- (iii) Access and implement in a timely manner national assistance available under the NAPAs, Second National Communications, Special Climate Change Fund, GEF Adaptation Pilot funds, Clean Development Mechanism (CDM) Adaptation Fund, Small Grants Scheme etc.; and
- (iv) Identify and seek the support of private enterprise in national climate change initiatives and in particular, the CDM.

Recent natural disaster events in the Pacific Islands region illustrate why national planners need to be much more aware of likely climate change impacts, and while there is insufficient evidence to link any of these specific events to climate change (PIFS 2009), in particular tsunamis and earthquakes, they are indicative of the extent of vulnerabilities faced by Pacific communities.

- (i) Tsunami in Samoa (2009) – direct economic losses equivalent to 5% of GDP;
- (ii) Floods in Nadi and Ba, Fiji (2009) – cost to families and businesses alone around 7% of GDP;
- (iii) Cyclone Heta in Niue (2004) – losses exceeded the 2003 GDP by 5 times; and
- (iv) Earthquake and tsunami in Solomon Islands (2007) – damage cost was around 90% of the 2006 recurrent government budget.

The World Bank estimated that natural disasters cost the Pacific Islands region in the vicinity of \$2.8 billion in the 1990s (in 2004 terms) (World Bank 2006). Clearly any prevention or disaster risk reduction measures in the national budget will have major economic benefits, while the cost of inaction may be very high and set back national economies for many years or even decades. Avoiding the costs associated with disasters frees up national budgets (and external financing) for other development priorities such as education and health. The impact of natural disasters on the private sector also results in shortfalls in income tax revenues (PIFS 2009).

For a model of what mainstreaming into a national budget might look like, the task-force should examine the contribution of environmental communities (more than 25 organizations) to develop a Green Budget 2010 for the USA (National Coalition for the Environment 2009). It includes proposals for energy, health, air and water, land, transportation, oceans, and wildlife and covers nearly all government agencies. NGO coalitions in the Pacific region may also be interested in assisting formulation of a green budget, if there is political willingness to consider such an approach.

6.1 National Budgetary Processes

The budget process is how government expenditures are determined or allocated. It consists of four main stages: formulation, adoption, execution, and control, audits and oversight (Isaksen 2005). National budgets are usually formulated by a two-way flow of information to and from sector agencies, coordinated by the Finance Ministry, possibly under the command of a budget committee at Cabinet or Council of Ministers level. The main stages in budget formulation are the macro-economic basis, budget policy outline, preparation of revenue and expenditure targets, and submission of sector plans within those ceilings. Adoption is by Parliament or by Cabinet and endorsed by Parliament. Budget execution is by sector agencies and controls are by the Auditor General or similar watchdog agencies, possibly with a Parliamentary oversight committee.

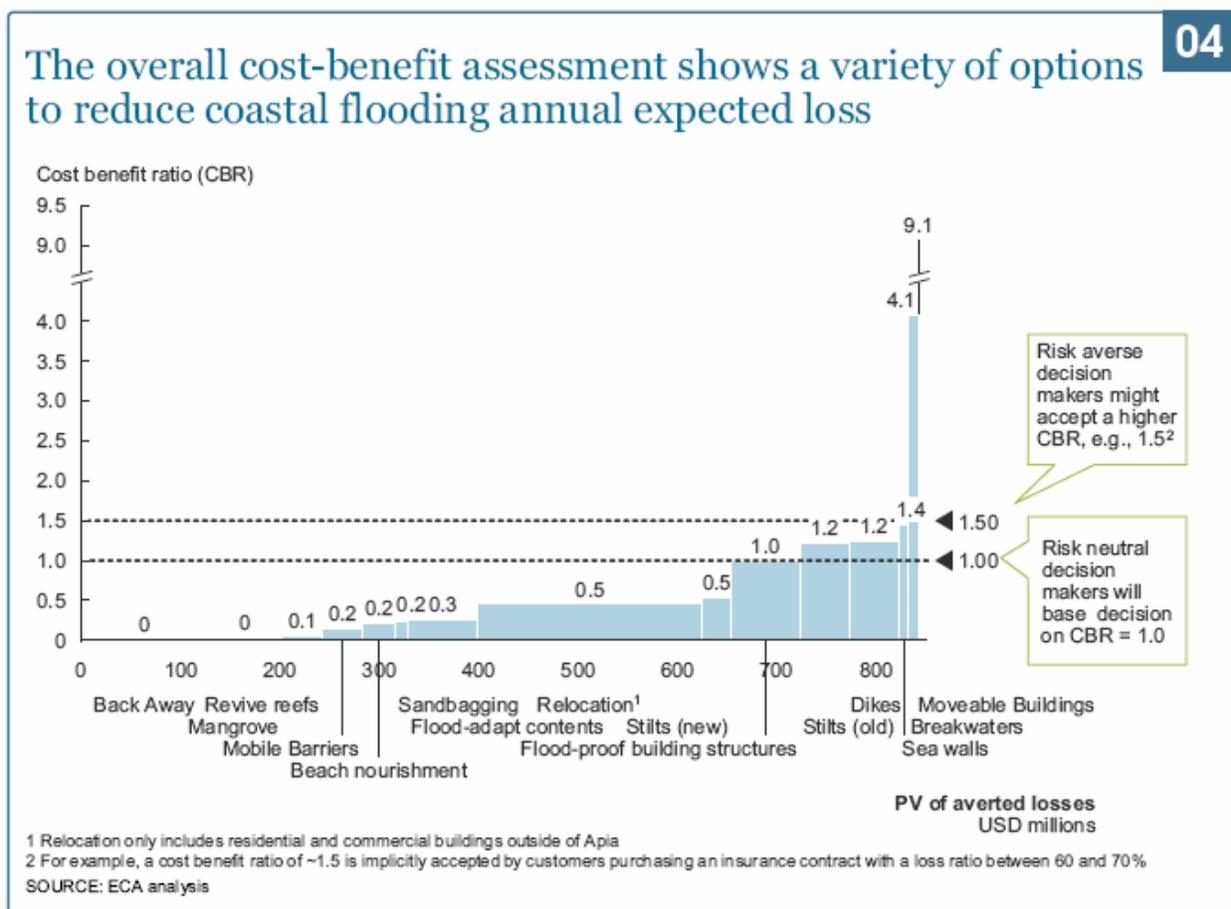
The importance of integrating climate change into annual budgets is to (i) ensure that adequate resources are allocated to high priority mitigation and adaptation measures; (ii) raise additional revenues from taxes, tariffs, and pollution charges related to climate change response measures; (iii) ensure that the unintended effects of budgeted activities in non-environmental sectors don't exacerbate climate change problems; and (iv) balance internal and external sources of funding for climate-related activities (Mickwitz et al. 2009).

