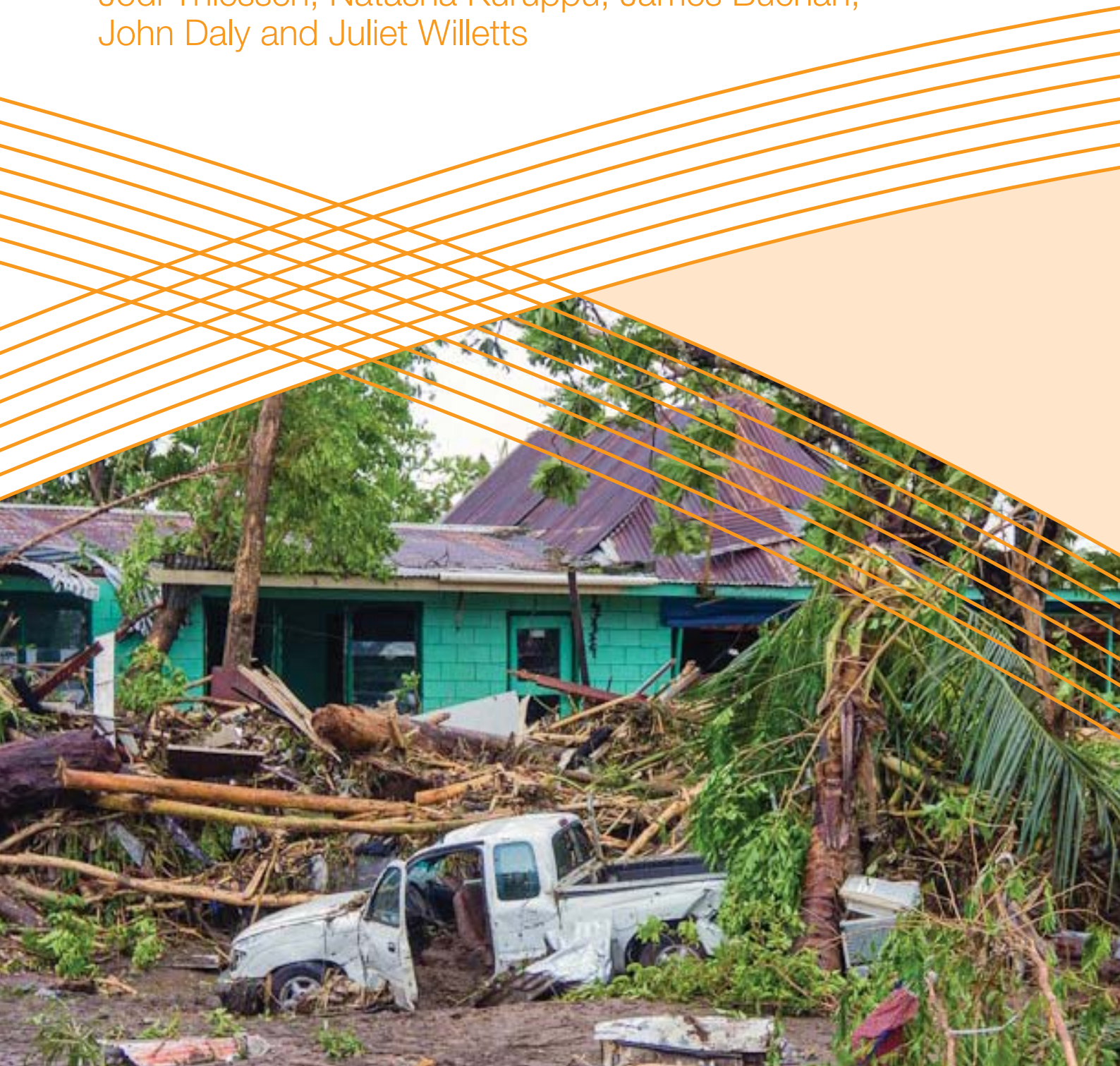


# Disaster response and climate change in the Pacific

Final Report

Anna Gero, Stephanie Fletcher, Michele Rumsey,  
Jodi Thiessen, Natasha Kuruppu, James Buchan,  
John Daly and Juliet Willetts





# **DISASTER RESPONSE AND CLIMATE CHANGE IN THE PACIFIC**

## **Understanding the Pacific's adaptive capacity to emergencies in the context of climate change**

University of Technology, Sydney

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### **COUNTRY REPORTS:**

- Country Report – Vanuatu
- Country Report – Samoa
- Country Report – Fiji
- Country Report – Cook Islands

### **POLICY BRIEFS:**

- Understanding the Pacific's adaptive capacity to emergencies in the context of climate change: Policy Brief for Australian Stakeholders.
- Understanding the Pacific's adaptive capacity to emergencies in the context of climate change: Policy Brief for Pacific Regional Stakeholders.
- Understanding the Pacific's adaptive capacity to emergencies in the context of climate change: Policy Brief for Pacific Island Country stakeholders.

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- Projected climate change impacts in the Pacific: A summary.
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## ACRONYMS

ACC	Australian Civilian Corps
ACFID	Australian Council for International Development
ACMC	Australian Civil Military Centre
ADF	Australian Defence Force
ADRA	Adventist Development and Relief Agency
ANGO	Australian non-government organisation
APEDNN	Asia Pacific Emergency Disaster Nursing Network
AusAID	Australian Agency for International Development
AusMAT	Australian Medical Assistance Team
CARICOM	Caribbean Community
CCA	Climate change adaptation
CDEMA	Caribbean Disaster Emergency Management Agency
CIANGO	Cook Islands Association of non-government organisations
CICSO	Cook Islands Civil Society Organisation
CHIPs	Country Health Information Profiles
CROP	Council of Regional Organisations of the Pacific
DAC	Disaster Advisory Committee (Samoa)
DCD	Development Coordination Division (Cook Islands)
DISMAC	Disaster Management Committee
DMO	Disaster Management Office (Samoa)
DRM	Disaster risk management
DRR	Disaster risk reduction
DRS	Disaster response system
ECHO	Humanitarian Aid and Civil Protection Department of the European Commission
EMCI	Emergency Management Cook Islands
EOC	Emergency Operations Centre
FAO	Food and Agriculture Organization
FES	Fire and Emergency Service
FRANZ	France, Australia, New Zealand
HDI	Human Development Index
HPA	Humanitarian Partnerships Agreement
HRH	Human resources for health
IFRC	International Federation of Red Cross / Red Crescent Societies
ISF	Institute for Sustainable Futures

JICA	Japan International Cooperation Agency
LDC	Least developed country
LDS	Church of Jesus Christ of Latter Day Saints, Samoa
MAF	Ministry of Agriculture and Fisheries (Samoa)
MNRE	Ministry of Natural Resources and Environment (Samoa)
MoFA	Ministry of Foreign Affairs
MoH	Ministry of Health
MoIA	Ministry of Internal Affairs
MoIP	Ministry of Infrastructure and Planning
MoU	Memorandum of Understanding
MWCSD	Ministry of Women, Community and Social Development
MWTI	Ministry of Works, Transport and Infrastructure (Samoa)
NAB	National Advisory Board (Vanuatu)
NCCARF	National Climate Change Adaptation Research Facility
NDC	National Disaster Council
NDMO	National Disaster Management Office
NEOC	National Emergency Operations Centre
NES	National Environment Service (Cook Islands)
NGO	Non-government organisation
NHS	National Health Services (Samoa)
NZAID	New Zealand Agency for International Development
OUM	Oceania University of Medicine Samoa (Samoa)
PAHO	Pan American Health Organization
PCIDRR	Pacific Community-focused Integrated Disaster Risk Reduction
PDRMPN	Pacific Disaster Risk Management Partnership Network
PHT	Pacific Humanitarian Team
PIC	Pacific island country
PRG	Project Reference Group
SOP	Standard Operating Procedure
SOPAC/SPC	Applied Geoscience and Technology Division of the Secretariat of the Pacific Community
SPCNMOA	South Pacific Chief Nursing Midwifery Officer's Alliance
SUNGO	Samoa's Umbrella for Non-Government Organisations Inc
TC	Tropical Cyclone
UN	United Nations
UNDAC	United Nations Disaster Assessment and Coordination

UNDP	United Nations Development Programme
UNESCO	United Nations Education, Science and Culture Organization
UNICEF	United Nations Children's Fund
UNHCR	United Nations High Commission for Refugees
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
VANGO	Vanuatu Association of NGOs
VCC	Vanuatu Christian Council
VHT	Vanuatu Humanitarian Team
VMGD	Vanuatu Meteorology and Geohazards Department
WASH	Water, sanitation, hygiene
WHO	World Health Organization
WHO CC	World Health Organization Collaborating Centre
WMO	World Meteorological Organization

## ABSTRACT

Disasters, and therefore disaster response, in the Pacific are expected to be affected by climate change. This research addressed this issue, and focused on the immediate humanitarian needs following a disaster, drawing upon adaptive capacity as a concept to assess the resilience of individual organisations and the robustness of the broader system of disaster response. Four case study countries (Fiji, Cook Islands, Vanuatu and Samoa) were chosen for deeper investigation of the range of issues present in the Pacific. The research process was guided by a Project Reference Group, which included key stakeholders from relevant organisations involved in Pacific disaster response to guide major decisions of the research process and to influence its progression.

Given the complexity of issues involved, including the contested definitions of adaptive capacity, the research team developed a conceptual framework to underpin the research. This framework drew upon concepts from a range of relevant disciplines including Earth System Governance, climate change adaptation, health resources, resilience in institutions and practice theory. Objective and subjective determinants of adaptive capacity were used to assess the 'disaster response system', comprised of actors and agents from government and non-government sectors, and the governance structures, policies, plans and formal and informal networks that support them.

Results revealed the most important determinant of adaptive capacity in the Pacific to be communications and relationships, with both informal and formal mechanisms found to be essential. Capacity (including human, financial and technical); leadership, management and governance structures; and risk perceptions were also highly important determinants of adaptive capacity. The research also found that in small Pacific island bureaucracies, responsibility and capacity often rests with individuals rather than organisations. Leadership, trust, informal networks and relationships were found to have a strong influence on the adaptive capacity of organisations and the broader disaster response system.

A common finding across all four case study countries affecting adaptive capacity was the limited human resources for health and disaster response more generally, both in times of disaster response and in day-to-day operations. Another common finding was the gap in psychosocial support after a disaster. Water, sanitation and hygiene (WASH) as an immediate post-disaster humanitarian need was relatively well established amongst responding organisations (although long term WASH issues were not resolved), while other humanitarian needs (health care, and food and nutrition) had varying stages of capacity – often limited by human, financial and technical resources. Adaptive capacity was therefore constrained by current gaps which need addressing alongside a future focus where risk is changing.

Drawing on these and other findings, recommendations for addressing key determinants of adaptive capacity were developed for relevant stakeholder groups including policy makers and practitioners in the disaster and emergency response sectors in Australia and the Pacific.

## EXECUTIVE SUMMARY

### **Introduction**

The links between climate change, natural disasters and human health are becoming better understood and reveal the need for humanitarian response organisations to incorporate climate change considerations into their planning and response strategies. However, most disaster response organisations' capacity is already over-extended in dealing with existing disasters. In particular, Ministries of Health across the Pacific often struggle to meet current health challenges, and face difficulties in responding to the additional and growing health impacts relating to climate change. This research focused on the nexus between disasters, human health and climate change in the Pacific, given the need to consider how to support organisations and the disaster response sector more broadly to cope with the added burden of climate change.

