A Review of Climate Change Impacts, Adaptation Practices and Policies, And Relevant Institutions in Fiji

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Key Messages & Recommendations

- The most significant climate change threats Fiji faces are tropical cyclones and floods.

- New vulnerability assessments are required at the sub-national level that incorporates socio-economic vulnerability to climate change.

- Diversification of adaptation projects is required that connects climate change adaptation to agriculture, tourism, health, infrastructure and forests.

- The Climate Change Division (CCD) within the Ministry of Foreign Affairs implements the National Climate Change Policy (NCCP) of 2012, which is a keystone policy that integrates climate change resilience and sustainable development.

- In order to implement NCCP, CCD will need to build capacity within the Government of Fiji to implement climate change policies and projects, and improve coordination committees by defining clear roles, establishing priorities and instilling a pattern of regular collaboration.

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Acronyms

CCD	**Climate Change Division**
CCPT	**Climate Change Policy Taskforce**
CCPTC	**Climate Change Policy Technical Committee**
DRR	**Disaster Risk Reduction**
GoF	**Government of Fiji**
MFA	**Ministry of Foreign Affairs**
NCCAS	**National Climate Change Adaptation Strategy**
NCCCC	**National Climate Change Coordination Committee**
NCCCT	**National Climate Change Country Team**
NCCP	**National Climate Change Policy**
NCCPT	**National Climate Change Policy Taskforce**
NDMO	**National Disaster Management Office**

1. Introduction

The Republic of Fiji is a low-lying island nation that faces many natural disasters due to climate change. Because climate change poses significant threats towards lives and livelihoods, Fiji has become an international leader highlighting the challenges that low-lying island nations face. The Government of Fiji is an active player in the UNFCCC negotiations. It chaired the Group of 77 + China in 2013 and is chairing the Subsidiary Body for Implementation under UNFCCC until 2015. At the national level, the Government of Fiji (GoF) plays an active role in developing and implementing policies to minimize the impact of climate change.

In order to understand the progress the Government of Fiji has made so far with regards to developing and implementing climate change adaptation policies, this report consolidates information on the impact of climate change in Fiji, reviews major Government policies that support adaptation, and describes the institutions involved in adaptation decision making in Fiji. The report also identifies gaps and opportunities to strengthen adaptation activities in Fiji. Literature review of journal articles, published reports, and government documents provides the basis for this report. This review is part of the German Green Climate Fund Readiness Initiative. Information in this report will contribute to informing activities under this initiative.

The review contains four sections. Section 2 starts by describing the impact of climate change in Fiji. Section 3 highlights some of the adaptation activities already in place and how the Government of Fiji is considering selecting adaptation projects in the future. Section 4 provides a review of various policies in place to support climate change adaptation in Fiji while identifying institutions involved in adaptation activities. Section 5 reviews how institutions coordinate to design policies. Section 6 identifies some of the gaps and opportunities to strengthen adaptation activities in Fiji.

2. Impact of Climate Change in Fiji

Section 2.1 describes temperature and rainfall predictions and projections for Fiji based on IPCC emission scenarios. Section 2.1 also reviews the vulnerability assessments conducted in Fiji thus far. Section 2.2 identifies the natural disasters likely to increase with climate change. Tropical cyclones and floods are the biggest threats in Fiji. Section 2.3 describes the impact climate change will have on various sectors.

2.1 Climate Change Projections

The recently published IPPC Assessment Report 5 (IPCC 2014) provides a picture of how climate change will affect small island states in the Pacific, such as Fiji. According to the IPCC, temperatures in Pacific Islands increased at a rate of between 0.1°C and 0.2°C per decade across the 20th century. Under an intermediate low-emissions IPCC scenario (RCP4.5), Pacific islands will face an average annual increase in surface temperature of 1.2°C – 2.3°C by the end of the 21st century. Changes in rainfall, however, demonstrate a greater variability and uncertainty in the Pacific. Under IPPC scenario 4.5, rainfall increases by 1% to 9% in general. In equatorial regions of the Pacific, areas will become wetter, whereas in the sub-tropical high-pressure belts, it will become drier. In areas of the Pacific where there are trade winds, precipitation will be more uncertain. Fiji faces trade winds, and therefore, uncertain precipitation will be a pertinent issue. Additionally, sea level rise is also a factor. Under IPCC scenario 4.5, sea levels will change between 0.5 and 0.6 meters in the Pacific.

Vulnerability assessments conducted at the national level provide insight into climate change impact in Fiji. Vulnerability assessments found:

- *Surface air temperatures* in Fiji will increase by at least 2.5°C by 2100 at 1990 levels and a rise in temperatures will affect coral health (Lal 2004). The rise in temperature is consistent with the IPCC assessment of small island Pacific states.
- Historical increases in *sea surface temperature* around Fiji are consistent with the broad scale changes in the region. Rapid warming of sea surface temperature of approximately 0.07°C per decade between 1970 and today has taken place (Lal 2004).
- *Sea levels* are increasing by 6 mm per year (GoF 2014d). Due to rising sea temperatures, aragonite saturation needed for coral growth and reef ecosystem development has fallen from 4.5 in the late 18th century to an observed value of about 3.9± 0.1 by 2000 (GoF 2014d).
- Reduction in coral reef increases vulnerability to *storm surges*. Storm surges are predicted to increase in frequency and intensity (Graville and Mimura 2008).
- El Niño-Southern Oscillation cycles that brings cooler, drier periods, and La Niña conditions that brings warmer, wetter conditions influence *precipitation* in Fiji (Salinger et al. 1995). Over the past 100 years, rainfall in Fiji increased by approximately 10% during the wet season.

Very little information exists on climate change vulnerability at a sub-national scale in Fiji where most of the adaptation activities take place. In order to address vulnerability at the sub-national level, the Climate Change Division (CCD) in the Government of Fiji is in the process of introducing a new "Vulnerability Self-Assessment Tool". Once district level representatives receive training on this tool, they will be able to collect information on vulnerability by engaging with local communities to identify key areas of vulnerability. Once information is gathered, CCD collects and maps the vulnerability assessment results. So far, CCD has identified 600 communities to be under climate threat. Recently, Urwin (2014) also developed a method to evaluate climate resilience at the community level. The method was tested in Lautoka. Through a list of indicators, the tool assesses whether a community is resilient based on a set of identified characteristics of resilience. Characteristics include community leadership, communication, legislation, health, education, management of physical assets, disaster preparedness, risk management, and reporting and learning.

CCD works closely with the National Climate Change Policy Subcommittee on Data Collection, Storage and Sharing. The Subcommittee aims to:

1. Establish a clearinghouse mechanism for climate change data and information within the CCD to foster data accuracy and efficient information sharing.
2. Establish collaboration with all relevant sectors and regional and international agencies on the collection and sharing of climate change-related data.
3. Ensure data management is aligned with international best practice standards such as the IPCC good practice guidance.
4. Collaborate with relevant regional and international research and academic institutions to update climate change-related data and information.
5. Strengthen the national weather and climate-monitoring network.
6. Adopt innovative and sustainable approaches to data management.
7. Encourage and promote robust research to provide sound climate change-related data.

To disseminate information, such as vulnerability assessments, CCD is developing a public website for national and sub-national stakeholders, supported by the Government of Germany and the University of

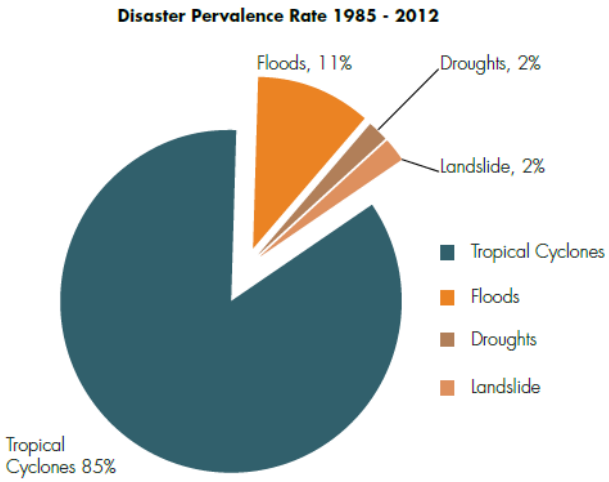
Griffiths. The website will provide information and tools for climate change stakeholders. All information will be shared through www.climate-change-fiji.gov.fj.

2.2 Natural Disasters

Between 1983 and 2012, Fiji experienced 106 natural hazard-related disasters. Projections indicate that while there may be a decrease in the number of tropical cyclones, the average maximum wind speed of cyclones will increase between 2% to 11% and there will be a 20% increase in rainfall intensity within 100 km of the cyclone center (GoF 2014d).

In addition to cyclones, coastal erosion and flooding due to sea level rise are ongoing problems due to the severity and frequency of tropical cyclones and related storm surges. For those living in coastal communities, coastal erosion, increased contamination of groundwater and estuaries by saltwater incursion, cyclones and storm surges, heat stress, and drought are key concerns (Barnett 2011). Flooding due to sea level rise and storm surges will primarily affect cities and towns in Suva, Nadi, Lautoka, Navua, Likuri Harbour, Nailaga and Tavua since they are mainly on the coast (GoF 2013). Figure 1 shows the main categories of disasters in Fiji. Fiji primarily faces tropical cyclones (85%) and floods (11%) most frequently, which are both climate related.

Figure 1: Disaster Categories in Fiji



Source: GoF 2013

The total assessed cost of disasters reported over the last 30-year period is US$ 1.2 billion. The most recent devastating cyclone was Tropical Cyclone Evan in December 2012, which caused loss and damage valued at approximately $195 million.

2.3 Climate Impacts on Sectors

Research shows that climate change will affect many sectors in Fiji. The sub-sections below review how climate change will affect agriculture, water and fisheries, health, tourism, forestry, and urban housing and development.

(a) Agriculture

Climate change leads to loss and damage of crops. Cyclone Ami in 2003 caused over US $35 million in lost crops (McKenzie et al. 2005). The risk of flooding is a concern in river catchments areas. For instance, severe flooding of the Wainibuka and Rewa Rivers in April 2004 led to 50% to 70% of crops being damaged (GoF 2004). In 2011, heavy rainfall period, which led to flooding in the Western division led to $7.2million in damages (GoF 2013). In addition to changes in seasonal rainfall and temperature, salt-water intrusion, and coastal and riverbank erosion affect crops (GoF 2012b). Loss in agriculture land and production will increase food insecurity for many people in Fiji who depend on agriculture for their livelihoods.

(b) Water and Fisheries

Considering most people in Fiji live along the coast, many people are involved in fisheries. Fisheries make up the third largest natural resource sector in Fiji in terms GDP (Teh et al. 2009). In 2009, fisheries contributed 1.9% to Fiji's GDP or USD 56.2million (GoF 2013). Reef fish are an important part of the fishing economy. However, floods and sediment discharge affect sea grass and coral reef habitats. Climate change impacts may lead to 5% loss of Fiji's sea grass by the year 2035 and between 5 – 20 % loss by 2100 (GoF 2014d). Ocean acidification also disrupts reef habitat structure. However, Fiji has been successful in recovering from mass coral reef bleaching incidents in 2000 and 2002, which was due to increase in sea surface temperature (Lovell and Sykes 2008).

Variations in tuna catches are especially significant for people during El Nino and La Nina years. For example, El Nino of 1997/98 negatively affected skipjack tuna catches highlighting the sensitivity of fish stocks to changes in the climate. Changes in migration patterns and depth of fish stocks affect the distribution and availability of tuna during such periods (GoF 2013). Efforts to plant mangroves and maintain healthy reef ecosystems are practices that Fijians implement to buffer the impact of climate change on marine life and fisheries.

(c) Health

Climate change will negatively affect environment and socio-economic determinants of health, which will result in higher communicable and non-communicable diseases (PCCAPHH 2013). A direct correlation between La Nina and dengue fever exists. Seven out of the eight dengue fever outbreaks occurred in Fiji after La Nina. Dengue outbreaks also occurred in 2012 that that affected 24,000 of the islands 856,000 inhabitants (Lewis 2012b). Sub-divisions of Bua, Lautoka, and Suva are prone to dengue fever. In addition to dengue, diarrheal diseases also increase with very high rainfall and temperature. This is especially the case when water supply and safety are compromised in times of droughts and floods. Suva in particular is susceptible to diarrhea during very low and very high rainfalls. Other diseases such as typhoid fever (in Ba) and leptospirosis (in Bua) may also increase with higher levels of rainfall.

(d) Tourism, Forestry, and Urban Development

Climate Finance Readiness in Fiji (GoG 2013) document summaries the impact of climate change on tourism, forestry and urban development.

