UNIVERSITY OF TECHNOLOGY SYDNEY

INSTITUTE FOR SUSTAINABLE FUTURES &
WORLD HEALTH ORGANIZATION COLLABORATING CENTRE FOR NURSING MIDWIFERY AND HEALTH DEVELOPMENT

BACKGROUND REVIEW: DISASTER RESPONSE SYSTEMS OF FOUR PACIFIC ISLAND COUNTRIES

2012

Institute for Sustainable Futures

WORLD HEALTH ORGANIZATION COLLABORATING CENTRE FOR NURSING, MIDWIFERY & HEALTH DEVELOPMENT
World Health Organization
Western Pacific Region

NCCARF
National Climate Change Adaptation Research Facility

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CITATION

Cite this report as:

Gero, A., Willetts, J., Daly, J., Buchan, J., Rumsey, M., Fletcher, S. and Kuruppu, N. 2012. Background Review: Disaster Response System of Four Pacific Island Countries. Report prepared for NCCARF by the Institute for Sustainable Futures, and WHO Collaborating Centre, University of Technology, Sydney.

ACKNOWLEDGEMENT

This project is funded by the National Climate Change Adaptation Research Facility (NCCARF) - an initiative of the Australian Government, established in November 2007 at Griffith University's Gold Coast Campus. The work of the NCCARF complements activities and projects currently underway in other institutions across Australia. NCCARF is distinct from these programs in that it focuses entirely on generating the knowledge required for Australia to adapt to the physical impacts of climate change. NCCARF's National Climate Change Adaptation Research Plans (NARPs) identify priority research questions. This research answers some of the Emergency Management NARP's questions, particularly looking at Australian adaptation issues in the international context.

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FOR NURSING, MIDWIFERY AND HEALTH DEVELOPMENT

18 JUNE 2012

Background Review: Disaster Response Systems of Four Pacific Island Countries

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TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

ACRONYMS

AusAID	Australian Agency for International Development
BoM	Bureau of Meteorology (Australia)
CHARM	Comprehensive Hazard and Risk Management
CHIP	Country Health Information Profile
CIANGO	Cook Islands Association for Non-Government Organisations
DAC	Disaster Advisory Committee
DISMAC	Disaster Management Committee
DM	Disaster Management
DREF	Disaster Response Emergency Fund
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
DRS	Disaster Response System
EEZ	Exclusive Economic Zone
EMCI	Emergency Management Cook Islands
ERU	Emergency Response Units
FAO	Food and Agriculture Organization
HFA	Hyogo Framework for Action 2005-2015
HRH	Human Resources for Health
IASC	Inter-Agency Standing Committee (UN)
IFRC	International Federation of the Red Cross and Red Crescent Societies
ISF	Institute for Sustainable Futures
LDC	Least Developed Country
MNRE	Ministry of Natural Resources and the Environment (Samoa)
MoH	Ministry of Health
NAP	National Action Plan
NAPA	National Adaptation Programme of Action
NCCARF	National Climate Change Adaptation Research Facility
NDC	National Disaster Council
NDMO	National Disaster Management Office
NDRMP	National Disaster Risk Management Plan
NEOC	National Emergency Operations Centre
NGO	Non-Government Organisation
NHS	National Health Service
NTF	National Task Force
NZAID	New Zealand Agency for International Development
NZCDM	New Zealand Civil Defense Management
OFDA	Office of the U.S. Foreign Disaster Assistance
PCCSP	Pacific Climate Change Science Program
PDRMPN	Pacific Disaster Risk Management Partnership Network
PHT	Pacific Humanitarian Team
PIC	Pacific Island Country
PIFS	Pacific Islands Forum Secretariat
RNDRF	Regional Natural Disaster Relief Fund
SOP	Standard Operating Procedures
SOPAC	Applied Geoscience and Technology Division
SPC	Secretariat of the Pacific Community

SUNGO	Samoa's Umbrella for Non-Government Organisations Inc
TAF	The Asia Foundation
TC	Tropical Cyclone
UNDAC	United Nations Disaster Assistance Coordination
UNDP	United Nations Development Programme
UNISDR	United Nations International Strategy for Disaster Reduction
UNOCHA	United Nations Coordination of Humanitarian Affairs
USAID	United States Agency for International Development
USAR	Urban Search and Rescue
UTS	University of Technology, Sydney
VANGO	Vanuatu Association for Non-Government Organisations
VMGD	Vanuatu Meteorology and Geohazards Department
WASH	Water, Sanitation and Hygiene
WHO CC	World Health Organization Collaborating Centre

EXECUTIVE SUMMARY

Climate change is expected to have significant implications for emergencies and disasters in the Pacific. Observations of altered climate and weather patterns are already happening in Pacific Island Countries (PICs) and are expected to continue in coming years, potentially changing the nature of emergencies and disasters.

Disaster response systems in PICs are comprised of various stakeholders and underlying policies and frameworks, from local to national, regional and global scales. This report provides an overview of these systems with a focus at the national level in four PICs – Samoa, Fiji, Vanuatu and Cook Islands and was developed through a desk-review as a pre-cursor to in-country research. The report forms part of broader research project on adaptive capacity of disaster response to climate change. National committees, organisations and teams are described, along with the government ministries and non-government organisations relevant in disaster response. Regulatory frameworks including national legislation, strategies and plans that underpin disaster response are also described. Since this research focuses in particular on four immediate post-disaster needs: health care, water and sanitation, food and nutrition and psychosocial needs, the particular agencies and institutions responsible for responding to these are noted.

Many similarities exist across the four countries. For example, all countries have a National Disaster Management Office – NDMO (or similar) and National Action Plans for Disaster Risk Management). However each country was found to have varying ways in which the national institutional arrangements are structured to respond to disasters. Furthermore, countries are at different stages and have different capacities within their own disaster response systems. These differences are a result of factors including PICs geography, system of government, cultural background and governance history. They are also dependent on how each country may have prioritised disaster risk management and response, with the responsible agency in some countries being located within the Office of the Prime Minister, in other countries within other Ministries.

Given the desk-based nature of this review, it is difficult to gauge how effective the arrangements are both in normal times (i.e. in disaster preparedness and disaster risk reduction) and in times of disaster response on-the-ground Next steps of the research will therefore involve stakeholder consultation with Australian and Pacific emergency and disaster response sector, with particular focus on current capacity and their potential to adapt to changing conditions as a result of climate change. This latter stage of the research will validate findings of this review and fill potential gaps arising from its limited desk-based approach. The aim is to produce research outcomes that provide the means for practitioners and policy makers to enhance their adaptive capacity to climate change in Pacific disaster management.

1 INTRODUCTION

1.1 This research

This report is part of a broader research project focused on the adaptive capacity of Pacific Island Countries (PICs) and Australia's emergency response to disasters in the Pacific in the face of climate change. Climate change impacts are likely to affect global stability, health, resources and infrastructure. In the Pacific, the impacts of climate change are expected to be severe, particularly the possibility of increased frequency and intensity of extreme events.

This research project is conducted through a partnership of two leading institutes from the University of Technology Sydney (UTS) – the Institute for Sustainable Futures (ISF) and the World Health Organization Collaborating Centre (WHO CC), and funded by the National Climate Change Adaptation Research Facility (NCCARF).

The research seeks to understand the adaptive capacity of both PICs and Australia's emergency response to a potential increase in disasters driven by climate change in PICs. With a focus on the immediate humanitarian needs post-disaster, including health care; food and nutrition; water and sanitation and psychosocial needs, the primary objectives of the research are:

- To provide recommendations to policy makers and practitioners in the Pacific and Australian disaster and emergency response sectors on current adaptive capacity of PICs to climate related disasters (e.g. tropical cyclones, floods, droughts, storm surge), and identify the resources, policies and systems needed in the coming years to enhance this capacity;
- To inform improved planning and more effective response through analysis of the Australian emergency services and related organisations' capacity, role and obligations to assist PICs in times of disaster.

To fulfil these objectives and to guide our research, the following research questions are posed:

1. What constitutes the 'disaster response system' (DRS) for the immediate humanitarian needs post-disaster (health care, water and sanitation, psychosocial needs and food and nutrition) in each of the 4 case study PICs (including the Australian component to this response)?

2. How do various inter-organisational determinants[1] serve to strengthen or reduce adaptive capacity of the 'disaster response system'? This question considers Australia's response obligations, national, regional and international stakeholders and the mechanisms that coordinate their actions, and other regional examples.

3. Which objective and subjective determinants are most significant in influencing the adaptive capacity of the organisations within the 'disaster response system'? What are the characteristics of an organisation with high levels of adaptive capacity?

[1] A range of possible 'determinants' have been selected drawing from literature on climate change adaptation, disaster response management and human resource management for health

1.2 This report

The purpose of this report is to provide a desk-based review of the disaster response systems (DRS) in four selected PICs: Samoa, Fiji, Vanuatu and Cook Islands. See Appendix A for details on criteria used to select these countries. The information from this report will assist the research teams in-country fieldwork by providing details of relevant stakeholders, policies and the overarching institutional structure associated with disaster response. This report also plays a role in defining the in-country research focus and scope.

1.3 Setting the context

The Pacific region is vulnerable to a range of natural hazards including tropical cyclones and storms, droughts, earthquakes, tsunami, floods, volcanoes and wave surges. The capacity of PICs to cope with these hazards is often challenged, due to their inherent vulnerability stemming from the isolation, small size, insularity, environmental factors and limited disaster mitigation capacity (Meheux et al., 2007). As such, natural disasters occur relatively frequently in the Pacific, with significant economic and social impacts as seen in Table 1.

Disaster Type	Number	Killed	Total Affected	Total Victims	Economic Damages US$2009	No. with Economic Damages
Drought	8	60	947,635	947,695	66,666,667	1
Earthquake	28	139	38,400	38,539	205,616,905	7
Epidemic	12	306	10,662	10,968	0	0
Flood	28	132	451,073	451,205	264,339,362	11
Landslide	16	544	2,563	3,107	0	0
Storm	134	1,573	1,937,467	1,939,040	6,128,846,865	57
Volcano	18	3,009	203,399	206,408	159,420,290	1
Wave Surge	4	2,534	11,574	14,108	0	0
Wild Fire	2	0	9,000	9,000	67,340,426	1
Total	250	8297	3,611,773	3620070	6,892,230,514	78

Table 1: Frequency and estimated economic and social impacts of natural disasters in the Pacific Islands Region (1950-2009)

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

Pacific Forum Leaders have committed to reducing disaster risks through various declarations and frameworks, including the Pacific Disaster Risk Reduction and Disaster Management (DRR and DM) Framework for Action (SOPAC, 2009). The Pacific DRR and DM Framework sets out six themes and includes guiding principles and expected

outcomes by 2015, and contributes to global progress in achieving goals of the Hyogo Framework for Action 2005-2015 – which is the principle international guiding framework for disaster risk management (UNISDR, 2005).

In times of disaster, it is the responsibility of the national government to respond to the needs of the population. In the Pacific, effective response is made more complex than in other regions due to reasons such as (Kennedy and Muller, 2008):

- Potential remoteness of the affected area
- Relatively small number of people affected (high cost per person due to relatively low population density and multiple remote locations)
- Ability of natural hazards to overwhelm local and national capacity to respond
- Logistical constraints, affecting timeliness and assessment challenges
- Coordination challenges of regional organisations

Effective institutions and guiding policies are necessary to provide a coordinated and effective response to disasters. Specific indicators important at the national government level that are identified as important in effective disaster response include (UNOCHA and UNISDR, 2008):

- A disaster risk reduction and disaster risk management implementation plan based on assessment of hazards and risks
- A national platform to promote coordination and sharing of information, and to harmonise capacity
- Adequate resource allocation across all levels
- National plans including community capacity and inclusion of specific vulnerable groups
- Disaggregated population data.

This report describes some of these elements to provide a basic understanding of each PICs national capacity to respond to disasters.

Given the focus of this research is the immediate humanitarian needs post-disaster (with a focus on health care, water and sanitation, food and nutrition and psychosocial needs), it is also useful to assess the human resources for health in each country. Density of health workers is one indicator used and is provided below in Figure 1 for countries of the Asia Pacific region, with the four countries of interest for this research circled in red. This figure will be referred to throughout this report.

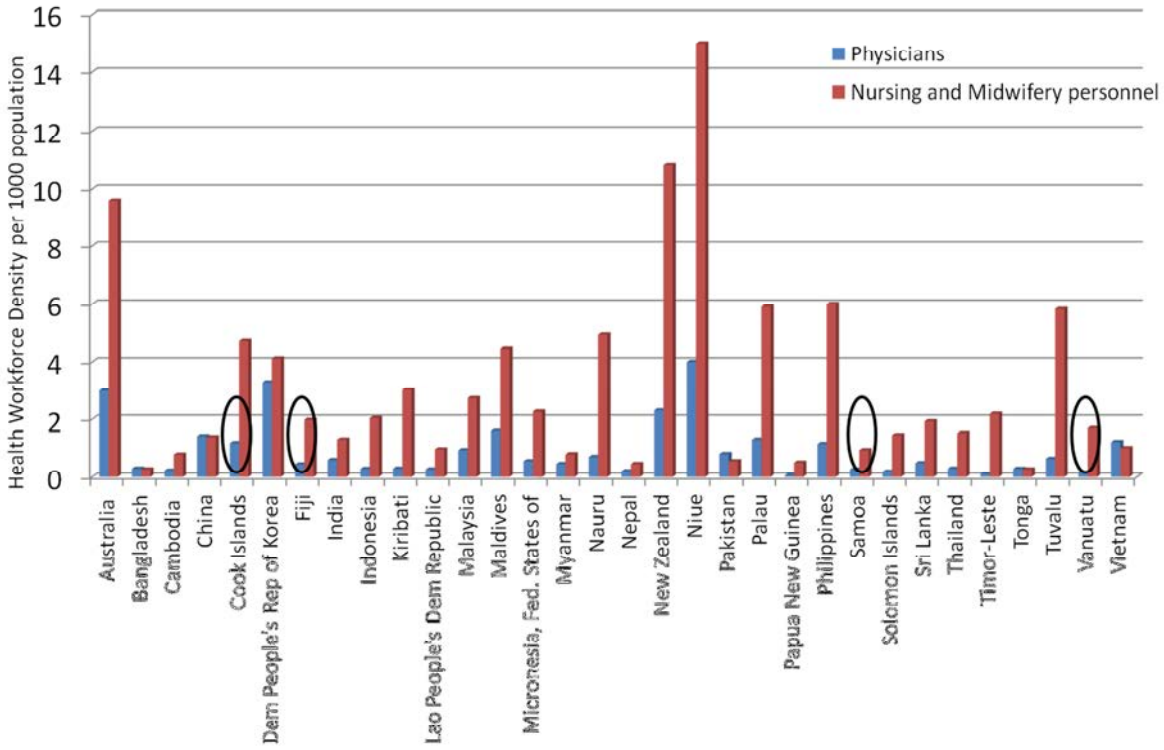

Figure 1: Health Workforce Density in the Asia Pacific Region.

Source: WHO (2011) World Health Statistics 2011 (Table 6).

In addition to the above figure, it has also been noted that the health system in PICs often face limited administrative and training capacity, limited or no specialists, and overall limited resources to support planning and regulation (Buchan et al, 2011).

The impacts of climate change may stretch the capacity of PIC's disaster response systems through more frequent and intense events (Gero et al., 2012). While our broader research will investigate the specific elements of institutions that are significant in responding to disasters, this report provides the national level baseline upon which disasters are managed and responded to. It is important to note that the desk-based nature of this report provides limited understanding of the situation on-the-ground, and researchers have relied primarily on the internet as a source of information, which may exclude more recent policies that exist in-country. Subsequent field visits will fill this gap.

The next four sections describe the disaster response systems of Samoa, Fiji, Vanuatu and Cook Islands. See Figure 2 for locations of these countries in context of the wider region. While our overall research focuses specifically on four immediate humanitarian needs post-disaster (health care, water and sanitation, food and nutrition and psychosocial needs), this report provides a description of the disaster response system more broadly. In-country research will assist in refining our scope to the four immediate humanitarian needs. An assessment of the regional and international disaster response system and a conclusion are provided in the final sections of the document.