Five ways that climate change could be better integrated into annual budgets include (i) increasing or introducing climate-based taxes and charges (like a carbon tax or pollution charges); (ii) increasing climate-based subsidies (e.g. for investment in renewable energy) and budget allocations for those subsidies; (iii) removing or redesigning perverse taxes and subsidies that exacerbate climate change; (iv) increasing budget allocations and tax rebates for activities with favourable climate effects; and (v) stipulating climate-based limits or goals as budget rules to govern resource allocation (Mickwitz et al. 2009). Green procurement by government agencies may also provide the necessary seed funding for new and innovative technologies.

As climate change is a cross-cutting issue that can be expected to impact on virtually all government agencies, the Ministry of Finance has a crucial role in conveying to the sector agencies the targets or ceilings for climate-related expenditures. In most cases there will be no standardised costing for such expenditures and detailed background studies may be necessary. Some guidance on the cost of adaptation measures is available from the World Bank's Economics of Adaptation to Climate Change project (World Bank 2009). Globally the cost of adaptation over the period 2010-2050 is estimated at \$75-100 billion per year, about the same as the current level of official development assistance. The methodology used to calculate the global costs involved (i) picking a baseline (2010-2050); (ii) choosing divergent climate scenarios based on model predictions; (iii) predicting the impacts for each scenario; and (iv) identifying adaptation options for major economic sectors and costing them (World Bank 2009). The study found that the cost of adaptation, while high, was actually only between 0.07-0.7% of GDP, and falling over time, so only relatively minor changes in annual budgets would be needed in most countries.

Aligned with this global study, the World Bank and McKinsey have examined the costs of adaptation in Samoa (ECA 2009) as one of the case studies for the Economics of Climate Adaptation (ECA) Working Group and as part of the World Bank’s Economics of Adaptation to Climate Change project. A five step process has been undertaken, as follows: (i) review current strategic development plans; (ii) review climate vulnerability assessments; (iii) identify gaps or additional needs in development plans; (iv) discuss options for incorporating improvements; and (v) agree on improved planning/implementation system (Cretegnny 2010).

Figure 16 Cost-Benefit Ratios of Adaptation Measures to Cope with Coastal Flooding in Samoa (ECA 2009)



The ECA study focussed on sea level rise, coastal flooding and salinization, which were seen as priority climate change impacts. Sea level rise was projected to range between 7.6 – 26.2 cm by 2030 and the annual expected loss from coastal flooding by 2030 was about \$80 million per year (up to 9% of GDP). This expected loss could be reduced by half by implementing cost-effective measures such as land use planning to move away from the coast, planting mangrove buffer zones, protecting and regenerating coral reefs, mobile flood barriers in high risk zones, and restricting all new buildings to at least a four meter elevation (ECA 2009). The cost-benefit

ratios of potential adaptation options for Samoa are shown in Figure 16. Relatively few of the identified adaptation measures, however, had cost-benefit ratios greater than 1.

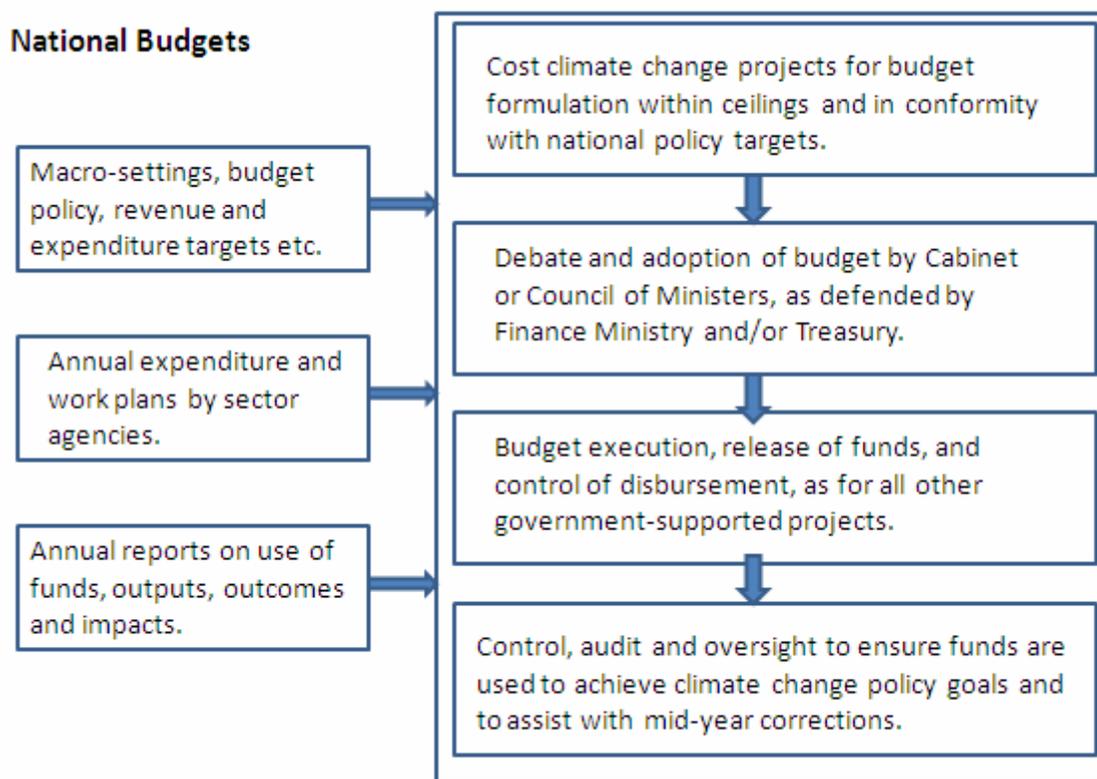
ADB has examined the cost of adaptation options for infrastructure investment in several Pacific islands countries (ADB 2005). For a coastal road project in Kosrae, Federated States of Micronesia (FSM), an unconstructed section of the road would cost about \$500,000 to climate proof it, with an internal rate of return of about 11%, while climate proofing an already constructed section of the same road would cost 3 times as much, although still a cost-effective investment. Climate proofing the breakwater for a harbour in the Cook Islands, with a design life of 60 years, should allow for sea level rise of at least 0.5 m and wave heights of up to 12 m. ADB also examined the feasibility of climate proofing critical elements (infrastructure, health care, and environment) of the FSM National Strategic Development Plan and the Cook Islands National Development Strategy (ADB 2005).

Based on this experience, Pacific SIDS could either set an arbitrary expenditure ceiling for adaptation based on experience from other countries or undertake similar studies to those being carried out by the World Bank, ADB and ECA. At the very minimum, Ministries of Finance should require sector agencies to conduct cost-benefit analyses of major investment proposals, with and without adaptation measures incorporated.

Figure 17 summarizes the budget process from formulation to control, audit and oversight, but buried within this flowchart is a series of decisions on specific policy measures that have budget implications (such as taxes and subsidies).