- Tourism: Tourism accounts for 17% of Fiji's GDP (GoF 2012b). Damage to infrastructure, sea level rise, storm surges, cyclones, and floods disrupt travel to Fiji. Fiji already faces decrease in tourist arrivals. Tourists and tourist service providers may have to absorb the cost of adapting to climate change.
- Forestry: Flood, droughts, and cyclones damage forests. Higher temperatures make forests vulnerable to fires, pests, and pollination. The loss of arable land due to flooding may lead to forest conversion.
- Urban Housing and Development: Flooding and cyclones affect infrastructure. Townships will incur high economic costs when infrastructure is damaged and businesses may be lost. High costs will especially negatively affect poor and marginalized groups. Loss of arable land could lead to urban migration, creating overcrowded towns and cities.

Annex 1 provides an extended list of impacts by sector and possible ways to minimize impacts.

Table 1 below provides a list of gaps and constraints by sector. The most common gap across sectors is the lack of data on how climate change will actually affect a particular sector and the lack of awareness of how climate change affects a particular sector.

Table 1: Gaps and Constraints by Sector

Sector	Gaps / Constraints
Water	• Lack of a legal framework to enable 1 government institute to regulate the water sector • Lack of data on the water consumption in all sectors • No expertise on the artificial recharge • Not such information available on the ground water. These includes the number of extraction sites (both locally & commercially), actual discharge, intended use, level of ground water above sea level. • In most of the town areas the sewage & grey water discharge from residence are discharge in nature. This is because there is still no structure in place that takes in all this waste waters and treats it before releasing it. • Lack of installation of proper water supply system for remote villages to prevent water wastage. • Financial constraint and accessibility to remote villages to install water tank to save water for usage during time of natural disasters • Lack of monitoring equipment and system • Lack of awareness on recycle and reuse of waste water, grey water & storm water. • Long term monitoring data on spring usage not available.
Agriculture	• Lack of training/ awareness for farmers on organic farming practices
Coastal zone	• Lack of institutional mechanism to protect remarkable the sites along the coastal zone
Forest	• Poor implementation of the forest code • Coordination & collaboration with the inter-ministerial • Lack of mainstreaming biodiversity conservation & ecosystem management in all policy making and development of law • Overlapping of mandate of department of Forestry & Fisheries, department of Lands and Department of Lands.
Health	• Data is available but lack of financial support to analysis & publish the finding on diseases • Lack of data on the temperature related diseases e.g. water, food & vector borne diseases. (More research needed in respect to climate change and diseases in whole of Fiji.)
Tourism	• Gaps still lay in the data for the vulnerable communities/ areas in the coastal areas • Lack of data on the soft & hard measures required into vulnerable areas • Limited data on how the side effects of climate change on the coral. For example the diseases associated with climate change & coral.
Building	• There is not enough integration of climate change issues into town & Planning Act • Financial constrain for the existing building to improve the to help cope with climate change • Lack of interest from the infrastructure owners to in cooperate climate change in infrastructure planning and developing • Lack of communication, collaboration and coordination among different stakeholders • None to very few expertises in designing and construction of the climate change infrastructure. • Lack of human capacity/ knowledge in monitoring the building of the infrastructure.

Source: GoF 2013

3. Adaptation Practices and Selection of Projects

Section 3.1 describes some of adaptation practices Fijians have been implementing informally and formally. Section 3.1 also provides a list of criteria to select adaptation projects in the future and the process by which the Government of Fiji will approve adaptation projects.

3.1 Adaptation Practices

Fijians have been adapting to climate change informally and autonomously for generations. In the village of Yadua on Viti Levu Island, Fiji, residents have built seawalls and replanted mangroves along eroding shorelines to address low-lying coastal erosion due to rise in sea levels (Hay and Mimura 2006). Informal social networks have helped people adapt where those affected by Tropical Cyclone Ami in 2003 received aid from households that were not affected (ODI & CDKN 2014).

Formal adaptation efforts have also been underway. The Government of Fiji spent over $500 million between 2002 and 2012 to adapt to climate change (IPC 2012b). According to the OECD, total funding for projects on disaster risk reduction, environmental protection and mitigation in Fiji has risen dramatically from $98,000 in 2008 to $12.5 million in 2012. The number of adaptation projects rose dramatically from 2 in 2008 to 26 in 2012 (CRS Database 2014). Below is a select list of projects underway.

- Mangrove Ecosystem and Climate Adaptation to Livelihood (USAID)
- Climate Change and Health Adaptation (GEF, UNDP, WHO, MOH)
- Community Adaptation to Climate Change and Land Use Planning (AusAid, WWF, LLEE)
- Ridge to Reef (GEF, UNDP)
- Integrated Flood Management- Nadin Basin Pilot (World Bank)

Annex 2 provides an extended list of adaptation activities that are underway (GoF 2012a). Most activities listed focus on improving coastal and water management. There are also some projects related to raising awareness about climate change and disasters. There are very few projects, however, that directly connect climate change adaptation to agriculture, tourism, health, infrastructure and forests.

An adaptation activity that is highly contested is relocating people to safer areas. Out of 600 vulnerable communities in Fiji, roughly 45 communities could be relocated over the next 5 to 10 years. Box 1 highlights some of the challenges with relocation as an adaptation strategy, especially among the iTaukei population (IPC 2013).

Box 1 Relocation as an adaptation strategy

According to the National Climate Change Coordination Committee (NCCCC), relocation is a possible adaptation strategy (IPC 2013). Relocation refers to the "physical process of moving people, which can be either temporary or permanent and either voluntary or forced" (IPC 2013: 2). Relocation does not involve providing access to resources and services to restore living standards. Although the iTaukei Affairs Board hopes that relocation is the last resort, the Board wants to plan for such an adaptation option. Relocation planning would involve providing adequate financing for relocation, advance and holistic planning, and protection of land and rights of the iTaukei affected communities. Village level demarcation exercise in Bua, Macuata and Cakaudrove are being carried out to identify relocation sites. The Climate Change Division within the Ministry of Foreign Affairs is currently drafting the "National Relocation Guideline" to guide and inform the work on relocation, and map out the responsibilities of agencies within government who will be involved in relocation. Relocation as an adaptation option may be included as an addendum to the National Climate Change Policy. iTaukei institutions are also responsible for assisting with the development and implementation of the relocation plans of each community to ensure that rights are upheld and the concerns of the community are addressed in the relocation process.

3.2 Selection of Adaptation Options and Projects

Adaptation options and projects must address the needs of vulnerable communities in Fiji based on vulnerability assessments that CCD supports (see section 2.1). In addition to making vulnerability assessments a key criterion, the draft National Climate Change Adaptation Strategy presents additional criteria (GoF 2012a). Based on recommendations from the OECD, the Strategy suggests using of the following set of criteria to decide on options and projects:

- *Effectiveness* – This criterion addresses the extent to which an adaptation action reduces vulnerability and provides other benefits. Effectiveness also includes implementing flexible adaptation strategies that can be adjusted in response to changing conditions or will be effective under different climate scenarios.
- *Cost* – This criterion helps assess whether an adaptation strategy is relatively expensive or inexpensive. Typically, it includes the initial costs of implementing an adaptation policy. However, costs over time, such as operation and maintenance, administration and staffing, expected frequency of reconstruction and so forth, are also considered.
- *Feasibility* – This criterion addresses whether the adaptation strategy can be implemented. Do the necessary financial, technical, human, and other resources exist, and are they available?
- *Social Acceptance* – The degree to which an adaptation strategy is acceptable by communities or society, e.g. based on traditional practices. Acceptance may be based on traditional knowledge as well as cultural and religious values.

Once the project proposal meets these criteria, project developers present the proposal to CCD. After CCD approves the project, the Permanent Secretary for the Ministry of Foreign Affairs and International Cooperation endorses the project (GoF 2014a).

4. Policies and Institutions on Climate Change Adaptation

Section 4 reviews the various adaptation policies in place and identifies the ministries and government divisions responsible for developing and implementing adaptation policies. Section 4.1 presents policies at the national level. Section 4.1.1 focuses on policies and institutions between 1997 and 2011. Section 4.1.2 discusses policies and institutions during 2012, which is a significant year for climate change policies due to the launch of the National Climate Change Policy. Section 4.1.3 discusses additional policies and institutions developed in 2014. Finally, section 4.2 focuses on policies and institutions relevant at the sub-national level.

4.1 National Level

4.1.1 Adaptation Policies and Institutions, 1997-2011

For most of the 1990s and early 2000's policies primarily focused on disaster risk reduction (DRR) and not on climate change. For instance, the first ***National Disaster Management Plan of 1995*** focused on reducing or avoiding the potential losses and other adverse effects of known hazards; assuring prompt and appropriate disaster assistance to disaster survivors, and achieving rapid and durable recovery following any occurrence. Ministry of Regional Development was responsible for an effective national disaster management strategy, covering prevention, mitigation, preparedness, emergency operations, relief and rehabilitation. The ***Natural Disaster Management Act of 1998*** (GoF 1998) supports pre and post disaster activities and includes the management of both risks and consequences of disasters. The Act ensures Fijians receive relief and rehabilitation support once a natural disaster strikes. It also supports building awareness about natural disasters and providing training to cope with a disaster. The National Disaster Management Office (NDMO) supports this Act. The Disaster Management Plans and Acts in the mid to late 1990s do not refer to climate change although they address weather related events, such as flood and droughts (GoF 1995).

The ***Strategic Development Plan 2007–2011*** focused on mainstreaming DRR by promoting early warning systems for floods and other natural hazards (Bijay et al. 2013). The Government of Fiji mainstreamed DRR policies into sectoral development plans, policies and programs to promote sustainable development and community resilience. The key policy and planning instruments for disaster management at national level in Fiji include the National Disaster Risk Management Act, the National Disaster Risk Management Plan, the National Disaster Risk Management Policy, and Hazard Contingency Plans and Agency Support Plans. Instruments for Disaster Risk Management in Fiji include Community Support Plans, which helps communities manage present and future disaster and climate risks. Community groups and individuals implement this Support Plan.

Disaster risk reduction and climate change plans and policies began to merge around 2007. The transition from purely disaster management to incorporating climate change in the Strategic Development Plan demonstrates that the Government of Fiji is committed to integrating climate change and disaster risk management into the national planning and budgeting process. The Ministry of Planning suggests that to support this integration, a national level Strategic Plan for Climate and Disaster Resilience should be developed so that actions recommended by strategies are implemented in an integrated manner, minimizing waste of resources and promoting efficiencies in vulnerability reduction. According to the Ministry of Planning, the development and implementation of such a plan would provide a stronger contextual basis for revising governance and institutional arrangements for disaster

risk management and climate change. It will allow Fiji to "bring about a more coordinated approach to dealing with issues of vulnerability and risk and most importantly it will help to facilitate the mainstreaming of climate change and disaster risk considerations within the national and sub national development planning and resource allocation mechanisms" (GoF 2014d: 21).

The **Roadmap for Democracy and Sustainable Socio-Economic Development 2010-2014** (GoF 2009) is an example of how climate change and disaster risk reduction is now integrated. One of the goals in the Roadmap is to build national resilience to disasters and adapt to climate change. The Roadmap suggests the following objectives, strategies, and indicators that could help build national resilience to disasters and adapt to climate change (see Table 2 below).

Table 1: Merging DRR and Climate Change in the Roadmap for Democracy and Sustainable Socio-economic Development 2010-2014.

Goal: Building national resilience to disasters and adapting to climate change		
Policy Objectives	**Strategies**	**Key Performance Indicators**
Communities are better protected from the risks of disasters and are better able to cope with their consequences.	• Identify and implement effective risk reduction projects. • Improve community response capacity in dealing with disasters and risks with effective, integrated and people-focused early warning systems on all hazards. • Enhance analysis and evaluation of hazards, vulnerabilities and risks. • Promote and strengthen food security programme to enhance community based disaster reduction initiatives.	• Government responds to disaster situation within the first 24 hours. • Casualties reduced from 30 per year to none. • Everybody to receive timely warning • One third of all villages and settlements in Fiji have disaster plans and committees in 2010 • Models of best practice developed and adopted to support disaster risk reduction • Cost for disaster emergency relief
	• Strengthen organizational, institutional, policy and decision making frameworks. • Enhance knowledge, information, public awareness and education. • Strengthen effective planning, response and recovery. • Ensure availability of adequate necessary germplasm to support recovery.	food ration reduced by 20% by 2012

Source: GoF 2009

Although the objective is to integrate DRR with climate change adaptation, the language of adaptation is largely missing from the goal above. Policies in 2012 show greater linkages between DRR and adaptation.