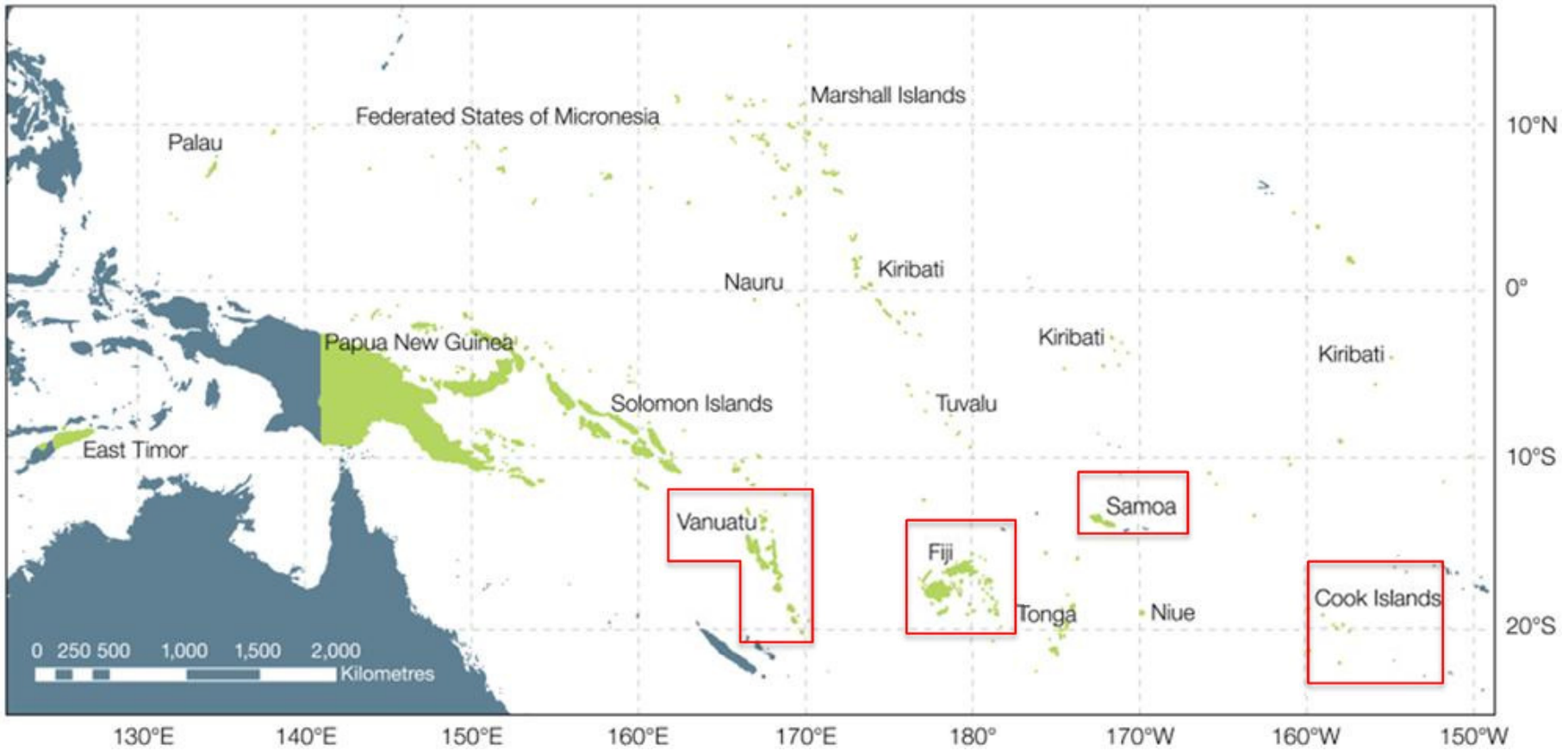

Figure 2: Map of the Pacific, highlighting the 4 countries of interest (Samoa, Fiji, Vanuatu and Cook Islands)

Source: Australian Bureau of Meteorology & CSIRO, 2011.

2 SAMOA

2.1 COUNTRY OVERVIEW

2.1.1 Location

Samoa is located in the south west Pacific between latitudes 13°-15°S and longitudes 168°-173°W. Neighbouring countries include Niue and Tonga to the south, Cook Islands to the south-east and Fiji to the south-west. Samoa's location is considered to lie within the cyclone-belt, and also is in close proximity to the Tongan Trench which is a known earthquake-generation zone (UN Conference on Trade and Development, 2006).

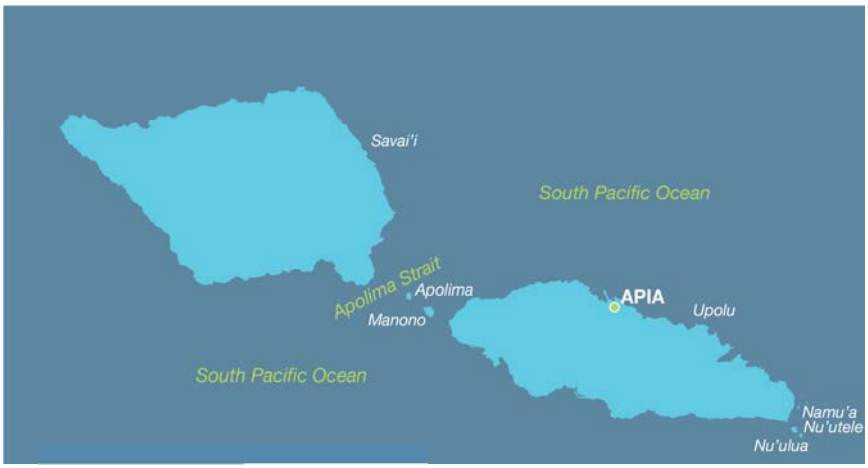

Figure 3: Map of Samoa.
Source: Australian BOM and CSIRO, 2011.

2.1.2 Basic geographic features

Samoa is comprised of two main islands, Upolu and Savai'i, which are of volcanic origin, and several smaller islands. Its capital, Apia, is located on the north coast of Upolu. Samoa's landscape consists of dormant volcanoes and lava fields, dense tropical forests, steep slopes, low lying areas and sandy beaches (MNRE, 2005).

2.1.3 Population and key demographics

Samoa is a Polynesian country and has an estimated population of 186,000 (Samoa Bureau of Statistics, 2011). The country has an estimated ratio of 1.05 male(s)/female (2012 est.), with over 37% being between the ages of 0-14 years old and nearly 60% in the 15-64 age group (CIA 2012). The average life expectancy at birth for Samoans is 70 years with females living to an average 72 years and males 68 years (WHO 2011). Around 70-80% of the population and infrastructure are located in coastal, low-lying areas and approximately 45,000 reside in the capital, Apia (Daly et al., 2010). Samoan and English are both official languages, with English often used for business (Government of Samoa, 2006a). Christianity is the dominant religion and plays a significant role in the daily lives of most Samoans. The economy is dominated by remittances, development aid, tourism and agriculture (Daly et al., 2010). Samoa has an estimated net migration of -10.8 per 1000 population.

The United Nations Development Programme (UNDP) Human Development Index (HDI) ranks Samoa 99th out of 187 countries. This places Samoa in the top five countries of the medium human development category ranking it as one of the countries with higher levels of social development in the Pacific (UNDP 2011). Samoa is currently listed as a Least Developed Country (LDC); however is due to graduate in 2013.

2.1.4 Key political features and system of government

Samoa gained independence in 1962. The country is governed by the Prime Minister, overseen by the Head of State and is a member of the Commonwealth. Samoa's traditional system of leadership is merged through the active role of village chiefs (*matai*), who play a large role in local to national level decision making (Government of Samoa, 2006a).

2.1.5 Example of past disasters and key impacts

Samoa is considered to be at high risk from tropical cyclones, particularly during El Niño periods (MNRE, 2005). The most significant tropical cyclones to affect Samoa were Tropical Cyclones Ofa and Val in 1990 and 1991 respectively. Associated costs from these events equalled four times the GDP, with the damaging winds, flooding and storm surge devastating agricultural crops, much of the country's infrastructure and resulting in high social costs as livelihoods were destroyed (MNRE, 2005).

2.1.6 Summary of predicted climate changes on weather related disasters

Recent scientific projections indicate that Samoa's temperatures are likely to increase by up to 1°C by 2030 (high emission scenario) while sea level is predicted to rise by between 5-15cm (high emission scenario) by 2030 (Australian Bureau of Meteorology and CSIRO, 2011). Rainfall is likely to increase in the wet season and decrease in the dry season, while extreme rainfall days are likely to occur more frequently (Australian Bureau of Meteorology and CSIRO, 2011). Tropical cyclones are predicted to occur less frequently, but there is expected to be an increase in the proportion of severe storms (Australian Bureau of Meteorology and CSIRO, 2011). Recognising these projections carry significant uncertainty, this means that while there may be fewer intense tropical cyclones, there may also be an increased frequency of response required to deal with severe storms which cause damage through flooding, high winds and storm surge. This would activate the disaster response system on a more frequent basis with potentially less time in between such events.

2.1.7 Human Resources for Health workforce density

Based on available development indicators such as Country Health Information Profiles (CHIPs), UNDP Human Development Report indicators and other relevant resources (e.g. Human Resources for Health Hub, 2009), Human Resources for Health (HRH) capacity was assessed for Samoa. Samoa has a relatively low HRH capacity with a HRH Density of <1 per 1000 population for physicians, nurses and midwives (also noted in Figure 1- (WHO 2011). CHIPs data (from 2004-2006) reveals above average results amongst other PICs for <5 year mortality and maternal health indicators (see Appendix A for details) (WHO, 2010). It is also noted that lower salaries in Samoa contribute to migration and job dissatisfaction amongst health workers (Henderson and Tulloch, 2008).

The uneven distribution of health workers with low availability in rural/remote and poor urban socioeconomic areas, are a particular problem in Samoa. A preliminary analysis by the Government of Samoa indicates that in addition to recruitment and retention of health staff, skills deficiencies and inappropriate distribution of the health workforce in some occupations is a major problem (Government of Samoa, 2011). In times of disaster, health professionals from overseas are often requested to assist the Samoan health team to mount a response. One major HRH challenge is the timely registration and credentialing of visiting health professionals in times of disaster. In the past, in an effort to address this

problem, the Samoan Government has requested the Professional councils through the office of the Registrar (for e.g. during the 2009 tsunami) to make provisions for the registrations and issuing of practicing certificates to healthcare practitioners, including temporary registrations to those who satisfied the minimum requirements for credentialing (Government of Samoa, 2011).

2.2 NATIONAL DISASTER RESPONSE SYSTEM

2.2.1 Key disaster response organisations

The Disaster Advisory Committee (DAC) is comprised of government, private sector and civil society stakeholders and is responsible for ensuring the National Disaster Management Plan is publicised and reviewed regularly (Government of Samoa, 2006a). The DAC is responsible for coordinating an inter-agency approach to disaster planning, risk reduction, preparedness, response and recovery activities. All DAC members are responsible for risk reduction activities and coordinated recovery activities. Samoa's DAC Members are provided in Appendix B.

The National Disaster Council (NDC) is also comprised of members of the **Cabinet**, with four members constituting a quorum for decisions made by the NDC (Government of Samoa, 2006a). The **Chief Executive Officer of the DAC** also attends NDC Meetings, acting as a liaison between the two committees. The NDC is responsible for providing advice on proclaiming and rescinding national State of Emergencies. The NDC also has high level oversight of the National Disaster Management Plan (Government of Samoa, 2011).

Disaster Management Office (DMO) is part of the **Ministry of Natural Resources and Environment (MNRE)**, with the CEO of MNRE acting as head of the DMO. The DMO is responsible for providing facilities for a **National Emergency Operations Centre (NEOC**), which is considered to be the disaster coordination centre under the Disaster and Emergency Management Act.

MNRE is land registrar for Samoa, host of the Climate Data Centre and the Meteorology Office.

The Fire and Emergency Services Authority and the **Police Service** are members of the DAC and have specific responsibilities regarding fire and emergency related events. Additional government ministries all have roles to play in disaster response and coordination. All ministries are required to develop Disaster Response Plans (see for example – Ministry of Works, Transport and Infrastructure, 2011). Such ministries include:

- Ministry of Health (and its National Health Service);
- Samoa Water Authority;
- Ministry of Agriculture and Fisheries;
- Ministry of Foreign Affairs and Trade;
- Ministry of Works, Transport and Infrastructure;
- Ministry of Education, Sports and Culture;
- Ministry of Finance, Ministry of Works and
- Ministry of Women, Community and Social Development, which has links to the local village level.

Samoa Red Cross Society (SRCS) and the Government of Samoa have a memorandum of Understanding (MoU) dating back to 1983 which recognises the Red Cross as a

voluntary disaster relief organisation auxiliary to the public authorities and with specialist medical expertise (Samoa Red Cross Society, 2009).

Samoa's Umbrella for Non-Government Organisations Inc (**SUNGO**) is the coordinating body of NGOs in Samoa and plays a role in disaster response in various ways. SUNGO is also active in organising and participating in training programs relevant to disaster response (see http://www.sungo.ws/).

Village Councils and village organisations are important stakeholders in disaster preparedness and response, and liaise with the **Ministry of Women, Community and Social Development** for support and linkages to the DAC.

Samoa Council of Churches is also an important stakeholder in disaster response, given the high proportion of Samoans who identify strongly with the Church.

Several **United Nations (UN)** agencies have regional offices in Samoa which are responsible for a number of countries neighbouring the Samoan islands. WHO, UNDP, FAO, UNESCO and WMO all have a presence in Apia and are also active in disaster response (see Section 6 for details).

Donors such as **AusAID** and **NZAID** are also active in times of disaster response and coordinate with national institutional arrangements as necessary (e.g. through the DAC). See Appendix C for a list of relevant agencies and their designated roles and responsibilities.

2.2.2 Institutional arrangements

The structure of the main disaster response organisations in Samoa are illustrated in Figure 4.

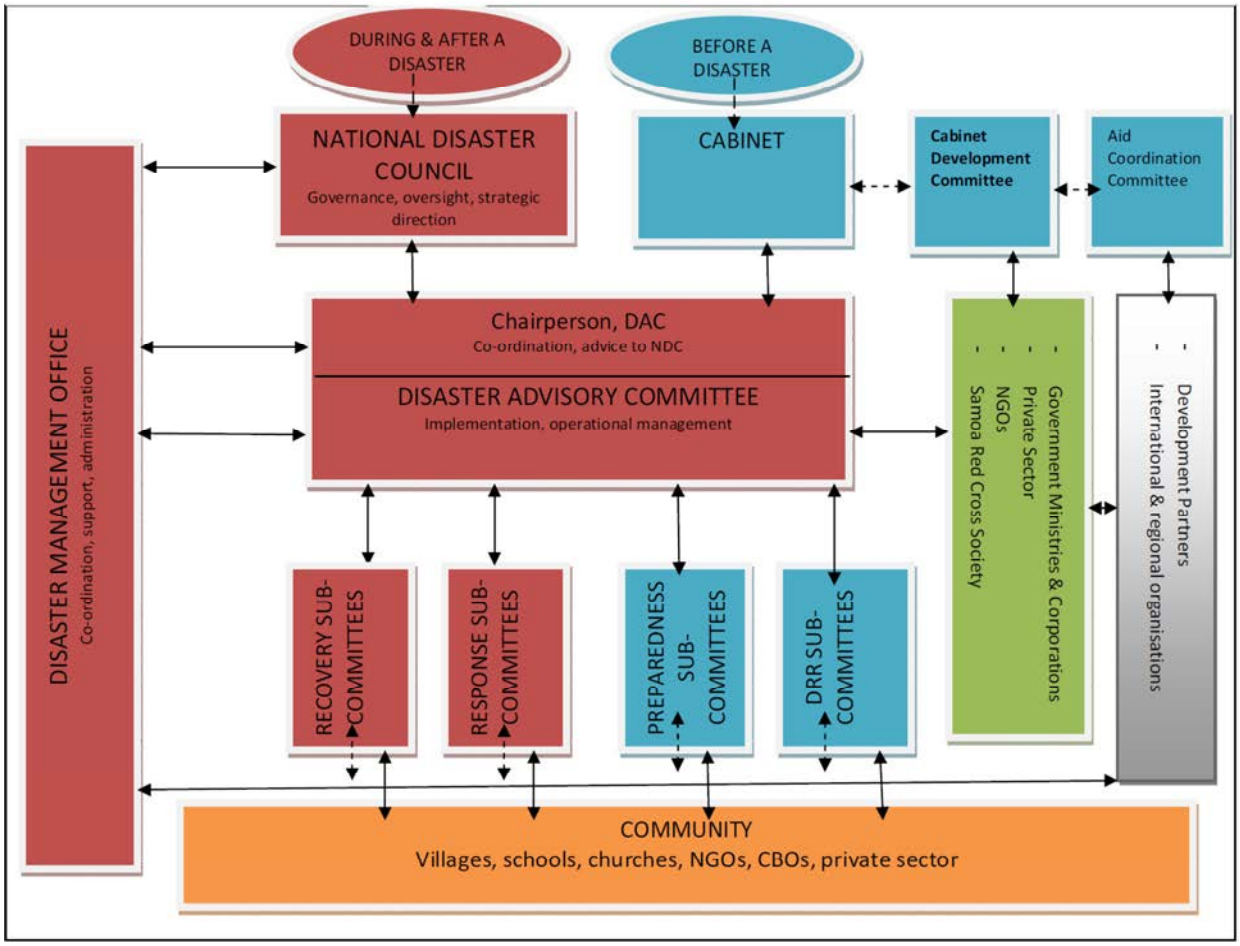

Figure 4: Samoa's disaster response institutional arrangements

Source: Government of Samoa, 2011.