RECOMMENDED ACTION
<ul style="list-style-type: none">• Examine climate related subsidies and remove any perverse subsidies in favour of climate positive subsidies (such as seed funding for renewable energy);• Examine current revenues from climate related activities and consider adopting new or amended revenue sources to fund climate responses;• Stipulate climate-based limits or goals (such as mandated renewable energy targets) as government-sanctioned budget rules;• Convey to sector agencies targets or ceilings for climate-related expenditure and revenue targets;• Estimate standard costs for adaptation activities to be used across all sector agency submissions to the budget bureau; and• Require cost-benefit analyses for all major investment proposals, with and without adaptation measures.

Figure 17 Summary of Mainstreaming Climate Change into National Budget Processes.



6.2 Securing Additional Financial Resources

The Copenhagen Accord “noted” at the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change promises \$30 billion, equally allocated to mitigation and adaptation for 2010-2012, with developed countries committing to a goal of mobilizing \$100 billion per year by 2020 to address the needs of developing countries. Funding for adaptation will be prioritized for the most vulnerable developing countries, including SIDS. A Copenhagen Green Climate Fund and a high-level panel were agreed to help mobilize the committed funding. While similar pledges have been made previously, most notably in relation to the 0.7% of GDP target for official development assistance, the Copenhagen Accord does promise significant amounts of new and additional funding for climate change, and the SIDS will be significant beneficiaries. In April 2010, the Adaptation Fund Board issued its first call for project proposals. Existing levels of funding for climate change have mainly benefited large nations like China and India, so the emphasis on assisting the most vulnerable countries is a welcome change. Among the existing multilateral and bilateral funding sources (loans and technical assistance), the World Bank, GEF, ADB are the largest, although their funding is not necessarily targeted at the SIDS. The main development partners contributing to climate change programmes in the Pacific Islands region are ADB, AusAID, European Union, GEF, Germany, Italy, Austria, Japan, New Zealand, UNDP and the World Bank.

The World Bank has been funding innovative projects dealing with all aspects of climate change through a series of carbon funds, including the Prototype Carbon Fund, the Community Development Carbon Fund, the BioCarbon Fund, the Netherlands CDM and Joint Implementation Facilities, the Italian Carbon Fund, Danish Carbon Fund, and Spanish Carbon Fund (World Bank 2006). These and similar funding arrangements by GEF and the ADB are providing developing countries with seed funding to make the transition to low carbon economies and to enable Kyoto Protocol Annex 1 countries to meet their GHG reduction commitments by investing in more cost-effective, low-carbon energy projects in developing countries.

The CDM project pipeline submitted to the CDM Executive Board comprises over 4,200 projects (with certified emissions reduction amounting to 3 billion tCO₂-eq) of which 1,258 are already registered. Of the registered projects, 836 are in Asia-Pacific (66.45%), mostly in China and India (with only two in the Pacific Islands countries – Fiji and Papua New Guinea). The GEF Least Developed Countries Fund, Special Climate Change Fund, and the Adaptation Fund under the Kyoto Protocol provide about \$250 million per year to climate change projects, which cover renewable energy, energy efficiency, sustainable transportation, adaptation, new low-carbon energy technologies, and capacity building.

ADB is providing access to financing for energy efficiency, renewable energy, sustainable transport, and other GHG mitigation projects through its Energy Efficiency Initiative, Carbon Market Initiative, and Sustainable Transport Initiative. To reduce fugitive emissions, ADB is promoting investment in the capture and use of methane from coal mines, landfills, and agricultural waste, and gas transmission networks (ADB 2007). ADB is also assisting with a range of adaptation projects, particularly in low-lying countries likely to be affected by sea level rise.

Pacific SIDS need to have detailed knowledge of the funding rules and formats for all relevant external resources. It may be desirable for the Ministry of Finance or Ministry of Planning to take the lead role in accessing these resources, depending on national circumstances and capacities. At least, detailed information should be issued to all sector agencies to advise them of the climate change funding opportunities and the steps involved in accessing those resources. Resource mobilization targets may be set for the most promising sources of funds. The adaptation and mitigation measures referred to in Section 4 should become the basis for funding applications.

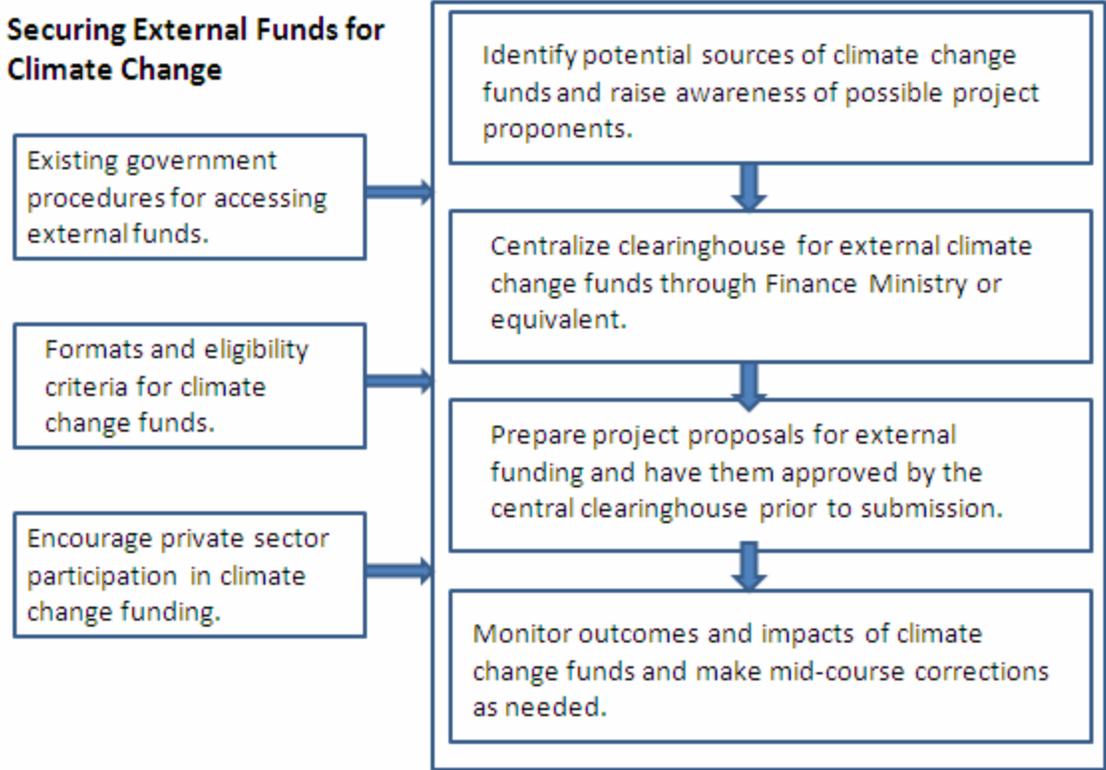
RECOMMENDED ACTION

- Become familiar with all sources of climate change related funds and set resource mobilization targets for the most promising funds;
- Request multilateral financing agencies to conduct workshops/seminars on the new sources of funds and the application processes;
- Consider locating the focal points for external sources of climate funds (such as GEF) in

- the Ministry of Finance or Planning rather than in a Ministry of Environment;
- Issue detailed information to sector agencies on the available funding sources, including the timelines and the steps involved in accessing the funds; and
- Ensure that external funds are fully incorporated into national planning processes and not processed as standalone projects.