The purpose of this research was to assist in enhancing long term adaptive capacity by informing policy makers and disaster response practitioners on what is needed for effective disaster response in the face of climate change. The research defined 'adaptive capacity' as the ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. The primary objectives of the research were:

- To provide recommendations to policy makers and practitioners in the Australian and Pacific disaster and emergency response sectors on current adaptive capacity of Pacific island countries (PICs) to rapid onset climate related disasters, and what resources are likely to be 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.

The research set out to investigate adaptive capacity from two perspectives. Firstly, it investigated the adaptive capacity of the system of disaster response in PICs in terms of internal coordination, capacity, and how external assistance is sought and received. Secondly, it investigated the adaptive capacity of Australian emergency response organisations to provide effective disaster response, given the potentially heightened risk of simultaneous disasters under a changing climate. Analysis also included how external agencies might play a role in enhancing PIC's internal adaptive capacity. Four countries were selected for in-depth research: Fiji, Vanuatu, Cook Islands and Samoa – all of which are exposed to tropical cyclones, allowing for consistency in assessing response to rapid onset disasters.

Three research questions were identified which centred on the concept of adaptive capacity. Given its complex and contested nature, the research team drew on literature across several relevant disciplines to define a range of potential key determinants of adaptive capacity. These key determinants of adaptive capacity were focused at two levels (i) inter- and (ii) intra-organisational level, and were categorised as subjective or objective determinants. The three research questions were as follows, and are addressed in this report.

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 the inter-organisational determinants serve to strengthen or reduce adaptive capacity of the 'disaster response system'? This question considers Australia's response obligations as well as 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'?

### **Methods**

The research team adopted a collaborative approach, engaging with key stakeholders involved in disaster response from the Pacific and Australia. A Conceptual Framework, informed by a range of relevant theories and disciplines, guided the research. This framework drew on Earth System Governance, climate change adaptation, human resources for health, resilience in institutions and practice theories. Methods included desktop reviews, individual and group interviews, and in-country workshops with key stakeholders in the four case study countries. A Project Reference Group (PRG) was established for the research, and consisted of a range of key stakeholders from the Pacific and Australian emergency and disaster response sectors. The PRG provided a form of structured stakeholder engagement and ensured relevance of the research process and outputs. It also guided the major decisions of the research and contributed to uptake of the research findings.

The research team completed over 90 interviews in Australia, New Zealand and in the four case study countries with government, non-government organisations (NGOs) and regional organisations. In Australia, these organisations included AusAID, the Australian Council for International Development (ACFID), the Australian Civil Military Centre, the Australian Defence Force, Red Cross, and NGOs including RedR and those included in the AusAID Humanitarian Partnership Agreement. In the Pacific, research participants included National Disaster Management Offices, National Climate Change Offices, Ministries of Health and Ministries of Environment, among others. National Red Cross Societies and faith-based organisations and NGOs of both local and international origin also provided an important perspective through interview and workshop participation. Interviews in Fiji also covered regional organisations, United Nations (UN) agencies and international NGOs.

Interview and workshop results were drawn together with desktop review results during the data analysis phase. Interview transcripts were analysed using qualitative software, and coded for specific themes based on the Conceptual Framework. Key determinants of adaptive capacity of the disaster response system were identified based on triangulation of data from multiple sources. Results were analysed thematically and recommendations made accordingly.

Specific determinants of adaptive capacity were used to assess the 'disaster response system' (DRS), comprised of actors and agents from government and non-government sectors, governance structures and the formal and informal networks that support them. A list of the key determinants of adaptive capacity used in the research is provided below.

### **Key determinants of adaptive capacity**

Determinants considered at inter-organisational level:

- Architecture
- Agency
- Adaptiveness

Determinants considered within organisations:

- Access to assets
- Leadership, management and governance structures
- Technical capacity, tools, methods and approaches
- Health workforce education, training and continuing competence
- Human resource for health governance and management systems
- Risk Perceptions
- Self-efficacy beliefs
- Silo mentality
- Communications and relationships
- Strategic vision and outcome expectancy
- Information and knowledge
- Elements of social practice

### **Results and Discussion**

Highlights of key country level findings are provided below, followed by answers to the three research questions. Finally, recommendations are provided to support enhancing the adaptive capacity of the Pacific's disaster response system.

**Fiji:** A relatively strong, well defined DRS with clear lines of authority was found to exist in Fiji. There were many strengths visible in the Fijian DRS. For example, leadership was viewed by interviewees as being strong and effective. The DRS leadership included all levels of society from the villages, provincial authorities, and district authorities up to national scale, with information flowing both ways. Overall, research participants were well aware of Fiji's vulnerability to climate change and its impacts. They were motivated to prepare but were constrained in terms of human, financial, technical and material resources. Communication and information sharing between the broader DRS and key organisations such as Ministry of Health (MoH) was reported to need strengthening. The health sector was actively involved in the DRS, with nurses playing key roles in initial assessments and response. However, health care response capacity was constrained by limited human and material resources, and the vulnerability of health facilities in remote areas. In-coming health personnel were



usually coordinated through the UNOCHA system. The current political situation in Fiji was also found to cause some barriers to adaptive capacity for the international development sector as most donor funds were channelled through NGOs and specific projects. This resulted in fragmented financial resources and was found to cause confusion for some stakeholders on how and where to access finances.

**Vanuatu:** Vanuatu's National Disaster Management Office (NDMO) provided a level of leadership that was supported by relatively high capacity and support from other organisations within the DRS both in Vanuatu and from outside. The credibility and legitimacy of the DRS was heavily tied to the NDMO and the Vanuatu Humanitarian Team (VHT), with its multi-sectoral membership that was reported to function effectively as a result of pre-existing relationships and an internal governance arrangement (through its clusters) that was well understood. The shared perceptions of risk across Vanuatu's DRS, coupled with (or perhaps as a result of) the existence and leadership of the VHT, had led to an overall shared strategic vision for coping with the impacts of climate change and disasters in Vanuatu. The establishment of the National Advisory Board for disaster risk reduction and climate change adaptation (NAB) provided an example of a DRS with a future focus and vision of how it would like to progress. The strategic vision of many individuals within the DRS provided the capability to move towards a system with enhanced adaptive capacity. While the health sector's perceptions of risk were aligned with those of the rest of the DRS, its limited capacity constrained its ability to fully participate in implementation of the strategic vision. Institutional and individual capacity building within the health sector was found to be required, appreciating elements of culture, geography and lessons from the past in the development of future initiatives. Clear guidelines were needed to govern the coordination of in-coming health personnel.

**Cook Islands:** Relationships and trust were found to be key to an effective and adaptable system of disaster response in the Cook Islands. With low institutional capacity due to a small population, efficiency in disaster response required the smooth flow of information between key individuals within responding agencies, and these responding agencies needed an understanding of both the formal and informal modes of operation. Strong relationships between key individuals in the DRS were observed to lead to an awareness of agents' roles, responsibilities, capacity and gaps, which in turn lead to a legitimate and credible governance structure. Incoming personnel to the Cook Islands in times of disaster were reported to need greater awareness of these formal and informal modes of operation, including issues surrounding culture and traditional governance structures. By increasing this awareness, external assistance can support development of local adaptive capacity in ways which are more sustainable and aligned with Cook Islands cultural practices. Past events revealed some gaps in the capacity and coordination of the Cook Islands' DRS, and some steps have been taken to overcome them. For example the establishment of the nationally owned and led Disaster Trust Fund. The capacity of the health sector was also found to be highly constrained in times of disasters, however, it was clear that Cook Islanders were keen to draw on their existing capacity first and be supported by external assistance only where gaps were evident. Nurses were usually amongst the first to respond to disasters, especially on outer islands and often carried out the initial assessments. Guidelines were being developed to govern the coordination of in-coming health personnel. Leadership of key responding bodies, such as Emergency Management Cook Islands (EMCI), was observed to be crucial for future adaptive capacity. However current capacity constrains the ability of some organisations to take necessary steps to implement important DRR or disaster response planning initiatives. Mechanisms for requesting international assistance needed strengthening, and disaster policies and plans were needed across many government ministries to ensure disaster response efforts, including disaster assessments were appropriately coordinated. Such policies

and plans need adequate consultation of relevant stakeholders to ensure a collective level of ownership exists, resulting in an inclusive and collaborative DRS.

**Samoa:** Traditional and social practices in Samoa played a major role in supporting affected communities after a disaster. The Church, family and social structures enhanced the adaptive capacity as individuals reportedly felt supported and comforted. This also led to both informal and formal practices of equipping the communities with rules of engagement when a disaster strikes. Inclusion of government, NGOs, churches and the community in the decision making processes for disaster response (such as the Disaster Advisory Committee), allowed education, training and lessons learned to be integrated into the DRS. A strain on resource capacity was evident in Samoa, in particular with regard to human resources for health (HRH), financial resources and technical capacity. Nurses were often among the first respondents to disasters and carried out the initial assessment. While guidelines were in place to govern the coordination of in-coming health personnel, it was reported that considerations were being given to how to fast-track the process. High cost of living in Samoa has led to a reliance on remittances and other societal impacts such as significant migration from the villages to the main capital. Several government and NGO programs to address sustainable livelihoods in villages have been developed in an attempt to address this issue. Incoming donor funding was managed through the Aid Coordination Unit to ensure transparency and accountability for donor funding. During the immediate period after the last major disaster (the 2009 earthquake and tsunami), a lack of technical capacity of front line responders was further exacerbated by strained relationships between organisations, causing confusion and both duplication and gaps in response. Resource capacity was found to need improvement in order to build long term adaptive capacity. The NDMO was considered to be strong in leadership but lacked sufficient human resources. However, as the 2009 tsunami was so recent, there were many lessons learned being discussed and implemented throughout the disaster response organisations, boding well for the future.

**Research Question 1 asked:** 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)?

The DRS in each PIC was led by a National Disaster Management Office (NDMO – or similar), and also included (to varying degrees) ministries such as Ministries of Health, Infrastructure, Social Welfare and Community Development, Internal Affairs, Foreign Affairs and Finance. Red Cross Societies were active in each case study country, while non-government organisations were most active in disaster response in Vanuatu and Fiji. Churches were important agents for disaster response in all countries, with varying degrees of participation in national disaster planning. Traditional leaders also had limited participation in national level planning, however while it was recognised that their participation was important, it needed to be balanced by an appropriate level of involvement in decision making in National Disaster Councils. The adaptive capacity of the DRS in each of the PICs was in part dependent on the degree to which disaster risk reduction (DRR), preparedness and response had been prioritised by central government, and the degree to which key line ministries had incorporated disaster planning into their operations. Ministries of Health in all case study PICs have connections to the NDMOs or broader DRS of the Pacific region, however their overall involvement and internal coordination needed to be strengthened.

In terms of Australian disaster response, AusAID led Australia’s “whole-of-government” approach to disaster response and was key to Australia’s bilateral development efforts in the Pacific, both in terms of disaster response and ongoing development

programming. This bilateral mechanism was found to rely heavily on the knowledge, experience and relationships of in-country AusAID staff. Research findings revealed the objectives of this AusAID led- “whole-of-government” mechanism supported the adaptive capacity of the PIC DRS with AusAID proactive in understanding the needs and capacity of PICs, and tailoring support accordingly. Australian Red Cross and humanitarian non-government organisations (NGOs) were also active in disaster response, with mechanisms existing to coordinate disaster response with AusAID through Australia Council for International Development (ACFID – the peak body for NGOs). Most NGOs had dual mandates of poverty reduction programming and disaster response when the need arises, and worked closely with in-country partners (and increasingly each other, as lessons from past events are implemented) to maximise the effectiveness of their support.