4.1.2 National Climate Change Policy of 2012

The ***National Climate Change Policy*** (NCCP) of 2012 is the keystone policy that will drive action on climate change in Fiji (GoF 2012b). The NCCP Taskforce (NCCPT) held numerous consultations with various stakeholders to develop the Policy. The Policy has a vision of "A responsible and exemplary Fiji, leading the Pacific in combating climate change and achieving resilience, while attaining sustainable development."

The Policy highlights many ways in which Fiji could better adapt to climate change. The goals in the policy include:

1. To support the implementation of Fiji's Roadmap for Democracy and Sustainable Socio-economic Development 2009–2014 under the People's charter for change, peace and progress;
2. To promote integration of climate change issues in national planning, budgeting and implementation processes;
3. To provide guidance on government's responses to climate change issues;
4. To guide sectors to develop appropriate climate change adaptation and mitigation strategies;
5. To support requests to regional and international agencies to provide resources and assistance in addressing national climate change issues;
6. To contribute to Pacific regional actions and to meeting international commitments

The eight objectives in the policy include:

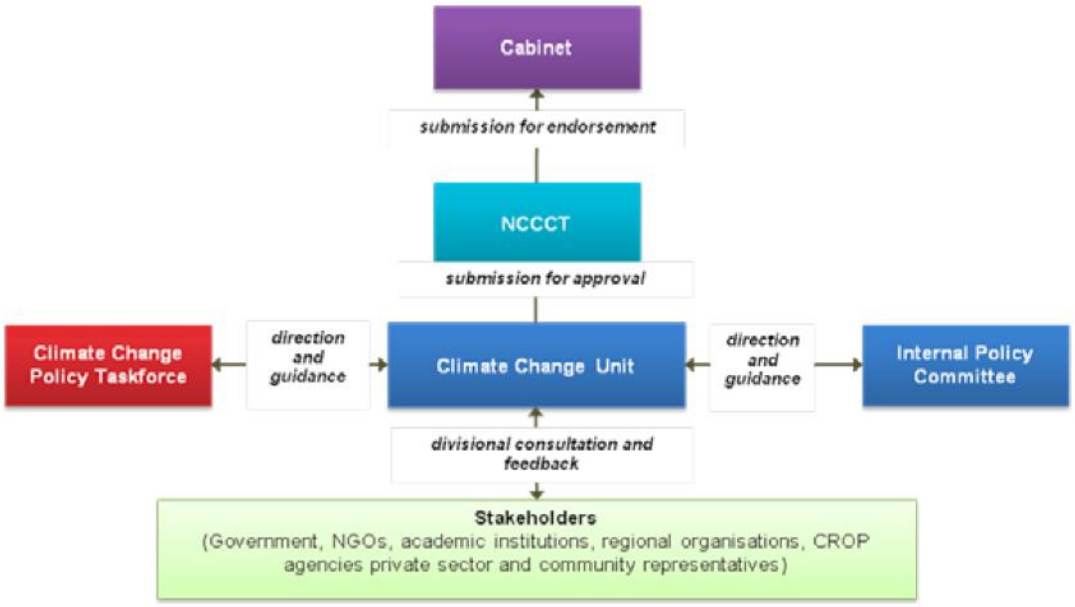
1. Mainstreaming
2. Data collection, storage and sharing
3. Awareness raising
4. Education and Training
5. Adaptation
6. Mitigation
7. Finance
8. International and Pacific region participation

Annex 3 contains the "Policy Implementation Framework", which provides strategies on how the objectives mentioned above will be implemented, the timeframe over which implementation will take place, and the implementing agencies responsible.

Figure 2 below provides an institutional map of agencies responsible for developing the NCCP. Figure 3 shows the process of consultations that led to the NCCP. In order to address climate change systematically in the national policy context, the Government of Fiji revived the National Climate Change Country Team (NCCT) in 2010, which is now referred to as the National Climate Change Country Coordination Committee (NCCCC). NCCCC, endorsed by Cabinet, provided high-level guidance and political direction to the Climate Change Unit. This Unit is now referred to as the Climate Change Division (CCD) (GoG et at. 2013). The NCCCC is chaired by the Permanent Secretary of the Ministry of Foreign Affairs and comprises of other Permanent Secretaries from relevant government agencies. It serves as the main platform to provide guidance and policy advice to Government on all matters relating to climate change. The NCCCC receives quarterly updates and technical advice from the Climate Change Policy Technical Committee (CCPTC) regarding climate change related programs/projects. CCPTC reports directly to Cabinet. CCPTC is chaired by the Director for CCD and the members include senior government officials, development partners, and NGOs. The Climate Change Policy Taskforce (CCPT) was

established to provide direction and guidance to finalize the NCCP. Once the NCCP is finalized, it will go through the Internal Policy Committee for approval by NCCCC and the Cabinet.

Figure 2: Climate Change Policy Organizational Chart



Source: GoF 2012b

The Climate Change Division (CCD) will be responsible for delivering NCCP, and coordinating programs and projects. CCD is located within the Ministry of Foreign Affairs (MFA) and the NCCP guides its work. CCD operates within the government's mechanisms and engages with a diverse range of external stakeholders including various government agencies, development partners, civil societies, private sectors and local communities. The CCD is to advise and consult all relevant stakeholders on the implementation of climate change activities. Stakeholders are to consult and inform the CCD on climate change related projects they propose to implement, the different types of activities, and the scope of its implementation. CCD reports quarterly to the NCCCT and information gathered by CCD is shared on the National Climate Change website (see section 2.1). The CCD aims build on these relationships in an effort to forge strategic alliances, which will enhance outcomes as an organization. The CCD will also be responsible in the international negotiations for all climate change related matters. CCD's additional responsibilities include (GoF 2012b):

- Act as the main government vehicle for information, funding, liaison with donors and negotiation strategies for all regional/international meetings.
- Provide overview on the execution of ongoing projects such as the Second National Communications (SNC) and Pacific Adaptation to Climate Change (PACC), and other relevant projects. It will also provide policy overview on the Clean Development Mechanism (CDM), carbon trading and REDD + through the Carbon Trading Technical Team (CTTT).
- Advice and advocate for integration of climate change initiatives/ issues into the Government's National Strategic Planning & Budgeting Process.
- Assume the lead role in the development and implementation of Fiji's Climate Change Policy.

- Assist the Government with the identification of and access to national and international sources of funding for climate change activities.
- Provide much needed multi- and inter- disciplinary focus to the issue of climate change and disaster risk reduction, which are acknowledged as an important development issue.
- Coordinate Fiji's participation in local and international strategic Climate Change meetings.
- Support establishment of positions for CC negotiations within line ministries and/ or departments.
- Provide oversight on climate change capacity building and awareness raising strategies.

Annex 3 provides strategies on implementing the NCCP (GoF 2012a).

4.1.3 Additional Policies, 2014

The Ministry of Strategic Planning, National Development and Statistics developed "**A Green Growth Framework for Fiji: Restoring the Balance in Development that is Sustainable for Our Future**" document in 2014 (GoF 2014d). It is a "tool to accelerate integrated and inclusive sustainable development that inspires action at all levels in the country to build environmental resilience, build social improvement and reduce poverty, build economic growth and build resilience to the anticipated adverse effects of climate change" (GoF 2014d: 6). The Framework supports and complements the 2010-2014 Roadmap for Democracy and Sustainable Socio-Economic Development and pre-2010 national development documents. One of the thematic areas in the Framework is "Building Resilience to Climate Change and Disasters". Under this theme, the Ministry of Strategic Planning, National Development and Statistics suggests how key challenges under the climate change and disasters thematic area to be addressed. Table 3 below highlights the challenges and suggested solutions.

Table 3: Challenges and Solutions to Climate Change

Key Challenges	Proposed Way Forward, Actions and Timebound Indicators
(i) There is a need to develop an integrated approach and policy and operational level to effectively address climate change and disaster management.	***Short Term (up to 2 years)*** • Establish a National Platform for Climate Change and Disaster Risk Management by 2015. • Develop a National Strategic Plan for Climate Change and Disaster Resilience by 2015. • Review the Fiji National Disaster Management Arrangements to include Climate Change by 2016.
(ii) There is a need to ensure that buildings constructed in urban and rural areas are cyclone proof.	***Short Term (up to 2 years)*** • Review the National Building Code by end of 2016. ***Medium Term (3 to 5 years)*** • Provide incentives to support compliance with new building standards by 2017.
(iii) There is a need to strengthen the role of local governments in building resilience.	***Short Term (up to 2 years)*** • Development of a Local Government Self-Assessment Tool for Disaster Resilience by 2016. • Review the town plan regulations to facilitate the enforcement of zoning and buffer zones for coastal areas, rivers banks, high risk areas and mangrove areas. Review to be completed by 2016.
(iv) Need for greater understanding of the impact of climate change and disasters in order to better plan for recovery and long term development.	***Short Term (up to 2 years)*** • Develop a comprehensive assessment framework, including adoption of the damage and loss assessment methodology by 2015. ***Medium Term (3 to 5 years)*** • Institutionalise a mechanism to collect and analyse hazard, vulnerability and exposure data by 2017. • Mainstream cost-benefit analysis into decision making process in mitigation and preparedness measures by 2017. • Encourage collaboration with development partners and tertiary institutions in conducting research on priority areas with climate change and disaster risk reduction by 2017. ***Long Term (over 5 years)*** • Develop hazard maps and models for all potential hazards (including sea level raise, storm surge, flood and tsunami) by 2020.
(v) The need to ensure climate change mitigation and adaptation, and disaster risk management become a	***Short Term (up to 2 years)*** • Integrate the climate change and disaster risk reduction into the National Development Plan by 2015.

part of the national and sub national development planning and budgetary process.	• Revise capital budget appraisal guidelines to incorporate comprehensive hazard and risk management (CHARM) and vulnerability and adaptation (VA) assessments by 2015.
(vi) The need to increase the resourcing of adaptation and mitigation measures given the growing impact of climate change and disasters on public infrastructure and livelihoods.	***Short Term (up to 2 years)*** • Explore post-disaster financing modalities by 2015. ***Medium Term (3 to 5 years)*** • Improve access to global financing facilities such as the Global Green Fund.
(vii) The need to strengthen community partnership for building resilience for climate change and disaster.	***Short Term (up to 2 years)*** • Partner with civil society in undertaking capacity building at divisional and community level on building resilience. ***Medium Term (3 to 5 years)*** • Undertake vulnerability assessment for all communities by 2019. • Develop climate and disaster resilience plans for urban and rural communities (prioritising squatter settlements and other vulnerable communities) by 2019. ***Long Term (over 5 years)*** • Capacity building provided to communities for which vulnerability assessments have indicated that relocation is the long term adaptation strategy to minimise risks due to anticipated impacts of climate change.

4.2 Sub-national Level

The Ministry of iTaukei put forward an Action Plan for Climate Change. The action plan provides approaches to mainstream climate change concerns from the perspective of iTaukei community. The Action Plan calls for facilitating awareness; capacity building and training; providing planning advice for development and disaster response procedures for the iTaukei community; and revitalizing traditional knowledge practices and programs that promotes adaptation and mitigation programs (IPC 2012b). To meet these objectives in the Action Plan, the Government of Fiji identified areas where the iTaukei would need additional support (GoF 2012a). The iTaukei may need to support to

(i) manage adaptation projects
(ii) sustain community-based awareness and training on climate change
(iii) maintain active community leadership and transparency in management
(iv) involve and engage women and children, to ensure meaningful ownership of adaptation projects
(v) coordinate and support NGOs, traditional institutions, local governments, religious/cultural/social groups to participate in projects
(vi) disseminate information about climate change adaptation and share best practices, lessons learnt etc.
(vii) monitor and evaluate projects to identify measures necessary to ensure continuing relevance of the activities

The Ministry of iTaukei, Provincial Councils, Tikina Councils and Village Councils may face challenges in implementing activities in the Action Plan due to the low resource base, logistical difficulties and costs of

responding to the needs of low-density populations (IPC 2012). Another barrier is that many Fijians do not view climate change as a threat due to their religious belief that God will protect those who are Christian. Therefore, there is no anticipatory response or planning at the local level (Nunn et al. 2014). Although institutions are in place where the local village or district chief is a conduit between community level decision making and government directives on climate change, communicating climate change has been a challenge for local leaders since policies on climate change are viewed as "obscure" and disconnected from local religious beliefs (Nunn et al. 2014). In order to help people at the local level better understand climate change, CCD developed a climate change glossary in the iTaukei language to improve climate communication to implement policies.