Figure 18 summarizes the process of identifying, applying for, and using external climate change funds. It should be noted, however, that the existing government procedures should be used for accessing such funds rather than attempting to create new institutional arrangements.

Figure 18 Summary of Process for Mainstreaming Access to External Funds



6.3 Public-Private Linkages

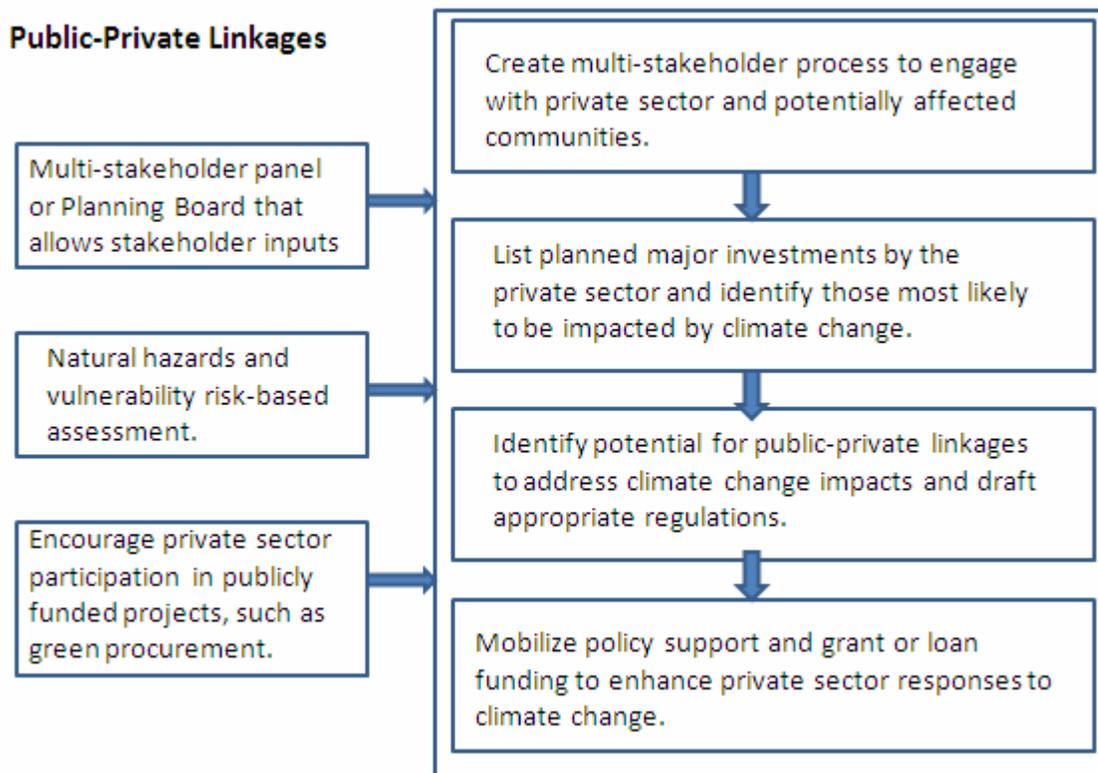
Clearly climate change mitigation and adaptation are not the sole preserve of governments, as most activities which impact on the climate or, in turn, are impacted by a changing climate take place in civil society. Many promising climate change responses, especially in relation to mitigation, will involve the private sector, such as energy efficiency gains in industry, retrofitting buildings to conserve energy, and renewable energy providers. Governments can assist the private sector in taking up these activities through various incentives referred to in Section 4.4, through green procurement, and through public-private partnerships. Governments can also

involve the private sector through multi-stakeholder processes and consultations, as well as adding private sector representatives to key committees and national councils (Figure 19).

One key area where private sector involvement is essential is in amendments to national codes and standards, such as the engineering standards, building codes, or cyclone proofing standards. Often the best method is for the Government to set a specific target and request the private sector to find the best ways of achieving that target. Standing committees may be formed to regularly review such standards and codes as additional information on climate change predictions becomes available. Perhaps Pacific Islands governments should insist on such standards for any donor funded infrastructure or buildings.

At the community level, NGOs have proven to be effective intermediaries between the government and the community. Governments should encourage active civil society involvement in all areas of climate change responses. Local and international NGOs may be particularly helpful in documenting and codifying traditional and indigenous adaptation measures, which may hold the key to future adaptation measures. Environmental NGOs can contribute considerable experience in ecosystem-based approaches to climate change adaptation to facilitate less vulnerable and more resilient communities.

Figure 19 Mainstreaming Public-Private Linkages to Address Climate Change



RECOMMENDED ACTION

- Consider adding private sector representatives to the climate change task-force and/or other national committees/councils;
- Involve the private sector in setting amended national standards and codes to respond to the challenge of climate change;
- Assist the private sector to take up climate change responses by providing incentive schemes, through green procurement, and by initiating public-private partnerships;
- Engage with local and international NGOs as effective intermediaries between the government and the community; and
- Request NGOs to assist with documenting and codifying traditional and indigenous adaptation measures, and to assist with ecosystem-based approaches to adaptation.

7. Mainstreaming in Development Cooperation

The Pacific Islands Action Plan on Climate Change (2006-2015) refers to the following priority national actions in relation to development partners:

- (i) Promote increased bilateral and international partnerships from traditional and non-traditional partners to address national climate change issues;
- (ii) Secure increased resources for climate change assistance, including international and regional financing, lending and research institutions, the private sector, and NGOs;
- (iii) Access and implement in a timely manner national assistance available under the NAPAs, Second National Communications, Special Climate Change Fund, Clean Development Mechanism Adaptation Fund, Small Grants Scheme etc; and
- (iv) Finalize and facilitate the implementation of the Type II partnership initiative on adaptation (bilateral and multilateral).