Regional and international coordinating mechanisms also exist to support disaster response. These include Australia’s Humanitarian Partnership Agreement (HPA – six predetermined NGOs designated to receive funds from the Australian government), FRANZ, the Pacific Humanitarian Team and United Nations responses – all of which have set objectives which were generally well understood by all stakeholders involved. Elements of these coordinating mechanisms that supported adaptive capacity included the recognition of the need to maintain relationships and partnerships with local stakeholders and to provide ongoing DRR interventions as a way to minimise the impacts of a disaster. Adaptive capacity would be further enhanced if DRS organisations consider how climate change may affect their future capacity to respond, and plan accordingly.

In terms of regional health care capacity for disaster response and elements supporting adaptive capacity, the research found evidence of various policies in place to coordinate human resources for health for disaster response in some countries. The health workforce was found to have a strong commitment to respond to their country’s needs even in the face of limited resources and there was also evidence of strong support from the NGO and donor community within the region. Despite these strengths, elements constraining adaptive capacity included weak coordination and registration of overseas health personnel in times of disaster in some countries. Nurses were nearly always the designated first respondents and carried out the initial assessment, which they were often not trained to undertake. There was a lack of policies to address the welfare of staff and their remuneration during and following disasters and limited HRH capacity even in times of “normality.” A severe lack of material resources and limited health care infrastructure was observed, and a significant shortage of specialist personnel to deal with the psychosocial needs of the population as well as disaster response personnel was evident. Limited capacity for training of medical specialists in PICs and low levels of enrolment in entry level training for nursing and medical courses were reported to be underlying factors that could further constrain the HRH capacity to meet post-disaster needs.

There were some commonalities across the four case study countries regarding the DRS for the four humanitarian needs (**health care, water and sanitation, psychosocial needs, and food and nutrition**). In all four case study countries it was reported that human resources for health care was limited for normal day-to-day operations. This was further exacerbated in times of disaster, and reportedly affects the ability of response personnel to meet health care, food and nutrition needs. Another common finding across all four case study countries was the largely unmet need for psychosocial support of both affected communities and disaster response personnel after a disaster. In some locations NGOs assisted with psychosocial support, however, there was no widespread systemic support available, including support for health care staff involved in disaster response. Of the four humanitarian needs focused on in this

research, psychosocial needs was the one that was least served by Australian organisations and had resulted in heavy reliance on local NGOs and the church community to meet the psychosocial needs of disaster affected communities. This was culturally appropriate for the affected population, but was inadequate to meet all needs which has implications for the ability of health care workers and other community leaders to function effectively in times of disasters. Water, sanitation and hygiene (WASH) as an immediate post-disaster humanitarian need was relatively well prioritised amongst responding organisations, although long term WASH issues remained a challenge in most countries. Adaptive capacity could therefore be constrained by current gaps which needed addressing, with a future focus where risk is changing.

**Research Question 2 asked:** How do inter-organisational determinants serve to strengthen or reduce adaptive capacity? This question draws upon the concepts of architecture, agency and adaptiveness, which are high level key determinants of adaptive capacity from the field of Earth System Governance.

The DRS **architecture** involves the interlinked systems, networks, policies, and institutions associated with disaster response across national, regional and international scales. This research found that formal and informal networks were both effective mechanisms for information exchange and the development of relationships both in Australia and in PICs. In the context of this research, formal networks refer to those that are formed through political, diplomatic and organisational relationships, are often evidenced by formal documentation, signatories to plans, paid membership, or diplomatic memorandums of understanding. Informal networks refer to those that are self-made among its members and occur naturally amongst people or organisations with mutual interests. The informal element of the Pacific disaster response architecture was an essential element which supported adaptive capacity through the forging of partnerships, personal relationships and trust. It was therefore considered important that both Australian and Pacific agents working in disaster response recognise these formal and informal networks, align with and support them in order to increase their “legitimacy” as part of the disaster response system.

Regional organisations and networks such as WHO and the Pacific Disaster Risk Management Partnership Network work to enhance adaptive capacity through training, supporting planning processes and procedures for disaster response, and assisting PICs in their national policy development efforts. This research found a lack of policies addressing the welfare and compensation of health workers in the disaster context. The existence of clear guidelines for the coordination and registration of in-coming health staff varied across countries, and where these existed they needed to be clearly communicated to the wider community. Regional political and governance issues were found to constrain adaptive capacity of the DRS in some cases. For instance when relationships between DRS organisations at the national or international level are confronted by political barriers, provision of disaster relief and ongoing DRR programming becomes more difficult. When these formal modes of operation provide barriers, it is the informal modes that were found to take over. Thus informal modes of operating should not be considered secondary, but in some cases the viable alternative to formal approaches.

**Key Recommendations:**

- a) Australian and PIC DRS organisations to continue to appreciate the need for regular interaction/meetings to develop and maintain links with emerging DRS agents, regional networks, donors and international organisations (e.g. Secretariat of the Pacific Community’s Applied Geoscience and Technology Division (SOPAC), Pacific DRM Partnership Network, WHO, UN agencies, SPCNMOA, and APEDNN)

- to continue to support the smooth functioning of the overall coordinated response by PIC and external organisations.
- b) The National Disaster Council (NDC) or equivalent, with the support of Ministry of Foreign Affairs, to review, simplify and streamline national policy and processes for requesting international assistance which can be understood and followed by all stakeholders. This supports both the affected country and those offering support.
  - c) PIC MoH to develop clear and transparent policies on staff welfare and compensation of health workers during disasters, and maintain a system to implement these policies.
  - d) PICs MoH (with the support of Australian and regional / international organisations) to ensure that clear guidelines are in place for in-coming personnel registration to facilitate efficient and effective HRH management, immigration and customs processes in each country.

**“Agency”** draws on concepts such as power, control and decision making, in this research, and as such goes beyond inter-governmental co-operation and includes a focus on the partnership between ‘whole of government’ and non-state actors and institutions. This research found that non-state actors were a significant presence in the area of disaster response, with some NGO, faith-based and UN agencies wielding considerable authority in some PICs. Additionally, partnerships, relationships and trust between these agents were observed to be vital in supporting the adaptive capacity of the DRS. The research found that power, control and decision making between agents in the PIC DRS needs to be inclusive and participatory to ensure outcomes (e.g. disaster response policy) were acceptable and appropriate at all levels. Some PICs had progressed further than others in including various stakeholders (e.g. traditional and church leaders) in decision making processes and levels of inclusivity was somewhat dependent on factors such as resource capacity and leadership. The absence of trust because of a lack of personal relationships between key agents in some PICs resulted in barriers to effective response, hence constraining the adaptive capacity of the PIC DRS. For example, an absence of existing relationships and trust between agents can be problematic for coordinating disaster assessments and act to constrain adaptive capacity of the DRS, particularly in accessing vital assessment information. In an environment where there are a growing number of agents working in Pacific disaster response, sometimes in an uncoordinated manner, it is crucial to understand the importance of relationship and trust in the PIC context. It is also important for agents to align with this culture to assist in supporting the adaptive capacity of the DRS.

**Key Recommendations:**

- a) PICs NDCs (through National Disaster Management Offices (NDMOs) as key coordination agency) to ensure that traditional leaders are formally involved in both disaster planning and response, where this currently doesn’t occur. This also includes NDMOs proactively working with village /traditional leaders in remote and isolated communities to build resilience at the community level.
- b) PIC DRS organisations, led by NDMOs as key coordination agency, to ensure that adequate resources and budgetary allocations are made for the involvement of traditional leaders in disaster planning for village, provincial and national level.
- c) PICs NDC (or similar) to ensure that churches are formally involved in disaster response at the national level.
- d) NDMOs to ensure systems are in place to facilitate a structured post-disaster debrief that encourages feedback of lessons learned from all agencies into national policy and planning processes. This may include involvement of UNOCHA to support regional sharing of learnings.

**Adaptiveness**, as a key concept in Earth System Governance was included in analysis of results as it was found to be a recurring concept across the case study countries. The challenge of adaptiveness in Earth System Governance is associated with the requirement of long term sustainability, coupled with flexibility to cope with the speed of change. Attention was being given to DRR and climate change adaptation (CCA) in all four case study countries, which supports the adaptive capacity of the PIC DRS as it reduces the potential disaster impacts and builds resilience of potentially affected communities. There was ongoing support from both donors and in PIC national budgets for DRR and CCA interventions with a view to build such resilience. However the bulk of the support is donor funded (much of it for CCA interventions) and should this discontinue (however unlikely this is), PICs could face significant challenges in coping with disasters and climate change impacts. The long term dependence on aid may result in PICs becoming overly reliant on external assistance rather than aiming to develop national systems of self-determination. Regional organisations, donors and international partners should therefore consider ways to assist PICs to build internal capacity to respond to their own needs. Approaches should take advantage of traditional systems and knowledge, the strong sense of cooperation and resource sharing amongst in-country organisations, and make use of existing regional networks and relationships. The design of plans to incorporate known vulnerabilities and uncertainties as well as drawing on past experiences and existing relationships are adaptive approaches being used for disaster response.

***Key Recommendation:***

- a) Regional organisations, donors and international partners should put greater priority and investment into building PICs internal response capacity particularly by drawing on traditional systems and knowledge.

***Research Question 3 asked: Which objective and subjective determinants are most significant in influencing the adaptive capacity of the organisations within the 'disaster response system'?***

Past studies of determinants of adaptive capacity often consider those that are objective and tangible including indicators such as wealth, technology, information and technical skills. This study also recognised intangible, or subjective, determinants, which are critical in determining the ability of individuals and organisations to adapt. This research found that for organisations in the Pacific, both objective and subjective determinants of adaptive capacity were important. Table 1 displays the most influential determinants for the four case study PICs based on the analysis of this research.

**Table 1: Summary of most influential determinants of adaptive capacity for each of the four case study countries.**

Cook Islands	Fiji	Samoa	Vanuatu
1. Communications and relationships, information and knowledge	1. Information and knowledge	1. Traditional and social practices	1. Communications and relationships, information and knowledge
2. Leadership, management and governance	2. Risk Perceptions	2. Capacity (human resources, financial and technical)	2. Leadership, management and governance
3. Capacity (human resources, financial and technical)	3. Communications and relationships	3. Leadership, management and governance	3. Capacity (human resources, financial and technical)
4. Risk Perceptions	4. Financial Capacity	4. Tools, methods and approaches	4. Risk Perceptions
	5. Leadership, management and governance		5. Strategic vision and outcome expectancy

Based on synthesis across the four case study countries, the overall determinants identified as most important for adaptive capacity of organisations in the Pacific region are described below, along with recommendations on how to further support adaptive capacity for disaster response.

**Communications and relationships:** This key determinant of adaptive capacity relates to the building of trust, informal relationships between key individuals, and accountability. Supporting literature states that governance that is credible, stable and inclusive must be considered legitimate by all stakeholders, and is held accountable for its actions. Trust is developed between governance systems, their stakeholders and constituents when they are found to be credible, stable, inclusive and accountable; with effective communications pathways based on mutually respectful relationships. This key determinant was considered highly influential in three of the case study countries. In the small island bureaucracies investigated within this research, trust and personal relationships between individuals were found to have a strong influence on the adaptive capacity of the DRS (as mentioned earlier against the Agency key determinant). Adaptive capacity of organisations was found to be enhanced when individuals and organisations in the DRS maintained both informal and formal relationships with each other and engaged in national and regional networks. Regional networks also need to ensure a coordinated approach to engaging with PICs, given the many roles and responsibilities key individuals hold in their respective countries.