5. Coordination Among Institutions

Linking research findings on climate change impacts to policies that support climate resilience requires coordination among the institutions mentioned in the previous section. Figure 3 below is a draft diagram that shows the top down structure for coordinating among institutions involved in climate change adaptation (GoF 2014a). The Ministry of Strategic Planning, National Development and Statistics is present in all coordination efforts although not shown in the diagram.

Figure 3: Top down Coordination Structure (DRAFT)

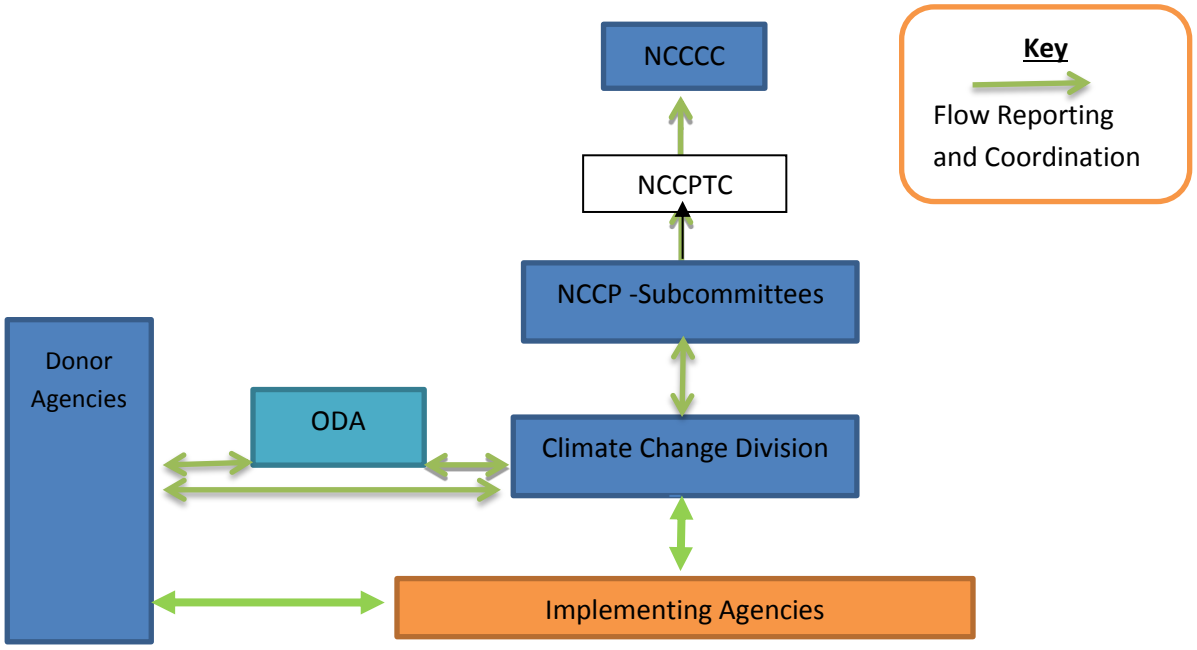
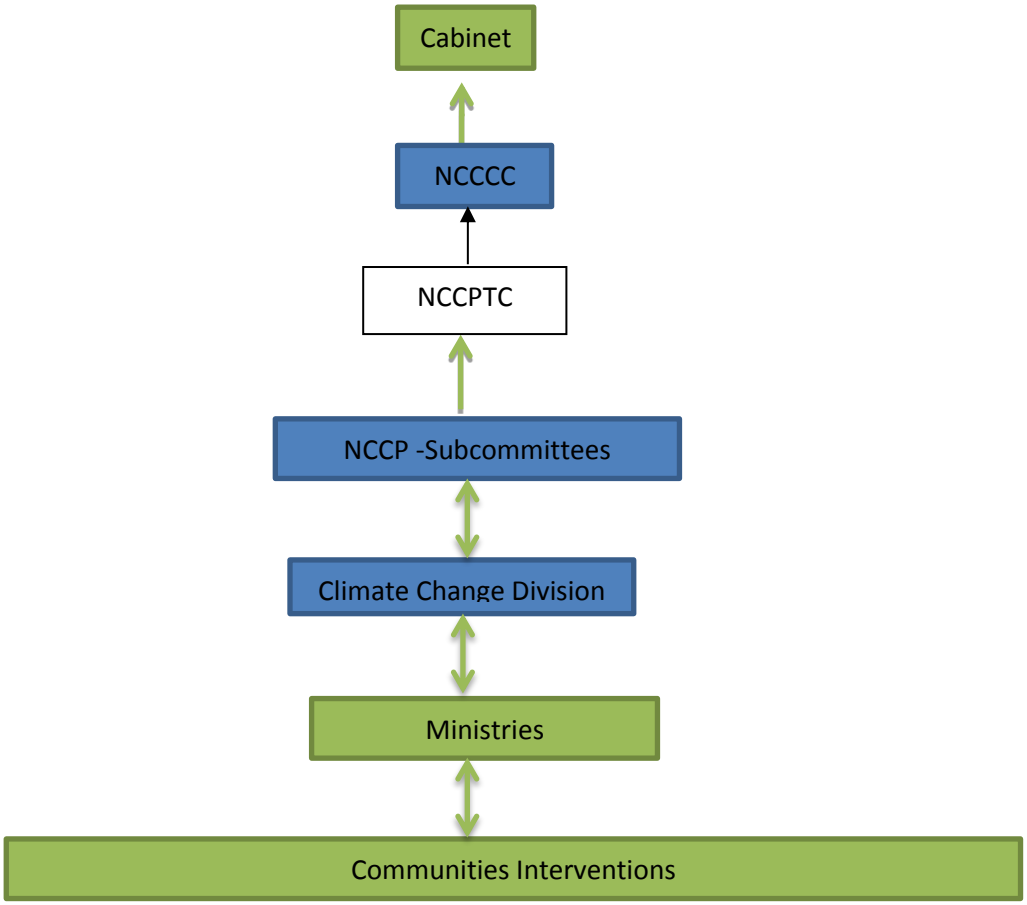


Figure 3 shows that the Overseas Development Assistance (ODA) Unit of the Ministry of Finance will provide CCD information on climate change programme, project or initiatives and the amount of funding available. CCD will advise and consult all relevant implementing agencies at the divisional level on the implementation of climate change activities at the community level. The Implementing Agencies will consult and inform CCD on climate change related projects they propose to implement, the different types of activities and the scope of its implementation. The information will be used by CCD for its quarterly reporting to the NCCCC via NCCP and NCCPTC (this information will also be shared through the

National Climate Change website). NCCCC serves as the inter-ministerial body that guides high-level policymaking and coordination on climate change policy and planning (GoF 2014a).

Figure 4 below shows a similar coordination structure but focuses on bottom up coordination where CCD engages with ministries who in turn engage with community organizations.

Figure 4: Bottom up coordination (DRAFT)



Source: adapted from GoF 2014a

Currently Figures 4 and 5 are in draft stages and being revised through a series of consultations due to new developments around the structure of decision making. The decision making structures will be finalized through the Green Climate Fund Readiness Programme. Nevertheless, these diagrams provide an idea about the institutions involved and who will be responsible for implementing climate change policies.

6. Gaps and Opportunities to Address Adaptation Needs

The numerous policies and plans established and implemented thus far suggests that the Government of Fiji is keen to help its citizens adapt to climate change. Although the Government of Fiji has made significant progress in establishing policies on climate change adaption, there are gaps to address adaptation needs. This final section identifies gaps and opportunities based on the sections 2-5 of this report.

(a) Conduct New Climate Vulnerability Assessments

Section 2 describes the climate and vulnerability information gathered thus far. As identified in Table 1, there is a critical gap in information and data on climate change, which will require new vulnerability assessments to be conducted to better understand who is vulnerable and why. CCD also requires vulnerability assessments to be part of project proposals. New vulnerability assessments, however, need to go beyond assessing physical and ecosystem vulnerabilities to incorporating socio-economic vulnerabilities. For instance, how men, women, children, and the elderly in Fiji are vulnerable needs to be assessed before developing targeted projects.

The opportunity to conduct new vulnerability assessments exists with the implementation of the "Vulnerability self-assessment tool" that is being rolled out and already being used by the ITaukei community. Currently, Assistant Provincial Officers and their respective Conservation Officers conduct vulnerability assessments. It is, however, unclear if they have the strong technical capacity to do so. Therefore, the NCCP Subcommittee on Data Collection, Storage, and Sharing will need to work closely to build capacity of those conducting vulnerability assessments. Efforts also need to be made to minimize inconsistencies in methodologies and standards used by various agencies in Fiji when collecting and analyzing climate change-related data and information (GoF 2012a). Standardizing methodologies is also an area that the Sub-committee could focus on since one of its aims is to promote robust research.

(b) Diversify Adaptation Projects

Based on the list of adaptation projects mentioned in section 3 and Annex 2, currently, there are more projects on flood management and disaster risk reduction compared to other projects. This demonstrates that Fiji is addressing the most significant impacts climate change will bring – floods due to sea level rise and tropical cyclones. However, very few projects directly relate to tourism, agriculture, health, infrastructure and forests. Although Pacific Adaptation to Climate Change is working on an adaptation and agriculture project, and the Fiji Protecting Human Health from Climate Change focuses on climate and health projects, projects predominantly focus on floods and disaster management. Opportunities exist to work with ministries in charge of tourism, agriculture, health, infrastructure and forests to develop new adaptation projects in these sectors. It is important to diversify projects so that various sectors become climate resilient and not just those involved in flood management and disaster risk reduction. Diversifying will also help project beneficiaries, such as farmers and fishermen, to protect their livelihoods.

Currently, many adaptation projects seem ad-hoc and funded by one-off funding sources or partnerships. A key opportunity is for Fiji to implement policy and financial systems to bind the ad-hoc projects together to efficiently support, fund and implement them in a timely manner, and ensure the delivery of sustained results over time. According to Climate Finance Readiness plan (GoG et al. 2013), there is also a need to develop the project pipeline process (that includes a project development and management cycle for projects); strengthen existing or establish new regulations (e.g. EIA requirements, building codes); improve enforcement of regulations; and conduct cost-benefit analyses of climate change projects.

(c) Build Capacity for Mainstreaming Climate Change Adaptation

In order to mainstream climate change into policies and plans, those working on climate change adaptation need to have a high level of understanding of technical issues related to climate change adaptation. This includes an understanding of climate change in general, but also how to conduct vulnerability assessment or use other methods to assess impacts of climate change at the local level. The lack of adequate capacity – both in terms of numbers of staff to implement climate change and disaster risk management policies, and the technical and project management skills required to implement projects are the most binding handicap to the achievement of national goals (GoF 2014b). The lack of capacity permeates all levels of work, from policy development, implementation, monitoring and evaluation and reporting. It affects budget allocation to entities working on climate change and disaster risk management issues.

In order to build capacity, developing a program to deliver trainings to staff will enable project implementers to become knowledgeable and efficiently deliver results. Likewise, by strengthening the capacities of local agencies and communities, people working on the ground will have greater access to the resources and skills they need to be effective and promote Fiji's climate and development objectives. It will be important to strengthen the capacity and expertise of the CCD, NCCCCC and National Disaster Management Office (NDMO) in the area of climate change adaptation and equip them with the financial and human resources necessary to provide decision-makers with robust and relevant information on climate change impacts, vulnerability and adaptation options, and oversee the implementation of the NCCP. Strengthening of other sector institutions will also contribute positively to building a more resilient nation by fostering adaptation to climate change (GoF 2014b).

Recommendations to strengthen capacity building include (GoF 2014b):

- Undertaking a review of skills and training needs and funding available to deliver mandates on climate change and disaster risk management.
- Developing a program to deliver training for technical and project management capacities associated with climate change and disaster risk management.
- Develop a program to deliver trainings and guidance notes for local agencies and communities to access sources of funding and resources for climate change and disaster risk management initiatives.

(d) Integrate Climate Change with Disaster Risk Reduction

Since 2012, the Government of Fiji strongly emphasizes linking climate change with disaster risk reduction. Although the NCCP integrates climate change adaptation and disaster risk reduction, in reality very few national and sectoral plans and policies consistently include climate change and disaster risk management as a crosscutting area. This has led to different levels of prioritization by different ministries (GoF 2014b). However, the NCCP provides an excellent example of how climate change adaptation and disaster risk reduction are linked. This is an example that various ministries could follow. Additional recommendations for greater integration of climate change and disaster risk management include (GoF 2014b):

- Incorporating climate change and disaster risk management into Annual Corporate Plans.
- The Ministry of Finance including an analysis on climate change and disaster risk management expenditures in the Budget Supplement every year and including climate change and disaster risk management in the priority areas of the budget speech.
- The Cabinet Office issuing a circular to all ministries and departments that project proposals submitted for Cabinet's consideration should clearly identify how they address climate change and disaster risk management.
- Developing a multi-year national implementation plan for climate change and disaster risk management to act as a bridge between national plans and budget.

