

**LOSS AND DAMAGE GAP ANALYSIS FROM CLIMATE CHANGE  
VANUATU COUNTRY REPORT  
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## List of Acronyms

ADB	Asia Development Bank
AOSIS	Alliance of Small Island States
COP	Conference of the Parties
CCCPIR	Coping with Climate Change in the Pacific Island Region
EU	European Union
ENSO	El Nino-Southern Oscillation
GEF	Global Environmental Fund
ICT	Information and communication technology
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
REDD+	Reducing emissions from deforestation and forest degradation in developing countries
SIDS	Small Island Developing States
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
VCCI	Vanuatu Chamber of Commerce and Industry
VNC	Vanuatu National Council
VMGO	Vanuatu Meteorological and Geo Hazards Department
VANWODS	Vanuatu Women's Development Scheme
UN	United Nations
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
USAID	United States of America AID
USCCSP	United States Climate Change Science Programme
WASH	Water, sanitation and hygiene

# 1. INTRODUCTION

## 1.1 Background

Recent developments have seen the topic of climate change related loss and damage move into the mainstream of international climate change negotiations. This was evidenced with the adoption of the Warsaw International Mechanism on Loss and Damage at COP 19 in 2013 and then at the most recent COP in Lima during which developed countries agreed to a proposed inclusion of the topic in the official post-summit statement. To date however, the discussion on loss and damage has focused mainly on the concept as a principle –i.e. that polluting developed countries should compensate small island countries for the loss and damage incurred as a result of man-made climate change. This has been part of the discussion about longer-term scenarios in which the boundaries of adaptation options are exceeded, i.e. adaptation is no longer capable of withstanding the (progressively severe) impacts of climate change. However while the principle of loss and damage is now firmly entrenched in the international climate change agenda, the subject is characterised by a shortage of empirical information, and remains theoretical in nature. Recognising the pressing need to inform the debate with solid on-the-ground research-based evidence, the Secretariat of the Pacific Environment Programme (SPREP) sought an expert on loss and damage to conduct a gap analysis on loss and damage issues in three Pacific Island Countries (PICs), as a first step towards establishing a coherent on-going programme on this issue in the region.

SPREP is an inter-governmental technical organisation mandated by the Pacific Islands Forum Leaders to service the environmental programming needs of PICs. This includes the issue of climate change and SPREP is the lead regional organisation in this field. SPREP plays a key role in supporting PICs in the UNFCCC negotiations process and provides active support to a Regional Loss & Damage Working Group established under the auspices of the Pacific Climate Change Round Table. The loss and damage gap analysis will align with and complement the workplan of the Regional Loss & Damage Working Group. It will also assist in providing empirical evidence to link the national to the regional and international levels.

The loss and damage gap analysis is funded by a grant from GIZ through its Global Programme on Risk Assessment and Management for Adaptation to Climate Change. It forms part of GIZ's preparatory activities geared towards the development of a four-year programme of support to the Pacific Island Region commencing in 2015. Currently GIZ's support to the region is channelled through the Secretariat of the Pacific Community (SPC) through a programme entitled: Coping with Climate Change in the Pacific Island Region (CCCPIR). The Geoscience Division of SPC has actively been working on assessing the economic impact of natural disasters in the region and has built up a significant repository of knowledge. The loss and damage

gap analysis will therefore seek to involve SPC and CCCPIR as active partners in the study.

## **1.2 Objective of the Gap Analysis**

The main objective of the assignment is to conduct a gap analysis study on loss and damage issues in a cross-section of PICs so as to inform the development of a programme of activities on loss and damage at the regional level, as well as to feed into international negotiations on climate change.

Countries to be included in the study are Samoa (volcanic island with Polynesian ethnicity), Vanuatu (dispersed chain of volcanic islands with Melanesian ethnicity) and Kiribati (dispersed atoll islands with Micronesian ethnicity). The gap analysis will focus on identifying the main issues with respect to loss and damage in these countries with a view to establishing information, knowledge and capacity needs, including perceptions at community levels on climate change and loss and damage.

The national studies will include a focus on key sectors in the context of small island developing states (SIDS), such as public and private infrastructure, environment, fisheries, agriculture, tourism as well as social and other private sectors. Of particular interest to SIDS are the issue of vulnerable groups and their dependence on ecosystems, the nature and extent of non-economic losses, patterns of migration, displacement, and human mobility.

## **1.3 Methodology**

Methods to complete the gap analysis involved a combination of literature review, document analysis, in-country stakeholder consultations, and expert group discussions. National counterparts were identified to assist the expert consultant with data collection, liaising with national stakeholders and facilitating country visits. Following is a more detailed description of the different methods used:

- a. Review of leading literature on loss and damage and an overview of the status of existing knowledge with emphasis on empirical studies;
- b. Document analysis of relevant government policies, reviews, reports, etc. in the sectors concerned in the three countries;
- c. In-country consultations with:
  - Government stakeholders from relevant sectors, including climate change, disaster management, economic and development planning, agriculture, forestry and fisheries, tourism, trade and industry, social development, environment and foreign affairs, women, youth and other vulnerable groups
  - Private sector stakeholders with an economic interest in loss and damage

- Development partners engaged in loss and damage discussions
- Men and women from communities that are already being impacted by climate change

#### **1.4 Framework for analysing the gaps**

Three simple steps were used to analyse the data collected. The first step involved identifying the current status of events. The second step involved identifying needs to bridge the gaps and the third step involved formulating recommendations in the form of proposed future actions. This third step was guided by directly by the needs identified in the second step.

More specifically, the first step involved an assessment of the current knowledge of loss and damage; identification of loss and damage issues and impacts by sector; current projects and programmes on loss and damage; current plans, policies and legislation on loss and damage; current tools, methodologies and guidelines on loss and damage and an assessment of non-economic losses and migration, displacement and population mobility. The second step, involved identifying country-level needs, describing those needs based on the assessments carried out in the first step. The third step involved formulating country-specific recommendations based on the sector-specific needs.

#### **1.5 Challenges**

Time constraints were the major challenge with the project in terms of being able to fulfil all of its requirements. The terms of the project imposed a very tight timeframe of 60 days for the completion of three gap analyses in three culturally, geographically and economically distinct PICs. These gap analyses included conducting data collection and in country consultations over a vast region which presents specific travel challenges. While some of this challenge was mitigated by engaging in-country specialists, the breadth of sectoral coverage requested was nevertheless a challenge for one / two in-country specialists to cover. Project design on follow on work should bear in mind these specific challenges.

#### **1.6 Content of the report**

This report is divided into 5 parts. Part 1 provides a background to the gap analysis and the project objective, the methodology used and some of the challenges involved. Part 2 focuses on developing a common understanding of loss and damage. This is done by providing a brief background to loss and damage under the UNFCCC, proposing a working definition of loss and damage and the outlining the

scope of loss and damage, as well as setting out the current treatment of loss and damage under the UNFCCC. Part 3 looks at the current state of knowledge of loss and damage, in-country loss and damage issues identified by sector including impacts experienced, an assessment of the current projects, programmes, plans, policies, legislation, tools, guidelines and methodologies available on loss and damage and an assessment of non-economic losses, migration, displacement and population mobility. Part 4 identifies and describes the needs based on the gaps and/or information lacking from the assessments in part 3. Part 5 provides key national recommendations towards a national programme on loss and damage, part 6 provides a concept paper on regional actions on loss and damage drawn from the three country recommendations and finally part 7 provides a list of references consulted for this report.

## 2. COMMON UNDERSTANDING OF LOSS AND DAMAGE

### 2.1 Background to Loss and Damage under the UNFCCC

In 1991, Vanuatu as the Chair of the Alliance of Small Island States (AOSIS) put forward to be part of the UN Framework Convention on Climate Change an insurance scheme to address the consequences of sea level rise. Although this was not taken up entirely under the 1992 agreement, reference to insurance is made in Article 4 (8) of the Convention. It states that in the “implementation of the commitments in this Article, the Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures, especially on” small island countries and other countries also identified under Art 4 (8).

In the run up to the global climate change conference in Copenhagen, AOSIS included in its proposed legally binding Protocol, a section that establishes an international mechanism to comprehensively address the long standing needs of small island developing states. The AOSIS loss and damage proposal can be categorised into the following key areas:

- Risk assessment;
- Risk management, including through risk sharing and risk transfer;
- Approaches to address slow onset events; and
- Approaches to address recovery, rehabilitation and permanent losses.

Although Parties at the Copenhagen meeting did not agree on a binding outcome, the same proposal with a few amendments formed AOSIS’s position calling for the establishment of an international mechanism to address loss and damage from the adverse effects of climate change. At the 19<sup>th</sup> session of the Conference of the Parties in Warsaw, Parties to the UNFCCC established the Warsaw International Mechanism on Loss and Damage under Decision 2/CP.19.

### 2.2 Working Definition of Loss and Damage

The growing importance of loss and damage for the international community has been highlighted by the IPCC (2014). However, in the context of the UNFCCC, there is yet to be an agreed definition of what loss and damage is. Nevertheless, a working definition has been proposed by Warner et al (2012) defining loss and damage as “the negative effects of climate variability and climate change that people have not been able to cope with or adapt to”.



The scope of loss and damage has been proposed to result from a spectrum of climate change impacts, from extreme events to slow onset processes (UNFCCC, 2012; Warner et al., 2012). Loss and damage emanating from climate change impacts can be economic in nature, such as loss of income or damage to property and assets, and non-economic, which include cultural, social and psychological impacts of climate change, as well as the loss of biodiversity and ecosystem services, amongst others (Morissey and Oliver-Smith, 2013).

Moreover, Verheyen (2012) argues that there are three types of loss and damage: i) avoided, ii) unavoided and iii) unavoidable. Avoided loss and damage is used to characterise the impacts of climate change that are avoided by mitigation and adaptation. Unavoided loss and damage could have been avoided, but has not been avoided because of inadequate mitigation and adaptation efforts. Lastly, there is some loss and damage that is unavoidable no matter how ambitious mitigation and adaptation efforts are. Those impacts that are either unavoided or unavoidable will need to be addressed by a range of approaches beyond mitigation and adaptation, such as risk transfer tools and insurance and risk retention measures including social safety nets and contingency funds. Ultimately, the more successful mitigation and adaptation efforts are, the less loss and damage will be incurred.

### **2.3 Loss and Damage extreme and slow onset events**

Siegele (2012) argues that novel climate conditions and unprecedented climate change impacts may occur on a variety of temporal and spatial scales. A distinction is sometimes made between “rapid onset” and “slow onset” events. A rapid onset event may be a single, discrete event that occurs in a matter of days or even hours, whereas slow onset events evolve gradually from incremental changes occurring over many years or from an increased frequency or intensity of recurring events.

A technical paper on slow onset events produced by the UNFCCC in 2012, further highlighted that there are some important relationships between rapid onset and slow onset events. Drought, for example, is an extreme weather event, but it is also closely linked to slow onset, incremental climatic change. This has also been highlighted by the IPCC (2007). Moreover, an ecological threshold or tipping point was noted where “the point at which there is an abrupt change in an ecosystem quality, property, or phenomenon, or where small changes in one or more external conditions produce large and persistent responses in an ecosystem. Ecological thresholds occur when external factors, positive feedbacks, or nonlinear instabilities in a system cause changes to propagate in a domino-like fashion that is potentially irreversible. Once an ecological threshold is crossed, the ecosystem in question is not likely to return to its previous state” (CCSP, 2009, p.1). The IPCC further observed that the “limits to resilience are faced when thresholds or tipping points associated with social and/or natural systems are exceeded, posing severe challenges for adaptation” (IPCC, 2012, p.20).