2.2.3 Key policy and legal framework

Samoa has a Disaster and Emergency Management Act (*the Act*) 2006 and a National Action Plan (NAP) for Disaster Risk Management 2011 – 2016 (Government of Samoa, 2011). The NAP provides an integrated approach to risk reduction and risk awareness in the context of sustainable development with a focus on building resilience.

Hazard specific Plans are required, as stipulated in the NDRMP, for tropical cyclone, volcano, pandemic, tsunami, invasive species, fire and flood. The following plans are known to have been developed:

- National Tropical Cyclone Plan 2006
- National Avian and Pandemic Influenza 2008
- National Tsunami Plan 2008

The Planning and Urban Management Agency Act 2004 and the Ministry of Works Act 2002 are important for disaster preparedness in terms of building safety requirements with development consents and permits required for all structures and developments in compliance with the National Building Code (Government of Samoa, 2006b).

The Fire and Emergency Services Act 2007 relates to the required need to have fire suppression equipment in public buildings.

From the health perspective, important frameworks include the National Standards for Nursing and Midwifery Practice. The Ministry of Health (MoH) / National Health Service (NHS) Service Continuity Emergency Plan represents another important document guiding disaster response for the health sector. At this stage, contents of this plan are unknown. An additional plan of relevance is Samoa's National Health Disaster Service Disaster Management Plan, 2008. It is hoped that this and others listed above will be obtained and examined during in-country visits.

Regarding climate change policy, Samoa has a National Adaptation Programme of Action (NAPA) which was developed in 2005 and led by MNRE (see MNRE, 2005). This provides identification of key areas of national vulnerability regarding climate change impacts and provides the basis upon which donors are able to contribute to pre-identified national priority areas of climate change interventions.

Box 1: Example of Past Response - Samoa

On 29 September 2009, Samoa and Tonga were hit by an 8.3 magnitude earthquake and tsunami, resulting in severe devastation. The tsunami killed 144 people and ruined numerous lives, homes, businesses, communities and pristine beaches. In Samoa, more than 3000 people subsequently were living in temporary tents and under tarpaulins.

Responding to the tsunami in Samoa required the collaboration of various organisations and government agencies, working alongside the Government of Samoa, and other local and international humanitarian stakeholders.

The Samoa Red Cross Society (SRCS) was responsible for leading early response at the country level, providing urgent support in water and sanitation, health, shelter, psychosocial support. Due to the disruption of water supplies in the affected areas, the SRCS and other volunteers worked with the fire service to deliver safe water to the affected population. The Samoa Water Authority conducted an assessment of damaged infrastructure and carried out restoration of the water supply infrastructure with emphasis primarily on sanitation and hygiene. In the interim, water was trucked to places along the affected coastline (IFRC 2009).

The Ministry of Health in collaboration with its sector partners, both private and public, implemented the tsunami response in terms of health service delivery, environmental health inspection, sanitation and hygiene, nutrition, water quality inspection, health surveillance, health promotion and prevention services (MoH -2010). The impact of the tsunami required the mobilisation of all the possible assistance in the nursing and midwifery profession. The entire division was mobilised to the Tsunami Ward specifically set up for tsunami casualties in the Accident & Emergency Department (*Tupua Tamasese Meaole* Hospital). Public Health Teams were involved in surveying affected sites (surveillance) and others were involved in coordinating the Samoa Health Mission teams (SHM) made up of volunteer Samoan nurses from Australia and New Zealand, who were assisting with tsunami response efforts in Lalomanu and Poutasi (MoH 2010).

The UN's inter-agency cluster system (see Section 6.1) was activated providing assistance in the areas of water, sanitation and hygiene (WASH); health and nutrition; education, protection, early recovery and information management. The IFRC'S field assessment and coordination team (FACT) was deployed with delegates from the: Australian Red Cross, Canadian Red Cross, French Red Cross, New Zealand Red Cross, Tuvalu Red Cross and International Federation's Pacific regional office and the Asia Pacific Disaster Management Unit (IFRC 2009). In the aftermath of the tsunami, The Samoa Volunteer Emergency Response Team (VERT) and Water Safety Project (WSP) set up to strengthen emergency response capacity of the Samoa Fire and Emergency Services Authority (SFESA), the first responder to disasters and emergencies that requires immediate evacuation, search and rescue, first aid, and medical evacuation (SFESA 2010). While in its early, capacity-building stages, the VERT-WSP programme aims to minimise dependence on permanent staff required to man base stations in the event of concurrent emergencies (SFESA 2010). This example provides a description of stakeholder's disaster response in Samoa, with analysis of the actors and processes scheduled after additional in-country data collection.

2.2.4 DRS for immediate humanitarian needs

Taking into account the limited nature of this desk-based review, a summary of the national level[2] disaster response system according to our research's four post-disaster immediate humanitarian needs is as follows.

Immediate Humanitarian Needs:	Responsible National Actors and Stakeholders
Health Care	• Ministry of Health • Samoa Red Cross • National Health Service
Food and Nutrition	• Ministry of Health • Samoa Red Cross • Churches
Water and Sanitation	• Ministry of Health • Samoa Water Authority • Samoa Red Cross
Psychosocial needs	• Ministry of Health • Samoa Red Cross • Churches

Table 2: The DRS of Samoa in relation to the 4 post-disaster humanitarian needs

[2] See Section 6 for international level response. In-country research will allow for a better understanding on how national and international responses are linked.

3 VANUATU

3.1 COUNTRY OVERVIEW

3.1.1 Location

Vanuatu is located in the western south-Pacific Ocean, between 12°- 23° latitude south and 166°- 173° longitude east. Vanuatu has a land area of 12,336 km^2 and a maritime exclusive economic zone of 680,000 km^2 (Government of Vanuatu, 2007). Vanuatu's islands are located in the Pacific Ring of Fire, and its arc of islands result from the New Hebrides subduction zone (IFRC, 2011a). As a result, Vanuatu is vulnerable to earthquakes, volcanic eruptions and tsunami. Vanuatu's location also deems it highly vulnerable to tropical cyclones, and is therefore ranked alongside the Solomon Islands as one of the most disaster prone countries (GRDRR, 2008).

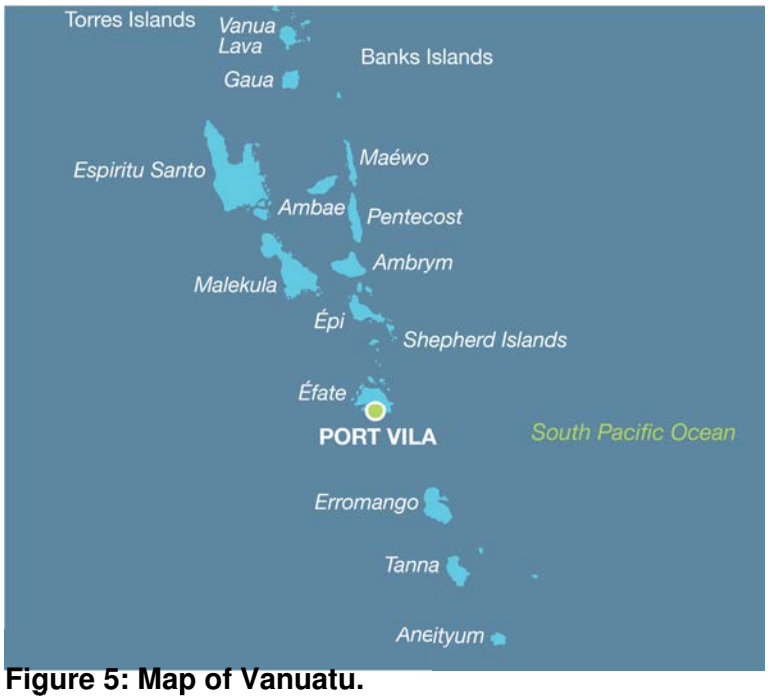

Figure 5: Map of Vanuatu.
Source: Australian BOM and CSIRO, 2011.

3.1.2 Basic geographic features

Vanuatu is a Melanesian country comprised of over 80 islands of volcanic and submarine volcanoes, the largest three islands being Espiritu Santo, Malekula and Efate (where the capital, Port Vila, is located) which comprise nearly 60% of Vanuatu's total land mass (Government of Vanuatu, 2007).

3.1.3 Population and key demographics

The population of Vanuatu is approximately 234,023 (2009 estimate – IFRC, 2011a). The island of Tanna (6th largest island) has the highest population density of 51 people / km^2 (IFRC, 2011a). The average life expectancy at birth in Vanuatu is 71 years; with females living to an average 71 years and males 69 years (WHO 2011). The country has an estimated ratio of 1.04 male(s)/female (2012 est.), with over 29.67% of the population being between the ages of 0-14 years old and nearly 66.1% in the 15-64 age group (CIA 2012). Bislama, French and English are official languages of Vanuatu, with an additional 150 indigenous languages also spoken throughout the country.

Vanuatu is ranked 125th out of 187 countries in the UNDP Human Development Index (HDI), placing Vanuatu in the medium human development category, below Samoa and Fiji (UNDP 2011). Vanuatu's status as a Least Developed Country (LDC) is currently being reviewed; however the Government is wary that graduation from LDC status will lead to reverses in development progress[3]. Vanuatu's economy is based on subsistence and small-scale agriculture, with 80% of the population living rural, subsistence lifestyles (Government of Vanuatu, 2007).

[3] See http://www.un.org/en/development/desa/policy/cdp/cdp_statements/cdp_statement_vanuatu_jan2012_egm.pdf

3.1.4 Key political features and system of government

Vanuatu gained independence from France and the United Kingdom in 1980, and has a Westminster style Constitution with a Presidential head who serves a five year term (IFRC, 2011a). The Prime Minister is an elected head of government, who, along with the Council of Ministers, forms the executive government (IFRC, 2011a).

Vanuatu's legal framework is comprised of the Constitution, Legislation and Customary Law, the latter of which is overseen by the Council of Chiefs (*Malvatumauri* - IFRC, 2011a). Vanuatu has six provincial governments and two municipal governments, which are noted to have weak planning and management capacity (Buchan et al., 2011).

3.1.5 Example of past disasters and key impacts

In January and February 2011, Vanuatu was affected by three tropical cyclones – Yasi, Vania and Atu, all of which resulted in heavy seas and storm surges, torrential rains and extreme winds. TC Vania and Atu occurred almost simultaneously, with TC Atu – a category four storm - affecting Port Vila around 21st February. TC Vania was located further to the south of the capital, affecting Tafea Province and moving towards New Caledonia. Damage from the storms resulted in destruction of fruit, root and cash crops and damaged infrastructure including water supplies and buildings (IFRC, 2011b). Government of Vanuatu and the National Red Cross Society cooperated in distributing food and supplies to over 16,000 beneficiaries (IFRC, 2011b).

3.1.6 Summary of predicted climate changes on weather related disasters

Scientific projections for Vanuatu states that temperatures are likely to increase by up to 1℃ by 2030 (high emission scenario) while sea level is predicted to rise by between 3-17cm (high emission scenario) by 2030 (Australian Bureau of Meteorology and CSIRO, 2011). Rainfall is likely to increase in the wet season and decrease in the dry season, while extreme rainfall days are likely to occur more frequently. As for Samoa, tropical cyclones in Vanuatu's region are predicted to occur less frequently, but there is expected to be an increase in the proportion of severe storms (Australian Bureau of Meteorology and CSIRO, 2011). As described for Samoa, this means that while there may be fewer intense tropical cyclones (and recognising these projections carry significant uncertainty) there may also be an increased frequency of response required to severe storms which cause damage through flooding, high winds and storm surge. This would activate the disaster response system on a more frequent basis with potentially less time in between such events.

3.1.7 Human Resources for Health workforce density

The Country Health Information Profiles (CHIPs), UNDP Human Development Report indicators and other relevant resources (e.g. Human Resources for Health Hub, 2009), assisted in reviewing Human Resources for Health (HRH) for Vanuatu. The WHO Health Statistics estimates that Vanuatu scores a HRH Density of 1.7 per 1000 population. Based on this ratio, Vanuatu is below the HRH density threshold, despite having a higher Health Worker Density than that of Samoa. CHIPs data (from 2006-2008) reveals a mid-range of results (compared to other PICs) for <5 year mortality and maternal health indicators (see Appendix A for details) reflecting a higher vulnerability in terms of health needs. Like others PICs, low salaries contribute to health worker job dissatisfaction and migration in Vanuatu (Henderson and Tulloch, 2008). A challenge for Vanuatu is that its

population is spread across 80 islands which are serviced by six public hospitals and one private hospital, with 32 aid centres and posts in every village (Buchan et al., 2011).

3.2 NATIONAL DISASTER RESPONSE SYSTEM

3.2.1 Key disaster response organisations

The Ministry of Internal Affairs has primary responsibility for disaster management in Vanuatu, and the Director General of the Ministry of Internal Affairs is appointed as the **Chair** of the National Disaster Committee.

The National Disaster Committee (NDC) coordinates disaster management.

The National Disaster Management Office (NDMO), within the Ministry of Internal Affairs, is supported by the NDC in implementing the National Disaster Act and associated plans (IFRC, 2011a). It is the responsibility of the NDC to request international assistance, should a disaster become outside the capacity of national response efforts. The NDMO has recently been relocated from within the Police Office to the Meteorology Department, with a separate budget for operations (Worwor, 2009).

The National Task Force (NTF) for DRR and DRM is comprised of representatives from relevant DRM departments and chaired by the Director of the Meteorological Service and the NDMO.

The Vanuatu Meteorology and Geohazards Department (VMGD) and the **Climate Change Unit** are also involved in disaster response and there are proposed changes to the National Disaster Act 2000 to amalgamate these agencies into a single organisation (IFRC, 2011a). A first step in aligning policy on disaster risk management and national planning is housing the NDMO together with the VMGD (SOPAC, 2011). VMGD is noted to have increased budget over recent years, highlighting the government's prioritising of the role of this organisation (Worwor, 2009).

Additional government ministries with responsibilities in disaster response include (IFRC, 2011a):

- Ministry of Foreign Affairs – responsible for liaising with donor organisations and countries
- Ministry of Finance and Economic Management – responsible for emergency funding
- Ministry of Health – distribution of medical supplies and administration of disaster medical services
- Ministry of Education, Youth and Sport – Liaise with schools and conduct Initial Damage Assessment; coordination of relief aids
- Ministry of Trade and Business Development – Provision of advice to business sector
- Ministry of Agriculture, Quarantine, Forestry and Fisheries – Damage assessments and coordination with NDMO
- Ministry of Infrastructure and Public Utilities – Responsible for issues cyclone warnings and supply of resources where possible; logistical support; damage assessment and emergency repairs.

Vanuatu also has **Provincial Disaster Committees**, with **Provincial Disaster Officers** (Worwor, 2009). The Department of Rural Water Supply (within the Ministry of Lands and

Natural Resources) is responsible for national rural water supply and is also important in delivering WASH services in post-disaster settings (SOPAC, 2006).
Vanuatu **Red Cross Society** has responsibilities spread across health and medical, and community welfare (Government of Vanuatu, 2008).