**Key Recommendations:**

- a) Communication and coordination between the NDMO and MoH in PICs needs to be strengthened to improve effectiveness and efficiency of disaster response.
- b) Organisations of the Pacific DRS to encourage new or emerging disaster response organisations (including regional / international response organisations) to align with the culture that is based on both formal and informal relationships and trust to assist in the flow of information in times of disaster and supporting the adaptive capacity of the DRS.
- c) Recognising the importance of formal and informal networks for maintaining relationships and trust in PICs, donors (such as AusAID) and UN agencies should systematise the coordination of regional meetings based on agreed agendas and

outputs, and ensure stakeholder inclusion and attendance is based on relevance of issues being discussed.

**Capacity:** This determinant is broad, and encompasses financial, technical (including training) and human resource capacity. Defining the technical capacity, tools, methods and approaches included in a disaster response system is important for understanding how the system functions, for monitoring/evaluation of response outcomes, and identifying gaps for future exploration and analysis, and the capacity to adapt to unforeseen stresses. This key determinant was found to be highly influential in all four case study countries. This research found that a country's disaster response system often relies on very few people with limited resources. Low institutional capacity of PIC disaster response organisations response agencies therefore led to high levels of vulnerability. Disasters place extra demands on agencies, including the health care workforce in terms of the number of workers and the skills and tools required to meet response needs. The research revealed a need for assessment of how workforce capacity can be improved in terms of the numbers, skills, competencies, deployment and co-ordination required to respond to climate driven disasters. These results also remain relevant for non-climate driven disasters (e.g. earthquake, tsunami and volcano). The gap in psychosocial support was mentioned above, with specific recommendations provided below.

**Key Recommendations:**

- Australian and regional / international DRS organisations, in partnership with SOPAC and NDMOs, to better coordinate capacity building, technical up-skilling and training programmes relating to disaster and health response (aligned with UNOCHA's own recommendations). This is to include needs based content and systematic selection of participants and may include discussion on how to effectively consolidate regional training programs to address the human resources for health capacity issues.
- Donors such as AusAID to continue to support CCA initiatives in line with PIC driven national risk reduction needs and their integration with broader PIC adaptation priorities.
- Ministries with responsibility for Finance (MoF), supported by the donor community, to lead discussion on the best approach to provision of access to national emergency funds in times of disaster. Further research into the optimal financial management approaches, to ensure effective DRM in PICs should be undertaken; including the use of nationally led and owned Trust Funds as a specific modality.
- MoH should ensure that adequate considerations are given to HRH needs for disaster response under a changing climate, in any new or revised National Health Plans or HRH strategic policies.
- PICs MoH to lead (supported by of Australian and regional / international organisations) an urgent comprehensive assessment, including further research, of psychosocial support needs and technical capacity in each of the case study PICs, both in terms of affected populations, health providers and other first respondents to disasters.
- MoH/National Health Services (supported by Australian and regional / international organisations including WHO) to develop a strategic plan addressing emergent findings from assessments of psychosocial support capacity. This will ensure that adequate consideration and provisions are made regarding the specific psychosocial needs of the affected population, health worker support and disaster response personnel.
- PICs MoH to lead (supported by Australian and regional / international organisations) the assessment of how the health workforce capacity can be



improved in terms of numbers, skills and competencies in the context of changed patterns of disasters.

- Australian DRS organisations to address the capacity of Australian and New Zealand field medical services with respect to the needs that may be faced in the field in times of disasters. Some of these gaps can be addressed through continuing professional development programs specifically designed for emergency response.
- Australian DRS organisations in partnership with PIC DRS organisations to provide ongoing educational support and capacity building for nurses in PICs, especially those who are first respondents to the disaster.

**Leadership, management and governance structures:** The quality of leadership, effective management and governance structures are critical for an adaptive culture. This key determinant was highly influential across all case study countries. The research found that power, control and decision making between agents responding to disasters needed to be inclusive and participatory to ensure disaster response policies, plans and procedures are appropriate and acceptable at all levels. The collective and participatory decision making processes also need to be in place prior to a disaster occurring, to ensure smooth operations and clear chain of command in disaster response. Some PICs were found to be better than others in regards to stakeholder inclusion in decision making and the strength of leadership of the DRS appeared to be dependent on factors such as resources capacity and quality of leadership. The research revealed that involvement and active participation of the national health services in the national and regional DRS varied. Collective and participatory decision making with relevant stakeholders was reported to be important to ensure an appropriate and timely disaster response and disaster planning that recognises the roles of local stakeholders including traditional leaders and the faith based organisations.

**Key Recommendations:**

- a) AusAID and other development partners to recognise and support NDMOs, given their strategic leadership and coordination role for disaster preparedness and response.
- b) Given the importance of the health services in disaster response, MoH should actively strengthen their involvement in the wider DRS. This may involve more active participation of MoH in the Pacific DRM Partnership Network and closer ties with NDMOs.
- c) NDMOs, with the support of the PIC DRS, to improve the coordination of disaster assessments through the development of clear Standard Operating Procedures (SOPs) and reporting guidelines for relevant clusters or sectors.
- d) PIC DRS organisations (with NDMO as key coordinating agency) to develop and implement sound policies and plans for disaster response (based on an 'all hazards approach') which appropriately balance flexibility and clear SOPs for all stakeholders.
- e) PIC DRS to adopt a nationally and culturally appropriate version of the Pacific Humanitarian Team as evidenced by the effectiveness of the VHT and its potential for increasing the adaptive capacity of the DRS.

**Risk Perceptions with respect to climate change:** This key determinant relates to an organisation's understanding of the risks that may be associated with climate change and its likely impacts on their disaster response processes. The literature states that having a shared perception of the changing nature of risk associated with climate change is important in improving the adaptive capacity and disaster response system in a given country. This key determinant was found to be more influential to adaptive

capacity in both the Cook Islands and Vanuatu. Risk perceptions surrounding climate change and disasters in some PICs were found in part to be dependent on the priorities and obligations of organisations. The need to prioritise DRR was widely acknowledged, however, following through with implementing DRR activities and extending efforts to mainstream climate change considerations varied, and was often reported to be resource dependent. Education and awareness of the need to internally adopt a future focus on DRR and CCA was needed within Pacific Islands, even with existing, constrained resources. Incorporating capacity building into ongoing donor supported DRR and CCA programming should encourage mutual responsibility with a view to the long term sustainability of the Pacific Island disaster response mechanisms.

**Key Recommendations:**

- a) PIC DRS organisations, led by NDMO as key coordinating agency) to embrace a strengthened 'future' focus for disaster response to enable incorporation of changing risk to shift the mentality towards one which acknowledges capacity challenges and uncertainty associated with climate change. This is likely to involve strengthening DRR initiatives which incorporate planning for uncertainty as a means to strengthen adaptive capacity.
- b) Australian disaster response organisations, including ANGOs, to increase their focus on the impact climate change may have on disaster response in the Pacific and incorporate this uncertainty into strategic planning in a way that will increase adaptive capacity within PICs

**Conclusion**

- This research set out to investigate the Pacific and Australia's adaptive capacity with regard to disaster response in a climate where baseline risk is changing. The research focused on four countries and involved in-country workshops and over 90 interviews with key stakeholders across the Australia-Pacific region. A range of important findings emerged revealing that the adaptive capacity the DRS in PICs is dependent upon various interlinked determinants. Recommendations were developed in keeping with these findings that can serve to enhance adaptive capacity in the Pacific, and improve Australia and overseas disaster response and ability to support the development of adaptive capacity in PICs.

# 1. INTRODUCTION

The research described in this report aimed to provide insight into the resources, policies and systems needed in coming years to enhance disaster response adaptive capacity from the Australian and Pacific perspectives, given the inherent uncertainty presented by climate change.

A growing body of evidence links human induced global warming to an increased number of observed extreme weather events, particularly heat waves and extremes in precipitation, with “plausible” evidence for a link to an increased severe storm potential (Coumou and Ramstorf, 2012). Climate change impacts (e.g. warmer temperatures, altered precipitation patterns, rising sea levels and changes to other extreme weather) are likely to affect global stability, health, resources and infrastructure (Ebi, 2008; Foresight, 2011). Pacific island countries (PICs) are inherently vulnerable to climate change given their small size, often low lying nature, insularity and remoteness coupled with high exposure to disasters and limited disaster mitigation capacity (Méheux et al., 2007; World Bank, 2012). In the Pacific, the impacts of climate change are therefore expected to be severe, including the possibility of altered patterns of extreme weather events (Australian Bureau of Meteorology and CSIRO, 2011).

Australia’s development assistance to the Pacific aims to address immediate development needs, and increasingly, to support future needs which are influenced by climate change. In terms of immediate and existing support, Australia is a major donor in the Pacific region, contributing funds to development priorities through various approaches including assistance to governments and regional organisations, non-government organisation (NGO) partnerships, scholarships, training and capacity building as well as delivering humanitarian assistance in times of disasters. Australian Agency for International Development’s (AusAID’s) 2011 Humanitarian Action Policy states Australia’s commitment to respond effectively to simultaneous disasters (possible under climate change scenarios), and to ensure the response is timely and coordinated (AusAID, 2011a). Climate change poses a challenge to Australia’s significant existing investment in development in PICs as it includes responding to emergencies.

This research investigated adaptive capacity from two perspectives. Firstly, an examination of the adaptive capacity of PICs and their governments was undertaken, in terms of internal coordination, capacity, and how external assistance is received. Secondly, an investigation of the adaptive capacity of Australian emergency response organisations was conducted, in their efforts to achieve the commitment of effective disaster response, given the potentially heightened risk of simultaneous disasters with climate change. Our research provides analysis of how the disaster assistance provided by Australian organisations supports or constrains the adaptive capacity of PICs.

This chapter provides the context of the research, including research objectives, scope and intended audience.

## 1.1 Objectives of the research

The purpose of this research was to assist the development of long term adaptive capacity for effective disaster response in the face of climate change, and thereby reduce vulnerability to climate driven disasters. ‘Adaptive capacity’ here describes “the ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences” (IPCC, 2001).

The primary objectives of the research were:

- To provide recommendations to policy makers and practitioners in the Australian and Pacific disaster and emergency response sectors on current adaptive capacity of PICs to rapid onset climate related disasters, and what resources are likely to be 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

### **1.1.1 Research questions**

Three research questions were developed and were centred on the concept of adaptive capacity. Given its complex and contested nature, the research team drew on literature across several relevant disciplines to define a range of potential key determinants of adaptive capacity, to support exploration of the concept. These key determinants of adaptive capacity were focused at inter- and intra-organisational level, and were categorised as subjective or objective. These are fully explained in Chapter 2: Methodology. The following research questions are addressed in this report.

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 the inter-organisational determinants serve to strengthen or reduce adaptive capacity of the 'disaster response system'? This question considers Australia's response obligations as well as national, regional and international stakeholders and the mechanisms that coordinate their actions, and other regional examples e.g. Caribbean.
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?

### **1.1.2 Intended audience**

The audience for this report is policy makers and practitioners in the areas of disaster and humanitarian response, particularly in the Pacific. Responding to disasters involves a broad cross-section of organisations and thus, stakeholders to whom this research will be useful include government, non-government, civil society and faith-based backgrounds both in Australia and in the Pacific. Several primary stakeholders were involved throughout the research and these steps are further discussed in Chapter 2: Methodology.

The findings of this research may also hold relevance for disaster response in small island states in other parts of the world, for instance the Caribbean.