## **2.4 Loss and Damage under the UNFCCC's Cancun Adaptation Framework**

In the context of defining loss and damage, the Cancun Adaptation Framework established under UNFCCC decision 1/CP.16, identifies slow onset events to include “sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification”. The technical paper on slow onset events produced by the UNFCCC (2012) also provides a detailed outline of some of the impacts of slow onset events listed under the Cancun Adaptation Framework.

### **3. CURRENT STATE: LOSS AND DAMAGE ISSUES/ SECTOR SPECIFIC**

The following sectors, departments, organizations were involved in the Vanuatu country consultation: Department of Fisheries, Department of Agriculture, Department of Forestry, Department of Environment, Water Office of the Department of Environment, Ministry of Health, Vanuatu Cultural Centre, Chamber of Commerce and Industry, Ministry of Education, Department of Women and Disability, United Nations Unit/Ministry of Foreign Affairs, National Disaster Management Office (NDMO)- Vanuatu Meteorology and Geo Hazards Department (VMGD), Project Management Unit of VMGD and representative of NGO from VANWODS.

#### **3.1 Knowledge of Loss and Damage**

Generally, there is far more knowledge and understanding of loss and damage in the context of extreme events such as cyclones and flooding. However, there is little knowledge and understanding in terms of loss and damage in the context of slow onset events. The current knowledge and understanding of certain slow onset events relate to current activities that focus on long term monitoring and observation of processes that change slowly over time, such as the monitoring of sea surface temperature and coral bleaching. Additionally, knowledge of slow onset events is a result of global research and monitoring activities such as the work that is done by NOAA on ocean acidification, and work produced by the UNFCCC and the IPCC, on slow onset events.

Thus there is a knowledge gap in relation to slow onset events and their impacts, which exists not only at the sector specific level but also at the provincial level and at the community level. Some gaps identified in terms of the knowledge and understanding of loss and damage from climate change include, the lack of a definition of loss and damage not only at the global and regional levels but also at the national level, limited understanding of the different categories of loss and damage such as extreme events and slow onset events and their different impacts on different sectors and communities. In decision 3/CP.18, paragraph 7, the Parties to the UNFCCC identified a long list of areas requiring further work to advance the understanding of and expertise on loss and damage.

#### **3.2 Loss and Damage Extreme, Slow Onset Events and Impacts**

Those involved in managing key sectors in Vanuatu identified loss and damage events, whether extreme or slow onset events, of importance for their specific sectors. These loss and damage events are identified in relation to what the sector management views as important and are based on impacts in sectors from events that are currently being experienced and reported at the national level or impacts

from events that are observed in relation to global research, literature, observation and monitoring.

### **Fisheries Sector (Department of Fisheries)**

Loss and damage in the context of Vanuatu's fisheries sector is treated as very important because it has major risks to the overall economy, food security and the livelihoods of the people of Vanuatu. Some of the impacts currently being experienced are creating major losses of essential eco-systems such those critical to coastal fishing that many communities rely on for their livelihoods.

#### **Loss and damage events**

The fisheries sector identified the following loss and damage events as important to the sector:

1. Ocean acidification- Ocean acidification has been captured as an issue in some of the sector discussions but not a lot has been done on the issue at the national level, including the absence of an ocean acidification monitoring system in Vanuatu. Ocean acidification is a concern for fisheries in Vanuatu because it will have impacts on the shellfish size and will also affect current policy on the size of shellfish catch permitted. The concerns noted are not based on observed impacts experienced at the national level but are made in relation to international research and literature on ocean acidification (Kroaker et al 2013, Tanhua et al 2015). The recent IPCC 5<sup>th</sup> Assessment Report also provided a basis for understanding some of the projected impacts of ocean acidification;
2. Siltation- There is not a lot of information available on siltation., but it is an event that the sector has experienced. This is when silt from the soil goes into the ocean. Some of the observed effects of siltation are its impacts on coral reefs and its contribution to ocean acidification. There is currently no monitoring of siltation in place at the national level; and
3. Rising sea surface temperature- Rising sea-surface temperature is identified as important for the fisheries sector because of its impact on coral reefs. This is an event that the sector has experienced.

#### **Loss and damage impacts that are currently experienced**

The sector also identified the following impacts it has experienced. These include:

1. Crown of thorns- crown of thorns is described as a pest species which impacts on different species fisheries habitats. Crown of thorns is considered to be a climate change related pest with observed links to fish poisoning and increases in fish poisoning events; and

2. Coral bleaching- coral reefs are the driving element of all coastal fisheries in Vanuatu and conducting on-going observation, monitoring and assessment are important activities for the sector. The significance of the impacts to the sector is highlighted in the recent National Oceanic and Atmospheric Administration (NOAA) of the United States Department of Commerce report on what warmer temperatures may mean for major coral bleaching in the tropical Pacific and Indian Oceans.

### **Agricultural Sector (Department of Agriculture)**

The impacts of climate change on the agricultural sector include reduction in crop yields and damage from cyclonic activity, increases in evapotranspiration, changes in growing seasons and reduction in water availability. There is also growing evidence of soil erosion and loss of soil fertility due to improperly managed deforestation and environmental degradation (SPREP, Pacific Adaptation to Climate Change Programme for Vanuatu, Country Consultation, cited in Climate Risk and Vulnerability Country Profile 2011).

The Agricultural sector has identified the following loss and damage events as important for the sector. These include cyclone, drought and sea level rise. The sector also identified increased incidences of pests and diseases, both established pests as well as new incursions, and volcanic activities and the impacts of volcanic ash as an important loss and damage issue for the sector. However, then impacts of volcanic are outside the scope of both climate-change related extreme and slow onset events.

#### **Loss and damage events include:**

1. Cyclones- Loss and damage as a result of extreme events such as cyclones is very familiar and known to the agricultural sector and to the communities involved in agricultural activities;

2. Drought- drought is also a concern to the agricultural sector. Drought in Vanuatu is related to the El Nino (ENSO –El Nino Southern Oscillation) phenomenon. The latest ENSO episodes, which resulted in dry conditions in Vanuatu, were in 1982/83, 1990/95 and 1997/98. The worst period of drought in Vanuatu was in 1993. With the El Nino expected in Vanuatu in the next few months, the impact of drought on the sector is a concern; and

3. Sea level rise- Smaller islands have reported that sea level rise have already impacted the ground water and have reported saltwater intrusion in the water table.

#### **Loss and damage impacts that are currently experienced**

In addition to the loss and damage events (both extreme and slow onset), the sector has also identified impacts it has experienced. These include:

1. Erosion- Erosion is also identified as a loss and damage impact that affects the agricultural sector. Erosion has been reported to take place both inland and in coastal areas;
2. Flooding- Flooding is another impact that is identified as a key loss and damage issue for the sector. Flooding affects both coastal and inland communities;
3. Saltwater intrusion- Saltwater intrusion and its impacts on coastal areas and smaller islands have been identified as a loss and damage issue and an impact faced by the sector. Some of the smaller islands have reported water contamination due to sea level rise and coastal flooding; and
3. Volcanic ash- Volcanic ash although not directly a climate change related event, is however identified by this sector as an important impact leading to loss and damage.

### **Forestry Sector (Department of Forestry)**

The Forestry sector has identified the following loss and damage events. These include: cyclone, drought, biodiversity loss, forest degradation and increasing temperature rise. Cyclone, drought and increasing temperature are events with impacts that the sector has experienced. Although biodiversity loss and forest degradation were noted as loss and damage events that are important to the forestry sector, there is however very little knowledge and information available to the sector on these events and their impacts on the sector.

The sector has also reported the following impacts as impacts it has experienced. These include flooding, inland and coastal erosion, changes in the seedling and fruiting seasons. The impacts of cyclone on trees include damage to trees from wind. Coastal erosion is reported to have affected trees on the coast including mangroves and general climate variability is affecting the seedling and fruiting seasons that are important to the rejuvenation of trees.

### **Tourism Sector (Department of Tourism)**

The Tourism Sector accounts for 20% of the countries Gross Domestic Product.

#### **Loss and damage events include:**

The sector has identified the following loss and damage events as important for the sector:

1. Cyclones- Cyclones were identified as a major loss and damage extreme event for the sector. Experience from cyclone Pam shows that most tourist operators, whether large, medium or small were affected; and

2. Sea level rise -Sea level rise has been identified as a loss and damage event for the sector. This is particularly an issue for operators on the coastal and low-lying islands.

**Loss and damage impacts that are currently experienced** The sector has also identified the following impacts as impacts that it has experienced:

1. Erosion- Erosion in the coastal areas have been reported to impact operators on the coast and have been linked to sea level rise;
2. Flooding- inland flooding of rivers, storm surges, heavy rain and coastal flooding are impacts that are identified as affecting the sector;
3. Volcanic ash- Volcanic ash, although is not directly a loss and damage from climate change impact, has been identified by the tourism sector as an important impact that affects the sector; and
4. Loss of income- loss and income for hotel, tourist operators and employees were identified as key loss and damage impacts affecting the sector. While some have managed to recover after cyclone Pam, a large number are still recovering. The cost of reconstruction and rebuilding after a disaster is very expensive for a lot of operators in the sector. Loss of income for both operators and employees as a result of temporary or permanent closure is increasingly a concern for the sector.

### **Water Sector (Department of Environment)**

The water sector is an important sector for Vanuatu. Water was identified after cyclone Pam, as one of the priority issues for the Pam post disaster needs assessment.

**Loss and damage events include:**

The sector has identified the following loss and damage events:

1. Cyclones- Extreme events such as cyclones affect the water sector in terms of damage to water reservoirs through flooding causing water contamination and damage to rain water harvesting equipment and water catchments;
2. Drought- Drought in Vanuatu is related to the El Nino (ENSO –El Nino Southern Oscillation) phenomenon. The latest ENSO episodes, which resulted in dry conditions in Vanuatu, were in 1982/83, 1990/95 and 1997/98. The worst period of drought in Vanuatu was in 1993; and
2. Sea level rise- Some coastal communities have reported contamination of fresh water due to sea level rise. The impacts of saltwater intrusion and water

contamination have been identified as results of both sea level rise and coastal flooding.

### Health Sector

Climate change impacts on the health sector is a new area particularly the impacts of climate change on health issues such as new diseases brought about by climate change.

**Loss and damage events include:**

The health sector has identified the following loss and damage events as important for the sector:

1. Cyclones –Extreme events such as cyclones pose major risks to hospital infrastructure and medical supplies. Weather related morbidity and mortality, vector borne disease and water borne diseases due to increase in the incidence and intensity of extreme weather events such as cyclones, hurricanes, floods, droughts, and wildfires may adversely affect people’s health immediately during the event or later following the event (WHO, n.d, NIEHS-led Inter Agency Inter-Agency Working Group on Climate Change and Health Report 2010); and
2. Rising temperature- Rising temperature and the introduction of new climate related disease has been identified by the health sector as an important area. There are new diseases that a linked to climate change and there are some common diseases that are exacerbated by climate change such as diarrhea, cholera and typhoid. Consequences of climate change, such as extreme heat waves, rising sea-levels, changes in precipitation resulting in flooding and droughts, intense hurricanes, and degraded air quality, affect directly and indirectly the physical, social, and psychological health of humans (WHO, n.d, NIEHS-led Inter Agency Working group on Climate Change and Health 2010).