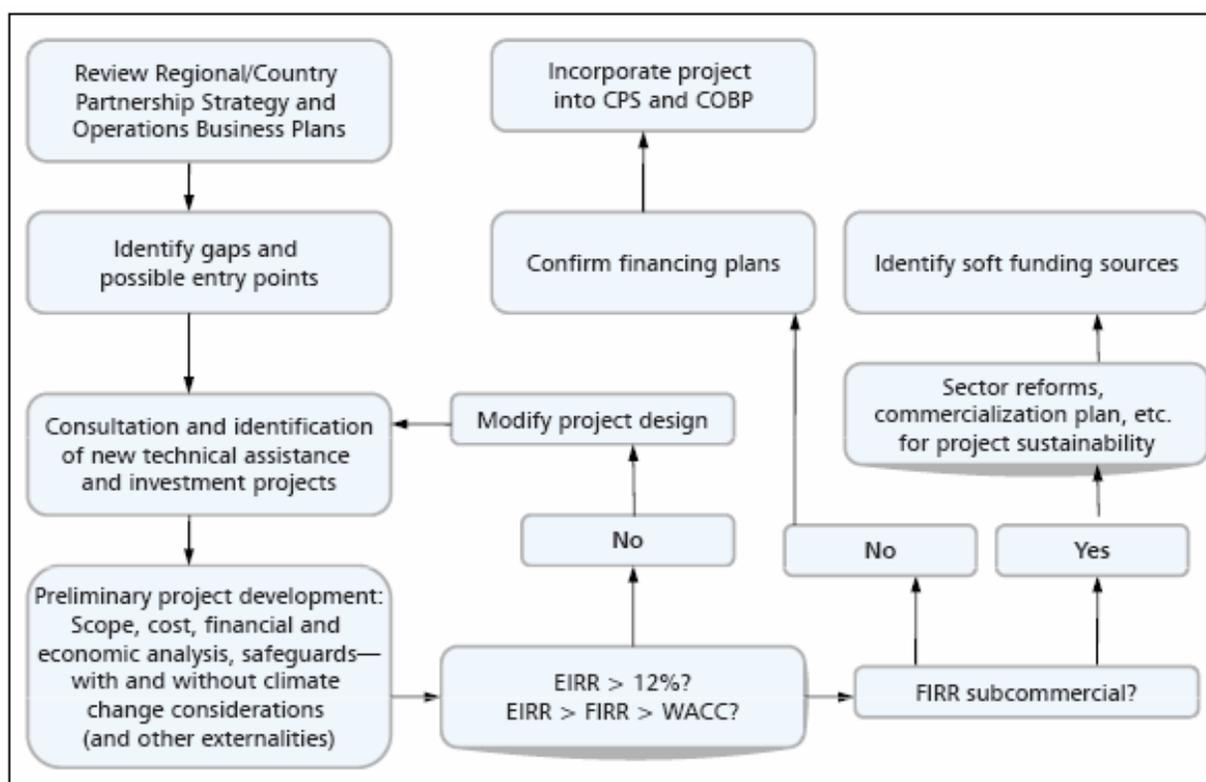
The Framework for Action on Climate Change (2006-2015) states that “additional resources will need to be accessed through multilateral and bilateral funding. While the Framework does not specify that external assistance should be integrated into national development planning and budgetary processes, it does require “that climate change partnerships are strategic and well coordinated.”

Most development assistance agencies have begun to integrate climate change into their development cooperation programmes. For example, the ADB Climate Change Implementation Plan (CCIP) for the Pacific (2009-2015) is intended to leverage additional investment funds and help Pacific countries develop and implement climate change action plans. The CCIP specifically states that ADB promotes mainstreaming of climate change considerations into

national development policies, plans and programmes, as well as its own operations (ADB 2009).

ADB’s mainstreaming process is illustrated in Figure 20 and similar processes are applied by other development partners. The initial focus of mainstreaming will be the Country Partnership Strategies (CPS), which will include climate change adaptation needs and prevention of climate related disasters (ADB 2009). The CPS will also detail the assistance that will be provided to “devise policies, incentives, and regulations to facilitate private sector and NGO involvement in adaptation.” ADB will also support mitigation efforts through energy efficiency and clean energy, sustainable transport, urban development, and forestry with a mix of loans and technical assistance. ADB will also help to mobilize additional funding from carbon markets and the private sector. Effective screening tools for projects will be used to identify and manage climate related risks and to incorporate climate proofing interventions at the design stage. ADB has reviewed its current portfolio of projects and found that the incremental cost of climate proofing those projects would be about 10-20% higher than current costs, but still economically and financially viable over the life of the project.

Figure 20 ADB’s Process for Mainstreaming Climate Change into Development Cooperation (ADB 2009)



Note: CCIP = Climate Change Implementation Plan; COBP = country operations business plan; EIRR = economic internal rate of return; FIRR = financial internal rate of return; WACC = weighted average cost of capital.

USAID has prepared a useful Guidance Manual for Development Planning so that its development assistance is adapted to climate variability and change (USAID 2007). Its target is to assist USAID Missions and other partners “to understand how climate change may affect their project outcomes and identify adaptation options to integrate into the design for more resilient projects.” The proposed mainstreaming approach for USAID projects is outlined in Section 1.4 above. The criteria for analyzing adaptation options include (i) effectiveness; (ii) cost; (iii) feasibility; (iv) social/cultural feasibility; (v) assistance requirements; (vi) adequacy for current climate; (vii) speed of implementation; (viii) consistency with state policy; (ix) size of beneficiary group; and (x) endorsement by experts (or global good practice) (USAID 2007).

The World Bank states that “adaptation goals need to be identified as a clear priority in national policies and development plans” (World Bank 2000). The Bank advocates that all major new development projects should undergo adaptation screening, which would not only assess the impact of climate change on the project but also the project’s impact on the project area’s vulnerability. This can be done through a revision of EIA procedures to ensure that impact assessments take adaptation into account.

The European Union (EU) has committed to environmental mainstreaming as a cross-cutting issue to assist developing countries in environmental policy making and to increase capacities to sustainably manage the environment and natural resources (EU 2009). Implementation priorities include (i) updating Country Environment Profiles to address environmental risks like climate change, biodiversity loss, deforestation, and desertification in a comprehensive manner; (ii) integration of environment issues, including climate change and adaptation, into the EU’s external action and partners’ development strategies, with full integration in the 2012 programming exercise; and (iii) ensuring coherence, coordination, and complementarity of EU support for climate change investments already identified and planned for in national frameworks. In particular, the EU recommends the use of SEAs to ensure mainstreaming of environment in key sector activities and to explore the use of such tools in new delivery modes, such as budget support. A priority work programme is to support climate integration in development cooperation through climate risk screening and assessment tools and by incorporating climate risks into SEA and EIA methodologies (EU 2009).