## **1.2 Setting the context**

### **1.2.1 Basic characteristics of Pacific Island Countries**

Despite some important similarities between all the Pacific island countries, the region is not homogenous. The four case studies include Melanesian and Polynesian

countries. Geographically, Melanesian countries (Fiji and Vanuatu) are characterised by larger land masses and populations while Polynesian countries (Samoa and Cook Islands) tend to be smaller but more compact land masses. There are also income differences, with Cook Islands ranked as an upper middle income country, Fiji, which is lower middle income and Vanuatu and Samoa that are Least Developed Countries (OECD, 2012). A desk based review found that from a disaster response perspective, the similarities between the four countries include the 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 of development and have different capacities within their own disaster response systems. These differences are also evident in 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, compared with other Ministries in the other countries (Gero et al., 2012a).

### **1.2.2 Climate change in the Pacific: Extremes**

Observations of altered climate and weather patterns are already happening in PICs and are expected to continue in coming years, potentially changing the face of emergencies and disasters (Gero et al., 2012b). Across the Pacific region, an increase in extreme rainfall days is likely, driven by the enhanced hydrological cycle resulting from human induced global warming (Australian Bureau of Meteorology and CSIRO, 2011). This can cause flash flooding, damage to crops and infrastructure, erosion and inundation. Limited certainty exists for altered drought frequency in the Pacific; however there is some agreement in climate models for some PICs expecting to have less frequent drought events. These include Cook Islands, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru and Palau (Australian Bureau of Meteorology and CSIRO, 2011).

Tropical cyclones are also likely to alter with climate change, in terms of frequency, intensity and seasonality. A warmer climate is likely to drive an increase in average maximum wind speed of tropical cyclones between 2-11% (Australian Bureau of Meteorology and CSIRO, 2011). Rainfall intensity within 100km of the centre of the cyclone is also likely to increase in intensity by 20% (Australian Bureau of Meteorology and CSIRO, 2011). Projections for tropical cyclone frequency for the Pacific follow global trends – i.e. less frequent tropical cyclones by the end of the 21st century. However, there is an expected change in the relative proportion of severe storms. Some countries will experience a greater number of severe storms, while for others, the proportion of severe storms will decrease as seen in Figure 1.



**Figure 1: Expected change in the proportion of severe storms**  
 (Source: Gero et al., 2012b)

Patterns of tropical cyclone frequency and intensity at the global scale have implications for the Pacific. Globally, data on hurricanes and tropical cyclones show that records continue to be broken, including:

- The first observed hurricane in the South Atlantic in 2004 (Pezza and Simmons, 2005);
- A record of 28 tropical storms arose in one season (previous record: 21), and of these 15 reached hurricane strength (previous record: 12) and of these storms 4 reached the maximum category 5 (previous record: 2) (Trenberth and Shea, 2006);
- Strongest hurricane ever recorded, with Hurricane Wilma in 2005 (Trenberth and Shea, 2006);
- Record strength Tropical Cyclone Gonu in the Arabian Sea, resulting in Oman's biggest natural disaster in history (Fritz et al., 2010).

While these records need to take into account the relatively short data series and large natural variability of severe storms, some scientists note that warmer sea surface temperatures provide the potential for heightened intensity of storms (Coumou and Ramstorf, 2012). This research is based on the premise (as a result of current climate science as described above) that severe storms in the Pacific may increase in intensity and frequency; hence adaptive capacity to this eventuation – given the far reaching implications – is a worthy research topic.

### **1.2.3 Links between climate change, disasters and health**

The links between climate change, disasters and human health are becoming better understood and reveal the need for humanitarian response organisations to incorporate climate change into their planning and response strategies. The impacts of climate change on human health are likely to be both direct (e.g. higher deaths and injuries resulting from increased frequency and intensity of severe storms) and indirect (e.g. changes in geographic range of disease carrying vectors as a result of altered temperature and rainfall patterns) (Ebi et al., 2008). Climate change may also affect human health in terms of physical impacts, such as through food and water shortages, or through psychological impacts, resulting from trauma associated with the event or recovery period (Ebi et al., 2008; WHO, 2009). Increased frequency of severe storms may cause damaging impacts on public health infrastructure, undermining efforts to deal with public health emergencies (WHO, 2009).

The effects of climate change and related disasters on populations will be varied and are dependent on exposure, levels of vulnerability and existence of coping mechanisms. Regardless of the mix of cultural and social determinants and their influence upon the disaster response, people of all countries have similar basic human needs for food, water, shelter, and basic healthcare (Busby et al., 2008). Climate change will inevitably affect the basic human health needs (clean air and water, food, nutrition, adequate shelter and freedom from disease), challenges to the control of infectious diseases, and subsequent health impacts from acute shocks such as natural disasters or epidemics (WHO, 2009). There is a growing body of evidence that vector-borne, food- and waterborne diseases are groups of infectious diseases that are most directly affected by changes in climate (Mviver, 2012). Disasters driven by climate change and variability can therefore significantly increase the risk of infectious diseases due to the abundance and distribution of disease agents, vectors and suitable environments for their spread (Moreno, 2006; Ebi, 2008; Ramasamy and Surendran, 2011).

Given these concerns, at the global scale there is growing political commitment to integrate health considerations into climate change mitigation and adaptation efforts at national and regional levels. However, efforts are still limited in the Pacific region (WHO/SEARO, 2007; CROP, 2012). Health ministries across the Pacific often struggle to meet current existing health challenges, and also face difficulties in financing the additional and growing health impacts of climate change (CROP, 2012).

In 2007, governments of Asia and the Pacific region agreed on the urgent need for incorporation of health concerns into inter-sectoral plans for the mitigation and adaptation to climate change. In recognition of these needs, the 'Regional Framework for Action to Protect Human Health from the Effects of Climate Change in the Asia-Pacific Region' was endorsed in September 2008, and intended to guide regional and national action towards reducing the potential burden of diseases linked to the effects of climate change in the region (Uy and Shaw, 2010). This research therefore strongly incorporated the health element within disaster response to understand the adaptive capacity of the disaster response system in the context of climate change.

### 1.3 Scope of the research

To maintain rigour and focus, the research scope was purposefully limited to examine four post-disaster humanitarian needs within the context of tropical cyclones. As described later in Chapter 2: Methodology), the research was undertaken in Australia and in four Polynesian and Melanesian countries vulnerable to rapid onset disasters: Cook Islands; Fiji; Samoa and Vanuatu. The rationale for choosing tropical cyclones and the four post-disaster humanitarian needs are described below.

#### 1.3.1 *Tropical cyclones as an example of rapid onset disaster*

Climate change is likely to result in changes to both slow onset weather events (e.g. drought) and rapid weather onset events (e.g. tropical cyclones) (Australian Bureau of Meteorology and CSIRO, 2011). The responses to slow onset events vary considerably to those associated with rapid onset events in terms of policies and processes, relevant stakeholders and overall approach.

This research aimed to focus on tropical cyclones as an example of a rapid onset disaster response to provide the opportunity to assess response to disasters in a more consistent manner across the four selected PICs, and from the Australian perspective. However, the most recent rapid-onset disaster was explored in each country as interviewees found it easier to recall events in the most recent past. Events informing the research therefore included flood, tsunami and tropical cyclone. This approach has allowed analysis to focus on particular mechanisms associated with rapid onset disaster response, with lessons and learnings which may be extrapolated similar disaster responses.

#### 1.3.2 *Four post-disaster humanitarian needs*

There are far reaching impacts of disasters driven by climate change on human health (Moreno, 2006; Ebi, 2008; Ramasamy and Surendran, 2011). To allow specific and relevant policy recommendations to be developed, the research focused on four immediate humanitarian needs following a disaster:

- **Health care:** The impact of disasters on human health can result in injury, disease outbreaks and loss of life. This results in a need for various health care interventions, including emergency medical treatment, medical relief supplies, and disease outbreak prevention and containment strategies (Tangi 2009; Urbano et al., 2010; Maclellan, 2011; WHO/SEARO, 2007a).
- **Food and nutrition:** Food supply can be adversely affected by disasters both in the short term and long term. Disasters impact on the availability and supply of food, the quality and variety of foods available for adequate nutritional. These effects therefore lead to long term health issues, some of which can be severe in the immediate aftermath of disasters particularly in vulnerable groups such as young children, persons with chronic diseases, nursing and pregnant women (Urbano et al., 2010; Maclellan 2011; WHO/SEARO, 2007a).
- **Water, sanitation and hygiene (WASH):** Access to adequate supply of clean water is essential for public health, sanitation and hygiene. Water monitoring, treatment and distribution programmes are therefore essential services post disasters, requiring a range of technical skills and supplies to assist the local environmental sectors in disaster settings (Urbano et al., 2010; Maclellan, 2011).
- **Psychosocial needs:** Psychosocial concerns can be acute and chronic following a disaster, and may arise from the impact of displacement, loss of life, property, and the sheer stress of the disaster itself (WHO/SEARO, 2007a).



Chronic psychosocial health conditions can be exacerbated by disasters and hence there is need for adequately qualified personnel to provide special trauma counseling and support systems to assist affected communities to coping with the effects of the disaster (Urbano et al., 2010; WHO/SEARO, 2007a).

Whilst the study recognises the relevance of additional humanitarian needs following a disaster (e.g. shelter, protection, and logistics), the focus on the above four humanitarian needs allowed a more in depth assessment of the health needs after a disaster and provision of specific recommendations to address these important needs, given these are priority research areas within the region, and are considered some of the key factors that affect the vulnerability of the population and their ability to adapt (McMichael et al., 2003).

This focus also allowed for interview questions to be specific and targeted, prompting interviewees to relate to specific experiences in disaster response in relation to the four identified post-disaster humanitarian needs.

#### **1.4 Structure of this report**

This chapter has provided an introduction to the research. Chapter 2 describes the research methodology and its strengths and limitations.

Chapters 3 – 5 cover research findings related to inter-organisational and regional aspects of disaster response. Chapter 3 provides findings on the importance of Agency and Architecture to understanding the Pacific's disaster response system. Chapter 4 describes how overseas disaster response assistance is provided to the Pacific, while Chapter 5 describes the regional health care capacity for disaster response.

Chapters 6 – 9 provide the individual case studies of the four countries (Fiji, Vanuatu, Cook Islands and Samoa, respectively). These chapters describe how the four humanitarian needs are addressed, and also draw out the key determinants found to be most influential on adaptive capacity.

The report concludes with Chapter 10 which provides direct responses to the research questions and related recommendations.

## **2. METHODOLOGY**

### **2.1 Introduction**

The research approach adopted in the study was a collaborative one, engaging with key stakeholders from Pacific and Australia throughout. A Conceptual Framework informed by a range of theories and disciplines guided the research. Methods included desktop reviews, individual and group interviews, and in-country workshops. The sections below outline these various components of the research approach, including the rationale for the chosen case study countries.

### **2.2 Stakeholder engagement**

#### **2.2.1 Project Reference Group (PRG)**

The research process was guided by a Project Reference Group (PRG) as a form of structured stakeholder engagement. The purpose of the PRG was threefold: to ensure relevance of the research process to important stakeholders; to guide the major decisions of the research process; and to contribute to the uptake of the research findings. Participation of the group allowed members to gain insight into the research and its outcomes whilst the research was in progress and to influence its progression. The PRG also assisted in key decisions and facilitated links with policy and practice as well as key stakeholders to interview.