### Vanuatu Cultural Centre

The Vanuatu Cultural Centre is under the Vanuatu National Council (VNC) and the VNC is under the Minister who holds the Culture portfolio. The Vanuatu Cultural Centre is currently under the Ministry of Home Affairs. The Cultural Centre has a number of departments that deal with matters, such as archaeology and cultural heritage. The impacts of climate change on culture are increasingly becoming more prevalent, especially in relation to loss of culture, loss of identity, loss of traditional knowledge and loss and damage to cultural heritage sites.

**Loss and damage events include:**

The Vanuatu Cultural Centre has identified the following loss and damage events:



1. Cyclones- The impact of extreme events such as cyclones on the cultural sector are linked to loss and damage to cultural heritage sites and traditional meeting houses; and

2. Loss of traditional knowledge- Loss of traditional knowledge as a result of climate change has been identified by the Cultural Centre as impacts that Vanuatu is currently experiencing. These include losses of traditional knowledge associated with planting, weather observation, food production and food security, crop diversification, traditional knowledge in relation to house building and coping mechanisms after a disaster.

### **Chamber of Commerce and Industry**

The Vanuatu Chamber of Commerce & Industry was established under the Chambers of Commerce & Industry Vanuatu Act CAP 236 in June 1995. Under the Act all business license holders are VCCI members. Ten percent of each and every business license fees paid to the Department of Customs & Inland Revenue goes to the VCCI. The VCCI represents several business sectors which include land transport, shipping, aviation, large commerce, small commerce, agriculture, tourism, finance, manufacturing, women's group, public utilities, etc. According to the 2013 membership data that is the number of business license holders in Port Vila and Luganville, the VCCI has a registered number of members at 1,844.

Climate change impacts affect the VCCI's members in different ways depending on the nature of the different business sectors. Tourism and agriculture sectors are most affected by climate change compared to others.

#### **Loss and damage events include:**

The Chamber of Commerce has identified the following loss and damage events as important to the sectors and members that they work with:

1. Cyclones -Cyclones affects all the sectors the Chamber of Commerce works with and the members under those sectors (see sections on different sectors included in this study);
2. Drought- Drought affects sectors such as agriculture, forestry and tourism (see also the sector specific information); and
3. Sea level rise- Sea level rise affects sectors such as tourism and agriculture (see also the sector specific information).

### **Education Sector**

The Ministry of Education has a role in ensuring that educational infrastructure and schools are safe for students and staff, and include preparing schools by providing information to schools on how to prepare before a disaster occurs.

**Loss and damage events include:**

The Education Sector identifies the following loss and damage events:

1. Cyclones- Major impacts of cyclones are the loss and damage in relation to school buildings, school furniture and teaching resources; and
2. Sea level rise- Sea level rise is evident in some provinces. Schools that are located on the coast and other areas experiencing sea level rise have been asked to relocate.

**Loss and damage impacts that are currently experienced**

In addition to the identified events, the following impacts were also noted. These are impacts have been identified as having been experienced by the sector:

1. Erosion- Erosion has been reported as causing damages to some school buildings. Some schools have been advised to relocate to higher ground and to less vulnerable areas; and
2. Flooding- Inland and coastal flooding is also causing loss and damage to schools that are located close to rivers and to the coast.

**DEPARTMENT OF WOMEN AFFAIRS & DISABILITY**

Department of Women Affairs leads the gender advocacy cluster. This cluster deals with vulnerable groups, gender based groups, disability and internally displaced persons.

**Loss and damage events include:**

The Department of Women Affairs and Disability identifies the following loss and damage events. These are events that are identified to have affected women and disability:

1. Cyclones- Cyclones affect the groups that concern the Department of Women Affairs and Disability;
2. Sea level rise- Sea level rise affects the groups that concern the Department of Women Affairs and Disability; and
3. Temperature rise- impacts the vulnerable groups that concern the Department of Women Affairs and Disability.

**United Nations Unit/Ministry of Foreign Affairs**

Climate Change is very high on the Ministry's agenda. The Ministry of Foreign Affairs is the Political Focal Point for Climate Change and advocates on the issue of climate change at the international level. The Ministry is represented at the international negotiations of the UNFCCC. The Ministry also advocates on climate change at the national level and depends highly on the expertise of the Climate Change Unit. Vanuatu is a member of the Alliance of Small Island States (AOSIS), a negotiating group on climate change at the UNFCCC and also supports the positions advocated by AOSIS.

The Ministry also relies heavily on the Ministry of Climate Change Adaptation, Meteorological, Geo Hazard, Environment, Energy and Disaster for technical information and positions on loss and damage.

### **Department of Youth and Sports**

The Department of Youth and Sports has a role to play in addressing climate change. The youth are part of the key agencies that are implementing projects on the ground whether climate change or development projects. Youth engage in different levels of education and business and take many roles in the community.

The department of Youth and Sports identifies the following loss and damage issues as important for the Department. These include: cyclones, sea level rise, drought and impacts such as coral bleaching and flooding. As agencies that play a key role in the implementation of current climate change projects on the ground, information on specific events and impacts provided by key sectors such as fisheries, agriculture, tourism, education and forestry also provide an understanding of the loss and damage events and impacts that affect the youth sector.

### **National Disaster Management Office (NDMO)- Vanuatu Meteorology and Geo Hazards Department (VMGD)**

The National Disaster Management Office is part of the Vanuatu Meteorology and Geo-Hazards Department (VMGD) under the Department Ministry of Climate Change Adaptation, Meteorological, Geo Hazard, Environment, Energy and Disaster.

The VMGD consists of seven Divisions and they are Administration; Weather Forecasting and Services; Climate; Climate Change/Project Management Unit; Geo-Hazards; Observations; and ICT/Engineering. These Divisions work together to ensure the core functions are carried out as indicated in the annual Business Plans, the Corporate Plan, and Vanuatu Priorities and Action Agenda.

The NDMO identifies the following loss and damage events: extreme events such as cyclones and slow onset events such as sea level rise, ocean acidification, rising temperature and drought. Impacts identified include inland and coastal flooding, saltwater intrusion and climate variability. Other impacts such as volcanic ash

(while not directly related to climate change) were also identified as important loss and damage issues for Vanuatu affecting many sectors and communities (please also see the sector specific information).

**Project Management Unit- Ministry of Climate Change Adaptation, Meteorological, Geo Hazard, Environment, Energy and Disaster**

The Project Management Unit is part of the Vanuatu Meteorology and Geo-Hazards Department (VMGD) and under the Department Ministry of Climate Change Adaptation, Meteorological, Geo Hazard, Environment, Energy and Disaster. The Project Management Unit (PMU) of the VMGD is Vanuatu's national focal point for the UNFCCC. The PMU is responsible for coordinating all governmental and non-governmental projects and programmes in the field of climate change, including REDD+.

The PMU has identified the following loss and damage events that are important for Vanuatu: extreme events such as cyclones and slow onset events such as sea level rise, ocean acidification, temperature rise and drought. Impacts such as inland and coastal flooding, saltwater intrusion, erosion, coral bleaching and volcanic ashes were also identified as important for Vanuatu. Although the impacts of volcanic ash may not be due to climate change, it is however identified as an important loss and damage issue and impact for Vanuatu.

Impacts as the result of ocean acidification were not identified except as observed in relation to various international research initiatives on ocean acidification (Kroeker et al 2013, Tahuna et al 2015) and on the IPCC's 5<sup>th</sup> Assessment report on the issue. This is due to limited understanding and knowledge of the issue in the national context and to the limited amount of monitoring and other work done on the issue at the national level (see also fisheries specific information on ocean acidification).

**NGO Representative  
Vanuatu Women Development Scheme (VANWODS)**

Vanuatu Women Development Scheme (VANWODS) started in 1993. It was initially funded by UNDP under Women's Affairs. In 2001, it was registered as an NGO under the Vanuatu Charitable Trust Act as VANWODS Micro-finance. In 2007, it became a self-funded NGO. Climate Change is high on VANWODS agenda as a lot of the impacts from extreme events and slow onset are already affecting its members. Its members are women small business operators. VANWODS identified the following loss and damage events affecting its members: cyclones, sea level rise, temperature rise and drought.

VANWODS also identified impacts that are already and currently being experienced by its members: damages to plantations and buildings, interruption to business and loss of income for both employers and employees as a result of cyclones. Drought is reported to affect women in agriculture and sea level rise has been reported to cause erosion and saltwater intrusion and contamination to local communities'

ground water catchments. The impacts of volcanic ash is also identified as affecting the members of VANWODS, although it is not directly due to impacts of climate change.

### **3.3 Current projects and programmes on loss and damage**

This section provides an assessment of current projects and programmes in Vanuatu that focus on loss and damage from climate change slow onset events. The assessment shows that there are currently no projects or programmes under the different sectors or in Vanuatu that are dedicated specifically to addressing impacts from slow onset events.

However, there are some projects and programmes that are in place to address extreme events. These include projects and programmes on building resilience and adapting to climate change, which could be of relevance to addressing loss and damage to slow onset events. The projects and programmes are listed by sector, with brief narratives on the possible slow onset components and the limitations of these projects and programmes as observed and experienced in the context of Vanuatu.

#### **Fisheries Sector**

There is no specific project or programme in the fisheries sector that addresses slow onset events. However, the following are current projects that have been identified to address some components of slow onset events. These include:

##### **Sea surface temperature monitoring**

Through collaboration between the Department of Fisheries and the Institute of Research and Development, automatic LOGGUS have been deployed to monitor sea temperature. The LOGGUS log the temperature at certain intervals. However, information and data from these LOGGUS have not been retrieved since they have been installed due to lack of capacity and lack of finance to enable staff to retrieve the LOGGUS. The Meteorological Office also monitors sea surface temperature as part of its core functions;

##### **Coral reef impact assessment**

There is currently some work being done on coral reef impact assessment but this is done as part of another project;

##### **Coral bleaching monitoring**

There is work on monitoring of coral bleaching but this is not well implemented and is part of other another project placed outside the sector;

##### **Ocean acidification monitoring**

There is some work that has been done on ocean acidification prediction, including ocean acidification monitoring by the Meteorological Office. The extent to what aspect of ocean acidification monitoring is taking place is not clearly articulated and the level of knowledge and understanding of ocean acidification in the sector is minimal. Knowledge of the issue comes from global research and reports provided by the IPCC and the UNFCCC.

### **Turtle monitoring programme**

There is a Turtle Monitoring Programme run by an NGO called One Small Bag Theatre Group. They formulate regulations on turtles and formulate new management plans on turtles. It is not clear however, whether the turtle monitoring involves monitoring for the impacts of ocean acidification.

### **Coping with climate change in the Pacific Island Region- CCCPIR (SPC-GIZ)**

This project runs from 2009- December 2015. The objective is to strengthen the capacity of Pacific Island countries to cope with climate change impacts and involves key actions on mainstreaming and policy development, pilot sites/adaptation trials, regional climate change capacity building and support, community-based tourism, climate change education (formal and non-formal), and activities involving forestry, livestock, crown of thorns, starfish eradication, marine and land management, tilapia and climate resilient kumara varieties. The project however does not address loss and damage.

## **Agricultural Sector**

The following projects are projects that have agriculture as a project theme.