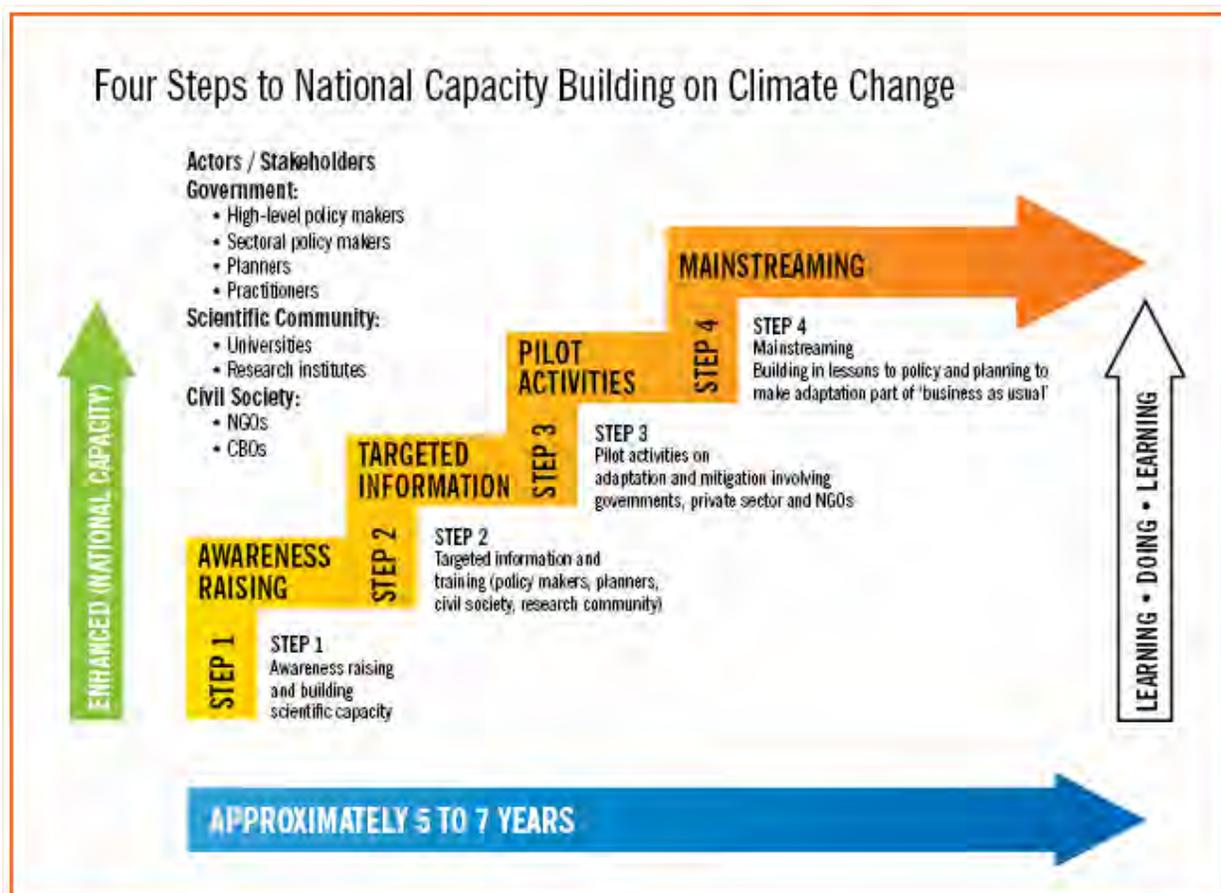
RECOMMENDED ACTION

- Request all development partners to mainstream all development projects into national development plans, so that climate change projects should be no different from any other development projects;
- Require all significant investment projects to be climate-proofed to an acceptable international standard; and
- Require all funding for climate change related projects to be new and additional, rather than recycling existing official development assistance under a new name.

8. Institutional Changes

As stated by Dalal-Clayton and Bass (2009) “the principal challenge of environmental mainstreaming is to improve governance. Mainstream institutions such as treasuries, planning departments and corporations have not generally recognized the environmental underpinnings of development. They treat environment as a “free” good and environmental damage as having minimal cost. Thus the environment tends to be unvalued, unpriced, unmonitored, and left on the margins of major institutions and their decisions.” It should also be understood that mainstreaming is often pushed by those who feel isolated or alienated from the mainstream, cut out of mainstream policies, and with limited power or funding, but strong environmental credentials. Generally, there is very little “pull” from the centre, so mainstreaming may face significant institutional hurdles.

Figure 21 Four Steps to National Capacity Building on Climate Change (IIED 2008)



“Climate change has not traditionally been a key expertise of finance ministries, nor of most of those involved in budget preparation in other ministries or agencies. It would also require an increased knowledge of the parliaments to deal with this aspect of budgeting” (Mickwitz et al 2009). One understandable response of these key agencies is to continue budgeting and planning as it has always been done, rather than take on a mainstreaming challenge for which

they are ill-equipped. Convincing central finance and planning ministries to participate in capacity building exercises may be one of the first and the most difficult obstacle to overcome.

IIED notes that there are four main stages in national capacity building for mainstreaming (Figure 21): (i) awareness raising and building an understanding of the science behind climate change; (ii) targeted information and training of key decision makers (the objective of this guidance manual); (iii) pilot activities and learning by doing; and (iv) making mainstreaming of climate change standard procedure (IIED 2008). IIED argues for patience in capacity building with a targeted programme over a 5-7 year period.

Many countries have responded to the urgency of the climate change challenges by creating new institutions, including whole ministries of climate change. While acknowledging that existing institutional arrangements may be sub-optimal and they may be very resistant to change, creating a new climate change agency may not be a good option for the Pacific SIDS. As shown above, mainstreaming of climate change requires an enormous commitment of time and resources from existing institutions, so any dilution of skills and resources may be counter-productive (Mickwitz et al 2009).

RECOMMENDED ACTION

- Recognize that mainstreaming climate change may receive some resistance from traditionally powerful agencies like finance and planning and use their own development paradigms to convince them of the need to mainstream climate change;
- Start with awareness raising and building a good understanding of the scientific underpinnings of climate change, especially among non-environmental agencies, the private sector, and parliamentarians;
- Conduct training programmes on climate change mainstreaming for key decision makers;
- Pilot mainstreaming activities and learn by doing, especially in central agencies like planning and finance; and
- Consider the need for new institutional structures, but avoid diluting skills and resources.

9. Community Participation in Mainstreaming

Many, if not all, adaptation measures need to be implemented at the local community level. “Adaptation will ultimately be a localised phenomenon. It will be driven by the need for people to adapt to the local manifestations and impacts of climate change, which will be mediated by geography and local physical, social, economic and political environments” (Brooks and Adger 2004). In many ways, local communities have been adapting to climate variables for generations, yet they are peculiarly ill-prepared to deal with climate change as a global issue over which they have little influence. A prerequisite of enhancing local capacities is a baseline understanding of the adaptive capacity to cope with the existing climate.

Some of the determinants of community level capacity to deal with climate change include (i) the stock of social capital, including secure property rights; (ii) human capital, including education levels and personal security; (iii) the range of viable, affordable technological options; (iv) the availability of resources and their distribution across the community; (v) the decision making structure; and (vi) access to risk spreading processes, like insurance (Ahmad 2009). Above all the community must be willing to participate in finding workable solutions. As adaptive capacity is not directly measurable, a score-card approach or capacity benchmarking may help to identify capacity strengthening needs (Brooks and Adger 2004).