The PRG members included: Dr. Kirstie Méheux, Secretariat of the Pacific Community's Applied Geoscience and Technology Division (SOPAC/SPC); Ms Beatrice Tabeu, Caritas Papua New Guinea; Dr. Matthew Inman, CSIRO; Ms. Lisa Conlon, Asia Pacific Emergency Disaster Nursing Network (APEDNN); Ms. Kathleen Fritsch, World Health Organization (WHO) Western Pacific Regional Office; Prof. Pelenatete Stowers, South Pacific Chief Nursing Midwifery Officer's Alliance (SPCNMOA); Prof. Anthony Zwi, Global Health and Development, Faculty of Arts and Social Sciences University of New South Wales, and Ms. Helen Horn, AusAID Humanitarian Partnership Agreement. The list of PRG members is also presented in Appendix 1.

Four PRG meetings were held during the year long research project, three by teleconference and one face-to-face. PRG members were regularly updated via email, telephone and additional meetings where possible, with the encouragement of voluntary feedback on a continual basis.

#### **2.2.2 End user engagement**

Primary and secondary end users were identified from the Australian and Pacific based contexts including organisations with an interest in research outcomes from policy, planning and management contexts. Stakeholders and end users were involved in the interview and workshop processes in each country and effort was made to generate a two-way dialogue which actively engaged stakeholders (rather than providing information only), to ensure these "end-users" were contributing and felt valued in the research process, and to ensure that the outcomes were relevant and applicable.

#### **2.2.3 Research communications and outputs**

Having identified project stakeholders (or 'end users'), the research team ensured the views of primary stakeholders were included through interviews and /or workshops. This direct engagement with stakeholders also allowed the research team to appreciate how outputs should be tailored to the needs of these end-users, who noted that shorter country briefs would be of most use to them. Dissemination of research findings will thus be undertaken in a format that is of benefit to them.

Ongoing updates on the project were featured in the Institute for Sustainable Futures (ISF) monthly newsletter, “The Wrap”, which is sent to over 1300 of ISF’s partners, clients and interested organisations and individuals. Similarly, a Regional Update newsletter published by the WHO CC UTS also provided continuous updates to relevant stakeholders and “users.” Several presentations and a poster were presented through various workshops and meetings in the Asia Pacific Region. These included presentations at:

- NCCARF Conference in June 2012 (poster presentation);
- Global Network of WHO CC meeting in Kobe, Japan, August 2012;
- Pacific Platform for Disaster Risk Management in New Caledonia, September 2012;
- Inter-professional Partnerships for Improvement in Global Health Outcomes in Thailand, September, 2012;
- Asian Pacific Emergency Disaster Nursing Network (APEDNN) meeting in Adelaide, October, 2012;
- South Pacific Chief Nursing and Midwifery Officers Alliance meeting in Melbourne, November 2012;
- Pacific Human Resources for Health Alliance (PHRHA) Fiji November 2012.

### **2.3 Conceptual Framework**

The research was guided by a Conceptual Framework (Figure 2) which sets out the key elements important to the research. Drawing on a range of literature that spans Earth System Governance (Biermann, 2007), climate change adaptation (Ekstrom et al., 2012), health resources (WHO, 2006; WHO, 2011), resilience in institutions (McManus et al., 2008) and practice theory (Strengers, 2010) key determinants such as: inter-organisational, intra-organisational and objective and subjective determinants of adaptive capacity of the Disaster Response System (DRS – described in more detail below) are proposed and a detailed definition of each is provided in Appendix 2. A brief outline of the determinants is presented in Box 1.

## Box 1: Definitions of key determinants of adaptive capacity

Inter-organisational determinants (objective and subjective):

Architecture: The architecture involves the systems and institutions associated with disaster response across both national and international scales (Biermann, 2007).

Agency: Drawing on concepts such as power, control and decision making, agency goes beyond inter-governmental co-operation and requires an understanding of the partnership between 'whole of government' and non-state actors and institutions (Biermann, 2007).

Adaptiveness: The challenge of adaptiveness in Earth System Governance is associated with the requirement of long term sustainability, coupled with flexibility to cope with the speed of change (Biermann, 2007; Kelman and West, 2009).

Determinants *within* organisations

*Objective determinants:*

Access to assets (financial and human resources): Financial assets include funding available to organisations undertaking disaster management whilst human resources include the skills and knowledge of staff related to disaster management (Ekstrom et al., 2012).

Leadership, management and governance structures: The quality of leadership and degree of empowerment of staff is critical for an adaptive culture (McManus et al., 2008).

Technical capacity, tools, methods and approaches: Defining the technical capacity, tools, methods and approaches included in a disaster response system is important for understanding how the system functions, monitoring/evaluation of response outcomes, and identifying gaps for future exploration and analysis, and the capacity to adapt to unforeseen stresses (FAO, 2008).

Health workforce education, training and continuing competence: The availability of skills required to carry out rapid diagnosis, surveillance, organisation and logistics, containment, communications, emergency surgery, and to create temporary facilities, require adequate training institutions and programmes where these skills are generated and updated (WHO, 2006).

Human resource for health governance and management systems, policy, finance, education, partnership, leadership: There is a need for human resources for health (HRH) governance, leadership and partnerships for sustained HRH contributions to improved population health outcomes, including HRH capacities to address disasters (WHO, 2006; WHO, 2011).

*Subjective determinants:*

Risk Perceptions and perceived adaptation efficacy and costs: Understanding of the risks of climate change and the likely impacts on their disaster response processes (Ekstrom et al., 2012; Kuruppu et al. 2011).

Self-efficacy beliefs: The extent an individual within an organisation believes in their own ability to adapt to the impacts of climate change (Ekstrom et al, 2012; Kuruppu et al. 2011).

Silo mentality: Represents a decentralised structure, with a more individualistic approach to achieving goals, based on a limited understanding of the overall vision of the organisation (McManus et al., 2007; Biermann, 2007).

Communications and relationships: Relates to accountability. Governance that is credible, stable and inclusive must be considered to be legitimate by all stakeholders, and is held accountable for its actions and representatives by its constituencies (McManus et al., 2007; Biermann, 2007).

Strategic vision and outcome expectancy: It has been found that regardless of how well defined the purpose or vision, the operational reality and the communication of this vision can vary from one extreme to another throughout organisations (McManus et al., 2007).

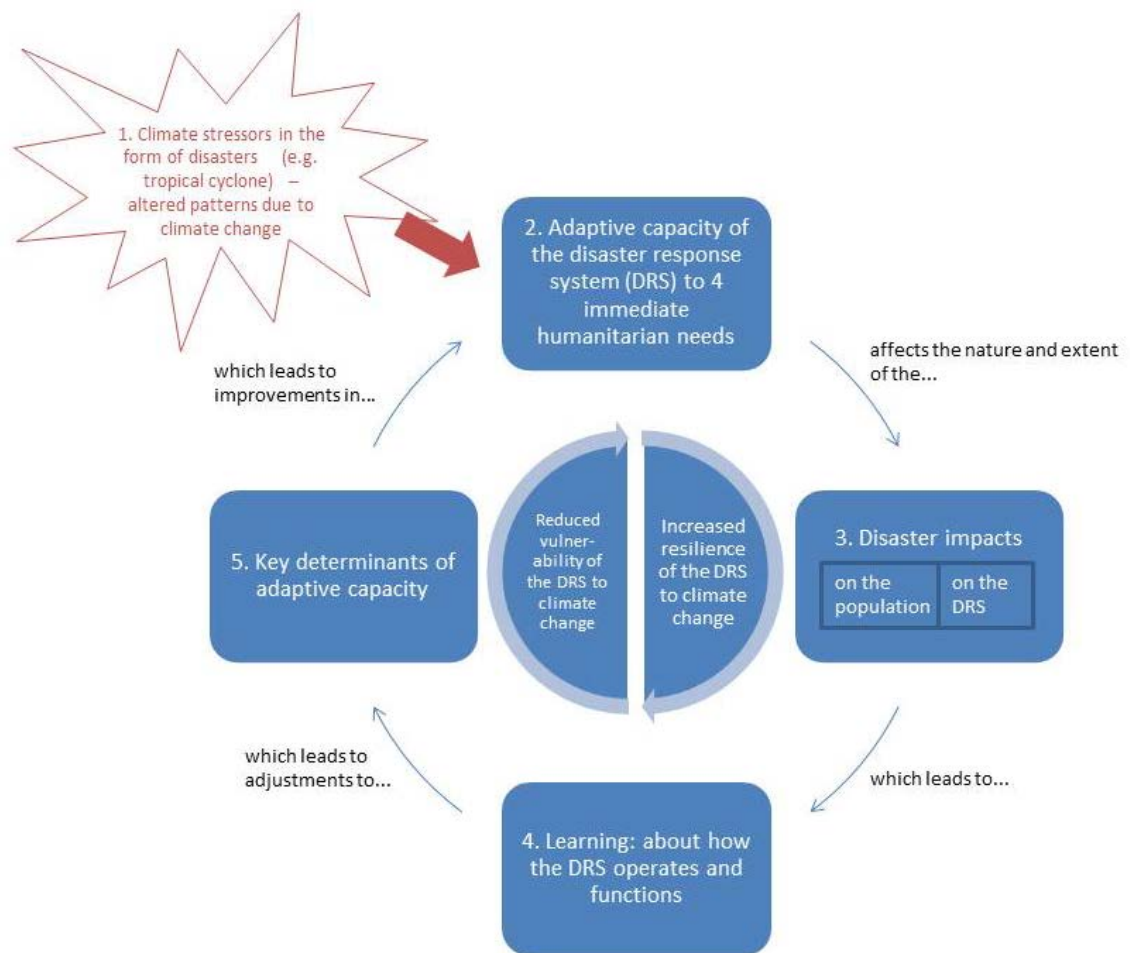
Health workforce strategic response to evolving and unmet population health and health service needs: This can be achieved through Health workforce plans and strategies that respond to population and service needs with emphasis on the most vulnerable and excluded groups (focusing on gender, equity and vulnerability), evolving health worker functions and technological advances (WHO 2011; Thompson, 2011).

Information and knowledge: The capacity to apply current knowledge to a situation in a creative manner, assigning virtual roles, and the ability of subsets of an organisation to assume responsibilities of absent members are considered adaptive features of an organisation (McManus et al., 2008).

Elements of social practice: Practical knowledge, common understandings / norms / culture, rules, traditional knowledge/practices and material infrastructure (Strengers, 2010).

The Conceptual Framework describes a cycle of adaptive learning within which the adaptive capacity of the DRS is affected by a range of key determinants (Ekstrom et al., 2012). The DRS is defined, in the scope of this research, to be the organisations responsible for responding to four immediate humanitarian needs (as defined earlier in Chapter 1: health care, food and nutrition, water and sanitation and psychosocial needs).

In the context of this project and as defined in Chapter 1, 'adaptive capacity' describes the ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences (IPCC, 2001). The key determinants of adaptive capacity are an important element of the Conceptual Framework and lie at the centre of the research focus.



**Figure 2: Conceptual framework of the disaster response system**

The following description provides a narrative explanation for Figure 2:

1. Climate change is expected to affect the pattern of disasters in the Pacific. When a disaster such as a tropical cyclone occurs it impacts adaptive capacity of the disaster response system (DRS).
2. The adaptive capacity of the DRS (either in each Pacific Island Country, and in relation to Australian and overseas response) at that point in time determines the scale of the disaster.

3. The disaster impacts on both the DRS and the general population; acknowledging that an effective DRS will include strong links and support to the community level.
4. Learning from this experience post-disaster (with an aim to become more adaptable and responsive to future events), leads to adjustments to the key determinants and DRS.
5. Adjustments to key determinants result in improvements in adaptive capacity (1) in preparation for future disasters.