### **Project on vegetation and land cover mapping and improving food security for building resilience to a changing climate in the Pacific communities.**

This is a regional project that is also piloted in Vanuatu. It started in 2013 and will end in December 2015.

The goal of this regional project is “to evaluate and implement innovative techniques and management approaches to increasing the climate change resilience of terrestrial food production systems for communities in selected PICTS (Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu). The project will do this through the introduction of integrated agricultural production systems based on assessments of the climate resilience of existing systems at selected sites. This will be supported by improved land-system data and analysis tools, such as vegetation and land use mapping and the application of GIS. It will build the capacity of participating countries to utilize GIS tools and techniques to help identify key areas of food supply vulnerability, monitor vegetation and land cover change over time. These assessments will be based on the most up-to-date country level climate change projections available” (National Advisory Board, n.d).

While the project contributes to building resilience of the sector, it does not address specific slow onset events such as impacts of drought that can be both an extreme event and a slow onset event.

### **Coping with climate change in the Pacific island region (CCIPR)**

This is a joint project between GIZ and SPC that started in 2009 and will end in December 2015. The objective of the programme is to “strengthen the capacity of Pacific Island countries to cope with climate change impacts including Mainstreaming & Policy Development, Pilot Sites/Adaptation Trials, Regional Climate Change Capacity Building and Support, Renewable Energy and Energy Efficiency, Community-Based Tourism and Climate Change Education (formal and non-formal)” (Vanuatu National Advisory Board, nd.).

Agriculture is listed as a theme under the project brief although the project does not address loss and damage from slow onset events.

### **Food security & agricultural responses to cyclone Pam**

This is a project involving SPC/GIZ, FAO and the Department of Agriculture and Rural Development. This is a project that looks at agriculture, food security and climate change in the sector as a disaster response to cyclone Pam. The project started in March 2015 and will run until March 2016.

The project does not address loss and damage from slow onset events.

### **Increasing Resilience to Climate Change and Natural Hazards in Vanuatu**

This is a World Bank project under the Department of Meteorological and Geo Hazard and involves also the Vanuatu National Advisory Board.

The objective of the project “is to increase the resilience of communities in Vanuatu to the impacts of climate variability and change, and natural hazards, on food and water security, as well as livelihoods” and includes actions such as “institutional strengthening for climate change adaptation and disaster risk management, increasing community resilience, promotion of improved technologies for food crop production and climate resilience and rural water security” (Vanuatu National Advisory Board).

The project does not address loss and damage from slow onset events.

### **Lidar survey of Aneityum for sustainable traditional agriculture, food security and monitoring of environmental change**

This is twelve-month project that extends from June 2014 to June 2015. The objectives include “proposal to conduct a LIDAR survey of Aneityum to assess the current state and recent damage to the island’s agricultural infrastructure in the form of terraced irrigation systems for taro production. The LIDAR survey would amount to an audit of the state of the infrastructure of the island 36 years after a

field survey of it by Spriggs, and will allow comparison between the two. In the intervening years considerable damage to the agricultural systems has been caused by extreme weather events, particularly in the western, leeward side, with significant implications for future food security on the island” (Vanuatu National Advisory Board, n.d). This involves the Ministry of Agriculture and Ministry of Climate Change.

While the project addresses some aspects of loss and damage from extreme events, it does not address loss and damage from slow onset events.

### **NARI General and Adoption of Agricultural Technologies to Mitigate Climate Change Imposed Risks to Food Security in Smallholder Farming Communities in Western in Pacific Countries**

This project started in 2012 and will end in 2016. The objectives of the project are to improve the food production capacity of smallholder farming communities in PNG, Solomon Islands and Vanuatu in areas where precipitation deficits and/or excesses and soil salinity problems are becoming significant threats to agricultural production and productivity (Vanuatu National Advisory Board, n.d).

Major actions include “community baseline status and needs assessments. Surveys will be used to provide baseline information on the food security status, management of native agro-biodiversity, especially primary forests, and soil and water resources, degree of HIV/AIDS awareness, disability profile of community members (e.g. numbers of people with hearing and sight disabilities), and their communication needs to obtain up to date situation and needs analyses regarding specific climate change risk scenarios. **Issues related to the rights of indigenous people, their culture and tradition will be explored for analysis to inform design details of the Action**” (Vanuatu National Advisory Board, n.d).

Although this project is not specifically on loss and damage, some of the major actions that focus on community baseline status and needs assessment and the baseline information on food security status, management of native agro-biodiversity, especially on forests, soil and water in relation to climate change scenarios are important also for identifying loss and damage baseline information. However, it is not clear how long this project will remain in place or how work in this area will continue to be funded once the project funds have been spent.

### **Natural Solutions to Climate Change in the Pacific Islands Region: Implementing Ecosystem-based adaptation.**

This is a SPREP, GIZ/SPC, Oxfam and Government of Vanuatu project that runs from June 2014 to June 2019.

The project “will be addressed by identifying and implementing ecosystem adaptation actions in different island ecosystems and livelihood situations. It will integrate ecosystem based approaches with wider adaptation strategies; build capacity; include non-climate stresses; involve local communities; have a multi-



partner approach; build on existing good practices in National Risk Management and ongoing Climate Change Adaptation projects (e.g. SPC-GIZ); communicate and educate” (Vanuatu National Advisory Board, n.d).

The project does not address loss and damage from slow onset events.

### **Pacific Risk Resilience Programme (PRRP)**

This project runs from January 2013 to January 2016. The Pacific Risk Resilience programme (PRRP) will focus on strengthening governance mechanisms for Disaster Risk Management (DRM) and Climate Change Adaptation (CCA) at the sub-national and local levels. The goal of the programme is: to strengthen the resilience of Pacific island communities to disasters and climate change related risk. The Pacific Risk Resilience Programme is designed to support and partner with existing stakeholder engagements / activities with a focus on strengthening governance mechanisms for Disaster Risk Management and Climate change Adaptation at all levels of decision making.

This programme does not address loss and damage from slow onset events.

### **Program for the development of climate resilient organic agriculture in Vanuatu**

This project runs from April 2014 until January 2017. The project builds on the contribution of organic farming as a means of mitigating green house gases, “cut nutrient and pesticide pollution and stop potentially harmful pesticide residues entering our food chain, build resilient farming systems capable of combating climate change and securing local food supplies...” (Vanuatu National Advisory Board, nd).

This project does not address loss and damage from slow onset events.

## **Forestry Sector**

### **REDD Plus Project**

The preparation phase of a REDD Plus Project funded by the World Bank was recently launched. The objective of this project is to identify key area of work for Vanuatu. However, this project is different from the UN REDD Programme.

This project also does not address loss and damage from slow onset events.

### **GIZ Adaptation Project- Reforestation and Food Security**

Reforestation is something the Department of Forestry also has started to work on. However, the efforts were devastated by cyclone Pam resulting in setbacks. Support for reforestation is through a GIZ funded project that addresses reforestation and food security. This project however, does not address loss and damage from slow onset events (personal communication).

## **Research**

Some research has also been done on several plant species as they relate to production and marketing.

## **Tourism Sector**

The following are projects, which have identified tourism as a key thematic area.

### **Tourism Component- SPC-GIZ Coping with climate change in the Pacific Island Region**

This project ended in January 2014. The project aimed “to strengthen the capacity of selected Pacific Island countries to cope with climate change impacts in the tourism sector through innovative partnerships and approaches that promote adaptation to climate change and a reduction of greenhouse gas emissions in the Pacific Island Countries Fiji, Samoa, Vanuatu and Palau” (Vanuatu National Advisory Board, n.d).

This project is one of the latest recorded projects involving the tourism sector although the project did not address loss and damage from slow onset events.

### **Coping with climate change in the Pacific Island Region- CCCPIR (SPC-GIZ)**

This project runs from 2009- December 2015. The objective is to strengthen the capacity of Pacific Island countries to cope with climate change impacts and involve key actions on mainstreaming and policy development, pilot sites/adaptation trials, regional climate change capacity building and support, community-based tourism, climate change education (formal and non-formal), and activities involving forestry, livestock, crown of thorns, starfish eradication, marine and land management, tilapia and climate resilient kumara varieties.

The project however does not address loss and damage from slow onset events.

### **Early Warning System**

Early warning systems are in place for communities, tourist operators and businesses. Information is provided by the Meteorological Office, which enables the sector to develop information products for operators and employers.

### **Commercial Banks and Agricultural Banks**

Commercial banks and specialised banks such as the agricultural banks are in place for tourist operators but quite often the operators do not qualify for their schemes. However, these banks do not address loss and damage from extreme events and slow onset events.

### **Vanuatu Investment Promotion Authority**

The VIPA sets minimum standards for tourist operators and businesses including ensuring that buildings reach a standard set by the Vanuatu Building Code.

### **Tourism Leisure Hospitality Technical Authority**

Working closely with the Department of Tourism Authority and the Department of Tourism, have recommended that climate change information be added to their courses.

## **Water Sector**

### **ADRA Vanuatu Sustainable Development Fund, Water Sanitation and Hygiene Program (ADRA SDF WASH Project)**

This project ended in December 2014. The programme deals with water sanitation and hygiene and will see new systems installed to ensure reliable access to clean water. However, the WASH Project does not address loss and damage from slow onset events that have impacts on water (Vanuatu National Advisory Board, n.d).

### **Water Advisory Board**

Water sector has set up its own Advisory Board and is also part of the Vanuatu National Advisory Board (NAB).

## **Health Sector**

### **ADRA Vanuatu Sustainable Development Fund, Water Sanitation and Hygiene Program (ADRA SDF WASH Project)**

This project ended in December 2014. The programme deals with Water Sanitation and Hygiene and will see new systems installed to ensure reliable access to clean water. However, the WASH Programme does not address loss and damage slow onset events that have impacts on water (Vanuatu National Advisory Board, n.d).

### **UNDP Project on Health and Climate Change**

There is a UNDP funded project that is in the pipeline.

## **Vanuatu Cultural Centre**

There are no projects on loss and damage with the Vanuatu Cultural Centre. However, there are some projects in Vanuatu that currently address cultural matters such as traditional knowledge and customary law. The projects are:

### **What value can customary law contribute to future international environmental legislation pertaining to global climate change adaptation? A Vanuatu case study**

The project runs from January 2014 to January 2018. This is a continuation of the 2010 Tabwemasana Project where research was conducted on the aspects of sustainability on behalf of the local community (Vanuatu National Advisory Board, n.d). However, this project does not address loss and damage nor non-economic losses.

### **Traditional Knowledge & Climate Indicators Project**

This project runs from January 2013 to June 2016. The objective of this project is to “document traditional knowledge (TK) on weather and climate forecasting, set up mechanisms to coordinate the collection of TK in Vanuatu, examine the reliability of that knowledge, incorporate it with conventional scientific methods, and develop mechanisms to disseminate the integrated product back to the community” (Vanuatu National Advisory Board, n.d). This project is not specifically on loss and damage but some of the activities on documenting of traditional indicators can provide important historical information on events, impacts and changes. This project addresses the issue of traditional knowledge, which falls under the scope of non-economic losses although it does directly address loss and damage relating to traditional knowledge. The project also does not address loss and damage from slow onset events.