Some of the participatory tools listed on the weADAPT website for community-based adaptation include (i) climate vulnerability and capacity assessment; (ii) community-based risk screening tool – adaptation and livelihoods (CRiSTAL); (iii) climate change and environmental degradation risk and adaptation assessment (CEDRA); (iv) adaptive capacity benchmarking; (v) child-oriented participatory risk assessment and planning (COPRAP); (vi) systemic approach to rural development (SARD); (vii) participatory vulnerability assessment (PVA); (viii) participatory capacities and vulnerabilities assessment (PCVA); (ix) community-based disaster risk management (CBDRM); (x) participatory assessment of disaster risk (PADR); (xi) weathering the storm; and (xii) livelihood assessment toolkit.

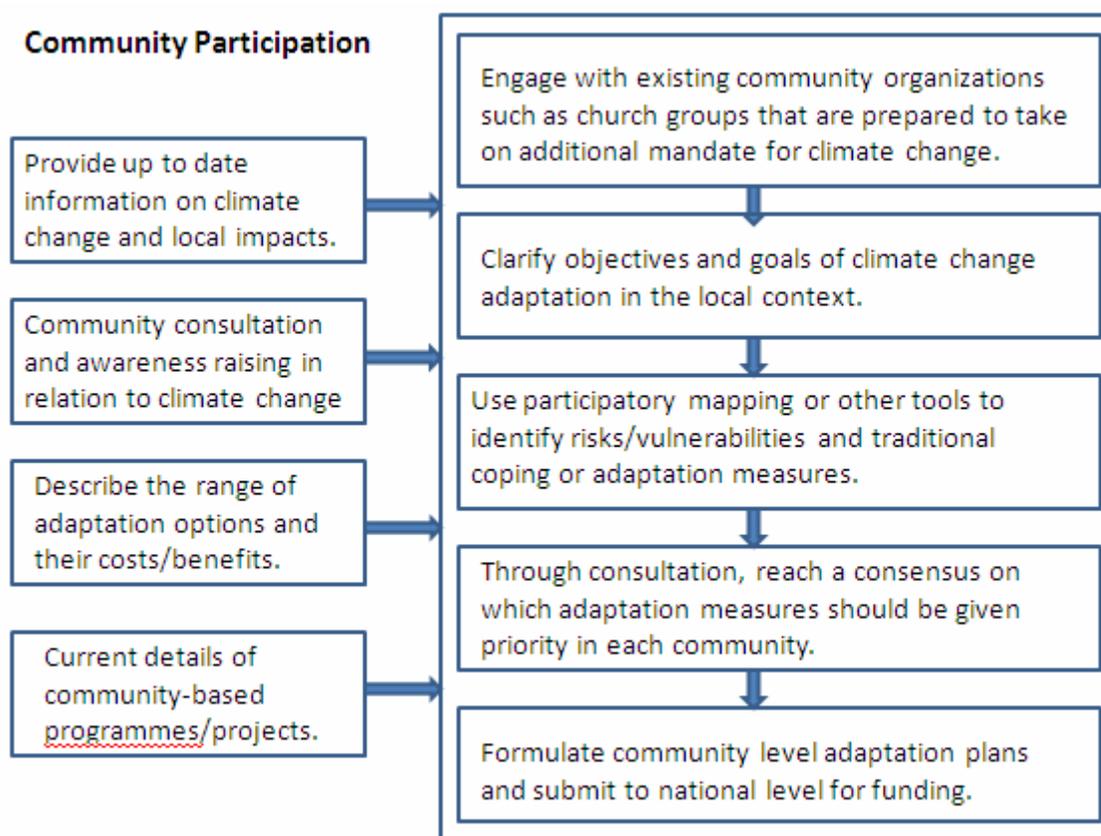
Effective engagement with the community depends on (i) clarity of the objectives and goals; (ii) understanding of how the engagement fits in with official processes; (iii) ready access to relevant information; (iv) support and capacity strengthening; (v) adequate time for the process, especially to build trust; (vi) feedback to the community and flexibility in the approach (Conde and Lonsdale 2004).

Mainstreaming of climate change is also being taken up at a municipal level (Clean Air Partnership 2007). For example, the city of Bangkok has adopted an Action Plan on Global Warming Mitigation 2007-2012, which calls for expanding mass transit systems, improving traffic management, promoting the use of renewable energy, improving electricity consumption efficiency, improving solid waste management and wastewater treatment efficiency, and expanding the city’s park areas (BMA 2009). The Action Plan aims to reduce Bangkok’s GHG emissions to 15% below the projected level for 2012. Proposed adaptation measures include (i) improving the local public health infrastructure; (ii) creating warning systems for extreme events; (iii) stricter zoning and building codes; (iv) improving disease surveillance; (v) improving water infrastructure and management; and (vi) protecting people from the impacts of high temperatures (BMA 2009).

RECOMMENDED ACTION
<ul style="list-style-type: none"> • Assess adaptive capacity at the community level to cope with existing climate variability and extremes; • Use one or more participatory tools to construct a community-based adaptation plan; • Implement the community-based adaptation plan

Figure 22 gives a rather generic summary of the approach to integrating community level adaptation planning into national economic development plans. As for other levels of planning, it is important to avoid creating new institutional arrangements unless there is no community level organization willing to take on the added role of climate change adaptation. Another key feature of community level adaptation planning is to ensure that traditional coping mechanisms are not only respected but also built into proposed plans.

Figure 22 Mainstreaming Community Level Adaptation Planning



10. Conclusions and Recommendations

Mainstreaming climate change into national development planning processes is generally regarded as a highly desirable objective and at least at an aspiration level is built into most national climate change strategies and action plans. Implementation of this objective, however, is relatively rare, including in the Pacific region. Aside from the obvious capacity issues, some of the main constraints are:

- (i) A lack of trust between developing and developed countries, as there is concern that traditional official development assistance may be “re-labelled” as adaptation. If adaptation measures are integrated into development strategies and plans, or adaptation measures may become indistinguishable from other sustainable development measures they may not be eligible for adaptation funding;

(ii) Administrative and organizational boundaries between government agencies may prevent the cross-sectoral coordination and cooperation that is necessary to mainstream climate change into development planning; and

(iii) In most jurisdictions, climate change focal points are in environment agencies, typically the weakest and least well resourced agencies of government, so they have little power or influence over the major planning, economic and financing agencies that need to be involved.

Accordingly, the physical processes of mainstreaming climate change into development planning may be the least difficult issue to deal with. Before SPREP or external development partners attempt to build mainstreaming capacity, there needs to be an assurance at the highest levels of government that this is not only wanted but also that any constraints, such as those listed above, will be addressed at the political level. Top-down instructions from politicians to all government agencies that mainstreaming climate change is a priority government policy should, therefore, be a prerequisite.