(e) Efficiently coordinate Climate Change Adaptation Units

Fiji's institutional arrangements and coordination mechanisms are at the heart of the country's response to climate change and disaster risk management. A system of committees, units, offices and other entities has been established, but in reality, weak connections between the entities results in a fragmented approach marked by a lack of coordination. As a result, implementation of policy and projects is slow and budget allocations are made on a casual basis, which lead to stagnant levels of funding every year. Optimizing the institutional arrangements by defining roles, clarifying means of coordination, establishing priorities and instilling a pattern of regular collaboration will speed up implementation and delivery of initiatives, support access to new sources of funding and streamline monitoring and evaluation in a coordination manner (GoF 2014b).

Overall, it will be important to strengthen coordination among national and sectoral policies, and division/province-level projects with implementation/support from national mechanisms (UNDP et al. 2014). The Government of Fiji will work together with partners in the Green Climate Readiness Program over the coming months to strengthen coordination, which will lead to revised coordination structures.

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Annex 1 Impact of Climate Change by Sector

Sector	Potential climate change impacts	Key mitigation opportunities	Key properties contributing to climate change resilience
Agriculture	• Extreme events such as high rainfall, floods and droughts can affect livestock production and management; • Land arability could be reduced due to salt water intrusion, coastal and river-bank erosion, exposure to salt water spray, and heat stress on soils; • Floods, droughts and cyclones may physically damage crops, farm equipment and infrastructure; • Reduced food security in terms of food production, food quality, nutritional availability, affordability and access; • Impact on the national economy as Fiji is an agro-economy country; • Increase in pests and diseases.	*Agriculture contributes 13.5% of global greenhouse gas emission. Soil represents 6%; livestock and manure 5.1% (IPCC 2007b)* Increased sequestration and reduced emissions can be achieved through: • the use of fuel-efficient farming equipment • farming practices that maintain or increase forest cover (agroforestry) • ensuring minimal soil tillage and soil cover to prevent the release of carbon in soil • reducing the use of fertilisers that can be converted and released as greenhouse gases • intensification of small scale commercial and subsistence agricultural activities to optimise production can minimise forest clearance • capturing methane gas from manure	• Diverse traditional crop species that are resilient to flood, drought and saltwater • Diverse traditional crop species that are resistant to disease spread • Traditional agroforestry and integrated farming practices
Human health/ welfare	The direct and indirect impacts of climate change on human health are summarised below: Direct impacts • increasing temperature • rainfall variability • storm activity Indirect impacts • increased spread of disease • compromised food and water sources • psychosocial impacts due to population displacement and income loss The direct and indirect impacts listed above can lead to: • increased incidence and severity of vector-borne, zoonotic and infectious diseases, e.g. dengue fever • increased food and water-borne diseases, e,g, diarrhoeal illnesses • increased injuries and longer-term consequences of extreme weather events • impacts on mental health, food and water security and malnutrition • increased cardiovascular respiratory and renal diseases		• Traditional knowledge of various medicines and cures, from locally available sources • Strong social safety nets within communities that increase resilience to extreme weather events

Sector	Potential climate change impacts	Key mitigation opportunities	Key properties contributing to climate change resilience
Marine and fisheries	• Climate and related oceanic variations already have impacts on fish catches, both subsistence and commercial (SPREP nd); • The combination of the high rainfall experienced during cyclonic activity and storm events with steep bare slopes, causes rapid runoff with river floods and sediment discharges into the near-shore seagrass and coral reef habitats, which has adverse impacts on the fisheries sector (World Bank nd); • Prolonged periods of elevated sea surface temperatures coupled with other climate factors has led to increased frequency of coral bleaching; • Ocean acidification caused by increased CO_2 concentration may reduce the ability of many marine species to form calcareous skeletons, thus disrupting food webs and habitat structure; • Changes in climate are causing migratory shifts in tuna aggregations to other locations (FAO 2008). Skipjack and yellow-fin tuna are displaced eastwards during ENSO events and westward in La Niña (Kirby 2007 in FAO 2008). This may become more pronounced with projections for a more ENSO-like climate (FAO 2008); • Increase in sea level, sea surface temperature changes and alteration of the mixing layer thickness will ultimately affect plankton productivity; • More stormy weather and intense cyclones may render fishing trips unsafe and less productive.		• Mangrove areas and coral reefs and other coastal zones provide physical buffers to extreme weather events • Healthy reef ecosystems are more resilient to the impacts of climate change, such as ocean acidification and increasing sea water temperature

Sector	Potential climate change impacts	Key mitigation opportunities	Key properties contributing to climate change resilience
Forestry	• Higher temperatures will make forests more vulnerable to fires; • Higher temperatures and changes in rainfall patterns may lead to increased occurrence of invasive species and pests; • Forest health could be reduced due to salt water intrusion, coastal and river-bank erosion and exposure to salt water sprays and heat stress on soils; • Floods, droughts and cyclones may physically damage forest plantations, natural forest and associated infrastructure; • Changing temperature and rainfall patterns may cause shifts in habitats and boundaries of certain tree species, pollinators and seed dispersers; • Changing temperature and rainfall patterns can affect the flowering behaviour of certain tree species; • Loss of arable land due to climate change would place added pressure on forest areas.	*Land use and land use change contributes 17% of global emissions (IPCC 2007b). Fiji's total forest carbon stock in 2010 was estimated at 192,270,000t CO2e (Carbon partnership Ltd. 2011)* Increased sequestration and reduced emissions can be achieved through: • sustainable management of forests (a huge carbon reservoir) • promoting reforestation, afforestation, and enrichment planting, as only growing forests are continually sequestering carbon dioxide from the atmosphere • sustainable management of mangrove areas and swamp land, which store huge amounts of carbon	• Healthy forest ecosystems increase the resilience of forest communities through the provision of various ecosystem services and food security (IPCC 2007a) • Healthy forest ecosystems increase the climate change resilience of many flora and fauna • Forests maintain land stability and waterway conditions
Communica-tions	• Cyclones, storm surges and other extreme weather events could damage infrastructure, leading to disruption of communication.		• Wide telecommunication and internet networks with good national coverage provide channels for education, emergency calls and warnings • Mobile phone services facilitate instant and easily accessible funds, transferred from overseas, which can assist in responding to disasters and damage
Transport	• Cyclones, storm surges or other extreme weather events could disrupt land, sea and air transportation; • Failure of transport infrastructure could increase the impacts of extreme weather events by isolating victims from food, water and medical treatment.	*Transport contributes 13.5% of global greenhouse gas emissions (IPCC 2007b)* • Utilisation of fuel-efficient equipment and vehicles to reduce greenhouse gas emissions	

Sector	Potential climate change impacts	Key mitigation opportunities	Key properties contributing to climate change resilience
Water resources and water infrastructure	• Potential impacts to water supply ➢ Potable and non-potable water supply will be affected as a result of decreased rainfall, sea level rise, and saltwater inundation/ intrusion; ➢ Extreme rainfall events could result in water contamination, overflow of dams; ➢ Cyclones, storm surges or other extreme weather events could damage water supply infrastructure and disrupt water treatment and distribution; • Potential impact on wastewater treatment ➢ Overflow of wastewater treatment ponds could result in contamination of water supply and waterways; ➢ Cyclones, storm surges, droughts or other extreme weather events could damage infrastructure, disrupt wastewater collection and treatment, and contaminate water supply and waterways. • Potential impact to storm-water drainage ➢ Extreme rainfall events could exceed the capacity of storm-water drainage networks; ➢ Cyclones, droughts, storm surges and other extreme weather events could damage storm-water infrastructure and disrupt drainage through blockage or excessive water flow.	*Wastewater treatment contributes 1.6% of global greenhouse gas emissions (IPCC 2007b)* • Reduction of methane emissions through changes to sludge management and storage	• Diverse water supply sources (surface water, aquifers and freshwater lenses)
Waste and Waste Infrastructure	• Changing climatic conditions will impact on landfill management practices.	• Reduction of household waste burning • Promotion of household composting, including use of compost toilets • Improvements to landfill management • Increased recycling facilities and collections	

Sector	Potential climate change impacts	Key mitigation opportunities	Key properties contributing to climate change resilience
Energy and Energy Infra-structure	• Cyclones, storm surges and other extreme weather events could damage infrastructure and disrupt generation, storage and distribution of electricity; • Decreased rainfall could reduce the environmental flow and impact hydro-electricity generation capacity. In 2010, hydro-electricity represented 48% of the average electricity generation mix (FEA 2010).	*Energy contributes 24.6% of global greenhouse gas emissions (IPCC 2007b)* • Efficient electricity generation and distribution losses to reduce fossil fuel consumption • Promotion of renewable energy • Minimisation of deforestation related to hydro-electricity dam construction	
Tourism	• Damage to buildings and infrastructure from sea level rise, storm surge, cyclones, floods, salt-spray, coastal erosion and landslides; • Disruption of land, sea and air transport to facilities • Decrease in tourist arrivals due to changing weather conditions and patterns, degradation of pristine natural attractions and damage to infrastructure; • Increasing costs to implement adaptation measures that would be subsequently absorbed by tourists and related service providers; • Growth in the tourism sector may be hindered by the need for increased capital investment and increased climate related challenges.	• Increased energy efficiency • Fossil fuel substitution with renewable energy in tourist facilities (green tourism) • Utilisation of fuel efficient equipment	• Diversity of tourism destinations and services to minimise disruption caused by extreme weather events
Urban devel-opment and housing	• Extreme events such flooding and cyclones incur an economic cost to townships; • Extreme events or natural disasters will affect lives of people in poorly built or poorly located houses — marginal communities are likely to be more severely affected; • Added pressure on services and utilities to cope with demands brought about by extreme events such as heat-waves, water shortages and disease outbreaks; • Land loss and reduction in arable land could lead to migration in urban centres, resulting in over-crowding; • Floods, storm surges, cyclones and other extreme weather events can damage houses and residential buildings, and have the potential to put their occupants in danger during or after an extreme weather event.	• Increased energy efficiency and use of renewable energy in residential, commercial and industrial sectors • Reduction of household waste burning	• Some traditional building practices provide resilience to extreme weather events

Annex 2: List of Adaptation Project Undeway (GoF 2012)

Title: SPC/GIZ Coping with Climate Change in the Pacific Island Region (CCCPIR) *(GIZ)*
Duration: 2009-2015
Short Description of the Project: The expanded SPC/GIZ 'Coping with climate change in the Pacific Island Region (CCCPIR)' programme aims to strengthen the capacities of Pacific member countries and regional organizations to cope with the impacts of climate change. Changing rainfall patterns, longer drought periods, increased cyclone intensity and rising sea levels are likely to affect all communities and key economic sectors such as agriculture, forestry, fisheries and tourism. The initial focus was on land based natural resources such as agriculture, forestry and land use. Based on country requests, the scope of the programme has expanded to also cover fisheries, tourism, energy and education. The Programme is implementing the following components: 1) Enhance SPC and SPREP capacity to integrate climate change into service delivery 2) Integrate climate change into various national strategies, plans and policies 3) Implement specific adaptation and mitigation measures (pilot projects) 4) Promote adaptation to climate change and strategies for emission reductions in the tourism sector 5) Sustainable energy management 6) Integrate climate change into existing curricula and training programs **Support to the reduction of climate and disaster risks by creating the following adaptation benefits**: • Improved knowledge and awareness of communities, NGOs and governmental departments • Mainstreaming of climate change into sector policies, plans and projects • Improved cooperation between national and regional stakeholders • Improved management of natural resources (forestry, agriculture, water, fisheries)
Links: http://www.spc.int/lrd

Title: Pacific Adaptation to Climate Change (PACC) *(GEF)*
Duration: since 2009
Short Description of the Project: The PACC project aims to significantly improve the effectiveness of the response to climate change in the Pacific. This project improves technical capacities to support appropriate adaptation centric policies, demonstrated cost –effective adaptation techniques in key sectors, and promote regional cooperation. It is designed to lay the framework for effective and efficiencies future investment on climate change adaptation in the Pacific.