### **Traditional Knowledge Climate Change and Disaster Risk Reduction Guidelines Project**

This project ran from April 2013 to April 2015. The objective of the project was to “develop a framework or guidelines covering the collection, access and use of "Save blong climate change mo disasta" and involved activities such as the development of guidelines and amendments to legislation on climate change and disaster risk reduction in regards to TK. This project addressed the issue of traditional knowledge, which falls under the scope of non-economic losses although it did not directly address loss and damage relating to traditional knowledge. The project also did not address loss and damage from slow onset events.

## **Chamber of Commerce and Industry**

### **Disaster Reconstruction Credit Facility (DRCF)**

The DRCF facility was introduced in March 2015 to assist businesses affected by tropical cyclone Pam in rehabilitation and reconstruction to improve economic activity and foreign earnings through the provision of a low cost back to back lending facility via domestic lending institutions. It can be reactivated in the future event of a natural disaster during the period of rehabilitation and reconstruction. It is available to all businesses affected by disaster although it should be noted, this facility is available to businesses through the commercial banks.

### **Business course with climate change**

The Chamber of Commerce runs business courses for its members and have incorporated general climate change information into their courses. The substance of the information is for general knowledge and awareness about climate change impacts but nothing substantive on loss and damage and slow onset impacts.

## **Education Sector**

### **Arttek Tanna: Naine Resilient Societies Centre**

This project started in 2011 and it is for the duration of 60 months. The project focuses on knowledge base, community preparedness and resilience, partnerships and collaboration on energy and emissions. The project however, does not address loss and damage from slow onset events.

### **Women Affairs & Disability**

### **Arttek Tanna: Naine Resilient Societies Centre**

This project started in 2011 and it is for the duration of 60 months. The project focuses on knowledge base, community preparedness and resilience, partnerships and collaboration on energy and emissions. The themes include gender, community awareness, education, youth, environment and forestry. The project however, does not address loss and damage on slow onset events.

### **Foreign Affairs**

The Ministry of Foreign Affairs is the political focal on climate change and advocates on climate change at the national, regional and the international levels. No projects on non-economic losses, migration, displacement and human mobility were identified although Vanuatu is a member of regional and international associations where these issues are being addressed

Migration, displacement and human mobility is not a department issue but rather a national and regional issue.

### **Youth and Sports**

Youth agencies play an important role in implementing climate change and development projects on the ground and youth engage at different levels.

### **Arttek Tanna: Naine Resilient Societies Centre**

This project started in 2011 and it is for the duration of 60 months. The project focuses on knowledge base, community preparedness and resilience, partnerships and collaboration on energy and emissions. The themes include gender, community awareness, education, youth, environment and forestry. The project however, does not address loss and damage on slow onset events.

### **Project Management Unite & National Disaster Management Office (NDMO) – Ministry of Climate Change Adaptation, Meteorological, Geo Hazards, Environment, Energy and Disaster**

The Ministry of Climate Change Adaptation, Meteorological, Geo Hazards, Environment, Energy and Disaster houses several departments including the National Disaster Management Office (NDMO) and Project Management Office (PMU). There are currently several projects on climate change and natural disaster

that are coordinated under the Project Management Unit. Although some of these projects are coordinated under one unit, the establishment of the National Advisory Board is to ensure inter-sectorial coordination and collaboration.

These projects are adaptation related projects that do however have some relevance to loss and damage if they are to be viewed as part of a continuum of approaches to reduce loss and damage. The projects include the following:

**IRCCNH Project- Increasing Resilience to Climate Change and Natural Hazards**

This project has a timeframe from January 2013 to December 2018. The aim of the project is to increase resilience of communities in Vanuatu to impacts of climate change variability and change, natural hazards, on food and water security as well as livelihoods. This project however does not address loss and damage from slow onset events.

**MDRR Project- Mainstreaming Disaster Risk Reduction Projects**

This project has the aim of mapping risk to support urban preparedness and planning and will include the development of hazard and risk models and maps for urban Port Vila, the establishment of tsunami warning systems for Port Vila and Luganville and the strengthening of institutional arrangements that integrate climate change and disaster risk reduction. This project does not address loss and damage from either extreme events or slow onset events.

**PCRAFI- Pacific Catastrophic Risk Assessment and Financing Initiative**

Vanuatu as a pilot country under the PCRAFI and received a rapid pay out of 1.9million USD after the risk pooling facility triggered by Category 5 cyclone Pam. This project is a pilot project involving Vanuatu. It addresses extreme events but it does not address slow onset events.

**VCAP- Vanuatu Coastal Adaptation Project**

This is a UNDP GEF-LDC project aimed at working on building resilience through improved infrastructure, livelihood and increased food production and improving the quality of life in targeted vulnerable areas in the coastal zones. The project does not address loss and damage from either extreme events or slow onset events.

**Pacific Risk Resilience Programme**

This is a Pacific regional programme of which Vanuatu is a part. The aim of the programme is to help build national and regional risk governance enabling environments to improve the resilience of Pacific communities. This includes actions, such as risk governance capacity building at the community level, risk governance planning at sub national governments and communities, risk integration across government policies, plans and budgets and sharing of information across all levels of the country and within the region. Although some aspects of the activities identified under this project could be important to addressing loss and damage, particularly in the risk governance area, the project does not specifically address loss and damage to slow onset events.

### **EDF10- Disaster Risk Reduction Support Initiative (European Development Fund)**

This project supports several disaster risk reduction initiatives within Vanuatu. The project does not address loss and damage from either extreme events or slow onset events.

### **SPC and USAID- Food Security Project**

This project started in 2012 and Vanuatu is one of the project countries in the Pacific. The project supports countries in their efforts to tackle the adverse effects of climate change on food production. The support includes updating vegetation and land cover maps and identifying appropriate adaptation measures to build resilience to climate change. This project does not address loss and damage to slow onset event.

### **PACC- Pacific Adaptation to Climate Change Project)**

This is an adaptation-based project that also addresses sea level rise. While the project is not directly related to loss and damage, it does address aspects of slow onset events – namely, sea level rise.

### **JICA- Japan International Cooperation Agency**

JICA has provided for the expanding of networks for monitoring seismic events and tides. While this project is not directly related to loss and damage, it does address aspects of slow onset events.

### **The Pacific Sea Level Monitoring (PSLM), operates under the Climate and Oceans Support Program in the Pacific (COSPPac)**

This programme is a continuation of the 20-year South Pacific Sea Level and Climate Monitoring Project (SPSLCMP). The 14 Pacific Island countries participating in the project are the Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. The objective of the project is to generate an accurate record of variance in long-term sea level for the Pacific region. The project also provides information about the processes, scale and implications of sea-level rise and variability of extreme events on Pacific communities. It also makes sea-level data more readily available and usable to support management of coastal infrastructure and industries (Australia Bureau of Meteorology, n.d). This project is part of regional sea level rise monitoring which addresses both aspects of loss and damage: extreme and slow onset events.

### **Ministry of Climate Change Adaptation, Meteorological, Geo Hazards, Environment, Energy and Disaster- On-going business as usual**

Monitoring volcanic, seismic activities and associated events, collecting climate data, which contributes to the global analysis of climate change.

### **Ozone Depleting Substance Project**

UNEP funds a project on ozone depleting substances in Vanuatu.

#### **NGO VANWODS**

##### **Micro-finance schemes**

VANWODS has two products that are available only to its members. They are Micro-savings and loans. The loan scheme does not require a guarantor or assets for security. It works on a trust and communal basis. Members can withdraw from the savings and loan scheme when a disaster happens to help members with rehabilitation and reconstruction.

### **3.5 Loss and Damage Policies, Plans and Legislation**

This section looks at the current sector/department/organizational policies, strategic plans, regulations and legislation. The aim is to identify what current policies, plans and legislation already address loss and damage.

#### **Fisheries Sector**

Loss and Damage is not featured in current fisheries policies, plans and legislation. However, there is a draft National Climate Change and Disaster Risk Reduction Policy that is applicable to this sector and will influence the work and activities in the sector. The draft National Policy does address loss and damage although it does this merely by acknowledging the Warsaw International Mechanism on Loss and Damage.

#### **Agriculture Sector**

A draft National Climate Change and Disaster Risk Reduction Policy was endorsed recently. The policy aims at mainstreaming climate change and disaster risk reduction into the different sectors including the agricultural sector. This draft policy does address loss and damage although it does this merely by acknowledging the Warsaw International Mechanism on Loss and Damage.

#### **Forestry Sector**

There are draft policies on REDD+ and Reforestation but none of these draft policies address loss and damage. However, there is a draft National Climate Change and Disaster Risk Reduction Policy that is applicable to this sector and will influence the work and activities in the sector. This draft national policy does reference loss and damage by acknowledging the Warsaw International Mechanism on Loss and Damage.

#### **Tourism Sector**



The Tourism sector has a National Tourism Plan and different Provincial Plans, including a draft Eco Tourism Policy. These sector documents do not address loss and damage. However, the tourism sector is currently reviewing its sector plan. Part of the lessons learned from cyclone Pam has prompted the sector to include climate change and loss and damage in its new plan. This will be in line with the new Climate Change and Disaster Risk Reduction Policy.

### **Water Sector**

Loss and Damage is yet to be captured in the National Water Strategic Plan 2008 – 2018 and policies. However, there is legislation that addresses water and disaster risk reduction and climate change adaptation. For instance, the Water Resource Management Act and the Environmental Act that deal with aspects of water management and disaster risk reduction.

The water sector has several plans in place that have recently been endorsed including a Water Security Plan that deals with protection and Water Safety Plan that deals with quantity and quality. Although the plans include some attempts at addressing climate change and disaster risk reduction, there is no clear reference to loss and damage, particularly slow onset events.

Nevertheless, the draft National Climate Change and Disaster Risk Reduction Policy will also be applicable to this sector. The draft national plan makes reference to loss and damage by acknowledging the Warsaw International Mechanism on Loss and Damage.

### **Health Sector**

#### **Draft Health Sector Plan**

Loss and damage is not referenced in the current sector strategic plan and policies. However, climate change, disaster risk reduction and certain slow onset impacts are incorporated into the current draft sector plan. Mainstreaming climate change and loss and damage into health policies is a work in progress.

#### **Draft National Plan on Health and Climate Change**

There is a Draft Plan on Health and Climate Change. The draft plan includes climate change and certain slow onset impacts. This project is a collaborative effort with UNDP and the Climate Change Unit.

#### **Draft National Climate Change and Disaster Risk Reduction Policy**

This policy is applicable to the health sector and will influence the work and activities in the sector. This draft national policy make reference to loss and damage by acknowledging the Warsaw International Mechanism on Loss and Damage.

Loss and damage is not referenced in the current sector strategic plan. However, there is a draft National Climate Change and Disaster Risk Reduction Policy that is applicable to this sector and will influence the work and activities in the sector. This draft national policy makes reference to loss and damage by acknowledging the Warsaw International Mechanism on Loss and Damage.

### **Chamber of Commerce**

Loss and damage from climate change is not in the strategic plan or policy. However, general climate change information is included in the activities of the Chamber. For example, climate change information is now added to a Module on Business Management.

#### **Draft National Climate Change and Disaster Risk Reduction Policy**

The draft National Policy is applicable to this sector and will influence the work and activities in the sector. This draft national policy make reference to loss and damage by acknowledging the Warsaw International Mechanism on Loss and Damage.

### **Education Sector**

The Ministry of Education has several plans in place. They are the: National Emergency Plan, National Housing Plan, Vanuatu Education Support Plan and the Vanuatu Education Support Plan. Loss and damage is not addressed in the current plans and policies. However, there is a draft National Climate Change and Disaster Risk Reduction Policy that is applicable to this sector and will influence the work and activities in the sector.