A 2008 Government of Vanuatu report also notes the **Church** as a response organisation, responsible for providing counselling and support after a disaster (Government of Vanuatu, 2008).

Vanuatu's Meteorology Department is responsible for weather forecasting (both daily and seasonal), tropical cyclone and tsunami warnings (Hay, 2009).

Numerous civil society organisations, NGOs and international relief organisations have MoUs with the Government of Vanuatu, some of which are facilitated through the Diplomatic Privileges and Immunities Act of 1982 (IFRC, 2011a). At the national level, Vanuatu Association of NGOs (**VANGO**) has had a MoU with the government since 2004. Donors such as **AusAID** and **NZAID** are also active in times of disaster response and coordinate with national institutional arrangements as necessary. A summary of all Vanuatu's leading and supporting response organisations is provided as Appendix C.

3.2.2 Institutional arrangements

The structure of the National Disaster Coordination System is provided below.

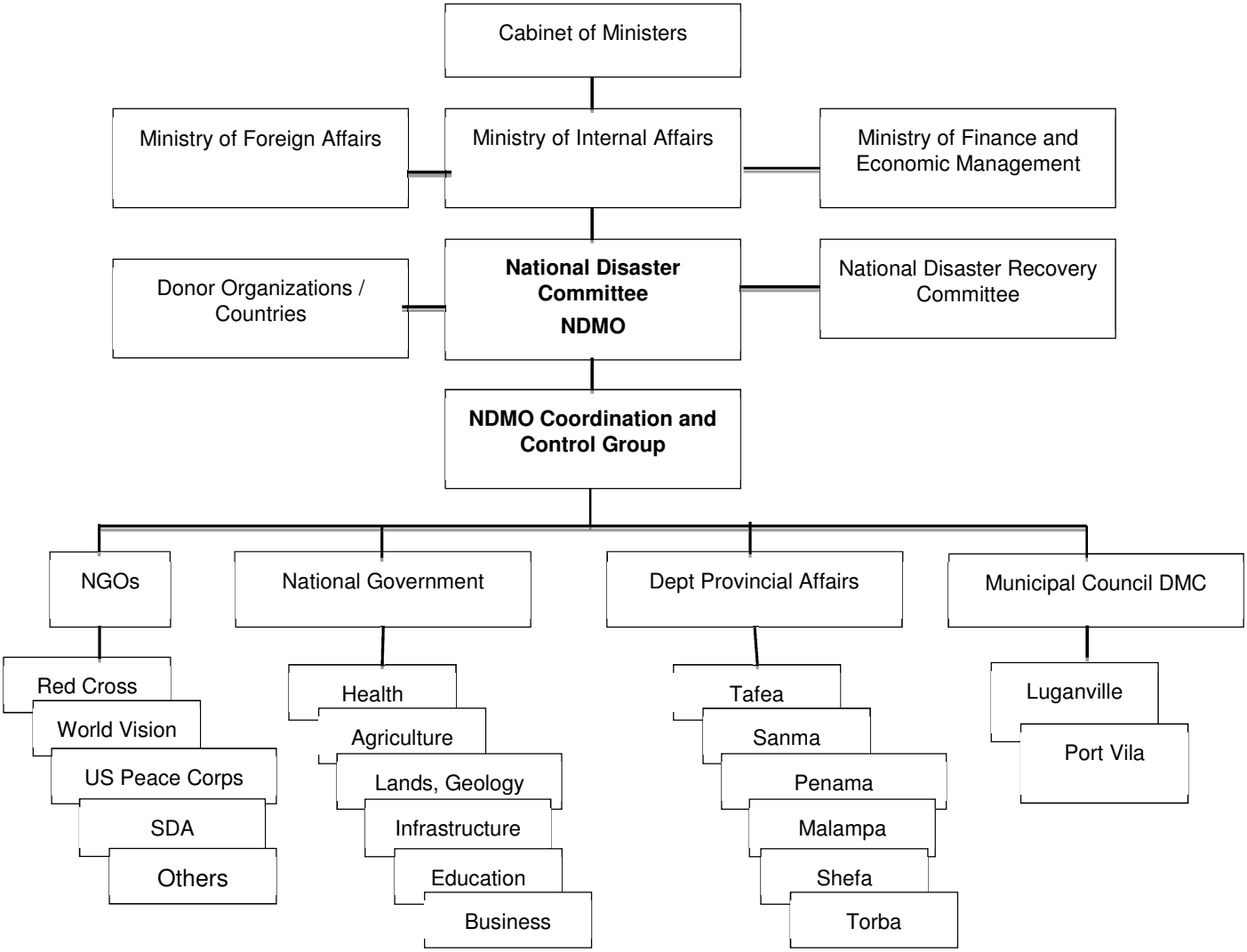

Figure 6: Vanuatu's disaster coordination system; key groups in bold.
Source: Modified from IFRC, 2011.

3.2.3 Key policy and legal framework

The National Disaster Act 2000[4], the National Action Plan for Disaster Risk Reduction and Disaster Management 2006-2016 and the National Disaster Plan (review 2009) form the legal and policy basis for disaster management in Vanuatu (IFRC, 2011a).

A summary of the structure, strategies and themes of the National Action Plan for Disaster Risk Reduction and Disaster Management is provided in Figure 7.

[4] An updated Disaster Management Act has been drafted but as of August 2011, it had not been approved by the Council of Ministers (IFRC, 2011a).

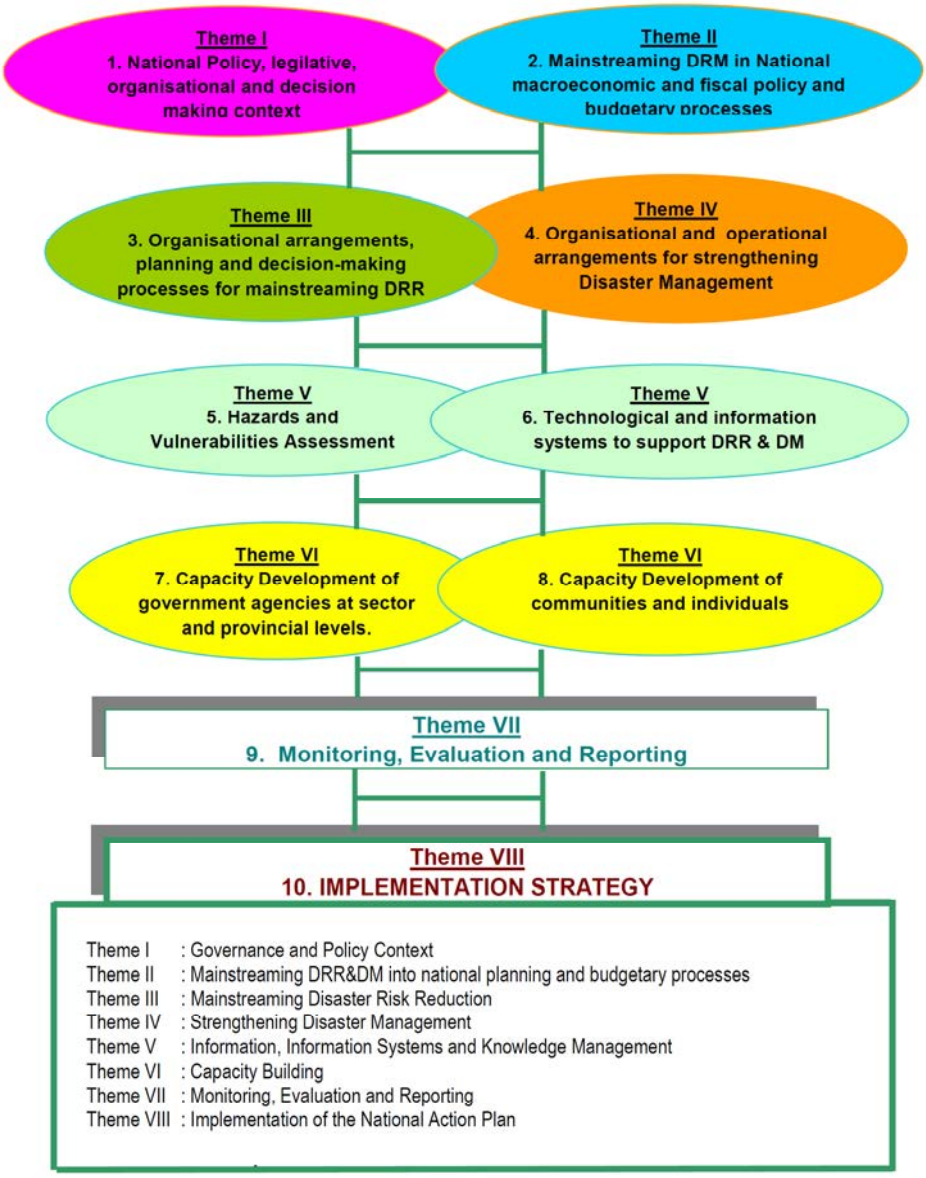

Figure 7: Vanuatu's National Action Plan for Disaster Risk Reduction and Disaster Management 2006-2016 – Structure, Strategies and Themes

Source: Government of Vanuatu, 2006.

The National Disaster Plan includes overarching Standard Operating Procedures and lines of communication for times of disaster, however it is noted that although the National Disaster Plan is reviewed on an annual basis, there is limited dissemination of the Plan amongst key stakeholders and there remain limited knowledge of its contents (IFRC, 2011a).

The Vanuatu Red Cross Society Act (1982) formalises the establishment of the Red Cross in Vanuatu and provides the basis for the work it undertakes.

The Government of Vanuatu has established a fund with VT25 million for disaster response, with an additional 1.5% of total budget available for responding to natural, health or financial disasters (SOPAC, 2011). Specific Standard Operating Procedures for both the NDMO and the VMGD are in the drafting phase as of 2011 (SOPAC, 2011).

Recent renovations have established a National Emergency Operations Centre (NEOC) which will be operated by the NDMO in times of disaster (SOPAC, 2012a).

At the sector level, Vanuatu's Ministry of Health has a National Health Disaster Management Plan (Government of Vanuatu, 2003) and a Health Response Plan however it is unclear as to whether these plans remain active documents given the development of the NAP for Disaster Risk Management.

Regarding climate change policy; Vanuatu has a National Adaptation Programme of Action (NAPA) which was developed in 2007 and led by Vanuatu Meteorological Services (see Government of Vanuatu, 2007). This report provides identification of key areas of national vulnerability regarding climate change impacts and provides the basis upon which donors are able to contribute to pre-identified national priority areas of climate change interventions. Vanuatu is the only PIC to have both a NAPA and a NAP for Disaster Risk Management and it is understood that Vanuatu is currently developing a national policy for Climate Change.

As referenced throughout this section, the International Federation of the Red Cross and Red Crescent Societies (IFRC) conducted a thorough review of Vanuatu's disaster response laws in 2011. The report notes that Vanuatu has not been affected by a major national disaster so its systems of response and their effectiveness and practical implementation have not been thoroughly tested. Recommendations provided in this report highlight the need for systems and plans developed to respond to disasters across various stakeholder groups need to be better integrated (IFRC, 2011a). Furthermore, a clearer delineation of roles and responsibilities and better visibility and circulation of existing plans is needed amongst all relevant stakeholders (IFRC, 2011a).

Box 2: Example of Past Response - Vanuatu

As described in Section 3.1.5, in 2011, Vanuatu was affected by three successive tropical cyclones over the period of one month. The multiple impacts to Vanuatu resulted in the disruption of sea freight/transport and cancellation of flights across the region, hence further delaying the delivery of aid and the shipments of supplies to affected regions until tropical cyclone Atu had passed (IFRC 2011b). Communications to these island communities were limited and in some cases not possible at all until rapid assessments teams were able to be flown out to the islands (IFRC 2011c).

The Vanuatu NDMO coordinated the response to emergency. The immediate humanitarian needs identified were food, agriculture rehabilitation, non-food items and water and sanitation (USAID 2011; IFRC 2011b, IFRC 2011c). As part of the response, a water, sanitation and hygiene (WASH) cluster group was formed and led by UNICEF, supported by Adventist Development and Relief Agency (ADRA),Vanuatu Red Cross Society (VRCS), Rural Water Supply and the Tafea Provincial Disaster Committee (IFRC 2011b, IFRC 2011c). VRCS contributed to the provision of logistics resources, procurement of water infrastructure materials (funded by Oxfam Australia) and the chartering of sea freight for transportation of materials (IFRC 2011c). The Government of Vanuatu with support from VRCS volunteers conducted the distribution of food (IFRC 2011b), and conducted further agriculture assessments. In addition to the IFRC support Australian Red Cross provided relief items, the French Red Cross supplied the VRCS with water and sanitation personnel and water quality testing kits for assessment of the affected water supplies across Erromango Island and parts of Tanna Island (IFRC 2011c).

Additionally, the USAID/OFDA through the U.S. Embassy in Port Moresby, Papua New Guinea contributed funds to the immediate relief efforts in the health and WASH sectors, and for the procurement and distribution of critical non-food items in Tafea Province, through the Vanuatu Red Cross Society (USAID 2011). The Adventist Development and Relief Agency (ADRA) in Vanuatu worked with the Government of Vanuatu's Department of Rural Water Supply to help with the repair of water supply systems in Tafea Province, with support from the New Zealand government (McCully, 2011).

As for Samoa, this example provides a description of stakeholder's disaster response in Vanuatu. Analysis of the actors and processes will occur with additional in-country data.

3.2.4 DRS for immediate humanitarian needs

Figure 6 and Appendix C provide useful information regarding the disaster response system of the research's four themes. In addition, The Ministry of Health Disaster Committee is described in the National Health Disaster Management Plan is likely to be a key actor in disaster response, however, as noted above, given this plan is from 2003 it may have been superseded. As described in the 2003 Plan, the committee is comprised of the following representatives (Government of Vanuatu, 2003):

- Director General (Chairperson)
- National Disaster Controller
- Deputy National Controller.
- MOH Executives
- Senior Medical Clinician
- National Clinical Services and Public Health Disaster Controllers
- Environmental Health Representative
- Emergency Department Clinician-Nurse
- Representative Finance Section-MOH
- Representative World Health Organization
- Senior Planner
- Epidemiologist
- Representative, NDMO

A summary of the DRS actors responsibilities relating to the four themes of the research in Vanuatu is provided below. Note that this is recognised as containing gaps given the reliance on potentially outdated materials.

Immediate Humanitarian Needs:	Responsible National Actors and Stakeholders
Health Care	• Ministry of Health • Police • Fire • Red Cross • Local NGOs
Food and Nutrition	• Police • Government Agencies • Community • NGOs
Water and Sanitation	• Red Cross • Rural Water Supply • Provincial Disaster Committees
Psychosocial needs	• Churches • Community Leaders

Table 3: The DRS of Vanuatu in relation to the 4 post-disaster humanitarian needs
Source: Government of Vanuatu, 2008.

4 FIJI

4.1 COUNTRY OVERVIEW

4.1.1 Location

The Fiji islands are located around 18°S latitude and 175°E longitude in the South Pacific Ocean. The location of Fiji exposes it to the effects of trade winds, El Niño Southern Oscillation (ENSO) impacts and the South Pacific Convergence Zone.

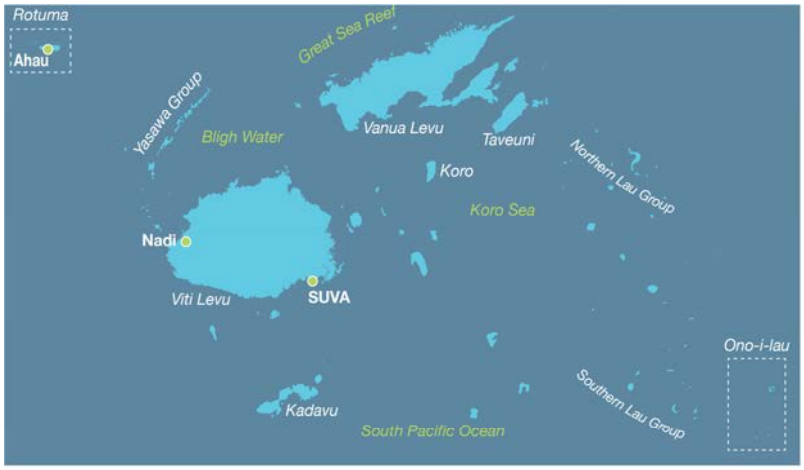

Figure 8: Map of Fiji.
Source: Australian BOM and CSIRO, 2011.