For Fiji, PACC focuses on:

- Adaptation in agriculture and related flood-plain management in the Nausori area
- Dredging of canals and related flood protection infrastructure (e.g. flood gates)
- Community-based adaptation and disaster risk reduction

Ultimately, the results will assist in mainstreaming climate change issues in policy, in particular strengthen of the Drainage Act.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Introduction of a climate-resilient agriculture and watershed management
- Establishment of climate-resilient infrastructure
- Improved CCA&DRR knowledge and awareness of communities, NGOs and governmental departments

Links: http://www.sprep.org/climate_change/pacc/country-fiji.asp

Title: Integrated Water Resources Management Project (IWRM)
(EU)

Duration: 2009-2013

Short Description of the Project:
The programme aims to support the implementation of the Pacific Regional Action Plan on Sustainable Water Management that aims to improve the assessment and monitoring of water resources, reduce pollution, improve access to technologies, strengthen institutional agreements, and leverage additional financial resources in supporting IWRM.

The programme focuses on strengthening governance structures (coordinating national water committees) and frameworks (policy, legislation, action plans) to mainstream IWRM and WUE in to national planning processes.

Projects have been designed to provide the basis for policy development, strategy choice, the development of National IWRM Plans, and on-the ground demonstrations to test and evaluate the effectiveness of integrated approaches to:

- Balance conflicting uses of scarce freshwater resources
- Improve public and environmental health by ensuring consistent water availability and quality
- Reduce effects of soil erosion, inadequate sanitation and other harmful activities on the quality of fresh and coastal waters
- Reduce vulnerability to droughts, floods, landslides and pollution

Climate change considerations have only recently been included as a smaller project component.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved water resource management
- Increased water availability and quality
- Reduced vulnerability towards climate impacts

Links: www.pacific**water**.org/

Title: Sustainable Land Management
(GEF/UNDP)

Duration: 2008-2012

Short Description of the Project:
The Sustainable Land Management Project (SLM), intends to reduce the current rate of land degradation by developing individual, institutional and systemic capacities to manage land wisely, and to mainstream sustainable land management tools and practices into the development and budgetary processes of the government.

The project will focus on the following activities:

- completion of a CCD National Action Plan (NAP) for combating land degradation;
- capacity building and strengthening legislative and policy frameworks;
- SLM mainstreaming into national development strategies and policies; and the development of a Medium Term Investment Plan and its Resource Mobilization.

In addition the project will collect, acquire and generate good quality land resources information (including Gender & Land Management) and raise awareness of land administrators and users of better land use management technologies through research, technology transfer, training, generation and compilation of reliable data. In doing so, it will strengthen and reinforce institutional capability providing a basis for comprehensive national land use planning and initiate practical on-farm sustainable land management technologies.

For Fiji, assessments have been undertaken, including community consultations. This will be followed by participatory land use planning activities, and a range of on the ground demonstration interventions in 11 villages of 4 districts in the Nadi catchment.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved land management concepts (especially agriculture and coastal zone management)
- Improved awareness and knowledge management on land issues

Links: www.undp.org.fj

Title: Ba River and Dredging Master Plan
(UNDP)

Duration: since 2011

Short Description of the Project:
The Ba River and Dredging Master Plan Project are currently in its concept phase, with EIA being undertaken. The project design is based on a 1 in 5 years flood event. It is proposed to have small scale community operated check dams as an adaptation measure.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved resilience towards flood events
- Increased community awareness and participation in disaster management

Links: -

Title: Pacific Climate Change Science Program (PCCSP)
(AusAID)

Duration: 2008-2011

Short Description of the Project:
The PCCSP is part of the Australian Government's commitment through the International Climate Change Adaptation Initiative (ICCAI) to meet high priority climate change adaptation needs in vulnerable countries in the Asia-Pacific region, especially the Pacific island countries and East Timor. One of the key outputs of the project is to prepare down-scaled climate products. It aims to:

- Rescue, rehabilitate and analyze observed weather data
- Establish national climate database management systems in an interactive, web-based data portal
- Interactive tropical cyclone tracker – historic and current
- Conduct trainings.

The 15 partner countries are the Cook Islands, East Timor, Fiji, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

The program is working with partner countries to i) track and analyze recent climate trends, ii) investigate regional climate drivers, iii) investigate past and future changes in ocean processes, ocean acidification, regional sea level rise and extreme sea level events and iv) prepare regional and national climate projections for 2030, 2055 and 2090.

Partner country engagement, information sharing and capacity building are integral to the program and are being undertaken across all areas of research.

The program has been led by the Bureau of Meteorology and CSIRO through their research partnership in the Centre for Australian Weather and Climate Research.

In 2012 the PCCSP and PASAP programs have been combined in to a single program the Pacific-Australia Climate Change Science and Adaptation Planning Program (PACCSAP). This combination strengthens the links between climate change science and how this information is used to support adaptation planning.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved awareness, knowledge and information sharing on future climate trends and impacts

Links: http://www.climatechange.gov.au/government/initiatives/international-climate-change-adaptation-initiative/pacific-climate-change-science-program.aspx

Title: Climate Change Adaptation in Rural Communities in Fiji (CCA)
(AusAID)

Duration: 2007-2010 (Phase 1), since 2010 (Phase 2)

Short Description of the Project:
The AusIAD funded CCA - phase 1 pilot project was a community-based climate change adaptation project jointly implemented by USP's PACE-SD and Institute of Applied Science (IAS). Phase 1 of the project entailed the implementation of a pilot project on climate change adaptation in six rural communities focusing on the coastal zone and its ecosystems and water resources. Through the Climate Change Adaptation in Rural Communities in Fiji Project, water supply was improved in Bavu, Votua and Druadrua villages through the provision of much needed water tanks, roof guttering for rain water collection, and the laying of water pipes and installation of water pumps.

Funds were also utilized in Buretu, Korotasere, and Navukailagi villages to implement cost effective initiatives to protect their coastal areas from erosion and flooding through the planting of mangroves and vetiver grass, and the construction and reinforcement of river bank protection structures. CCA - phase 2 project will focus on implementing cost effective adaptation options in new six rural communities in Fiji.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved water availability due to the installation of new water infrastructure
- Improved coastal zone management by communities

Links: http://www.usp.ac.fj/index.php?id=9843

Title: Develop Capacity to Monitor, Evaluate and Communicate Climate Change Adaptation
(UNDP)

Duration: 2008-2010

Short Description of the Project:
The project supports efforts towards internalizing climate change adaptation within rural communities of Fiji, and enables the replication of best practices from the six pilot sites to other rural communities. The resources have been mobilized using cost-sharing arrangements with UNDP and other donors (e.g. AusAID).In partnership with the University of the South Pacific, the project supported the monitoring of effects of measures or interventions through an Adaptation Monitoring and Evaluation (AME) framework and plans for all six project sites based on adaptive management principles successfully used in the management of Fiji's marine resources. Specifically, UNDP

provided funding support for: (i) the development of a monitoring and evaluation system; and (ii) customizing project processes and outputs into communication products that can be used within and beyond the project lifetime.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved community awareness and knowledge on CCA and DRR

Links: http://www.undp.org.fj/pdf/Success/CCA%20Rural_Fiji.pdf

Title: Enhancing Resilience of Rural Communities to Drought-Related Climate Change and Disaster Risks in the Ba Catchment
(UNDP)

Duration: Pending Approval

Short Description of the Project:
The overall objective of the project is to replicate successful interventions in the Ba catchment and fully integrate climate change considerations in flood/drought risk management by not only generating and producing information, but also training and dissemination. Mitigation of flood damage remains the highest priority need in the area, particularly in light of projected increase in intensification of rainfall and storm events. Fiji lacks an integrated natural resource management plan that incorporates climate change, agriculture, flood, and drought risk simultaneously. The project utilizes government commitment and support to partner with UNDP on implementation, and largely seeks to build on and complement existing and past efforts to address land and water resource management. The project focuses on the following components:

- Implementation of climate early warning and information systems.
- Community-based adaptation to flood and drought-related risks and hazards
- Institutional strengthening to support climate and disaster resilient policy frameworks
- Awareness raising and knowledge management.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved community awareness and knowledge on CCA and DRR (especially adaptation towards floods and droughts)

Links: http://adaptation-fund.org/project/1641-enhancing-resilience-rural-communities-flood-and-drought-related-climate-change-and-dis

Title: Integrated Flood Management in the Pacific - Nadi Flood Pilot
(WB)

Duration: Since 2011

Short Description of the Project:
The project is implemented by SPC/SOPAC and aims to develop integrated flood management for the Pacific using the Nadi catchment as a case study. It was designed to complement and enhance the work of the GEF funded IWRM Demonstration Project in the Nadi catchment and build on synergies such as the Pacific HYCOS project, EU funded IWRM

national planning programme and the AusAID NAP facility.

The project is closely aligned with the Fiji National Action Plan for Disaster Risk Reduction. It has three components:

- Institutional Strengthening of Flood Forecasting and Warning Systems
- Flood Risk Assessment, Identification of Mitigation Measures, and Dissemination
- Institutional Strengthening for Integrated Flood Management

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved awareness and knowledge on CCA and DRR (especially floods)

Links: http://www.sopac.org/index.php/media-releases/1-latest-news/339-nadi-integrated-flood-management-project

Title: Development and Implementation of Fiji's DRM National Action Plan (JNAP) *(UNDP)*

Duration: Since 2011

Short Description of the Project:

The project aims to assist Fiji to develop and implement a DRM National Action Plan, covering the following hazards: Fire; Technical; Flood; Tornado; Cyclone; Heat Wave; Tsunami; Drought; Insect Infestation; Volcano; Earthquake; Land Slide; Epidemic; Storm Surge.

The key themes include: Capacity Development; Recovery; Civil Society/NGOs; Risk Identification & Assessment; Climate Change; Community-based DRR; Complex Emergency; Disaster Risk Management; Early Warning.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved awareness and knowledge on CCA and DRM
- Improved disaster management
- Improved environmental governance

Comments: The outcome of this project is the development Climate Change Adaptation and Disaster Risk Reduction National Strategy.

Links: -

Title: Second National Communication (SNC) under UNFCCC *(GEF)*

Duration: 2008-2012

Short Description of the Project:

The core output of the SNC project is Fiji's Second National Communication as part of its reporting obligation under the UNFCCC. This project further enhances the national capacities and raises general knowledge and awareness on climate change, sea level rise, natural hazards and their effects. It also contributes to putting climate change issues higher on the national agenda through strengthened cooperation and increased

involvement of all relevant stakeholders in the process. In addition, it also strengthens national capacities for participation in different mechanisms related to adaptation and greenhouse gas (GHG) mitigation, as well as fulfilling other commitments to the UNFCCC.

A related activity is the baseline assessment of the vulnerability of the Yasawa Group to climate change, covering 16 of the 27 villages in the Group; undertaken by an integrated coordinated team.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved awareness and knowledge on climate change issues
- Improved cooperation between stakeholders

Comments: The Third National Communication is now underway.

Links: www.**environment**.gov.fj

Title: Regional Partnerships for Climate Change Adaptation and Disaster Preparedness *(ADB)*

Duration: 2008-2011

Short Description of the Project:

The TA supports the development of up to eight national databases, and a consolidated regional database encompassing risk, hazard, and vulnerability data critical to the future development of a Pacific regional catastrophe insurance scheme and vital to inform government decision- making regarding adaptation to natural catastrophes. The PDMCs included are those most exposed to the risk of earthquakes and cyclones. The databases will build upon the information gathered by World Bank in their development of country-specific risk models. The database will utilize a geographic information systems (GIS) platform, already in use across the Pacific, to enable the easy manipulation of data for presentation that facilitates public policy and decision-making. This will contribute to improved geophysical information in the Pacific region.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved awareness and knowledge on CCA and DRR issues
- Improved CCA & DRR information management and dissemination

Links: www.**adb**.org/Documents/TARs/REG/41187-REG-TAR.pdf

Title: Strengthening the Capacity of Developing Member Countries to Respond to Climate Change Baseline Report–Nausori, Fiji Islands *(ADB)*

Duration: 2008-2011

Short Description of the Project:

The main sector focus for the project is infrastructure (Transport& Public Infrastructure). The protection of infrastructure is vital as it supports or interconnects with other sectors within the Nausori urban center and peri-urban project area. These other sectors also play

a key role in the effects of climate change on the project area and also its exacerbation of climate change impacts. These sectors include: education, industry, energy, water resources, coastal resources, urban development and land use planning, agriculture and natural ecosystems, public health and sanitation.