The Ministry of Education has a Facilities Guideline, which provides for the minimum standard required of school facilities.

The Ministry of Education as part of business as usual has Provincial Disaster Committees in place. Their roles were limited to being reactive only to post-disaster scenarios; however, since the experience with cyclone Pam, there is an intention to have these committees do more than react only when a disaster happens.

The draft National Climate Change and Disaster Risk Reduction Policy will be applicable to this sector and will influence the functions and activities of the sector. The draft National Policy addresses loss and damage by acknowledging the Warsaw International Mechanism on Loss and Damage.

### **Women Affairs & Disability**

### **Draft Climate Change Policy**

The Department of Women Affairs has a draft policy on climate change. The policy does not specifically refer to loss and damage but it is broad enough to capture the different impacts of both extreme and slow onset events.

#### **Foreign Affairs**

Loss and damage is not featured in the policies, plans and legislation of this ministry but the Ministry of Foreign Affairs as the Political Focal Point for climate change relies heavily on the Ministry of Climate Change for technical advice and information on climate change. The draft National Policy on Climate Change and Disaster Risk Reduction will be applicable to the Ministry and this draft does acknowledge the Warsaw International Mechanism on Loss and Damage.

#### **Youth and Sports**

Neither loss and damage nor climate change are not featured in the Youth and Sports plans and policies but they are, however, captured in their programmes and activities. The draft National Policy on Climate Change and Disaster Risk Reduction will also be applicable to this department.

#### **Project Management Unite & National Disaster Management Office (NDMO) – Ministry of Climate Change Adaptation, Meteorological, Geo Hazards, Environment, Energy and Disaster**

There is a draft National Climate Change and Disaster Risk Reduction Policy currently in its final stage. This policy takes into account loss and damage by making reference to the Warsaw International Mechanism on Loss and Damage under the UNFCCC.

The Vanuatu Meteorological and Geo Hazard Department and the National Disaster Management Office Acts are also currently under review and are expected to consider loss and damage from climate change. The National Disaster Management Office also has an Emergency Preparedness Plan.

Vanuatu has recently endorsed a National Sustainable Development Plan that will replace the Priority and Action Agenda 2006-2015. The National Sustainable Development Plan takes into account climate change and loss and damage.

The Ministry of Climate Change Adaptation, Meteorological, Geo Hazards, Environment, Energy and Disaster have also worked across different sectors to develop and update legislation, including the following: Water Resource Management Act, Environment Conservation Act, Coastal Marine Protection Act, Infrastructure, Drainage Act and Building Code.

There are also new acts, which include the Ozone Layer Protection Act, Waste Management Act, Pollution Control Act, Ocean Management Act (currently under consultation), and a draft National Environment Policy.

### **NGO VANWODS**

Loss and Damage is not in the VANWODS plans and policies but it is captured in its programmes and activities. The products they provide are broad enough to capture rehabilitation and reconstruction from climate change impacts that its members are facing. The draft National Policy on Climate Change and Disaster Risk Reduction will also be applicable to this Department.

### **3.6 Tools, Methodologies, Guidelines**

This section looks at current tools, methodologies and guidelines on loss and damage. These can be assessment tools, methodologies or guidelines on loss and damage.

### **Fisheries Sector**

To monitor sea surface temperature, the fisheries sector is using an automatic LOGGUS. Otherwise, there are no tools, methodologies and guidelines to address loss and damage.

### **Agricultural Sector**

There is an assessment tool to assess loss and damage from cyclones but there is nothing in place to assess slow onset events. The tool used to assess cyclones is also used to assess volcanic ash impacts. However, there is nothing in place to assess the impacts of flooding, drought, erosion and saltwater intrusion.

### **Forestry Sector**

The sector has a Vanuatu Resource Information System (VANRIS). This tool is a map-based information system for soil types, rivers and roads.

However, there is currently no impact assessment tool. After cyclone Pam, the sector was unable to conduct an assessment of the resulting loss and damage.

### **Tourism Sector**

The tourism sector has an impact assessment form that was used after cyclone Pam. This is a simple questionnaire that was used by the sector to assess loss and

damage. The forms were sent out to operators in the different provinces to complete and return to the Department of Tourism.

There are some insurance products available in Vanuatu but not every operator is able to afford insurance. Some operators also use traditional materials that are outside the scope of what is covered by most insurance policies.

The sector has a classification system for different types of buildings and has different standard guidelines for each type of structure that are in line with the minimum requirements of the Vanuatu Building Code. For example, there is a standard guideline for bungalows.

While there is an assessment tool (form) used to assess impacts of cyclones, there is nothing in place for loss and damage from slow onset events.

### **Water Sector**

The water sector is part of the National Advisory Board (NAB) on Climate Change through the Project Management Unit of the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management.

There are tools in place, such as vulnerability assessment tools and tools for the assessment of water quality, but there are no tools, guidelines or methodologies in place for the assessing loss and damage from the impacts of slow onset events.

### **Health Sector**

There are currently no tools, guidelines and methodologies in place to address loss and damage.

### **Vanuatu Cultural Centre**

There are currently no tools, guidelines and methodologies in place to address loss and damage.

### **Chamber of Commerce and Industry**

There is an assessment tool to assess the impacts of cyclones. This was used as part of the post-cyclone Pam assessment. The Chamber of Commerce used this tool to assess the loss and damage inflicted on its members. However, there are no tools, guidelines and methodologies to assess the impacts of slow onset events.

### **Education Sector**

The Ministry of Education has a Guideline on Facilities, providing the minimum standards required for school facilities. However, there are no tools, guidelines and methodologies in place to address loss and damage.

### **Women Affairs & Disability**

The main concern of the Department of Women Affairs and Disability is the mainstreaming of gender issues into national, provincial and sector policies and plans. The Office of Women Affairs and Disability has created a survey form on how to assess whether projects and programmes have mainstreamed gender issues into policies, projects and programmes.

However, there are currently no tools, guidelines and methodologies in place to address loss and damage.

### **Foreign Affairs**

The Ministry of Foreign Affairs is the Political Focal Point for Vanuatu on climate change. The climate change agenda is high on the Government and the Ministry's priorities. They rely heavily on the expertise of the Ministry of Climate Change Adaptation, Meteorological, Geo Hazards, Environment, Energy and Disaster and support the draft National Climate Change and Disaster Risk Reduction Policy.

Currently there are no tools, guidelines and methodologies in place to address loss and damage.

### **Youth and Sport**

There are currently no tools, guidelines and methodologies in place to address loss and damage.

### **Project Management Unit & National Disaster Management Office (NDMO) - Ministry of Climate Change Adaptation, Meteorological, Geo Hazards, Environment, Energy and Disaster**

There are several tools and methodologies in place. These tools and methodologies were developed for climate change adaptation projects and project consultations and are relevant to the issue of loss and damage. These include: Community Partnership Tools, Vulnerability Assessment Tools, Stakeholder Liaison, Community Gender, Disability Inclusive, Community Based Adaptation, Enforcement/Implementation Tools, Project Management Unit-National Advisory Board (for the inter-sectoral coordination of climate change and disaster risk reduction projects and programmes), Department of Strategic Policy Planning and Aid Coordination Process.

However, there are currently no tools, guidelines and methodologies in place specifically to address loss and damage.

**NGO  
VANWODS**

VANWODS have developed their own internal tool for assessing loss and damage from cyclones as part of the post-impact assessment from cyclone Pam but there are currently no tools, guidelines and methodologies in place to address loss and damage from slow onset impacts.

**3.7 Non-economic losses**

In 2013, the UNFCCC released a technical paper on non-economic losses in the context of the work programme on loss and damage from climate change. The paper refers to non-economic losses as what “can be understood as the remainder of items that are not economic items” (UNFCCC 2013, p.3). Items falling under the definition of non-economic losses are those not commonly traded in markets and where there is also the absence of a market price. These characteristics make assessing the value of non-economic losses very challenging (ibid).

Non-economic losses can occur from both slow onset and extreme events, such as the loss of territory to sea level rise, and loss of life from extreme events such as cyclones (UNFCCC 2013, p.4). The paper further identifies areas where non-economic losses might occur, including, *inter alia*, life, health, displacement and human mobility, territory, cultural heritage, indigenous/local knowledge, biodiversity and ecosystem services (UNFCCC 2013, p.4, Morrissey et al 2013).

**Knowledge**

Non-economic loss, as a concept in the context of loss and damage from climate change, is a fairly new and emerging concept to most sectors in Vanuatu. There is limited knowledge and understanding of what non-economic loss is and its scope. It was included for the first time in the post-cyclone Pam assessment. The assessments were mainly on environmental impacts and impacts on NAKAMAL, traditional houses.

However, sectors, such as agriculture, forestry, tourism, water and the Vanuatu Cultural Centre identified areas that fit into the scope of non-economic loss. These include loss of traditional knowledge on crop diversification, role of traditional knowledge in addressing food security and food production, and traditional ways of coping after a disaster.

**Current programmes/projects**

There is currently no project in Vanuatu on non-economic losses. However, there are projects on aspects of non-economic losses such as traditional knowledge and customary law but these projects do not address non-economic losses directly. These projects include:

**What value can customary law contribute to future international environmental legislation pertaining to global climate change adaptation? A Vanuatu case study**

The project runs from January 2014 to January 2018. This is a continuation of the 2010 Tabwemasana Project where research was conducted on the aspects of sustainability in local communities (Vanuatu National Advisory Board, n.d). However, this project does not address loss and damage nor non-economic losses directly.

**Traditional Knowledge & Climate Indicators Project**

This project runs from January 2013 to June 2016. The objective of this project is to “document traditional knowledge (TK) on weather and climate forecasting, set up mechanisms to coordinate the collection of TK in Vanuatu, examine the reliability of that knowledge, incorporate it with conventional scientific methods, and develop mechanisms to disseminate the integrated product back to the community” (Vanuatu National Advisory Board, n.d). This project is not specifically on loss and damage but some of the activities on documenting of traditional indicators can provide important historical information on events, impacts and changes. This project addresses the issue of traditional knowledge, which falls under the scope of non-economic losses although it does directly address loss and damage relating to traditional knowledge. The project also does not address loss and damage from slow onset events.

**Traditional Knowledge Climate Change and Disaster Risk Reduction Guidelines Project**

This project ran from April 2013 to April 2015. The objective of the project was to “develop a framework or guidelines covering the collection, access and use of “Save blong climate change mo disasta” and involves activities such as the development of guidelines and amendments to legislation on climate change and disaster risk reduction as regards TK. This project addresses the issue of traditional knowledge, which falls under the scope of non-economic losses, although it does directly address loss and damage relating to traditional knowledge. The project also does not address loss and damage from slow onset events.

**Plans, policies and legislation**

Non-economic losses are not in the plans, policies or legislation of the sectors covered in this report.

**Tools, guidelines and methodologies**



No tools, guidelines or methodologies have been developed to assess non-economic losses.

### **3.8 Migration, displacement and population mobility**

Displacement and human mobility as a result of climate change are listed as non-economic losses by a technical paper on loss and damage produced by the UNFCCC in 2013.

#### **Knowledge**

Migration as a result of climate change is a concept that is not well understood in Vanuatu mainly because it falls outside the functions and responsibilities of key sectors. However, displacement and population mobility as a result of natural disasters and climate change impacts are already happening internally in Vanuatu. Communities from the coastal areas affected by coastal flooding have been asked to relocate. Communities near vulnerable rivers banks and flood plains have also been asked to relocate and move to higher ground.