4.1.2 Basic geographic features

Fiji is comprised of approximately 300 volcanic islands and coral atolls, around a third of which remain uninhabited. Most islands are surrounded by fringing and barrier coral reefs. The land area of Fiji is approximately 18,300km^2 while its Exclusive Economic Zone (EEZ) is 1.26 million km^2 (FAO, 1999).

4.1.2 Population and key demographics

The population of Fiji is approximately 860,623 (World Bank, 2010) with indigenous Fijian predominantly of Melanesian background. The largest island, Viti Levu, accounts for around 70% of the population and is the country's centre of politics and economy with the capital city, Suva on the eastern side and the centre of tourism, Nadi, of the western side. Over 80% of land is owned by Fijians under the customary land tenure system, and can be leased to non-Fijians. During British colonisation (especially in the period 1879-1916), a program bringing contract labourers from India to Fiji has led to a high ethnic Indian population. The current population of Indo-Fijians comprise approximately 37% of the total population (Fiji Islands Bureau of Statistics, 2007). This cultural mix is significant given the differing social and cultural practices of the two dominant cultural groups (indigenous Fijians and Indo-Fijians) (Minorities at Risk, 2006). The country has an estimated ratio of 1.03 male(s)/female (2012 est.), with over 28.9% being between the ages of 0-14 years old and nearly 65.9% in the 15-64 age group. (CIA 2012) The average life expectancy at birth for Fijians is 69 years, with females living to an average 73 years and males 66 years. (WHO 2011) Fiji has an estimated net migration of -7.1 per 1000 population. The United Nations Development Programme (UNDP) Human Development Index (HDI) ranks Fiji 100th out of 187 countries. This places Fiji in the top six countries of the medium human development category ranking it as one of the countries with higher levels of social development in the Pacific (UNDP 2011).

4.1.3 Key political features and system of government

Fiji is a former British colony, gaining independence in 1970. A series of coups (two in 1987, one in 2000 and the latest in 2006) have resulted in an interim military-led government, with democratic elections scheduled for 2014 (Hayward-Jones, 2011). As a

result of this political situation, Fiji has been suspended from the Commonwealth and the Pacific Islands Forum since 2009 (Hayward-Jones, 2011).

Example of past disasters and key impacts

In 2009, Fiji was affected by serious flooding on the western and northern side of Viti Levu – the region known as Fiji's sugar belt and also the focus of tourism. The severity was considered the worst in history since the 1931 floods, with flood levels of up to 3-5m (Lal et al., 2009). Damage to infrastructure and losses to growers and millers was estimated at FJD$24 million, with an additional estimate of FJD$5 million in humanitarian costs (Lal et al, 2009). Domestic and international assistance was provided by a range of development partners and donors, in addition to the commercial sector providing cash or in-kind assistance (Lal et al., 2009). This assistance was greatly needed, given that 42% of flood affected families were unable to meet their basic food needs (Lal et al., 2009).

4.1.4 Summary of predicted climate changes on weather related disasters

Projections for Fiji indicate that temperatures are likely to increase by up to 1℃ by 2030 (high emission scenario) while sea level is predicted to rise by between 3-16cm (high emission scenario) by 2030 (Australian Bureau of Meteorology and CSIRO, 2011). Although carrying considerable uncertainty, rainfall is projected to increase in the wet season and decrease in the dry season, while extreme rainfall days are likely to occur more frequently. As for Samoa, tropical cyclones in the Fiji islands are predicted to occur less frequently, but there is expected to be an increase in the proportion of severe storms (Australian Bureau of Meteorology and CSIRO, 2011). Again, this means that while there may be fewer intense tropical cyclones (and recognising these projections carry significant uncertainty) there may also be an increased frequency of response required to severe storms which cause damage through flooding, high winds and storm surge. This would activate the disaster response system on a more frequent basis with potentially less time in between such events.

4.1.4 Human Resources for Health workforce density

Country Health Information Profiles (CHIPs), UNDP Human Development Report indicators and other relevant resources (e.g. Human Resources for Health Hub, 2009) revealed Fiji's HRH capacity was below the acceptable threshold for HRH Density, but scoring higher than Samoa and Vanuatu. According to the WHO health statistics Fiji scored a HRH density value of 1.98 per 1000 population. CHIPs data (from 2007-2008) reveals a low to mid-range of results for <5 year mortality and maternal health indicators (see Appendix A for details) reflecting a higher vulnerability in terms of health needs. Similar to Samoa and Vanuatu, low salaries amongst health workers in Fiji contribute to migration and job dissatisfaction (Henderson and Tulloch, 2008). A shortage of specialist nurses, including those with specialist skills in intensive care and accident and emergency has been flagged as a major HRH issue in Fiji (AusAID 2010). In addition, a study identified the lack of coordination between health policy and medical education as a major contributing factor to the resignation of medical specialists in Fiji (Oman 2009).

4.2 NATIONAL DISASTER RESPONSE SYSTEM

4.2.1 Key disaster response organisations

The National Disaster Management Council has overall responsibility for disaster management, both in times of disaster and during normal day-to-day operations (Government of Fiji, 1998). The Disaster Management Council is responsible for advising

Cabinet on declaring a natural disaster (Government of Fiji, 1998). Membership of the National Disaster Management Council is found in Appendix D.

The National Disaster Management Office (NDMO) was established in 1990; however it wasn't until 2001 that it was formally established with 12 staff and an operating budget (Rokovada, 2006). The NDMO sits within the Ministry of Provincial Development, and is responsible for implementing disaster risk management policies and plans, as guided by Disaster Management Council and Cabinet (Government of Fiji, 1998).

The National Disaster Controller is the role of the Permanent Secretary of Provincial Development pre- and post-disaster, and is advised by the NDMO. The Disaster Controller is in overall command during disasters, and advises Ministers, NGOs and other relevant stakeholders on operational issues relating to disaster management (Government of Fiji, 1998). The Disaster Controller has all government resources at his/her disposal during emergency operations (Government of Fiji, 1998).

The National Disaster Coordinator is the role of the Director of the NDMO and is responsible for coordinating the policies of the Council and the functions of the NDMO (Government of Fiji, 1998). The National Disaster Coordinator is responsible for the Emergency Operations Centre in times of disaster. The Disaster Service Liaison Officer is an additional supporting role to the Disaster Coordinator.

The Disaster Management Committee (DISMAC) is activated during times of disaster as a coordinating body.

Divisional Commissioners and District Officers are also responsible for distribution of disaster relief supplies and services post-disaster (Government of Fiji, 1998). Regarding accessing resources in times of disaster, Divisional Commissioners have the same level of authority as the Disaster Controller at the Divisional level, while District Officers have the same level of authority at the District level. Pre-disaster, these Commissioners and Officers are responsible for disaster preparedness, in collaboration with the NDMO and the Preparedness Committee (Government of Fiji, 1998).

Roko Tuis (traditional head of Provincial Councils) and **District Advisory Councillors** are also responsible for disaster preparedness at the local level (Government of Fiji, 1998).

Additional stakeholders (both government and non-government) with specific responsibilities included in the Disaster Management Act 1998 in disaster response include (Government of Fiji, 1998):

- Water Authority of Fiji – responsible for providing safe water access, distribution of water containers and other "related matters"
- Health Department – responsible for ensuring environmental conditions do not increase risks to human health
- Ministry of Foreign Affairs – responsible for requesting international assistance
- Non-Government Organisations (NGOs) – NGOs are directed to work in coordination with District Officers to avoid overlap and duplication of relief efforts.
- The Ministry of Agriculture, Rural Housing and Education are tasked with rehabilitation responsibilities (i.e. not immediate post-disaster response).

Fiji Red Cross Society sees disaster preparedness and response as its primary responsibility, and sees cooperation with national government agencies, local and international NGOs and it's IFRC as crucial in its operations (Fiji Red Cross Society,

2007). The Fiji Red Cross cooperates with the National Disaster Controller, and coordinates with all other agencies.

The Fiji Council of Social Services is listed as the umbrella NGO organisation for the Pacific with disaster response noted as one of its key areas (Chand and Naidu, 2010), however in reality this group remains limited in its activities
.
As with most PICs, the **Church** is an important social and cultural institution and active in disasters response. The Fiji Council of Churches represents most of the Christian faith-based organisations s in Fiji and is a member of the Pacific Conference of Churches – both of which are active in disaster management and climate change issues (see http://www.oikoumene.org/member-churches/regions/pacific/fiji/fcc.html).

Numerous **United Nations (UN)** agencies have regional offices in Fiji which are responsible for a number of countries neighbouring the Fijian islands and the Pacific region as a whole. Many of these UN agencies are also active in disaster response (see Section 6 for details).

Donors such as **AusAID**, **NZAID and USAID** are also active in times of disaster response and coordinate with national institutional arrangements as necessary.

4.2.2 Institutional arrangements

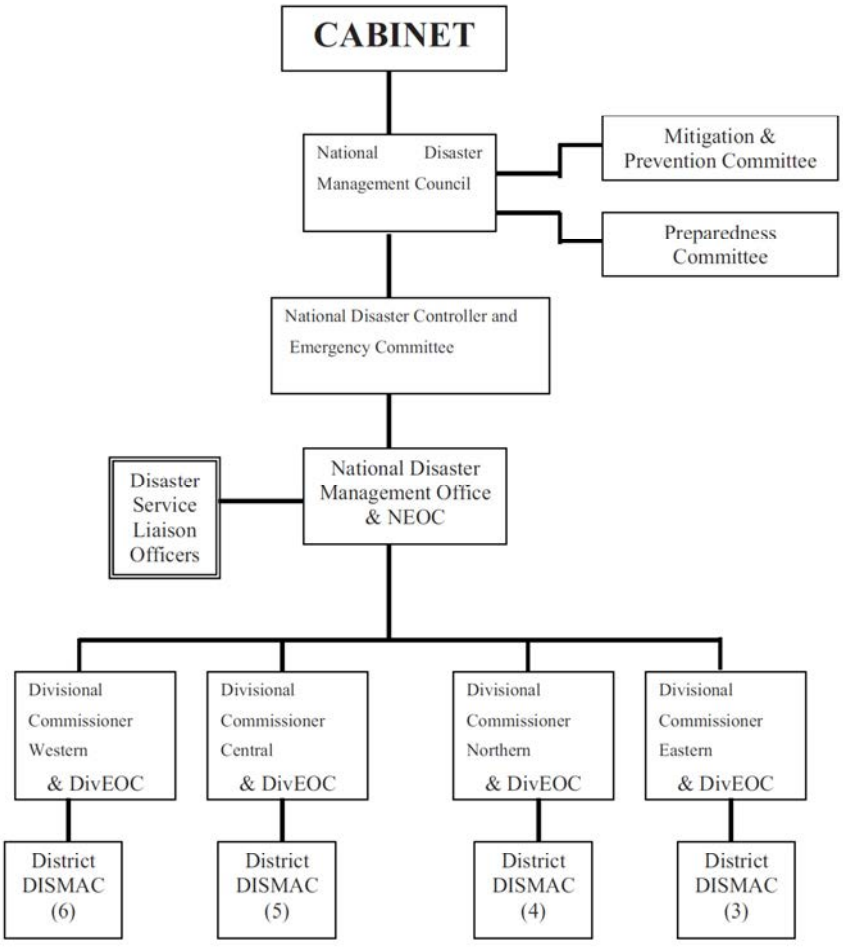

Figure 9: Fiji's organisations structure during emergencies and disasters

Source: Government of Fiji, 1995.

Figure 9 illustrates the structure of relevant organisations in Fiji during times of disaster. It should be noted that Cabinet sit above the National Disaster Management Council and provide guidance and direction. Furthermore, three Committees are linked to the National Disaster Council, they being:

- Emergency Committee
- Preparedness Committee
- Mitigation and Prevention Committee

Given this research's focus on disaster response, the members of the Emergency Committee are found in Appendix E.

4.2.3 Key policy and legal framework

Fiji's National Disaster Management Plan was first developed in 1995, and is currently being reviewed. It is supported by Hazard Contingency Plans and Agency Support Plans (UNISDR, 2010).

The National Disaster Risk Management Act 1998 outlines the legal basis for the management of disasters. It includes powers to establish the National Disaster Management Office (NDMO), the National Disaster Management Council, Emergency Operations and Declaration of Disasters. Fiji's NDMO is currently implementing the Comprehensive Hazard and Risk Management (CHARM) Framework.

A National Emergency Operations Centre is also mentioned in the Disaster Risk Management Act 1998, and is the location for monitoring, warning and coordination of immediate post-disaster response (Government of Fiji, 1998).

Fiji Red Cross Society has its own Disaster Preparedness and Response Plan (Fiji Red Cross Society, 2007) which is adhered to in times of disaster.

In February, 2012, the director of SOPAC and the Permanent Secretary for Provincial Development and Disaster Management signed a letter of agreement to progress the development of a Joint National Action Plan for Disaster Risk Management and Climate Change Adaptation (SOPAC, 2012b).

The Prime Minister's National Disaster, Relief and Rehabilitation Fund was established in 2004 with FJ$2 million (topped up annually by the National Disaster Management Budget and overseen by the National Disaster Committee) to address the dependence of government handouts after disasters (Hay, 2009). In January 2012, flooding on the west of Viti Levu around Nadi resulted in the Prime Ministers Flood Relief fund receiving funds from a range of sources, both national organisations and international governments and NGOs (ReliefWeb, 2012).

Finally, Fiji has developed Standard Operating Procedures (SOPs) for management and coordination of disasters, from its National Emergency Operations Centre (Government of Fiji, 2010).

Fiji is currently developing a national climate change policy, and is also in the process of integrating climate change into its National Disaster Management Plan (Hay, 2011).

Box 3: Example of Past Response - Fiji

Tropical Cyclone Tomas, a category four cyclone, reached the Fiji Islands on Monday, 15 March 2010. The slow moving system gained intensity as it moved south across the northern islands of Fiji, over Vanua Levu, the Lau and Lomaiviti Group bringing destructive winds and heavy rains. A state of disaster was declared in the northern and eastern divisions by the Fiji Interim Government (IFRC 2010b). International assistance was formally requested by the Ministry of Foreign Affairs and in response, the Australian and New Zealand governments' deployed planes with emergency supplies and personnel to assist with aerial surveys of the affected areas (IFRC 2010b, Smith 2010). Fiji's Disaster Management Committee coordinated the government's response, with coordination and information management support SOPAC and OCHA. International assistance was coordinated by the Ministry of Foreign Affairs, with specific operational issues directly managed by the respective Ministries. The National Disaster Management Council (DISMAC) in collaboration with the Fiji Red Cross Society emergency response teams and trained disaster assessment personnel conducted initial post-disaster assessments in the affected areas (IFRC 2010b). Funding from the Australian Government allowed the NDMO to charter helicopters and boats to deliver relief supplies to remote communities, and the Fiji Red Cross Society to distribute emergency supplies already in storage in Fiji, and enable the local purchase of other essential supplies (Smith 2010) survival boxes were donated by the Rotary Club (OCHA 2010a).

The officials from different government departments, Save the Children Fiji, and the Fiji Red Cross Society (FRCS) conducted multi-sectoral assessments in the affected islands and relief teams provided food and basic non-food relief items, including clothes, blankets, tarpaulins, water, cooking sets, hygiene sets and first aid kits and tents for shelter and classrooms. Food packs were provided by ADRA to supplement the Government food distribution. Private food companies donated or supplied discounted food supplies (OCHA 2010a).