Thus the adaptive learning cycle, over time, increases the resilience, and reduces the vulnerability, of the DRS to climate change.

This Conceptual Framework was used to guide the research to understand the disaster response systems, identify the most significant determinants affecting adaptive capacity and how these might be influenced to reduce disaster impacts on responding agencies and the wider population.

Considerations were given to wider activities, processes and policies relevant to preparedness and disaster risk reduction during the research process. However, the focus of the investigation was purposefully framed to focus on disaster response to the four humanitarian needs specified above. The research was focused at the national level in each case study country, with particular interest in the coordination and decision making mechanisms (both formal and informal) that surround disaster response. We also recognised links to adaptive capacity of the disaster-affected communities, and hence potential institutional responses to improve community adaptive capacity were considered within the scope of the research, though no detailed field research was undertaken at community level.

## **2.4 Ethics**

The study obtained ethics approval through the Internal Institutional Review Committee of the Institute for Sustainable Futures, UTS as well as Department of Health ethics committees in all four case study countries. Such processes involved summarising the research procedures, describing how research participants were recruited and how they would be involved in the research as well as detailing any potential risk or harm (and minimisation techniques) to participants. Procedures for data collection and storage were also considered to ensure privacy of primary data. All participants were asked to provide written informed consent prior to their participation in interviews (Appendix 3).

## **2.5 Background reviews and stakeholder mapping**

As part of the research, background desk based literature reviews were conducted to develop an understanding of the relevant stakeholders and governance frameworks that support disaster response in Australia and the Pacific.

Three desk based reviews were conducted and resulted in three written reports:

- i. Projected climate change impacts in the Pacific: A summary;
- ii. Review of Australia's Overseas Disaster and Emergency Response Sector; and
- iii. Background Review: Disaster Response System of Four Pacific Island Countries

These reviews provided useful information to guide the development of interview questions and later research stages.

A stakeholder mapping exercise assisted in identifying primary and secondary stakeholders for the research. This exercise then guided the identification of key stakeholders for interviews, and others to consider in dissemination of research results.

## **2.6 Australian stakeholder interviews**

Key informant interviews were undertaken with high level professionals in the Australian emergency and disaster response sector during May-June 2012, to ascertain the current challenges and constraints as well as their views on future implications of disasters and climate change in the Pacific and the impact on Australian resources. Several interviews were also undertaken with high level professionals in the New Zealand emergency and disaster response sector, based on referrals from Australian stakeholders identifying them as key informants in the PIC and study context. A total of 17 Australian/New Zealand organisations were interviewed. A full list of the organisations interviewed is provided in Appendix 4.

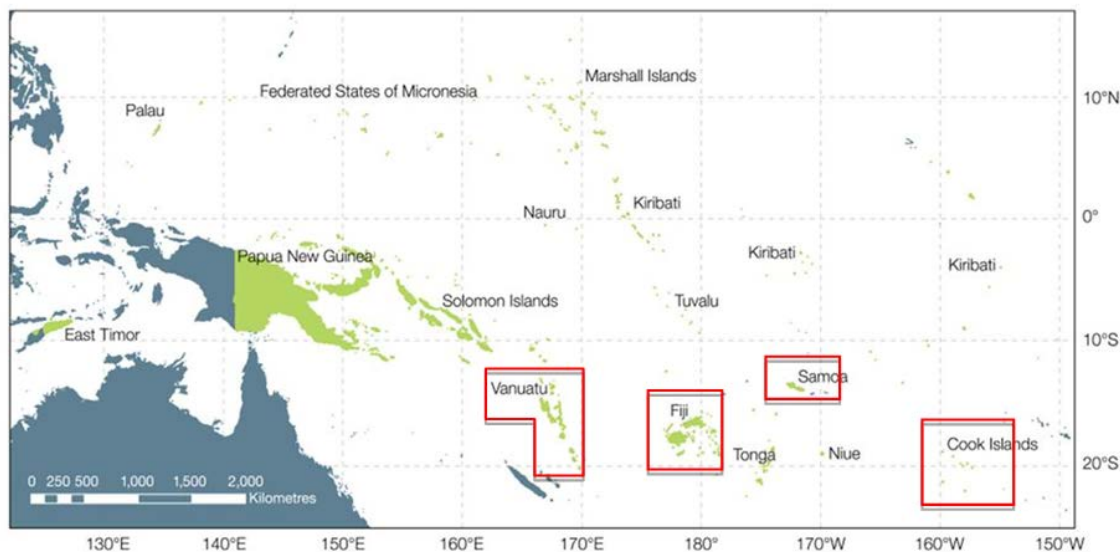
Interviews were guided by a semi-structured interview guide, and recorded for transcription purposes. Questions were based on key themes from the Conceptual Framework and focused on interactions at the inter-organisational and organisational levels, as well as the individual perceptions (See Appendix 5).

## **2.7 Case study country selection**

Four PICs were investigated in detail on the basis of an assessment against criteria relevant to the objectives of the study, and with the assistance of the PRG. The country selection criteria are presented in Appendix 6. In summary, the selection of these countries was 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-driven disasters, and those in the more distant past.
- Countries that experience tropical cyclones;
- Varied Health Workforce Density

Development indicators were also used as a criterion for selection. The four case study countries were: Cook Islands, Fiji, Samoa, and Vanuatu. Micronesian countries were not selected, given they are less vulnerable to tropical cyclones due to their location outside of the tropical cyclone belt.



**Figure 3: Map of the Pacific**

(Source: Australian Bureau of Meteorology and CSIRO, 2011)

## 2.8 Case study country interviews and workshops

The Pacific in-country component of the project was undertaken in July 2012 and sought to engage with individuals and organisations involved in disaster management at the country level to develop a complete picture of the DRS in the four case study countries. This was accomplished through key informant interviews and a half-day interactive workshop in each PIC country.

### 2.8.1 Interviews

Semi-structured face-to-face interviews guided by the Conceptual Framework were conducted with key stakeholders from government, non-government and humanitarian organisations, with emphasis on the four proposed thematic areas (healthcare, food and nutrition, water and sanitation and psychosocial needs) in each of the four countries. Relevant organisations were identified with the assistance of the PRG and key individuals in each country, with additional organisations identified through a snow ball sampling technique (Atkinson and Flint, 2001). A full list of the PIC organisations interviewed is provided at Appendix 7. A total of 17 interviews were completed in Cook Islands, 19 in Fiji, 20 in Vanuatu and 18 in Samoa. Interviews were conducted over a one-week period in each of the four PICs. Interview questions were semi-structured and the interview style was designed to appreciate the cultural differences and the need for flexibility when interviewing people from various cultural backgrounds (see Appendix 8 for the interview guide).

### 2.8.2 Workshops

A half-day interactive workshop was held in each PIC country (except Vanuatu – See Chapter 7) guided by the following aims:

- To support engagement and learning for national stakeholders on coordination and contribution to climate change and disaster management (thus avoiding a solely extractive research process);
- To verify information collected from one-on-one interviews in relation to our research questions/topic;



- To facilitate discussion between stakeholders that might offer further insight into the topic and support development of recommendations for policy and practice;
- To engage with those who were unable to be interviewed through the week and to ensure active participation of end-users in the research process.

The workshops employed a participatory approach, demonstrating cultural sensitivity and relevant gender awareness. Each workshop involved three main activities including:

- Activity 1: Institutional Mapping: identify key stakeholders that respond to the immediate humanitarian needs post disaster.
- Activity 2: Actors and Stakeholders – rating the level of capacity for each organisation according to coordination, human resources, and skills.
- Activity 3: Group Discussion on National Priorities: Themes and priority areas that emerged from the research for that country were identified from the preceding interviews. Themes along with pre-written guiding questions / prompts were divided between several groups. Groups were asked to consider the suggested priority for their table, indicate whether they agreed/disagreed and answer the guiding questions, directly beside each theme/priority. Each group feedback their themes and responses and the entire audience had an opportunity to comment.

## 2.9 Data analysis

Interview and workshop results were drawn together with desktop review results through the data analysis phase. Initial analysis of research findings was undertaken in a collaborative manner in-country with two to three team members comparing their impressions and interpretations to ensure appropriate interpretation of the data collected and to obtain effective engagement and buy-in around findings from local stakeholders. This was done through a summary of key findings from each country's interviews and fed-back to workshop participants during Activity 3 in each workshop.

Following in-country work, key informant interviews transcripts were subjected to an inductive thematic analysis (Rice and Ezzy, 2000), for general patterns and emerging issues from participants' explanations and descriptions (Charmaz, 1990). Interview transcripts were uploaded into the computerised qualitative software NVivo 10, and coded for specific themes based on the Conceptual Framework and the objective and subjective determinants of adaptive capacity of the emergency management system, based on triangulation of data from multiple sources (Hansen, 2006). Results were analysed thematically and recommendations made accordingly.

## 2.10 Limitations

As described above, the research took a detailed and rigorous approach, however a number of limitations must be taken into consideration in interpreting the research findings.

- Some countries experienced disasters more recently prior to the interview than others and this therefore may have affected their relative perception of risk and recall of past responses.

- There were several concurrent workshops on climate change and disaster response being held or recently held in three of the four case study countries. These affected attendance at workshops as well as may have introduced recall bias on topics relate to the workshops since these issues were in the forefront of the respondents' minds.
- Traditional leaders and stakeholders were difficult to access. Since this was observed in the Cooks Islands (the first case study country), additional efforts were made to include them in the other three PICs, however it was not possible to return to fill this gap in Cook Islands.
- The complexity of the concept of adaptive capacity was a challenge in terms of research focus and was also open to the wide variety of influences on adaptive capacity.
- Language/translation/culture- the research team needed to acknowledge these issues. The team was able to mitigate these to a degree through their familiarity with working in Pacific and Pacific culture.
- Attempts to contact and interview some (two) key organisations were unsuccessful (however we do not believe any key organisations were missed), while some organisations were interviewed but did not provide permission for comments to be used.

## RESEARCH FINDINGS AND OUTPUTS

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### 3. ARCHITECTURE AND AGENCY

This chapter presents research findings regarding elements such as regional networks, practices and policies, and the role of various actors and agents in disaster response (what we term the “inter-organisational elements”), and how these serve to strengthen or constrain the adaptive capacity of the disaster response system. This chapter therefore answers Research Question 2: “How do the inter-organisational determinants serve to strengthen or reduce adaptive capacity of the ‘disaster response system’?” This chapter mainly focuses on the broad disaster response system (DRS) across the region rather than within each country. The findings demonstrate how inter-organisational determinants affect the Australian and international DRS and the DRS within the case study country.

The inter-organisational concepts of architecture and agency draw from the concept of Earth System Governance, which is defined as “the sum of the formal and informal rule systems and actor- networks at all levels of human society set up in order to influence the coevolution of human and natural systems in a way that secures the sustainable development of human society” (Biermann, 2007: 329). Within the overall concept of Earth System Governance, Biermann (2007) identifies five fundamental research and governance challenges, which are noted as cross cutting themes in global change research. These problem structures, or the “five A’s”, are Architecture, Agency, Adaptiveness, Accountability and Allocation. We included all of these areas in some form within the determinants considered in our research, however we draw on the most relevant to understand the inter-organisational determinants of adaptive capacity under two main headings: Architecture and Agency. These are defined in Box 2 below.