#### **Current projects and programmes**

There are currently no projects or programmes on migration, displacement and population mobility in Vanuatu.

#### **Plans, policies and legislation**

Migration, displacement and human mobility as a result of natural disasters or as a result climate change are not in the plans, policies and legislation of the sectors covered in this report.

#### **Tools, guidelines and methodologies**

There are no tools, guidelines or methodologies on migration, displacement and population mobility available in Vanuatu.

## 4. LOSS AND DAMAGE NEEDS

### 4.1 Needs Identification & Description

This section identifies the needs of specific sectors, departments and organisations in relation to loss and damage. The needs are identified and the descriptions are based on the analysis performed in Section 3, above.

#### Fisheries Sector

The specific needs of the fisheries sector include the need to:

- Strengthen technical and scientific knowledge- especially in relation to ocean acidification and siltation, including the need for baseline information on ocean acidification and its impacts on different marine species.
- Institute observation and monitoring of ocean acidification, water monitoring for siltation, and continued monitoring of coral reefs.
- Assess the impacts of ocean acidification and siltation on, *inter alia*, coral bleaching, seabed grass in mangroves and coral reefs, generally.
- Mainstream loss and damage into fisheries plans and policies.
- Build and strengthen capacity including in the following areas:-
  - human capacity - additional manpower should be dedicated to work on loss and damage as current capacity is lacking;
  - understanding loss and damage including the collection and analysis of information;
  - research into relevant slow onset impacts;
  - awareness raising at the provincial and community levels on potential loss and damage from the impacts of climate change;
  - mainstreaming loss and damage into sectoral plans, policies and legislation;
  - developing tools, guidelines and methodologies on loss and damage.
- Increase financial support to be able to do any work on loss and damage as additional to current sector work.

#### Agricultural Sector

The agricultural sector has identified the need to:

- Understand loss and damage, especially slow onset impacts and their impacts on the agricultural sector, including non-economic losses.
- Strengthen data collection and build data systems in the sector for loss and damage.
- More weather observation stations in the provinces and in high prone areas located with key farmers.
- Up-skill sector staff on the issue of loss and damage and on the technical aspects of the issue and how it relates to the sector.

- Investigate the possibility of developing products on loss and damage that are appropriate for the sector and for farmers.
- Build capacity of the sector as it is currently under staffed as well as the capacity of lead farmers to understand loss and damage, including the ability to collect information on loss and damage.
- Increase financial support for any work on loss and damage that will be added to the sector. This will be for, *inter alia*, programmes, projects and staffing.

### **Forestry Sector**

The forestry sector identified the need to:

- Understand loss and damage from climate change and its impact on the forestry sector.
- Strengthen and where appropriate develop research on potential loss and damage from climate change that could affect the forestry sector, such as seed variety and seed storage.
- Build capacity in terms of data collection, research and data analysis.
- Better coordinate with other sectors including the strengthening of inter-sectorial work and collaboration.
- Conduct more pilots involving the forestry sector.
- Develop information products on loss and damage to raise awareness at the community level.
- Explore the feasibility of an insurance facility to safeguard farmers against droughts and cyclones.

### **Tourism Sector**

In terms of loss and damage, the tourism sector has identified the need to:

- Understand the issues of loss and damage and its impacts on the tourism sector, including understanding non-economic losses, migration, displacement and population mobility.
- Build the capacity of staff in the tourism sector on climate change and loss and damage.
- Mainstream loss and damage into sectoral plans, policies and legislation.
- Update the current information collection system to include loss and damage.
- Build capacity of tourist operators, focussing on pre disaster preparation, including the collection of pre disaster information about their businesses.
- Explore and develop cheaper insurance options for tourist operators.
- Increase financial support.

### **Water Sector**

The Water sector identified the need to:

- Understand loss and damage, its scope and its impacts in relation to the water sector, including non-economic losses as they relate to the water sector.
- Strengthen data collection and research on loss and damage associated with climate change impacts that affect the water sector.
- Raise awareness on loss and damage at all levels of government: national, provincial and community.
- Develop tools, guidelines and methodologies on loss and damage for the sector, such as assessment tools for the different slow onset events that impact on water.
- Increase financial support for any additional work on loss and damage.

### **Health Sector**

The health sector identified the need to:

- Understand the issue of loss and damage and how it relates to the health sector.
- Build capacity of the ministry to understand loss and damage and how it relates to the health sector and include awareness raising on loss and damage at all levels: national, provincial and communities.
- Strengthen research into areas of health and climate change including health potential loss and damage from the impacts of climate change.
- Strengthen data collection on area of health, climate change and loss and damage.
- Review current policies so that they take into account loss and damage from the impacts of climate change.

### **Vanuatu Cultural Centre**

The Vanuatu Cultural Sector has identified the need to:

- Understand potential loss and damage from the impacts of climate change as related to culture, including understanding non-economic losses, migration, displacement and population mobility.
- Build capacity in terms of the technical aspect of loss and damage.
- Develop assessment tools, guidelines and methodologies on non economic losses associated with climate change impacts.
- Raise awareness at community levels in relation to potential loss and damage from climate change impacts in the areas of culture and traditional knowledge.

### **Chamber of Commerce and Industry**

The Chamber of Commerce and Industry has identified the need to:

- Understand loss and damage and what it is.

- Clarify loss and damage from climate change impacts in relation to disaster risk management and build capacity on knowledge of loss and damage.
- Build capacity of medium and small businesses to collect pre-disaster information and post-disaster information. (Most businesses are good at collecting post-disaster information but are not good at collecting pre-disaster information.)
- Raise awareness on loss and damage and its different impacts and how that affects businesses.
- Explore more options and facilities to support businesses build resilience to climate change impacts and enhance post-disaster recovery and reconstruction, including dealing with loss and damage from climate change impacts.

### **Education Sector**

The education sector has identified the need to :

- Strengthen community programmes to raise awareness on potential loss and damage from the impacts of climate change.
- Conduct specialist assessments of all schools in Vanuatu to ensure schools are safe and climate proof.
- Include disaster risk reduction and climate change in school curriculum as an on-going programme.

### **Women Affairs & Disability**

The Women Affairs and Disability identified the need to:

- Understand what potential loss and damage from climate change impacts is, including non-economic losses, especially in the area of migration, displacement and population mobility.
- Raise awareness of potential loss and damage from climate change impacts and strengthen communities' capacity to deal with these impacts.
- Strengthen gender-based approaches and mainstream gender issues into loss and damage projects and programmes.
- Strengthen community pre-preparation programmes in relation to loss and damage from climate change impacts.

### **Foreign Affairs**

Foreign Affairs have identified the need to:

- Better understand loss and damage from climate change, its scope and its impacts at all levels.
- Develop a country position on loss and damage including a regional Pacific position in preparation for COP 21 (21<sup>st</sup> Session of Conference of the Parties to the UNFCCC) in Paris.

- Develop a regional negotiation training programme to prepare delegates from Vanuatu and the Pacific for COP 21 in Paris.

### **Youth and Sports**

The Department of Youth and Sports identified the need to:

- Build knowledge of the Department and youth on loss and damage from climate change.
- Strengthen collection of climate change data in the Department.
- Develop projects and programmes on loss and damage that involve this sector.

### **National Disaster Management Office (NDMO) – Ministry of Climate Change Adaptation, Meteorological, Geo Hazards, Environment, Energy and Disaster**

The NDMO identifies the need to:

- Strengthen other sectors in their understanding of disaster risk reduction, climate change and loss and damage, including understanding of non-economic losses, especially migration, displacement and population mobility.
- Build human capacity to work on loss and damage issues as currently very limited capacity to take on board extra work on loss and damage.
- Strengthen the current cluster system and include the addition of a media cluster.
- Develop standardised tools, guidelines and methodologies on loss and damage, especially on different slow onset events and impacts.
- Develop a system to record and collect information on losses and damages faced by communities as a result of climate change impacts.
- Explore more PCRAFI insurance type initiatives for different slow onset events.

### **NGO VANWODS**

The VANWODS identified the need to:

- Build knowledge and understanding of loss and damage from climate change impacts.
- Develop awareness raising materials for the members of VANWODS on loss and damage.
- Develop a programme on business and livelihoods diversification.

### **Non-economic losses, migration, displacement and population mobility**

In relation to non-economic losses, migration, displacement and population mobility, many sectors noted the need to:

- Enhance the understanding and scope of non-economic losses.
- Collect information and record patterns of internal migration.

## **5. RECOMMENDATIONS ON LOSS AND DAMAGE ACTIONS/PROGRAMMES**

This section provides recommendations for addressing the needs identified in Vanuatu to address loss and damage from climate change impacts. The recommendations are based on the analysis of gaps and needs in this report, and will require dedicated financial and technical support from regional and international organisations with the appropriate expertise:

1. Develop better understanding of the issue of loss and damage, specially on the slow onset events and impacts at the national level (government sector specific), provincial and community levels. This should include the issues of non-economic losses, migration, displacement, and population mobility.

2. Capacity building.

Initially, capacity building on a broad scale would address many of the needs identified by the sectors covered in this report. Accordingly, capacity building activities should include the following topics:

- Developing baseline understandings of loss and damage from climate change, including the topics of non-economic losses, migration, displacement and population mobility;
- Training on risk assessment, risk reduction and risk management across the different sectors;
- Developing standardised and appropriate guidelines, methodologies and tools for risk assessment in each sector and the assessment of slow onset events;
- Establishing research capabilities aimed at fostering internal collaboration among sectors on loss and damage, especially in the area of slow onset impacts;
- Strengthening national and inter-sectoral policy coordination and collaboration on loss and damage;
- Enhancing human capacity dedicated to working on loss and damage additional to current sectoral work at all levels: national, provincial and community.

3. Develop ongoing training programmes on loss and damage to initiate newcomers and deepen and update baseline knowledge gained during initial capacity building activities set out in Recommendation 2. above. Among other things, these programmes should respond to expressed needs at the national and sub-national levels; be tailored to the audience concerned; take a cross-sectoral approach (where appropriate); and link into regional / international programmes, where relevant.

4. Build lasting country-level expert and scientific knowledge on loss and damage

Science shows that even with best efforts at mitigation and adaptation, there will be permanent loss and irreversible damage associated with climate change impacts. This is especially true where slow onset processes affecting SIDS, such as ocean acidification, sea level rise and land and sea temperature rises are concerned. Given this certainty, there should be a focus now on building scientific expertise in country to help address long-term climate change impacts. This expertise could include the establishment of baseline information and ongoing observation, monitoring and analysis dedicated to slow onset events, including ocean acidification, siltation, biodiversity loss, salinization, drought and sea level rise.

5. Prepare and periodically review long-term assessments of risks to loss and damage from extreme weather and slow onset events, especially those that have been identified as relevant by the different sectors. For instance, needs were identified in relation to the assessment of the impacts of ocean acidification on marine species, the assessment of the impacts of siltation and the assessment of the impacts of drought. These assessments could be done sectorally; however, there should be a mechanism for analysing the assessments across sectors, and joining up assessments at the regional level. The assessments would serve a number of uses, including the exploration of regional level risk transfer/insurance mechanisms and identifying where support is required for national-level initiatives.