National Emergency Operations Centre (NEOC) monitored the Evacuation Centres / Emergency Shelters, and the damage to infrastructure. DISMAC reported major damage to root crops mainly in the Northern and Eastern Divisions. In order to address food security the Ministry of Agriculture conducted rapid assessment of agriculture and distributed vegetable seeds of fast growing crops and proposed a one month food ration to affected communities and boarding schools. (OCHA 2010b) The health sector response was coordinated by The Ministry of Health, supported by key actors including WHO, UNICEF, NZAID, AusAID and the Fiji Red Cross. The health team conducted assessment of health facilities, handling of medical emergencies, disposal of the dead and planning for a typhoid vaccination campaign in vulnerable communities and typhoid hotspots post-disaster (OCHA 2010b). Micronutrient deficiency and growth monitoring was flagged as a health priority to be monitored by Maternity and Child Health clinics in Fiji (OCHA 2010a). Key agencies involved in the WASH cluster include the Ministry Of Health, IFRC, WHO, SOPAC, AusAID, Fiji Water Foundation, NZAID and UNICEF. WASH awareness advertisements were aired through the media by UNICEF and MOH (OCHA 2010a). Additionally the Ministry of Health and the WASH cluster developed a WASH emergency intervention strategy for the prevention of faecal-oral disease outbreaks in 40 cyclone affected villages and 15 schools in remote parts of Napuka, Rabi, Taveuni, Karoko and Koro (OCHA 2010b).

4.2.4 DRS for immediate humanitarian needs

Again, taking into account the limited nature of this desk-based review, a summary of the disaster response system according to our research's four post-disaster immediate humanitarian needs for Fiji is as follows.

Immediate Humanitarian Needs:	Responsible National Actors and Stakeholders
Health Care	• Ministry of Health
Food and Nutrition	• Ministry of Health • Churches
Water and Sanitation	• Water Authority of Fiji

	• Fiji Water Foundation
Psychosocial needs	• Fiji Red Cross • Churches • FCOSS • NGOs

Table 4: The DRS of Fiji in relation to the 4 post-disaster humanitarian needs

5 COOK ISLANDS

5.1 COUNTRY OVERVIEW

5.1.1 Location

The Cook Islands are located in the South Pacific Ocean between 5° – 25°S latitude and 150 – 175°W longitude. The islands lie between American Samoa and French Polynesia.

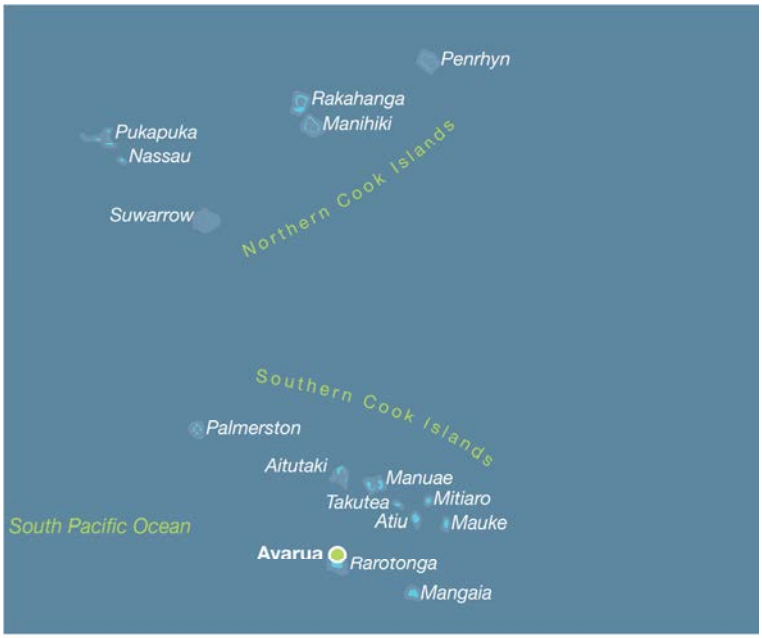

Figure 10: Map of Cook Islands
Source: Australian BOM and CSIRO, 2011.

5.1.2 Basic geographic features

The Cook Islands are comprised of 15 islands, all but two of which are inhabited. The country is geographically divided into a group of atoll islands in the north (the Northern Group) and volcanic islands in the south (the Southern Group) (Government of Cook Islands, 2010). The Cook Islands have a total land area of approximately 240km^2 across an expanse of ocean of 2 million km^2 (Government of Cook Islands, 2010).

5.1.3 Population and key demographics

The Cook Islands have a predominantly Polynesian population of approximately 15,750, with over two thirds residing in Rarotonga (SPC, 2008), which is the capital island and located in the Southern Group with a land size of approximately 67km^2. The average life expectancy at birth for Cook Islanders is 76 years with females living to an average 80 years and males 72 years (WHO 2011). The country has an estimated ratio of 1.07 male(s)/female (2012 est.), with over 25.1% being between the ages of 0-14 years old and nearly 65% in the 15-64 age group (CIA 2012). Population decline is a key challenge in the Cook Islands (Government of Cook Islands, 2010). The Cook Islands have a relatively high per capita income stemming from expatriate incomes and the success of the tourism sector, however it is worth noting that this is seen to overlook outer island subsistence lifestyles which are common (Reed, 2004). More than one-quarter of the working population is employed in the agriculture sector with major exports made up of copra and citrus fruit. Black pearls are the Cook Islands' leading export (CIA 2012).

5.1.4 Key political features and system of government

Since 1965, the Cook Islands have been a self-governing nation in free association with New Zealand, with Cook Islanders being citizens of New Zealand (Government of Cook Islands, 2010). The Prime Minister heads the government with parliament having 25 elected members including a representative of Cook Islands overseas constituency (Government of Cook Islands, 2010).

Outer Island Local Governments enjoy devolved statutory powers, and elects a local council and a Mayor, with an Island Secretary managing operations (Government of Cook Islands, 2010).

5.1.5 Examples of past disasters and key impacts

On February 10th 2010, category three Tropical Cyclone (TC) Pat hit the island of Aituaki in Cook Islands Southern Group. The TC struck after a series of TCs affected the Cook Islands during the month of January. Given the early warnings available, upon the TCs impact, the Prime Minister declared a State of Emergency for the island of Aituaki and government and Red Cross personnel were dispatched early on the 10th February (UNOCHA, 2010).

The United Nations received a formal request for assistance from the Government of the Cook Islands on 12 February 2010, while New Zealand received its request for assistance on 14 February 2010. New Zealand responded to the Cook Islands request with its 'Operations Cook Islands Assist' mission which involved army and air force delivering emergency aid relief and assisting with repairs (NZAID, 2010). Immediate funds of NZ$350,000 were also provided for response, while a further NZ$5.5 million were made available for reconstruction (NZAID, 2010).

5.1.6 Summary of predicted climate changes on weather related disasters

Projections for the Cook Islands indicate that temperatures are likely to increase by up to 1℃ by 2030 (high emission scenario), with a wider uncertainty range given for the Southern Group (Australian Bureau of Meteorology and CSIRO, 2011). Sea level is predicted to rise by between 4-15cm (high emission scenario) by 2030 (Australian Bureau of Meteorology and CSIRO, 2011). Rainfall projections carry considerable uncertainty in the region of the Cook Islands, however in the Southern Group, scientists project an increase in the wet season rainfall, while extreme rainfall days are likely to occur more frequently (Australian Bureau of Meteorology and CSIRO, 2011). As for the other PICs, tropical cyclones in the Cook Islands are predicted to occur less frequently, but there is expected to be an increase in the proportion of severe storms (Australian Bureau of Meteorology and CSIRO, 2011).

5.1.7 Human Resources for Health workforce density

Country Health Information Profiles (CHIPs), UNDP Human Development Report indicators and other relevant resources (e.g. Human Resources for Health Hub, 2009) revealed Cook Islands' HRH capacity as moderate for HRH Density, scoring higher than Samoa, Fiji and Vanuatu. The Health Worker Density of 4.71 per 1000 population was more than two times more than the other three countries under review, as seen in Figure 1. CHIPs data (from 2007-2008) reveals a mid-range of results for <5 year mortality and maternal health indicators (See Appendix A for details) suggesting a slightly higher resilience compared to the other three countries in terms of HRH capacity. The small population base, resource constraints, and a shortage of health specialists and well-trained local staff has been identified as issues affecting health service provision in the Cook Islands (Ministry of Foreign Affairs and Trade, New Zealand (2011). Health workforce disparities exist between the Main Island and outer islands, affecting access to healthcare. For example, although health officers are based on four islands (Pukapuka, Penrhyn, Mitioro and Rakahanga) they do not have a resident doctor (Pacific Human Resources for Health Alliance 2009). A recent study notes that efforts are being made by

the Ministry of Health to deploy general practitioners to outer islands in efforts to provide improved health services in remote areas (Buchan et al., 2011). The Cook Islands Health Specialist Visits (HSV) Programme is assisting by providing specialised health services not already accessible in the Cook Islands, through health practitioners from New Zealand, Australia and the wider Pacific, through public hospitals in Rarotonga and Aitutaki, and clinics and health centres on outer islands (Ministry of Foreign Affairs and Trade, New Zealand (2011).

5.2 NATIONAL DISASTER RESPONSE SYSTEM

5.2.1 Key disaster response organisations

The Disaster Risk Management Council is responsible for overseeing disaster management in the Cook Islands, including in advising the Prime Minister on declaring State of Emergencies or State of Disasters. The Disaster Risk Management Council also provides support (including an annual activities report) to Cabinet on issues relating to disaster risk management and planning. Council convenes every 3 months. See Appendix F for members of the Council.

The Disaster Risk Management Council also has an Advisory Committee, which provides specific support on issues relating to mitigation, preparedness, response and recovery.
Disaster Coordinators are appointed on each island affected by disasters. This role is responsible for implementing a Disaster Risk Management Plan (Government of Cook Islands, 2007).

The role of **National Controller** in times of disaster is taken on by the Police Commissioner (Government of the Cook Islands, 2007).

The Response Executive is established in the Disaster Risk Management Act and directs disaster response. The Response Executive is chaired by the National Controller, and also consists of the Police Commissioner, the Financial Secretary, the Secretary of Works, the Chief Executive Officer of Ministry of Outer Islands Administration and the director of EMCI (Government of the Cook Islands, 2007).

Emergency Management Cook Islands (EMCI)[5] is established as a division under the Office of the Prime Minister. Its responsibilities, as detailed in the Disaster Management Act 2007 are to coordinate the maintenance (including review and testing) and implementation of the disaster risk management plan (Government of the Cook Islands, 2007). In addition, EMCI is responsible for advising and supporting the Disaster Risk Management Council and assisting the National Coordinator in Emergency Operations Centre management in times of disaster (Government of the Cook Islands, 2007). The **Director of EMCI** is appointed by the Prime Minister, and must report to the Prime Minister. The Director has all the resources of government at his/her disposal (within reason) in times of disaster (Government of the Cook Islands, 2007).
Disaster Response Teams are coordinated at the village, district or island level and are tasked with implementing the Disaster Risk Management Plan at the local level, in tandem with EMCI (Government of the Cook Islands, 2007).

[5] EMCI is the Cook Islands equivalent of the National Disaster Management Office (NDMO) in other PICs.

Island Councils are responsible for establishing **Disaster Risk Management Committees** and a **Disaster Coordinator**, who liaise with the Director of EMCI on the implementation of Disaster Risk Management Plans (Government of the Cook Islands, 2007). Disaster Coordinators take on the powers of the Disaster Controller should an event occur in the Outer Islands and communications are limited (Government of the Cook Islands, 2007). Disaster Risk Management Plans are to be prepared and maintained by the Disaster Risk Management Committees.

The **Ministry of Health** is responsible for appointing a Health Official to assist the Disaster Coordinator. The **Ministry of Works** is also important in disaster response from a coastal hazards and infrastructure perspective (Reed, 2004).

Cook Islands Red Cross Society is active in Cook Islands disaster response, with its head office in Rarotonga and branches located on nine of the 12 inhabited islands (IFRC, 2003). Cook Islands Association of NGOs (CIANGOs) is the umbrella group representing NGOs in the Cook Islands, also important in disaster response.

Donors such as **AusAID** and **NZAID** are also active in times of disaster response and coordinate with national institutional arrangements as necessary.

5.2.2 Institutional arrangements

The institutional structure of the Cook Islands disaster management system is illustrated in Figure 11.

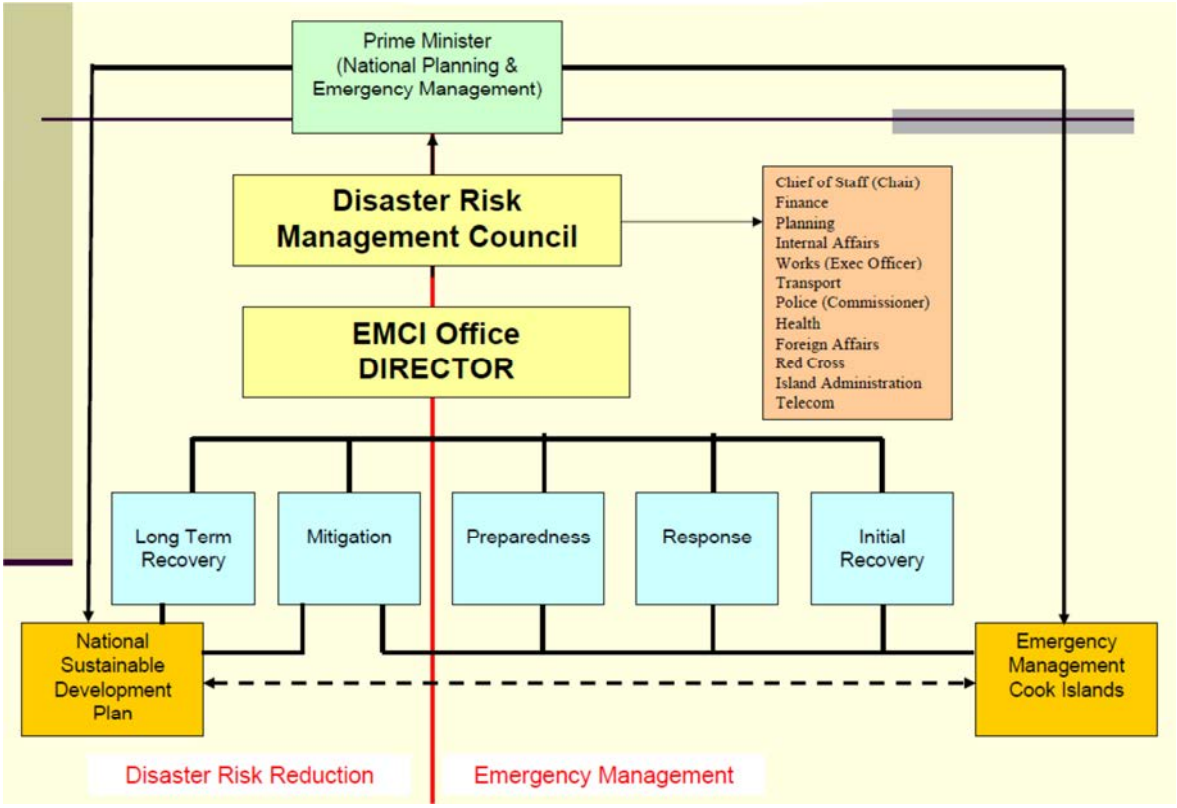

Figure 11: Cook Islands Disaster Risk Management Structure

Source: EMCI, 2007.

National ministries are included in the Disaster Risk Management Council as indicated in Figure 11 and also listed in Appendix F.

5.2.3 Key policy and legal framework

The Cook Islands Disaster Risk Management Act 2007 replaced the Hurricane Safety Act 1973. The Act establishes Emergency Management Cook Islands (EMCI) as the lead national focal point to coordinate disaster risk management activities and provides relevant details on disaster management including the declaration of a State of Disaster and a State of Emergency (Government of the Cook Islands, 2007).
Cook Islands overarching plan for disasters is its National Action Plan for Disaster Risk Management 2009-2015, which was developed with the support of regional partners including SOPAC, UNDP, PIFS and the PDRMPN (Government of Cook Islands, 2010).
Disaster Risk Management Plans are stated as being required by all agencies and essential services[6], and must include details pertaining to evacuation, mitigation strategies, resources, and also comply with the Director's directions (Government of the Cook Islands, 2007).

The Cook Islands Health Strategy of 2006 (Government of the Cook Islands, 2006) lists 'health sector responsiveness' as a key priority, noting further development of disaster and emergency response is needed, including capacity building.
Additional relevant plans and frameworks for disaster response in the Cook Islands include:

- Disaster Risk Management Plan for the Outer Islands
- The Outer Islands Local Government Act 1987 is significant as it establishes the legality of Island Councils – important stakeholders in disaster response at the local level (Government of the Cook Islands, 2007).
- National Emergency Operations Centre (NEOC) is established in the Act and is the location in which the Response Executive operates from (Government of the Cook Islands, 2007).
- Cyclone Response Plan 2009 (reviewed)
- EMCI Business Plan
- Cook Islands developed a Tsunami Response Plan after the 2009 tsunami devastated Samoa and Tonga.