There is a view that some unique “blueprint” for mainstreaming can be extracted through a synthesis of the literature. As noted by Barry Dalal-Clayton and Steve Bass (IIED 2009), however, there is no boiler plate for mainstreaming and a healthy degree of methodological diversity is to be encouraged, until such time as a consensus view begins to emerge after many years of trial and error. It would not be appropriate to recommend at this stage that only one of the methodological approaches (or some synthesis of them all) outlined in this report should be adopted by the PICTs. Possibly there has already been enough top-down, external advice on how to mainstream and the PICTs need some time to work out acceptable approaches from their internal perspectives, based on best practice from other domains.

Once a political mandate exists for mainstreaming, there needs to be a debate at the political level whether the minimal version of mainstreaming is intended or “mainstreaming plus” where all drivers of vulnerability and natural hazards are mainstreamed rather than climate change alone. The latter form of mainstreaming is strongly recommended but it is possible that Pacific SIDS may wish to start with simpler forms of mainstreaming, until sufficient experience is gained to take on more complex approaches.

The steps for mainstreaming are relatively straightforward and various guides are available from ADB, UNDP, USAID, CARE and others. Of all of the guidance documents reviewed, however, the OECD’s Integrating Climate Change Adaptation into Development Cooperation – Policy Guidance (OECD 2009) is the most comprehensive and should be the starting point for government officials interested in learning more about mainstreaming.

Whichever guidance documents ultimately form the basis of the country’s mainstreaming approach, capacity building in a variety of tools (see Appendix 1) will be essential. A training module to accompany these guidance notes will help to define some of the key skills that need to be developed.

Above all, there is no substitute for agreeing that mainstreaming is a beneficial policy decision and then learning by doing.

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Appendix 1 Tools for Mainstreaming

(from <http://www.environmental-mainstreaming.org/tool-profiles.html>)

A) PROVIDING INFORMATION	(B) PLANNING & ORGANISATION
<p>Impact assessment & strategic analysis Environmental impact assessment (EIA) Integrated environmental assessment (IEA) Integrated impact assessment (IIA) Life cycle assessment (LCA) Poverty & social impact assessment (PSIA) Regulatory impact assessment (environmental, fiscal) Social impact assessment (SIA) Strategic environmental assessment (SEA) Sustainability appraisal</p> <p>Economic and financial assessment Public environmental expenditure review (PEER) Budgeting Cost benefit analysis (CBA) Eco-budget Economic analysis (general) Green/Natural resource accounting Valuation (resource, NR, economic, goods & services)</p> <p>Social surveys and assessments Household surveys Participatory poverty assessment Spatial data analysis Well-being health happiness measurement</p> <p>Spatial assessment Geographic information system (GIS) Geological survey Resource maps Zoning plans</p> <p>Monitoring and evaluation Community-based monitoring Corporate social responsibility (CSR) Environmental quality monitoring Environmental audits Indicators Monitoring (general) Multi-sectoral monitoring State of environment report (SOE)</p> <p>Other</p>	<p>Plans & policies Business plans for protected areas (National) sustainable development strategies Conservation plans Environmental (action) plans Fiscal policy (taxes, incentives, etc) Integrated development plans Internal environmental policy National & District Environmental Action Plans (NEAP / DEAP) Physical & land use planning Strategic planning (general) Spatial development framework</p> <p>Legal Legal tools (general) Public interest litigation Regulatory frameworks/guidelines</p> <p>Policy tools Policy analysis Policy guidelines</p> <p>Organisation-specific Corporate policy & sustainability reporting In-house project & programme appraisals Planning schedule Work plans</p> <p>Visioning Collective/community visioning Scenarios The Natural Step Framework</p> <p>Other Certification Charters & codes of practice Cleaner production Eco-management & audit system (EMAS)</p>

<p>Cleaner production in-plant assessment Pre-feasibility studies Thematic studies (e.g. noise pollution, emissions)</p>	<p>Environmental management system (EMS) Gantt tables Internal meetings ISO standards Life cycle analysis Multiple decision criteria analysis Performance standards, loan/grant conditions Standards & licensing Sustainable livelihoods</p>
<p>(C) DELIBERATION & ENGAGEMENT</p> <p>Participation & citizens' action Community-based natural resource management (CBNRM) Community meetings Community mobilisation Conferences Eco clubs Environmental tribunal Internal meetings Lobbying Meetings with external actors Multi-stakeholder consultation/processes National councils for SD Participatory mapping Participatory planning Participatory rural appraisal Partnerships (e.g. citizen-city administration) Private-public committees Public consultation Public hearing Public participation (general) Reward systems/motivation/funds augmentation Stakeholder mapping Workshops & seminars</p> <p>Creating demand & awareness Awareness workshops Media (campaigns) Negotiations Practical examples Public online databases Right to Information Act</p>	<p>D) MANAGEMENT</p> <p>Management planning & control Alternative dispute resolution Conflict management/resolution Energy audits Environmental compliance audits Environmental management plans (EMP) & frameworks Integrated environmental management Occupational health & safety audits Performance indicators & benchmarks Risk assessment</p> <p>Market-based tools Business supply chains Eco-labelling Green procurement Payments for environmental services</p> <p>Institutional governance (general) Environmental standards & regulations</p>

(E) VOLUNTARY & INDIGENOUS APPROACHES

Analysis of international regulations
Converting Black Economic Empowerment (BEE) to sustainable and equitable empowerment (SEE)
Bhagidari scheme (India)
Informal communication
Quality management systems
Review of national jurisdiction
Taboos/Sacred Places

(F) OTHER APPROACHES

Capacity-building (general)
Capacity-building workshops/seminars
Collaborative forest management
Environmental levy
Integrated soil & nutrient management tools
On-farm resource flows

Appendix 2 – PACC Tool Box

PACC PROJECT COMPONENTS AND TOOLS INCLUDING IMPLEMENTATION TIME LINE

TOOLS REQUIRED	WHEN
1. Mainstreaming guide to assist countries mainstream cc into development plans and policies.	January to May 2010
2. Climate Change economic tools for adaptation options evaluated.	January to May 2010
1. V&A tool	January to May 2010
2. Climate Risk Assessment tool	January to May 2010
2. Socioeconomic Assessment tool	January to May 2010
3. Climate Change Explorer tool	January to March
4. CRiSTAL tool	January to March
1. Communication Strategy	January to May 2010
2. Partner tracking tool (excel sheet)	January to May 2010
3. Capacity Building tracking tool (excel sheet)	January to May 2010
4. Website [improvement]	February
1. National Coordinator Reflection Survey tool (excel worksheet)	January to May 2010
2. PACC Project Impact Indicators (excel worksheet)	January to March 2010

Notes:

- Using PRODOC language on the guide description for consistency.
- Most of the tools need to be developed immediately