6. Identify risk management approaches and tools, including risk transfer and risk sharing tools, such as insurance, appropriate for a variety of climate change impacts, including identifying the costs and benefits of using those tools, and including approaches to address permanent losses. Design pilot projects to demonstrate the use of these tools in different sectors, in order to test the approaches, identify best practices.

7. Regional and international organisations should assist Vanuatu with identifying and facilitating access to the financial and technical support required for the implementation of policies, plans and programmes to put in place a country-wide approach to address loss and damage to the impacts of climate change, both from extreme weather events and slow onset processes.



## 6. REGIONAL CONCEPT PAPER FOR LOSS AND DAMAGE ACTIONS

The regional concept paper was drawn from the three countries set of recommendations. The concept paper was formulated with the assistance of representatives from the Government of Samoa, Government of Kiribati, representatives from SPC, SPREP and UNESCO through a two days workshop that was held in Apia Samoa on the 24<sup>th</sup> - 25<sup>th</sup> July 2015. Representative from the Government of Vanuatu was not able to attend. However, countries will have the opportunity to make inputs into this paper as SPREP and GIZ conducts national and regional consultations on what will be a regional programme on loss and damage.

PROJECT/PROGRAM THEMES	ACTIVITIES
<b>Planning, establishment of activities</b>	<b>National and regional consultation to get buy and support</b>
<b>Definition-</b> loss and damage, rapid onset events and slow onset events, non economic losses, permanent losses how do you differentiate between L&D and adaptation*	<p><b>Literature review on existing definitions –practitioner’s definition/purpose of definition, who is defining for what purposes? (Possible collaboration with USP graduate school)</b></p> <p><b>Consultation</b></p> <p>Cross Cutting issues: <i>need capacity building, and communication</i></p>
<b>Awareness-</b> loss and damage, rapid onset events and slow onset events, non economic losses	<p><b>Awareness campaign- policy makers, DRR, SRDP, politicians, CROP Agencies,</b></p> <p>Cross Cutting issues: <i>need capacity building, and communication</i></p>
<b>Baseline information:</b> on observation and long term monitoring	<p><b>Case studies to establish baseline information on slow onset events on the following:</b></p> <ul style="list-style-type: none"> <li>- Case studies on coast line monitoring</li> <li>- Case study on coral bleaching link to fisheries</li> </ul>

	<ul style="list-style-type: none"> <li>- Case study on salinization</li> <li>- Case on drought</li> <li>- Case study on ocean acidification</li> <li>- Case study on sea surface temperature</li> </ul> <p><i>Cross Cutting issues: need capacity building, and communication</i></p>
<p><b>Baseline information on impacts</b></p>	<p><b>Case studies to establish baseline information on slow onset events on the following:</b></p> <ul style="list-style-type: none"> <li>- Documentation of impacts of the above listed climate change phenomena's</li> <li>- Documentation and sharing of lessons learned from above (guidelines, methodologies)</li> <li>- Identify thresholds, tipping points related to the above climate change phenomena's (permanent losses)</li> <li>- Migration (internal)</li> </ul> <p><i>Cross Cutting issues: need capacity building, and communication</i></p>
<p><b>Knowledge management</b></p>	<p><b>Identifying options for information, management (collection, management, storing and sharing) ensure information is accessible:</b></p> <ul style="list-style-type: none"> <li>- Documentation of impacts of the above listed climate change phenomena</li> <li>- Documentation and sharing of lessons learned from above</li> </ul>

	<p>(guidelines, methodologies)</p> <p>Cross Cutting issues: <i>need capacity building, and communication</i></p>
<b>Governance</b>	<p>Capacity building, Institutional strengthening (national level)- information management, capacity building, internal coordination and collaboration, plans and policies</p> <p><b>(issues identified here are cross cutting across the different themes)</b></p>
<b>Explore options on approaches, tools, methods to address Loss and Damage</b>	<p><b>Review risk modelling (e.g. PCRAFI and others) to include those things above (Climate Change phenomena's)</b></p> <ul style="list-style-type: none"> <li>- Explore tools for risk transfer e.g. insurance, faalavelave, micro finance</li> <li>- Explore options to address permanent losses. E.g. Migration, Economic diversification, technology</li> </ul> <p>Cross Cutting issues: <i>need capacity building, and communication</i></p>
<b>Means of Implementation</b>	<p>Identify options to generate, facilitate access to Finance and technology to address loss and damage</p> <p>Cross Cutting issues: <i>need capacity building, and communication</i></p>
<b>Scope out next phase of this project</b>	<b>SPREP</b>

## **7. REFERENCES**

- AOSIS Insurance Scheme for Climate Change Convention, 1993. World Environmental Library. <http://www.nzdl.org/gsdmod?e=d-00000-00---off-0envl- -00-0----0-10-0---0---0direct-10---4-----0-1l--11-en-50---20-about---00-0-1- 00-0--4---0-0-11-10-0utfZz-8-10&a=d&cl=CL1.3&d=HASH0135a950495c115243e15a5d.5.3.9> (accessed 19.06.15)
- Building Resilience to Climate Change for Food Security in the Pacific Region. SPC-USAID. <http://www.spc.int/lrd/focus-areas/climate-change/34/building-resilience-to-climate-change-for-food-security-in-the-pacific-region> (accessed 22.06.15)
- Climate change and health, World Health Organization, n.d. Available at <http://www.who.int/mediacentre/factsheets/fs266/en/> (accesses 12.05.15)
- Development Planning in Vanuatu. DSPPAC Process. Available at [http://www.undp-alm.org/sites/default/files/uploaded-images/development\\_planning\\_in\\_vanuatu.pdf](http://www.undp-alm.org/sites/default/files/uploaded-images/development_planning_in_vanuatu.pdf) (accessed 22.06.15)
- IPCC, 2014. Climate Change 2014: Impacts, Adaptation and Vulnerability. IPCC Working Group II Contribution to AR5. Summary for Policymakers. Intergovernmental Panel for Climate Change. Available at <http://www.ipcc.ch/> (accessed 12.04.14).
- Kreft, S., Warner, K., Harmeling, S., 2012. Framing the Loss and Damage Debate: A Conversation Starter by the Loss and Damage in Vulnerable Countries Initiative. Germanwatch, Bonn.
- Kroeker, K. J., R. L. Kordas, R. Crim, I. E. Hendriks, L. Ramajo, G. S. Singh, C. M. Duarte, and J. P. Gattuso, 2013. Impacts of ocean acidification on marine organisms: quantifying sensitivities and interaction with warming, *Global Change Biology*, 19(6), 1884-1896. Retrieved at <http://www.wmo.int/bulletin/en/content/monitoring-ocean-carbon-and-ocean-acidification#sthash.0kg9AbJH.dpuf>
- Morrissey, J., Oliver-Smith, A., 2013. Perspective on Non-economic Loss and Damage: Understanding values at risk from climate change. International Centre for Climate Change and Development (ICCCAD), Dhaka, Bangladesh. <http://www.lossanddamage.net> (accessed 29.04.14)
- National Ocean and Atmospheric Administration, United States Department of Commerce. Ocean. Warm ocean temperatures may mean major coral bleaching, 2015. Available at

- <http://www.noaanews.noaa.gov/stories2015/20170211-noaa-warm-ocean-temperatures-may-mean-major-coral-bleaching.html>
- Samna Tourism Plan. Department of Tourism. Government of Vanuatu.
- Siegele, L. 2012. Loss and Damage: The Theme of Slow Onset Impacts. Available at <https://germanwatch.org/en/download/6674.pdf> (accessed 24.05.15)
- SPREP, Pacific Adaptation to Climate Change Programme for Vanuatu, Country Consultation, cited in Climate Risk and Vulnerability Country Profile 2011. Retrieved at [http://sdwebx.worldbank.org/climateportalb/doc/GFDRRCountryProfiles/wb\\_gfdr气候\\_change\\_country\\_profile\\_for\\_VUT.pdf](http://sdwebx.worldbank.org/climateportalb/doc/GFDRRCountryProfiles/wb_gfdr气候_change_country_profile_for_VUT.pdf) (accesses 23.06.15)
- Technical Paper on Slow Onset Events, 2012. UNFCCC. <http://unfccc.int/resource/docs/2012/tp/07.pdf> (accessed 15.05.15)
- Technical Paper on Non-economic Losses, 2013. UNFCCC. Available at <http://unfccc.int/resource/docs/2013/tp/02.pdf> (accessed 15.05.15)
- The Pacific Sea Level Monitoring & COSPPac Project. Australia Bureau of meteorology. Available at <http://www.bom.gov.au/pacific/projects/pslm/> (accessed 19.06.15)
- Toste Tanhua, James C. Orr, Laura Lorenzoni and Lina Hansson, 2015. Monitoring Ocean Carbon and Ocean Acidification. Vol 64 (1)
- Tourism Master Plan 2004-2010, Department of Tourism. Government of Vanuatu.
- United States Climate Change Science Program. 2009. *Thresholds of Climate Change in Ecosystems*. Available at <http://www.climatechange.gov/Library/sap/sap4-2/final-report/default.htm>.
- United States Department of Health and Human sciences NIEHS-led Interagency Working Group on Climate Change and Health. Human health perspective on climate change. 2010. Report outlining the health research needs on the human health impacts of climate change. Available at [http://www.niehs.nih.gov/health/materials/a\\_human\\_health\\_perspective\\_on\\_climate\\_change\\_full\\_report\\_508.pdf](http://www.niehs.nih.gov/health/materials/a_human_health_perspective_on_climate_change_full_report_508.pdf) (accesses 12.06.15)
- Verheyen, R., 2012. Tackling loss and damage: A new role for the climate regime? Germanwatch, Bonn. <http://www.lossanddamage.net> (accessed 12.04.14).
- Warner, K., van der Geest, K., Kreft, S., Huq, S., Harmeling, S., Kusters, K., De

- Sherbinin, A., 2012. Evidence from the frontlines of climate change: Loss and damage to communities despite coping and adaptation Loss and Damage in Vulnerable Countries Initiative. Policy Report. Report No. 9. United Nations University Institute for Environment and Human Security (UNU-EHS), Bonn. <http://www.ehs.unu.edu/> (accessed 12.04.14).
- Warner et al. (2012): Insurance solutions in the context of climate change-related loss and damage: Needs, gaps, and roles of the Convention in addressing loss and damage. Munich Climate Insurance Initiative (MCII). Submitted to the SBI Work Program on Loss and Damage, October 2012.
- Warsaw International Mechanism on Loss and Damage.  
<http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf>  
(accessed 15.05.15)
- Vanuatu draft post disaster needs Tropical Cyclone Pam, 2015. Government of Vanuatu.
- Vanuatu National Forest Policy 2010-2023. Department of Forestry. Government of Vanuatu Official Document.
- Vanuatu Meteorology and Geo-hazards Department 10 year strategic plan 2014-2023. <http://www.sprep.org/climate-change/vmgd-launches-its-next-10-year-strategic-development-plan> (accessed 23.06.15)
- Vanuatu Pacific Risk Resilience Programme Project.  
<http://www.nab.vu/projects/pacific-risk-resilience-programme-prrp>  
(accesses 22.06.15)
- Vanuatu Project Portal. National Advisory Board. <http://www.nab.vu/project-search2> (accessed 24.06.15)
- Vanuatu Tourism Assessment Report of Tropical Cyclone Pam, 2015. Department of Tourism.
- Vanuatu Strategic Tourism Action Plan 2014-2018. Department of Tourism. Government of Vanuatu.