The Cook Islands government is currently working towards integrating climate change concerns into its existing National Disaster Risk Management Plan, so as not to duplicate existing actions and priorities (Carruthers, 2011). A National Planning Week was held in February/March 2011 to work collaboratively and progress the joining together of disaster and climate change planning (Carruthers, 2011).

Criticisms of the response to TC Pat, particularly on the financial inefficiencies of the response, have led to discussions of the process by which heads of ministries are required to use their ministry budgets in disaster response (Government of Cook Islands, 2011). In January 2011, the new Prime Minister suggested the establishment of a Trust Fund for Disaster Management, Response and Recovery, and in June 2011, Cabinet approved NZ$200,000 to be allocated to the Trust Fund and managed through a coordinated approach involving EMCI, Ministry of Finance, Office of the Prime Minister, and SOPAC (Government of Cook Islands, 2011).

[6] Essential services are defined as: All Ministries and offices of Government, All State owned Enterprises and Authorities, Cook Islands Red Cross, Telecom Cook Islands, Banking Institutions, Island Councils, Significant Private Sector enterprises and All schools and tertiary institutions (Government of Cook Islands, 2007).

Box 4: Example of past response - Cook Islands
As described in Section 5.1.5, Tropical Cyclone Pat hit The Cook Islands early on 10 February 2010 affecting Rarotonga, Palmerston and Aitutaki Islands. Based on the magnitude of the damage, the Prime Minister declared a State of Disaster for Aitutaki Island and a state of Emergency in Rarotonga, with requests for international assistance mainly from New Zealand and the United Nations. An Emergency Operation Centre (EOC) was immediately activated on the island and rapid assessments conducted by a team comprised of Ministry of Education, Ministry of Health and Ministry of Infrastructure and Planning (MOIP) government and The Cook Island Red Cross Society (CIRS), indicated that shelter and water were the greatest needs on the island. Numerous domestic buildings had been damaged or destroyed on the island, although the airport, wharf and hospital sustained minimal damage (OCHA 2010c, IFRC 2010d). The Ministry of Internal Affairs' Department of Social Welfare dispatched staff to identify the most vulnerable that requires social welfare supported under government schemes (OCHA 2010c).

The New Zealand Defense Force (NZDF) C-130 Hercules provided assistance in the immediate post-disaster to transport emergency relief goods and equipment to isolated islands (OCHA 2010c). The UNDP provided early recovery expertise to the Cook Islands to aid the government in the formulation of a multisectoral recovery plan. The Australian Red Cross provided drinking water, and family tents for displaced families in Aitutaki, and the CIRCS distributed Food funded by ADRA (OCHA 2010c). IFRC's Pacific Regional Office (in Suva, Fiji) coordinated the support from regional partners to CIRCS, including the New Zealand Red Cross Society, the Australian Red Cross Society, the French Red Cross and the South Pacific Regional Intervention Platform (PIROPS) as well as the UNOCHA (IFRC 2010d) as well as mobilizing personnel and relief items (OCHA 2010c).

5.2.4 DRS for immediate humanitarian needs

Taking into account the limited nature of this desk-based review, a summary of the disaster response actors and stakeholders according to our research's four post-disaster immediate humanitarian needs for the Cook Islands is as follows.

Immediate Humanitarian Needs:	Responsible National Actors and Stakeholders
Health Care	• Ministry of Health • Cook Islands Red Cross
Food and Nutrition	• Cook Islands Red Cross • Churches
Water and Sanitation	• Ministry of Health • Ministry of Works • Cook Islands Red Cross
Psychosocial needs	• Cook Islands Red Cross • Churches

Table 5: The DRS of Cook Islands in relation to the 4 post-disaster humanitarian needs

6 LINKS TO REGIONAL AND INTERNATIONAL ORGANISATIONS

6.1 Key regional and international organisations and systems

Regional and international partners in disaster response in the Pacific include the following:

- SPC / SOPAC – Pacific Islands Applied Geoscience Commission
- SPREP – Secretariat of the Pacific Regional Environment Programme
- UNDP – United Nations Development Programme
- NZCDM – New Zealand Civil Defense Management
- TAF – The Asia Foundation[7]
- AusAID – Australian Agency for International Development
- USAID – United States Agency for International Development
- NZAID – New Zealand Agency for International Development
- OFDA – Office of the U.S. Foreign Disaster Assistance
- IFRC - International Federation of Red Cross Society
- UNISDR – United Nations International Strategy for Disaster Reduction
- UNOCHA – United Nations Office for the Coordination of Humanitarian Affairs
- European Union (EU)
- World Bank
- FAO - Food and Agriculture Organization
- International NGOs
- Pacific Humanitarian Team (PHT)

The Pacific Humanitarian Team (PHT) was formed in 2008 and is coordinated by UNOCHA, and overseen by the UN Resident Coordinator in Fiji. The PHT covers 15 PICs[8] and operates on the principles of predictability in decision making and coordination through the use of cluster groups / leads and accountability, as the UN Resident Coordinator is accountable to the UN Secretary General.

The PHT includes the following Clusters and Cluster Leads, which also act as Sectoral Working Groups:

Cluster	Cluster Lead
Logistics	World Food Programme (WFP)
Health and nutrition	WHO
Shelter	IFRC
Protection	OHCHR, UNHCR
Food security	FAO

[7] Preparedness for response via training, rather than direct response
[8] PHT countries include Cook Islands,, Federated States of Micronesia (FSM), Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Republic of the Marshall Islands (RMI), Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu (see http://www.phtpacific.org/Country).

Early recovery	UNDP
Education	Save the Children, UNICEF
Water sanitation and hygiene	UNICEF

Table 6: Pacific Humanitarian Team Clusters and Cluster Leads
Source: Pacific Humanitarian Team: http://www.phtpacific.org/

The Pacific Disaster Risk Management Partnership Network (PDRMPN) was established in 2006 and is coordinated by SOPAC, supported by regional development partners and is comprised of numerous NGOs, donors, UN agencies and academic institutions. The aim of the PDRMPN is to strengthen the implementation of national disaster plans across the Pacific in line with the **Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 - 2015** (Regional Framework) (see http://www.pdrmpn.net/pdrmpn/).

6.2 Systems of international and regional response

The UN Inter-Agency Standing Committee (IASC) was set up in 1992 with humanitarian and development partners coordinating their approach to disaster response. The IASC is comprised of "all operational organizations and with a standing invitation to the International Committee of the Red Cross, the International Federation of Red Cross and Red Crescent Societies, and the International Organization for Migration. Relevant non-governmental organizations can be invited to participate on an ad hoc basis" (IASC, 2011).

UNOCHA is responsible for coordinating several systems of disaster response including (Kennedy and Muller, 2008):

- UN Disaster Assistance Coordination (UNDAC) Team: Comprised of IT, logistics, and cartographers
- Urban Search and Rescue (USAR)
- Resource Mobilization through flash appeals.

In the Pacific, UNOCHA also coordinates the Pacific Humanitarian Team as described in Section 6.1.

International and regional instruments important in disaster response include:

- Hyogo Framework for Action 2005-2015[9]
- Pacific Plan (PIFS, 2007)
- Pacific Regional Framework for Action (SOPAC, 2009)

The Red Cross is an important stakeholder in disaster response from the international level to the local level (as seen in each country's stakeholder descriptions). The Red Cross has a global response mechanism called the Disaster Response Emergency Fund (DREF), which it provides to National Red Cross Societies in times of disasters and health emergencies (IFRC, 2010). As noted by the IFRC, "*The DREF is a vital part of the*

[9] See http://www.unisdr.org/we/coordinate/hfa

International Federation's disaster response system and increases the ability of national societies to respond to disasters" (IFRC, 2011d).

IFRC responded to an increasing number of disasters in recent years and is considering ways of raising additional funds for the DREF to meet the needs of National Societies it supports (IFRC, 2010). Red Cross Emergency Response Units (ERUs) are coordinated from IFRC's headquarters in Geneva. IFRC is also active in the field of International Disaster Response Law (IDRL) and its Disaster Law Programme provides technical assistance, capacity building and advocacy, dissemination and research to developing countries (see http://www.ifrc.org/en/what-we-do/idrl/about-idrl/).

At the regional level, Red Cross operates out of Kuala Lumpur in its support and coordination of disasters in south-east Asia and the Pacific. The Kuala Lumpur Disaster Management Unit can offer technical support in relief management, assessments, WASH, shelter and early recovery (IFRC, 2011d). Also located in Kuala Lumpur is the Red Cross Regional Logistics Unit, providing both technical and training support (IFRC, 2011d). The IFRC Pacific Regional Office in Suva, Fiji provides support to PIC national Red Cross Societies particularly in capacity building for disaster preparedness (IFRC, 2011d).
An additional regional funding mechanisms is the Regional Natural Disaster Relief Fund (RNDRF), established in 1975 by the Pacific Islands Forum Secretariat (PIFS) to provide PIFS member countries with financial support in responding to natural disasters (IFRC, 2011d).

7 IMPLICATIONS FOR RESEARCH

This review has described the various elements of the disaster response systems within the four countries of interest for this research (Samoa, Fiji, Vanuatu and Cook Islands) and also at the regional and international levels. As well as partly contributing to answering our research questions, the review raises issues and questions regarding adaptive capacity, and which elements of adaptive capacity are most important in disaster response. For example, does the existence of a National Disaster Plan correlate to high adaptive capacity in disaster response; is adaptive capacity enhanced if the NDMO reports directly to the Prime Minister?

Being a desk based review, this report has limitations in its ability to analyse the effectiveness and adaptive capacity of these systems on the ground. The following questions have emerged from this review and it is anticipated that they will form part of the in-country questioning in the four countries.

- At the moment of response, what shapes decisions and priorities by the different actors and stakeholders within the national level response system?
  - *National policies, legislative frameworks?*
  - *Regional / international mechanisms?*
  - *Are there any that detract from the system – acting as a barrier to building up adaptive capacity to changed needs in the face of climate change?*
- How are the roles of government and non-government (private and NGO) interacting at the moment of response?
  - *At the national level?*
  - *At the regional and international level?*
  - *Clearly articulated and understood?*
  - *How are decisions made? Who makes them and what power relationships are involved?*
- Within institutions, what are seen as the most important elements of adaptive capacity for effective disaster response (and why)?
  - *Leadership, management and governance structures?*
  - *Technical capacity, tools, methods and approaches?*
  - *Health workforce education, training?*
  - *Access to assets (financial and human resources)?*
  - *Perceptions of risk?*
  - *Elements of social practice?*
  - *Information and knowledge?*
- What is the level of understanding of the links between climate change and tropical cyclones and storms?
  - *Have steps been taken to address these potential links?*
  - *Are there discussions occurring in-country, policies under formulation?*

The above questions will be posed during the in-country research, along with a comparison, or validation, of the on-the-ground situation of the disaster response systems with contents of this report. It is acknowledged that there are significant limitations in relying on available resources from sources such as the internet, thus it is hoped that in-country research will ground truth the review, or otherwise assist in filling existing gaps

and potential misinterpretations. Further analysis will enable researchers to better understand the most important determinants of adaptive capacity in disaster response, allowing insights into what is needed to cope with potentially more frequent and intense events driven by climate change.

8 SUMMARY AND CONCLUSION

This report has described the disaster response systems of Samoa, Fiji, Vanuatu and Cook Islands and provided an overview of the regional and international response mechanisms relevant to these four countries. Relevant stakeholders have been described both broadly and in relation to our four identified immediate humanitarian needs post-disaster (health care, water and sanitation, food and nutrition and psychosocial needs). The legal elements have also been described in term of relevant Acts which serve to underpin the national response frameworks, as well as other important guidelines, frameworks and strategies that aim to enhance the country's response to disasters.

A summary table of the relevant actors and stakeholders in each of the four countries, and relative to our four humanitarian needs, is provided below. Again we stress the recognised limitations of desk based research and the need for in-country validation.

Immediate Humanitarian Needs:	**Responsible National Actors and Stakeholders**			
	Samoa	**Vanuatu**	**Fiji**	**Cook Islands**
Health Care	- Ministry of Health - Samoa Red Cross - National Health Service	- Ministry of Health - Police - Fire - Red Cross - NGOs	- Ministry of Health - Fiji Red Cross	- Ministry of Health - Cook Islands Red Cross
Food and Nutrition	- Ministry of Health - Samoa Red Cross - Churches	- Police - Government Agencies - Community - NGOs	- Ministry of Health - Fiji Red Cross - Churches	- Cook Islands Red Cross - Churches
Water and Sanitation	- Ministry of Health - Samoa Red Cross		- Fiji Red Cross - Public Works Department	- Ministry of Health - Ministry of Works - Cook Islands Red Cross
Psychosocial needs	- Ministry of Health - Samoa Red Cross - Churches	- Churches - Community Leaders	- Fiji Red Cross - Churches - FCOSS - NGOs	- Cook Islands Red Cross - Churches

Table 7: Summary of the DRS of each country in relation to the 4 post-disaster humanitarian needs

The four countries have many similarities in how disasters are managed, with a coordinating government body called the National Disaster Management Office (NDMO – or in the Cook Islands, Emergency Management Cook Islands - EMCI), which is generally responsible for disaster preparedness and risk reduction activities. In times of disaster, the NDMO/EMCI maintains a high level of activity and coordination authority, however also reports to more senior government officials who have a higher level of power and decision making abilities.

While climate change is well understood to pose significant threat to PICs, particularly through changing the nature of extreme events, the four countries are at different stages of incorporating and integrating measures to adapt to climate change impacts and disaster risk reduction and response. Samoa's two national plans for disasters and climate change remain separate, however Samoa's relatively high institutional capacity appears to be able to manage and implement necessary measures contained in these two plans. The other three countries remain in discussion with regional organisations regarding the integration of disaster and climate change risk into single national plans.

The limitations of a desk based study provide significant challenges in analysing the capacity of a country to respond to a disaster. This is well recognised and our research team aim to overcome this through detailed in-country research. It is hope that any gaps will be filled and potential misinterpretations will be corrected, and the broader research will be validated so as to gain a more comprehensive picture and further answer our research questions.

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10 APPENDICES

Appendix A – Selection of Pacific Island Countries for study

Climate change impacts are likely to affect global stability, health, resources and infrastructure. In the Pacific, the impacts of climate change are expected to be severe, particularly the possibility of increased frequency and intensity of extreme events. Pacific Island Countries (PICs) are inherently vulnerable to climate change given their small size, insularity and remoteness and limited disaster mitigation capacity. Climate change therefore challenges Australia's significant existing investment in development in PICs including in response to emergencies.