Support to the reduction of climate and disaster risks by creating the following adaptation benefits:

- Climate-resilient infrastructure
- Improved awareness and knowledge on climate change impacts

Links: -

Title: Pacific Islands Climate Predictions Project (PICPP) - Phase 2
(AusAID)

Duration: 2003-2009

Short Description of the Project:
The aim of this project is to strengthen climate prediction in Pacific Island countries. It aims to expand the use of climate predictions by Pacific Island countries both in National Meteorological Services and by industries/agencies which use climate information including farmers, tourism, water resource managers and health authorities. The project is scheduled to end in 2009. At the end of the project implementation, the NMS of each participating country are to have software tailored for use in its location, and a thorough understanding of how seasonal climate prediction services can be applied to support climate-sensitive decision making in industry and government. Key representatives of climate-sensitive activities (e.g. agriculture, water management, disaster mitigation) will have received training in the effective use of climate predictions in a risk management context. It is hoped that in turn, the growth in productivity and efficiency that will follow in climate-sensitive industries will naturally flow through to better food security, improved public health, better managed water resources and more robust national economies.

Support the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved knowledge and awareness
- Improved information sharing
- Improved food security
- Better management of water resources

Links: www.adaptationlearning.net/

Title: South Pacific Sea Level & Climate Monitoring Project (SPSLCMP): Phase IV - Vulnerability and Adaptation Project
(AusAID)

Duration: 1991-2011

Short Description of the Project:
The primary goal of the SPSLCMP is to generate an accurate record of variance in long-term sea level for the South Pacific and to establish methods to make these data readily

available and usable by Pacific Island countries. Since 1991, the Project has established a network of 12 high-resolution sea level monitoring SEAFRAME (Sea Level Fine Resolution Acoustic Measuring Equipment) stations throughout the Pacific. These stations have been established at the Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Marshall Islands, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. All are located on wharves. A system for transmitting the data via satellites and telephone links is in place, and computer databases have been established at the National Tidal Centre (NTC) (formerly the National Tidal Facility Australia (NTFA)), for processing, analysing, archiving and making the data available to the international community.

SPSLCMP: Phase IV builds on the achievements of Phases I, II and III. The goal of Phase IV is to continue to provide for partner countries an accurate long-term record of sea level variability and change in the South Pacific that enables them: (1) to respond to and manage related impacts; (2) to manage their near-shore and coastal resources sustainably; and (3) to develop policies and strategies for responding to long-term trends.

Support the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved early warning systems for hazards and disasters
- Improved knowledge and awareness
- Integration of new risks into planning activities

Links: http://www.ausaid.gov.au/publications/pdf/climate_monitoring.pdf

Title: Pacific Disaster Net (PDN)
(AusAID, SOPAC, UNDP PC, UNISDR, IFRC)

Duration: 2006 – ongoing

Short Description of the Project:
Pacific Disaster Net (PDN - http://www.pacificdisaster.net) was launched in September 2008 as the new portal and growing information resource for all Disaster Risk Management partners working in the Pacific region including government agencies, regional bodies, non-government organizations and international agencies.
It supports DRM and development decision making and provides in-country information for distribution within the region in a range of formats and including contacts, alerts, documents, calendar, audio / visual files etc. PDN is developed and maintained by SOPAC and partners - IFRC, UNDP Pacific Centre, UNOCHA and UN/ISDR.

Support the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved knowledge, awareness and information exchange on disasters and hazards

Links: http://www.pacificdisaster.net

Title: Disaster Risk Reduction Project (ADPC)
(ADB)

Duration: Since 2009

Short Description of the Project:

Purpose: The Disaster Risk Reduction (DRR) Project Portal aims to collect information on all multi-country and national level DRR projects and initiatives in Asia and the Pacific implemented since 2005. By facilitating information sharing in Asia and the Pacific, the Portal aims to advance the Hyogo Framework for Action (HFA) strategic goals.
The Portal:

- Helps effective planning, programming, cooperation, and collaboration of DRR projects and programs in the region by facilitating project analysis to identify gaps and overlaps;
- Is essential for governments, organizations and donors involved in implementing and supporting DRR projects and programs in the region;
- Is a useful resource for academics, students and the media for obtaining an overview of DRR projects being implemented in the region.

Supported by the Asian Development Bank (ADB). Developed by the UNISDR Asia Partnership on Disaster Reduction (IAP) and Asian Disaster Preparedness Centre (ADPC)

Support the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved knowledge, awareness and information exchange on disasters and hazards

Links: http://www.drrprojects.net

Title: Small Grants Programme (SGP)
(GEF)

Duration: since 2006

Short Description of the Project:

This umbrella project is designed to assist 15 Pacific Island Countries (PICS) in the implementation of a GEF Small Grants Programme (SGP) and NZAID regional Pacific Environment Fund (PEF). Through an umbrella approach, the project is intended to provide expedited assistance to countries and reduces transaction costs of individual SGP country programs in the region. Its benefits will include enabling country parties, including both civil society organizations, as well as participating governments, to improve access to sources of funding for local environmental initiatives and for the protection of the global environment.

Support the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved access to climate funds for communities and CSOs

Links: www.undp.org.ws/Portals/12/...SGP/**NZAID**%20PEF-SGP%20Prodoc.pdf

Title: IUCN Mangrove Ecosystems for Climate Change Adaptation and Livelihoods (MESCAL) Project
(IUCN)

Duration: 2009-2013

Short Description of the Project:
Under the Pacific Mangrove Initiative (PMI), the MESCAL project was developed to address key challenges to mangrove management and conservation. The overall goal of this project is to help Pacific Islanders effectively manage their mangrove and associated coastal ecosystems to build resilience to the potential consequences of climate change and variability on coastal areas and support/enhance livelihoods.

The MESCAL project focuses on five Pacific Island countries (Fiji, Samoa, Solomon Islands, Tonga and Vanuatu) to achieve its objectives. It is envisaged that the MESCAL project will serve as a platform for future Pacific-wide integrated coastal ecosystem management support under the Pacific Mangrove Initiative umbrella.
MESCAL Fiji has identified two main areas:

- Mangrove management - looking at policies and regulations, mangrove management plans and national level database of the country;
- Community awareness and capacity building - focus on community engagement through governance and capacity building on mangroves and climate change adaptation.

Support the reduction of climate and disaster risks by creating the following adaptation benefits:

- Improved community awareness
- Improved management of mangroves

Links: http://www.iucn.org/

Title: National Capacity Self-Assessment (NCSA)
(GEF)

Duration: since 2000

Short Description of the Project:
The NCSA is a type of enabling activity within the Department of Environment that specifically focuses on capacity development. The NCSA is a flexible & powerful tool to help Fiji examine its environment commitment in a holistic and integrated fashion.
The NCSA focuses on assessing Fiji's Capacity to meet its Rio Convention Obligation namely the United Nation Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (CBD) and the United Nation Convention to Combat Desertification (UNCCD).

The NCSA Project involves a number of processes that includes a stocktake exercise so to establish baseline information of existing projects, programs and initiatives in Fiji to address each of the three Rio Conventions. The second process includes the In-depth thematic assessment and prioritization of capacity areas based on the baseline stocktake information. The third process includes the identification and prioritization of crosscutting of the three Rio Conventions. The final process under the NCSA Project is the compilation

of a list of recommended strategies and action for capacity development under a National Action Plan. **Support the reduction of climate and disaster risks by creating the following adaptation benefits**: • Improved cooperation among sectors (e.g. land management, biodiversity, forestry) • Improved capacities to deal with climate change, biodiversity conservation and land degradation
Links: www.**ncsafiji.com**

Annex 3: NCCP Policy Implementation Framework

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
	Objective 1: Mainstreaming							
1	Incorporate climate change into National Plans and budgets in line with the Climate Change Policy Framework.						Ministry of Strategic Planning, National Development, and Statistics	Line ministries
2	Ensure that reviews of national and sectoral policies align with the Climate Change Policy.						Climate Change Unit	Line ministries; Solicitor General's Office
3	Consider the Climate Change Policy in legislative review processes and develop cooperative and coordinated agreements between sectors to ensure enforcement.						Solicitor General's Office	Solicitor General's Office; all government agencies
4	Consider lessons learnt and recommendations of national and local-level reports, projects and studies relating to climate change in the national, divisional and local planning processes.						Climate Change Unit	Line ministries; Ministry of Provincial Development; Department of Local Government
5	Consider climate change implications in all strategic national development planning, including land use planning, development assessment, infrastructure and settlement planning.						Ministry of Strategic Planning, National Development, and Statistics	Climate Change Unit; Ministry of Agriculture; Ministry of Fisheries and Forestry; Ministry of Works, Transport and Public Utilities; Department of Tourism; Ministry of Health; Department of Housing; Department of Urban Development
6	Ensure all sectors coordinate climate change adaptation and disaster risk reduction efforts to enhance aid effectiveness and streamline implementation.						Ministry of Strategic Planning National Development and Statistics	Line ministries; Climate Change Unit
7	Task the Climate Change Unit with facilitating the design and implementation of a national monitoring and evaluation tool to assess and improve on climate change integration in sectors, including enforcement of climate change related legislation.						Climate Change Unit	Ministry of Strategic Planning, National Development and Statistics
8	Include climate change programmes in the responsibilities of all government departments.						Climate Change Unit	Ministry of Strategic Planning, National Development and Statistics; Ministry of Provincial Development; line ministries

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
4	Collaborate with relevant regional and international research and academic institutions to update climate change related data and information.						Climate Change Unit	SOPAC; SP; USP; FNU; University of Fiji; SPREP; IUCN; Forum Secretariat; NGOs
5	Strengthen the national weather and climate monitoring network.						Fiji Meteorological Services	SOPAC; SPC; USP; SPREP; IUCN; Forum Secretariat; NGOs
6	Adopt innovative and sustainable approaches to data management.						Climate Change Unit	Fiji Meteorological Services; Ministry of Information;
7	Encourage and promote robust research to provide sound climate change-related data.						Climate Change Unit	Ministry of Education; USP; FNU; University of Fiji
	Objective 3: Awareness Raising							
1	Conduct awareness raising workshops and sessions for policy makers, decision makers and local and national planners on climate change issues.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Ministry of Works, Transport & Public Utilities; Department of Tourism; NGOs
2	Use a range of available communication technologies to conduct outreach activities related to climate change adaptation and mitigation.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Ministry of Works, Transport & Public Utilities; Department of Tourism; NGOs
3	Support community-based organisations and faith-based organisations to raise climate change awareness within local communities.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Department Tourism; NGOs
4	Establish an effective communication and networking mechanism on climate change issues among government departments, NGOs, CBOs, faith-based organisations, municipal councils, the private sector, and professional and academic institutions.						Climate Change Unit	Ministry of Strategic Planning, National Development, and Statistics; Ministry of Provincial Development; Pacific Council of Churches, Regional Development, Department of Local Government; Department of Urban Development; Fiji Meteorological Services; NGOs

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
4	Collaborate with relevant regional and international research and academic institutions to update climate change related data and information.						Climate Change Unit	SOPAC; SP; USP; FNU; University of Fiji; SPREP; IUCN; Forum Secretariat; NGOs
5	Strengthen the national weather and climate monitoring network.						Fiji Meteorological Services	SOPAC; SPC; USP; SPREP; IUCN; Forum Secretariat; NGOs
6	Adopt innovative and sustainable approaches to data management.						Climate Change Unit	Fiji Meteorological Services; Ministry of Information;
7	Encourage and promote robust research to provide sound climate change-related data.						Climate Change Unit	Ministry of Education; USP; FNU; University of Fiji
	Objective 3: Awareness Raising							
1	Conduct awareness raising workshops and sessions for policy makers, decision makers and local and national planners on climate change issues.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Ministry of Works, Transport & Public Utilities; Department of Tourism; NGOs
2	Use a range of available communication technologies to conduct outreach activities related to climate change adaptation and mitigation.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Ministry of Works, Transport & Public Utilities; Department of Tourism; NGOs
3	Support community-based organisations and faith-based organisations to raise climate change awareness within local communities.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Department Tourism; NGOs
4	Establish an effective communication and networking mechanism on climate change issues among government departments, NGOs, CBOs, faith-based organisations, municipal councils, the private sector, and professional and academic institutions.						Climate Change Unit	Ministry of Strategic Planning, National Development, and Statistics; Ministry of Provincial Development; Pacific Council of Churches, Regional Development, Department of Local Government; Department of Urban Development; Fiji Meteorological Services; NGOs