This project seeks to understand the capacity of both PICs and Australia's emergency response to a potential increase in disasters driven by climate change. Given the limitations of the research, four PICs will be investigated in detail. On the basis of an assessment against criteria relevant to the objectives of the study, we have selected the following countries;

- Cook Islands
- Fiji
- Samoa
- Vanuatu

The selection of these countries is based on the following criteria which were developed for the project:

- Mix of geographical settings (e.g. atoll countries, high islands, isolation / sparseness)
- Varied policy landscapes (e.g. those with national climate change and / or disaster policies and plans and those without, or in development)
- Mix of countries with recent significant climate disasters, and those in the more distant past.
- Countries that experience tropical cyclones (our research aims to examine the response to the same type of disaster across 4 countries – this comes as a response to PRG recommendations)
- Varied Health Workforce Density

We are also interested in including a mix of countries with a range of social development needs, capacity and vulnerabilities, thus have also included development indicators as a criteria for selection. Polynesian and Melanesian countries are included given the fact that Micronesian countries are less vulnerable to tropical cyclones due to their location outside of the tropical cyclone belt. The following table summarises PICs status against these criteria to assist in selection of 4 PICs. Countries are ranked (lowest to highest) in order of their Human Development Index value.[10]

[10] Human Development Index (HDI) value: A composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. See http://hdrstats.undp.org/en/indicators/103106.html

Sources:					DFAT[11]	Development indicators					
						UNDP[12]			CHIPS[13]		WHO[14], HRH Hub[15]
Country	**Cultural context**	**Geography**	**Last major climate related event?**	**Policy Instruments (NAPA, NAP, JNAP)**	**Population**	**Impact of natural disasters: number of deaths (average per year/million)**	**Impact of natural disasters: population affected (average per year/million)**	**Human Development Index (HDI) value**	**<5 years mortality per 1000 live births**	**Maternal mortality per 100,000 live births**	**HRH (doctors, nurses, midwives) density per 1000 population**
PNG	Melanesia	Large high island, some small atolls	TC Guba, 2007	NAP	6600000 (2010)[ii]	4	3987	0.466	68	250	0.6
Solomon Islands	Melanesia	Large volcanic islands, some small atolls	Heavy rain and flooding 2009	NAPA, N-DRM Plan 2009, JNAP under development	531000 (2010)	4	4672	0.51	37.2 (2007)	100 (2008)	2
Vanuatu **	Melanesia	Volcanic high islands	TC Vania, Jan 2011; TC Yasi Jan/Feb 2011; TC Atu Feb 2011	NAP, NAPA (only PIC with both), Climate Change Policy under development	247000 (2010)	2	24519	0.617	31 (2008)	70 (2006)	2
Kiribati	Micronesia	Atoll nation; sparse	Drought - current	NAPA and Kiribati Adaptation Program (KAP), National Water Resource Policy	100000 (2010)	0	85	0.624	48 (2008)	158 (2005)	4

[11] DFAT country fact sheets. Available at http://www.dfat.gov.au/geo/index.html. downloaded 1 March 2012
[12] UNDP: Human Development Report 2011. Available at http://hdr.undp.org/en/media/HDR_2011_EN_Complete.pdf
[13] WHO Western Pacific Region.(2010) Country health information profiles. (CD-ROM) Revision 2010
[14] WHO. Global Atlas of the Health Workforce. Available http://apps.who.int/globalatlas/default.asp
[15] HRH Hub 2009. Mapping Human Resources for Health Profiles from15 Pacific Island Countries: Report to the Pacific Human Resources for Health Alliance from the Human Resources for Health Knowledge Hub, UNSW. April 2009 available at http://www.med.unsw.edu.au/HRHweb.nsf/resources/Mapping_15_PacificCountries.pdf/$file/Mapping_15_PacificCountries.pdf
N.B. The HRH density was calculated based on the sum of doctors, nurses, midwives divided by the country population and reported per 1, 000 population. The Joint Learning Initiative's report on Human Resources for Health Density suggests that a density of 2.5 workers per 1,000 (WHO 2.3 per 1000) may be considered a threshold of worker density necessary to attain adequate coverage of some essential health interventions and core MDG-related health services. http://www.who.int/hrh/documents/JLi_hrh_report.pdf

FSM	Micronesia	Atoll nation; sparse	High seas - 2009; King tides in Jan and Feb 2011	Climate Change Policy under development	110000 (2010)	43	7771	0.636	39 (2009)	317 (2003)	3
Samoa	Polynesia	Large volcanic islands	TCs Ofa and Val in 1990 and 1991	NAPA; 2011 Review of HFA progress; National Disaster Plan and the Health Sector Disaster Plan	186000 (2011)	5	0	0.688	13 (2004)	3 (2006)	2
Fiji ** *(could also be useful to include Fiji given location of regional offices and chance to meet stakeholders)*	Melanesia	High and low islands	Flooding, 2009; Coastal inundation from high seas May 2011 (SLR/inundation/ erosion)	Initial National Communications (2005), National Climate Change Policy under development, JNAP under development	890000 (2010)	8	10511	0.688	23.6 (2008)	31 (2007)	3
Tonga	Polynesia	Various geographies	TC Renee 2010	JNAP under implementation, National Forest Policy (contains more than thirty references to climate change)	103000 (2010)	0	15857	0.704	26 (2008)	37 (2007)	4
Niue	Polynesia	Small single "high" island	TC Heta, 2004	JNAP under development	1514 (2009)	NR	NR	0.774[16]	0	0	13
Palau	Micronesia	Small rock islands	NA (does not encounter TCs)		20397 (2009)	NR	NR	0.782	25.64 (2009)	NR (1 death 2009)	7
Cook Islands **	Polynesia	High and low islands	Tropical Cyclone Pat (2010) - island of Aitutaki. 2005 - major TCs	NAP, JNAP under development	13300 (2009)	NR	NR	NR	7.1 (2009)	0	11

[16] Taken from Barnett, 2008.

Tuvalu ** *(although we don't have a Micronesian country, Tuvalu is an atoll country and has many challenges similar to those in Kiribati and RMI)*	Polynesia	Reef islands and atolls	Drought - current	NAPA; S/JNAP under development, Climate Change Policy under development, National Strategy for Sustainable Development (2005–2015)	11090 (2010)[ii]	NR	NR	NR	35	NR (1 death in last 10 years)	6
Marshall Islands	Micronesia	Atoll nation; sparse	High seas - 2009; King tides in Jan and Feb 2011	NAP, JNAP under development, Climate Change Policy under development	54065 (2009)	0	1110	NR	46 (2009)	NR	4
Nauru	Micronesia	Small single island (phosphate)	NA (does not encounter TCs)	JNAP under development; National Nauru Disaster Plan and the Min of Health Disaster Plan Manual	9771 (2009)	NR	NR	NR	37.9 (2003-2007)	300 (2002)	11

NAPA = National Adaptation Programme of Action

NAP = National Action Plan (for Disaster Risk Management - DRM)

JNAP = Joint National Action Plan for DRM and Climate Change Adaptation (CCA)

DRR = Disaster Risk Reduction; ER = Emergency Response; CCA = Climate Change Adaptation

NR = Not reported

Appendix B: Samoa's Disaster Advisory Committee Members

Core Members (Responsible Agencies Listed in Act)	Representative
Electric Power Corporation	CEO (or nominated representative)
Ministry of Agriculture & Fisheries	CEO (or nominated representative)
Ministry of Communication & Information Technology	CEO (or nominated representative)
Ministry of Education, Sports& Culture	CEO (or nominated representative)
Ministry of Finance	CEO (or nominated representative)
Ministry of Foreign Affairs & Trade	CEO (or nominated representative)
Ministry of Health	CEO (or nominated representative)
Ministry of Natural Resources and Environment	CEO (Chairperson of DAC) Disaster Management Officer
Ministry of Police, Prisons & Fire Services	Police Commissioner (or nominated representative) Chief Fire Officer (or nominated representative)
Ministry of Prime Minister & Cabinet	CEO (or nominated representative)
Ministry for Revenue	CEO (or nominated representative)
Ministry of Women, Community & Social Development	CEO (or nominated representative)
Ministry of Works, Transport & Infrastructure	CEO (or nominated representatives) comprising: Maritime Infrastructure Assets – Building Infrastructure Assets – Roads PUMA Civil Aviation Energy
Origin Energy Samoa	CEO (or nominated representative)
Samoa Airport Authority	CEO (or nominated representative)
Samoa Broadcasting Corporation	CEO (or nominated representative)
Samoa Ports Authority	CEO (or nominated representative)

Samoa Red Cross Society	Secretary General (or nominated representative)
Samoa Shipping Corporation	CEO (or nominated representative)
Samoa Water Authority	CEO (or nominated representative)
SamoaTel	CEO (or nominated representative)
Telecom Samoa Cellular	CEO (or nominated representative)
Associate Members:	
Australian High Commission	Nominated representative
CARITAS Oceania Samoa/ CCJD	Nominated representative
Chinese Embassy	Nominated representative
Foreign Aid Office	Nominated representative
Head Office – European Union	Nominated representative
Japan International Co-operation Agency	Nominated representative
New Zealand High Commission	Nominated representative
Office of the Attorney General	Nominated representative
Samoa Hotel Association	Nominated representative
Samoa Polytechnic	Nominated representative
Secretariat for the Pacific Regional Environment	Nominated representative

Source: Government of Samoa, 2006 (NDRMP)

Appendix C: Samoa's Disaster Response Organisations: Roles and Responsibilities

Stakeholder Group	Roles and Responsibilities
National Disaster Council/Cabinet	'High level' oversight of the NAP and DRM in general
Disaster Advisory Committee (DAC)	· Ensure overall coordination of NAP activities at a national level with regular meetings · Overall responsibility for NAP implementation/coordination and ensure NAP aims and objectives are aligned with and complementary to other related DRM initiatives · Endorse NAP implementation progress reports for submission to the NDC/Cabinet

DAC Sub Committees	· Coordinate and facilitate implementation of NAP programmes and projects within the scope of respective areas of focus e.g. DRR, Training & Education and Emergency Communication · Agree of programmes and projects for NAP implementation · Develop M&E system with the support of the DMO and DRM partner organisations · Work with DMO and other key stakeholders on progress reports for NAP implementation
NDMO	· Lead 'Mapping' exercise to determine existing and planned complementary initiatives for the NAP and resourcing gaps to guide the identification of required financial and other assistance · Provide technical assistance and coordination support to DAC Sub Committees involved in implementing NAP activities · Lead the process of M&E and reporting in consultation with DAC Sub Committee members · Provide DAC with reporting and M&E updates from DAC Sub Committees as required · Liaise with donors and development partners through mechanisms established by the Government like the PMU · Facilitate secretariat support to DAC
DRM Donors and Development Partners	· Provide resources and assist in coordination and monitoring and evaluation of implementation progress · Support the communication of the NAP and related implementation progress at regional and global levels · Identify further opportunities for DRM strengthening
Government Agencies	· Implement NAP activities as per the programme and projects developed · Develop DRM sector and subsidiary plans wherever necessary · Maintain regular reporting of progress of NAP activities · Participate actively and provide updates to relevant DAC Sub Committees as required · Allocate resources for DRM implementation
Civil Society, NGOs, Community and Private Sector	· Participate actively in DAC and DAC Sub Committees · Identify and support implementation of NAP programme and projects · Provide feedback to assist M&E

Source: Government of Samoa (2011)

Appendix D: Vanuatu's Disaster Response Organisations: Roles and Responsibilities

Response Function	Lead Agency	Role	Support Agency/ies	Role
Health and Medical				
First Aid	Ministry of Health	Coordinating the initial response	Police, Fire and Red Cross	Assist as Required
Transport and movement of casualties	Ministry of Health	Coordinating and providing ambulance services	Police, Fire and Red Cross	Assist as Required
Medical Treatment	Ministry of Health	Providing medical practitioners and hospital facilities	Police, Fire and Red Cross	Assist as Required
Public Health	Ministry of Health	Developing prevention activities and raising public awareness	Red Cross and NGOs	Assist as Required
Management of Deceased Victims	Ministry of Health	Coordinating the management of deceased victims	Police and Foreign Affairs	Disaster Victim Identification Coroner services Repatriation
Mortuary Services	Ministry of Health	Processing and storage	Police and Foreign Affairs	Storage of deceased Persons
Counselling and Support	Churches	Providing counselling services	Community Leaders	Assist as Required
Fire and Rescue				
Fire Suppression	Fire Service	Coordinating and providing fire suppression services	Police, Water, Health and Community	Assist as Required
Motor Vehicle Rescue	Fire Service	Coordinating and providing motor vehicle rescue services	Police and Health	Assist as Required
Urban Search & Rescue (e.g. structural collapse)	Fire Service	Coordinating and providing initial search and rescue services	Police, Health and Community	Assist as Required

Maritime search & rescue (e.g. vessels, aircraft at sea)	Maritime Authority	Coordinating and conducting search and rescue	Police & Community	Assist as Required
Land Search & Rescue	Police Service	Coordinating and carrying out Search and Rescue	Fire Service, Heath and Community	Assist as Required
Evacuation				
Evacuation of people	Police Service	Coordinating and carrying out evacuation and security of property	Fire Service and Communities	Assist as Required
Community Welfare				
Registration of Evacuees	Police Service	Registering evacuees using a prescribed process	Red Cross, Health and NGOs	Assist as Required
Temporary Shelter	Police Service	Coordinating the provision of temporary shelter	Govt. Agencies and Community Leaders	Assist as Required
Emergency Food and Clothing	Police Service	Coordinating the provision of emergency food supplies	Govt Agencies Community and NGOs	Assist as Required
Emergency Finance	Min. for Finance	Coordinating the provision of emergency finance	Community Leaders	Provide funding and setting parameters
Logistics Supply				
Overseas Aid	Ministry of Foreign Affairs	Coordinating emergency external assistance	Min of Finance And Aid Management	Assist as Required
Information Management				
Public Information / Media Liaise	National Disaster Controller	Coordinate the issuing of Public Information and liaison arrangements with the media	Public Information/Media Liaise Officer	To coordinate the representatives of the media and prepare releases for public

				broadcasts
Enquires about affected people	Police Service	Responding to local and international enquires	Media Liaison Officer	Assist with enquires regarding affected people
Communications between response agencies	National Disaster Controller	Ensuring there is effective communications links between all responding agencies	NDRMO and all response agencies	Assist with communications between responding agencies
		Impact Assessment		
Initial Damage and Needs Assessment	Central Control Group	Coordinating tasks behalf of the NDC	Trained Assessors from various agencies and UNDAC if required	Provide initial damage and needs assessment reports
Building evacuations	Police Service	Coordinating the safe evacuation of buildings	Fire Service	Assist as Required
Utility services impacts	UNELCO[17]	Provision of information on impacts on water and power supplies	Police, Fire and communities	Assist as Required
Assess impacts – roads	Public Works	Provision of information on road damage and access	Police and Communities	Assist as Required
Assess restoration – Air Travel	Civil Aviation Authority	Provision of information on the safety of air travel and the airport	Airport Fire Service	Assist as Required
Assess restoration – marine	Maritime Authority	Providing information on the safety of marine travel and the seaports	Port Authority	Assist as Required
Environmental impact	Environmental Unit	Providing information on the environmental impact	Other Sectors	Assist as Required
Chemical / Toxic spill	Fire Service	Coordinate the clean-up of toxic	Other Sectors including	Assist as Required

[17] French owned power company

clean-up – Land		substances on land	Private Sector	
Clean up - Sea	Maritime Authority	Coordinate the clean-up of toxic substances affecting the marine environment	Port Authority and Oil and Gas Companies	Assist as Required

Source: Government of Vanuatu, 2008.

Appendix E: Membership of Fiji's National Disaster Management Council

(a) Permanent Secretary responsible for disaster management activities who shall be Deputy Chairman
(b) Permanent Secretary for Home Affairs
(c) Permanent Secretary for Foreign Affairs
(d) Secretary to Public Service
(e) Permanent Secretary for Fijian Affairs
(f) Permanent Secretary for Finance
(g) Permanent Secretary for Agriculture
(h) Permanent Secretary for Public Works
(i) Permanent Secretary for Health
(j) Permanent Secretary for the Prime Minister's Office
(k) Permanent Secretary for Information
(l) Permanent Secretary for Women & Culture
(m) Permanent Secretary for Education
(n) Permanent Secretary for Lands
(o) Permanent Secretary for Urban Development
(p) Commander, Fiji Military Forces
(q) Commissioner of Police
(r) Controller of Government Supplies
(s) Director of Meteorology
(t) Managing Director, Telecom Fiji Ltd.
(u) Chief Executive, Fiji Electricity Authority
(v) Director-General, Fiji Red Cross Society
(w) Director, Fiji Council of Social Services
(x) Chief Executive, National Fire Authority
Source: Government of Fiji, 1998

Appendix F: Membership of Fiji's National Emergency Committee

a) Permanent Secretary for Regional Development, Chairperson
b) Permanent Secretary for Agriculture
c) Permanent Secretary For Health
d) Permanent Secretary for Home Affairs Permanent Secretary for
e) Public Works Permanent Secretary for Transport
f) Permanent Secretary for Fijian Affairs Permanent Secretary for Finance
g) Commissioner, Fiji Police Force Commander, Fiji Military Forces
h) Controller of Government Supplies Director, Fiji Council of Social Services
i) Director General, Fiji Red Cross Society

Source: Government of Fiji, 1995.

Appendix G: Membership of Cook Islands' National Disaster Management Council

(a) the Prime Minister, or his or her delegate, who will act as the Chair;
(b) the Financial Secretary;
(c) the Police Commissioner;
(d) the Director of EMCI;
(e) the Public Service Commissioner;
(f) the Chief Executive Officer of Office of the Minister of Island Administration;
(g) the Secretary of Ministry of Works and
(h) the Director of the Meteorological Services.

Source: Government of Cook Islands, 2007.

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