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
4	Build capacity of provincial administrators, *Roko Tui*, advisory councillors, community leaders, village headmen, youth leaders, faith-based organisations and NGOs to deliver accurate information, integrate local content, and promote critical thinking about climate change.						Ministry of Education	Ministry of Education; Ministry of Provincial Development; Climate Change Unit
5	Ensure education and training programmes are designed to allow and encourage individuals to understand climate change, and to take action on mitigation and adaptation.						Ministry of Education	Ministry of Education (CDU)
6	Develop appropriate training tools on climate change for government officers involved in awareness and training programmes in all government departments.						Climate Change Unit	Ministry of Education; tertiary institutions; government departments
	Objective 5: Adaptation							
1	Integrate related disaster risk reduction and climate change adaptation strategies and actions into national and sectoral planning to streamline responses.						Ministry of Strategic Planning, National Development, and Statistics	Climate Change Unit; NDMO; line ministries, SOPAC
2	Include vulnerability assessment and climate change impact projections into resource management planning, such as integrated coastal and watershed management plans.						Climate Change Unit	Department of Environment (biodiversity); line ministries
3	Incorporate climate change impact projections into infrastructure and urban and rural planning.						Department of Lands	Climate Change Unit; Department of Forests; Department of Lands; Department of Agriculture; DTCP; Department of Environment; NGOs
4	Develop adaptation technologies that take traditional knowledge into account and are culturally acceptable.						NDMO	Ministry of Fisheries & Forests; Department of Lands; DTCP; Fiji Meteorological Services; Department of Environment
5	Support the ecosystem-based approach throughout Fiji, recognising that ecosystem services, such as food security, natural hazard mitigation and physical coastal buffer zones, increase resilience.						Climate Change Unit	Department of Environment; Ministry of Primary Industries; NDMO; Fiji Meteorological Services; NGOs
6	Develop and make accessible hazard maps of coastal, riverine, urban and inland areas in Fiji, using the comprehensive hazard assessment and risk management (CHARM) tool to guide all development planning.						NDMO	Climate Change Unit; Department of Environment; Ministry of Primary Industries; NDMO; Fiji Meteorological Services; NGOs
7	Assess poverty, health and food security issues to determine their vulnerability to climate change, and consider these						Climate Change Unit	Ministry of Fisheries & Forests; Ministry of Education; Ministry of Health; Ministry of

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
4	Build capacity of provincial administrators, *Roko Tui*, advisory councillors, community leaders, village headmen, youth leaders, faith-based organisations and NGOs to deliver accurate information, integrate local content, and promote critical thinking about climate change.						Ministry of Education	Ministry of Education; Ministry of Provincial Development; Climate Change Unit
5	Ensure education and training programmes are designed to allow and encourage individuals to understand climate change, and to take action on mitigation and adaptation.						Ministry of Education	Ministry of Education (CDU)
6	Develop appropriate training tools on climate change for government officers involved in awareness and training programmes in all government departments.						Climate Change Unit	Ministry of Education; tertiary institutions; government departments
	Objective 5: Adaptation							
1	Integrate related disaster risk reduction and climate change adaptation strategies and actions into national and sectoral planning to streamline responses.						Ministry of Strategic Planning, National Development, and Statistics	Climate Change Unit; NDMO; line ministries, SOPAC
2	Include vulnerability assessment and climate change impact projections into resource management planning, such as integrated coastal and watershed management plans.						Climate Change Unit	Department of Environment (biodiversity); line ministries
3	Incorporate climate change impact projections into infrastructure and urban and rural planning.						Department of Lands	Climate Change Unit; Department of Forests; Department of Lands; Department of Agriculture; DTCP; Department of Environment; NGOs
4	Develop adaptation technologies that take traditional knowledge into account and are culturally acceptable.						NDMO	Ministry of Fisheries & Forests; Department of Lands; DTCP; Fiji Meteorological Services; Department of Environment
5	Support the ecosystem-based approach throughout Fiji, recognising that ecosystem services, such as food security, natural hazard mitigation and physical coastal buffer zones, increase resilience.						Climate Change Unit	Department of Environment; Ministry of Primary Industries; NDMO; Fiji Meteorological Services; NGOs
6	Develop and make accessible hazard maps of coastal, riverine, urban and inland areas in Fiji, using the comprehensive hazard assessment and risk management (CHARM) tool to guide all development planning.						NDMO	Climate Change Unit; Department of Environment; Ministry of Primary Industries; NDMO; Fiji Meteorological Services; NGOs
7	Assess poverty, health and food security issues to determine their vulnerability to climate change, and consider these vulnerabilities in future policies and initiatives.						Climate Change Unit	Ministry of Fisheries & Forests; Ministry of Education; Ministry of Health; Ministry of Agriculture; Ministry of Itaukei & Multi Ethnic Affairs; Department of Energy; NGOs

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
8	Improve disaster response capacity and access to public health facilities, emergency services, communication services and evacuation centres.						NDMO	Ministry of Fisheries & Forests; Ministry of Health; Department Local Government; Ministry of Primary Industries; NDMO; Department of Energy; Ministry of Information; Fiji Meteorological Services
9	Build the capacity of the health and agriculture sectors to respond effectively to climate sensitive diseases, including the strengthening of disease surveillance and control systems, and early warning mechanisms for climate sensitive human and livestock diseases.						Ministry of Health Department of Agriculture	Ministry of Health and Department of Agriculture
10	Use appropriate consultation mechanisms for the participation of all members of the community in the planning, management and implementation of adaptation measures.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Department of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Department of Tourism; NGOs
11	Mobilise resources and all sectors to support the implementation of relevant national adaptation strategies and plans, such as the National Climate Change Adaptation Strategy, the planned Joint National Action Plan for CCA and DRM and the National Disaster Risk Management Plan.						Climate Change Unit	Ministry of Provincial Development. Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Department of Tourism; NGOs
12	Strengthen early warning systems to ensure effective and timely communication to the public, with particular attention paid to isolated, hazard-prone and disadvantaged areas.						Fiji Meteorological Services	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Department of Tourism; NGOs
13	Implement best practice adaptation measures, based on sound scientific research, and lessons learnt from local, regional and international experiences.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment ; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Tourism; NGOs

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
14	Undertake national research to identify effective adaptation measures to support sector-specific adaptation and disaster risk reduction responses.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Department of Tourism; NGOs
15	Establish a monitoring and evaluation system to determine the success of national, sectoral and local adaptation initiatives						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Department Tourism; NGOs
	Objective 6: Mitigation							
1	Develop joint programmes and cooperation agreements between relevant sectors to reduce and avoid greenhouse gas emissions.						Department of Energy	All government agencies and statutory bodies; NGOs
2	Develop and implement national, industrial, commercial (such as the tourism, agriculture, and mining sectors) and household energy efficiency programmes, including provision of rebates, incentives and disincentives.						Department of Energy	Department of Energy; Department of Public Enterprise; Department of Tourism
3	Assess and utilise appropriate renewable energy sources, such as wave, tidal, solar, wind, hydro, geothermal, biofuel and biomass.						Department of Energy	Department of Energy and government statutory; Fiji Meteorological Services
4	Support the implementation of the *Fiji REDD-Plus Policy*, the *Fiji Biodiversity Strategy and Action Plan*, the *National Air Pollution Control Strategy*, the Ozone Depleting Substances Decree, the *National Energy Policy*, the *Clean Development Mechanism Policy Guideline* and other relevant national polices and strategies on the reduction of greenhouse gas emissions, deforestation, forest degradation and the enhancement of forest carbon stocks.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Works ,Transport and Public Utilities; Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Tourism; NGOs

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
5	Access international financing instruments to support renewable energy, energy efficiency, waste management and carbon trading initiatives.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Department of Tourism; NGOs
6	Control and reduce emissions from existing private and public vehicles.						Department of Transport	Department of Transport and LTA
7	Control the ages of imported and second-hand vehicles and introduce alternative fuel powered vehicles.						Department of Transport	Department of Transport; Department of Energy
8	Develop activities and infrastructure that promote the reduction and avoidance of fossil fuel consumption (for example, construct proper walking and cycling lanes)						Department of Local Government	Ministry of Works ,Transport and Public Utilities,
9	Support the enforcement of legislation on open burning in residential and commercial locations, as stated by the Environment Management Act (2005).						Department of Environment	Department of Environment
10	Formalise collaboration arrangements and commitments of members of committees working in the area of climate change mitigation, such as the Carbon Trading Technical Team, and the Fiji REDD+ Steering Committee.						Climate Change Unit	Ministry of Fisheries & Forests; Department of Lands; Department of Transport; Department of Local Government; Department of Energy; Department of Tourism; NGOs
11	Establish a national monitoring and evaluation system to calculate GHG emissions and assess Fiji's mitigation efforts.						Climate Change Unit	Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Department of Works; Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Department of Tourism; NGOs

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
	Objective 7: Financing							
1	Ensure that national budgeting processes include the assignment of funds for climate change mitigation and adaptation research, planning and programme implementation.						Ministry of Strategic Planning, National Development, and Statistics	Climate Change Unit and Ministry of Finance
2	Develop innovative approaches and schemes to generate funds for adaptation activities at local and national level.						Climate Change Unit	Climate Change Unit; Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Works Transport and Public Utilities; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Tourism; NGOs
3	Support the UNFCCC National Focal Point to efficiently and effectively access and deliver funds from regional and international sources.						Climate Change Unit	Climate Change Unit; Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Works Transport and Public Utilities; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Tourism; NGOs
4	Develop an overview of climate change funding and costs in order to monitor the efficiency and effectiveness of funding mechanisms and project delivery.						Climate Change Unit	Climate Change Unit; Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Works Transport and Public Utilities; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Tourism; NGOs
5	Ensure adequate distribution of climate change funding, such as GEF and the Adaptation Fund, into climate change-related projects in all government agencies.						Climate Change Unit	Climate Change Unit; Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Works Transport and Public Utilities; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Tourism; NGOs

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
6	Secretariat of the NCCCT to collaborate with the Development Partners of Climate Change Committee (DPCC) in sharing information, coordinating and streamlining donor-funded projects.						Climate Change	Climate Change Unit; Ministry of Provincial Development; Ministry of Fisheries & Forests; Department of Lands; Ministry of Works ,Transport and Public Utilities; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Energy; Fiji Meteorological Services; Housing; Urban Development; Tourism; NGOs
7	Improve financial reporting to the Ministry of Finance to ensure proper disbursement and utilisation of funds.						Ministry of Finance	Ministry of Finance and Climate Change
8	Develop an analysis of the economics of climate change adaptation and mitigation in Fiji to identify cost-effective and cost-ineffective approaches.						Ministry of Strategic Planning, National Development, and Statistics	Ministry of Strategic Planning, National Development, and Statistics; Ministry of Finance and Climate Change
9	Support and develop capacity of Government Agencies and local NGOS and CBOs in proposal formulation and reporting to improve access to funds from regional and international sources.						Climate Change Unit	Climate Change Unit; Provincial Councils; Ministry of Fisheries & Forests; Department of Lands; Ministry of Works ,Transport and Public Utilities; Ministry of Health; Ministry of Local Government, Urban Development, Housing and Environment; Ministry of Agriculture; NDMO; Department of Tourism; NGOs
10	Provide adequate resources to the Climate Change Unit.						Ministry of Finance	Climate Change Unit
11	Implement recommendations from the 'Mainstreaming climate change into national development and budgeting' feasibility study (supported by the Global Climate Change Alliance Facility).						Ministry of Strategic Planning, National Development, and Statistics	Climate Change Unit; Ministry of Finance
12	Develop projects and initiatives with carbon financing potential.						Climate Change Unit	Government Agencies; Private Sector; NGOs

	STRATEGIES	TIMEFRAME					Lead agency	Implementing agency
		2012	2013	2014	2015	2016		
	Objective 8: International and Pacific Region Participation							
1	Strengthen international negotiation skills of Fiji delegation members and improve understanding of international policies related to climate change.						Climate Change Unit	Climate Change Unit
2	Ensure maximum preparation for international and Pacific regional meetings relating to climate change by encouraging cross-sectoral engagement and capacity building.						Climate Change Unit	Climate Change Unit; Ministry of Strategic Planning, National Development, and Statistics, Department of Environment, line ministries
3	Ensure Fiji's fulfilment of international reporting requirements through streamlined reporting of climate change issues to the three Rio Conventions (UNFCCC, CBD and UNCCD) and systematic monitoring across all sectors.						Climate Change Unit	Climate Change Unit; Ministry of Strategic Planning, National Development, and Statistics; Department of Environment; Ministry of Agriculture
5	Support a stronger and better coordinated Pacific position by initiating a collective Pacific regional approach to global negotiations on climate change issues.						Climate Change Unit	Climate Change Unit
6	Facilitate the development of a national and regional supporting mechanism for neighbouring Pacific Island countries that are highly vulnerable to the impacts of climate change.						Climate Change Unit	Climate Change Unit