## **Box 2: Definitions of Architecture and Agency**

Architecture is “the interlocking web of principles, institutions and practices that shape decisions by stakeholders at all levels” (Biermann, 2007: p332). In the context of this research, the architecture involves the systems and institutions associated with disaster response across both national and international scales. In order to define this architecture, it is therefore important to define what the institutions and practices are that shape decisions by stakeholders at all levels, and understand the following: (i) the extent to which state sovereignty is restricted by this architecture; (ii) the legal framework or constitutional norms required to support this architecture; (iii) the mechanisms required for the effective interaction within and across governance systems at all levels, and; (iv) the need for universal inclusion and participation among states.

Architecture requires that consideration be given to the national, regional, international policy and regulatory framework and Australian response structure: (IFRC, 2010; AusAID, 2011a). Australia’s emergency response organisations and management structures are well developed, to manage the response to and recovery from, disasters within Australia and overseas (IFRC 2010; AusAID, 2012a).

In defining the architecture of a country’s disaster response system, additional questions to be addressed include: (i) What are the national, regional, international policy and regulatory framework, that guides the response to humanitarian needs post disasters? (ii) What are the policies, guidelines, response organisations, networks and management structures in place in Australia and in PICs that guide their response to disasters? These all form part of the architecture of the disaster response system in the context of our research.

Agency refers to the role of actors beyond the nation state, i.e. power, control and decision making (Biermann, 2007) An effective and credible governance system requires the endorsement and participation of non-state stakeholders, including intergovernmental bureaucracies and private organisations. Non-state stakeholders not only contribute to lobbying and advising of governments but also participate in decision making processes and setting the standards required for overall governance.

Agency goes beyond inter-governmental co-operation and requires an understanding of the partnership between ‘whole of government’ and non-state actors and institutions (Biermann, 2007). One therefore needs to know who the non-state stakeholders are, that contribute to and participate in (i) the overall governance (ii) the decision making processes; and (iii) setting the standards.

This chapter assesses and describes the contributing elements of architecture and agency that were important in the context of this research, and describes findings of how these elements serve to either strengthen or reduce adaptive capacity of the DRS. Results are summarised in Table 1.

**Table 1: Elements of architecture and agency that support or constrain the DRS**

	<b>Elements <i>supporting</i> adaptive capacity</b>	<b>Elements <i>constraining</i> adaptive capacity</b>
<b>Architecture</b>	<ul style="list-style-type: none"> <li>• Formal and informal networks are useful mechanisms for information exchange and the development of relationships. An example is the Pacific Humanitarian Team (PHT), which is an important regional body that supports coordination of non-state actors in regional response through the cluster approach. The PHT also encourages dialogue between government and non-state actors in non-disaster times.</li> <li>• Participation and visibility of stakeholders in relevant networks assists in building trust, relationships and also understanding others roles, responsibilities, strengths and weaknesses.</li> <li>• Having clearly defined roles and responsibilities through standard operating procedures (SOPs) is important for agents to understand their own and each other's actions in times of disaster. SOPs also need to have in-built flexibility given the dynamic and variable nature of disaster response.</li> </ul>	<ul style="list-style-type: none"> <li>• Strained international diplomatic relations were raised as providing a barrier to effective disaster response. Where these formal mechanisms provide barriers, informal mechanisms can take over to ensure progress in times of disaster.</li> <li>• Lack of ownership (at the national and local scales), and lack of consultation and cultural relevance leads to poor policy and thus constrains adaptive capacity. Policy can also provide a barrier to effective disaster response if it is rigid and does not acknowledge the varying scenarios disasters can bring.</li> <li>• In some countries, cultural issues and national pride can result in delayed requests for international assistance. In other countries, aid dependence mentality can result in PICs becoming overly reliant on external assistance rather than aiming to develop national systems of self-determination.</li> <li>• Historical processes and culture can act to dissuade organisations to follow established procedures and policy.</li> </ul>
<b>Agency</b>	<ul style="list-style-type: none"> <li>• Collective and participatory decision making with relevant stakeholders, including traditional leaders, is important to ensure an appropriate response and one that recognises the agency of local communities.</li> <li>• In the Pacific, personal relationships and trust between individuals are crucial. Recognition and maintenance of these relationships is important to ensure timely and accurate information sharing between stakeholders. Developing and maintaining in-country partnerships also assists in having a clear understanding of formal and informal ways of operating, and supports understanding local needs and capacity.</li> <li>• The recognition of local culture and context is important for outside agents. This includes recognising the Church as wielding significant authority in PICs.</li> </ul>	<ul style="list-style-type: none"> <li>• The growing number of agents working in Pacific disaster response has been described as unwieldy at times working in an uncoordinated manner. Organisations not engaged in regional networks or lacking relationships with key institutions find themselves isolated and without adequate information in times of disaster. For example, mechanisms such as the Vanuatu Humanitarian Team (VHT) will not be fully effective without existing trust and relationships between participating individuals and organisations.</li> <li>• Limited capacity (human resources, financial and technical) of key responding bodies, such as National Disaster Management Offices (NDMOs), constrains the ability of the national DRS to interact and work effectively with regional partners.</li> </ul>

### 3.1 Architecture

The architecture that supports disaster response in the Pacific is complex, and comprised of formal and informal structures and ways of operating. From a formal perspective, numerous policies, legislative instruments and coordination mechanisms support the DRS architecture, while on the informal side, elements of underlying culture and traditional systems underscore the ways in which agents relate to each other and respond to disasters. To assist the reader to follow the discussion below, effects on adaptive capacity are purposefully bolded.

Key findings in relation to architecture in the context of Pacific disaster response include:

- Networks, systems and institutions were important elements which act **to support adaptive capacity** through the forging of partnerships, personal relationships and trust. Pacific agents within these networks need to recognise the range of formal and informal mechanisms in place and align with and support them to be considered “legitimate” agents of the DRS.
- Policies, procedures and regulations can **support or constrain adaptive capacity** depending on the method of development, level of ownership, cultural relevance and level of flexibility. Policy needs to be developed in an inclusive and participatory approach which genuinely consults and includes views of a wide range of stakeholders in order to be taken up.
- Regional politics and governance issues can **constrain adaptive capacity of the DRS**. When relationships between DRS organisations at the national or international scale are confronted with political barriers, provision of disaster relief and ongoing disaster risk reduction (DRR) programming becomes difficult. When these formal modes of operating provide barriers, it is the informal modes that take over. Thus informal modes of operating should not be considered secondary, rather viable alternatives to formal diplomatic relationships.

#### 3.1.1 *Networks, systems and institutions*

Formal and informal networks are useful mechanisms for information exchange and the development of relationships between individuals and organisations. In the context of this research formal networks refer to those that are formed through political, diplomatic and organisational relationships, are often evidenced by formal documentation, such as paid membership, signatories to plans or diplomatic memorandums of understanding and are usually imposed from the top down, for example, by the head of government, large bureaucracy or company hierarchy. Informal networks on the other hand refer to those that are self-made among its members and occur naturally amongst people or organisations with mutual interests; the terms and rules of which are dictated by its members. Either of these types of networks are equally important and cannot be ignored in the PIC context. In most instances, established formal and informal networks **assist in building adaptive capacity of both PICs and Australian organisations** by providing information exchange mechanisms and linking together organisations in times of disaster.

From the Australian DRS perspective, networks, systems and institutions of significance include the Australian Council for International Development (ACFID) as the coordinating peak body for NGOs, the National Council of Churches and its international aid agency – Act for Peace, and the Red Cross/Red Crescent network of societies, and its international body – the International Federation of Red Cross / Red Crescent Societies (IFRC). These networks encourage information exchange and dialogue surrounding DRR interventions and in times of disaster response. **Adaptive**

**capacity is supported** through these networks as channels of communication and modes of contact (both formal and informal) are well established, allowing for efficient use of time and resources in times of disaster.

Participation and visibility of agents within these networks was also important in supporting adaptive capacity of the DRS. Being seen as an active agent who understands the modes of operating in the DRS, including the cultural and informal elements, leads to development of relationships and trust – important determinants of **supporting adaptive capacity**.

Both Australian and Pacific organisations found the Pacific Disaster Risk Management Partnership Network (PDRMPN), which is coordinated by SPC's Applied Geoscience and Technology Division (SOPAC) to be an important network in the region. While not specifically a disaster response organisation, SOPAC provide significant support to the National Disaster Management Offices (NDMOs) across the Pacific, and also in regional capacity building initiatives. The PDRMPN sees NDMOs as important members. The PDRMPN provides ongoing communication with a broad range of organisations involved in DRR, preparedness and disaster response activities, with involvement contributing to important relationships and the building of trust. Annual meetings of the PDRMPN provide opportunity for Pacific disaster organisations to build these relationships and discuss relevant issues, again **supporting adaptive capacity** by recognising the importance of relationships and partnerships.

From the Pacific perspective, the cluster approach and the Pacific Humanitarian Team (PHT - as described in Chapter 4) provides insight into both agency and architecture through issues such as authority, power and control (further discussed in Section 3.2.2) and through mechanisms such as institutions and networks which are more related to architecture. The PHT also increasingly encourages dialogue between government and non-state actors in non-disaster times. The PHT and the cluster approach were viewed differently by different agents. Throughout interviews, the PHT was more relevant for Australian NGOs (ANGOs), AusAID, UN agencies and in-country NGOs, and was less relevant (in terms of being mentioned at all) to PIC government interviewees. This could reflect the fact that the PHT is an important mechanism through which these external organisations interact with PIC countries, hence the level of importance ascribed by them. On the other hand, this could indicate limited involvement of PIC governments in the PHT planning and implementation processes, since the PHT's objective is to provide surge capacity to PICs when government and in-country resources are exhausted. However, exclusion of PIC government representatives and the ways in which PIC disaster governance structures operate has the potential to **constrain adaptive capacity of PIC DRS** by taking over in times of disaster response and undermining national efforts of leadership and ownership in decision making.

The cluster system was drawn upon during the Samoa tsunami in 2009, as described by an ex-UN agency interviewee who notes the collective and collaborative nature of the mechanism:

*“We had all this UN cluster meetings from day one, so in the seven cluster groups OCHA facilitated and then you had all the different groups come directly and so we had these meeting directly in our UN compound so it was very centralised everybody came”.*

The PHT approach has been adopted at the country level in Vanuatu, through the Vanuatu Humanitarian Team (VHT) and many stakeholders believe it is becoming a successful initiative. The VHT is recognised as providing a coordinated approach to DRR and responding to disasters where there are many stakeholders involved. Its

success and contribution to **supporting adaptive capacity of Vanuatu's DRS** is in part due to the pre-existing close relationships between humanitarian agents operating in Vanuatu. Without these relationships already existing, it was noted the VHT would not function, again highlighting the importance of building trust and relationships between agents. The VHT is described by a UN interviewee:

*“We see in Vanuatu that there is an agreed collaboration between Government and non-Government which is supported by Oxfam - they call it the Vanuatu Humanitarian Team. We support it as well from the regional level.”*

The health sector, usually lead by the in-country Ministry of Health (MoH) in each PICs, takes the lead for the provision of health care and in each country. The MoH's role is supported by the regional/local offices of the WHO, local and international NGOs, bilateral development programs by donors, including AusAID. These networks assist in providing an enabling environment for the health sector to respond and to improve their capacity to respond through routine health care development programmes, information sharing, and support for emergency response simulations and training. These aspects are discussed further under health care capacity, in Chapter 5. PIC interviewees indicate that they rely on these networks throughout the region, especially for technical skills that are scarce in the health sector, as implied in the following quote.

*“In a small island state we will never have all the technical [health] skills; that is where we have to rely on friendly countries and organisations .”*

Another aspect of the DRS architecture was seen with international incoming health personnel, a key issue of health workforce governance identified in PIC interviews. PICs rely on international health personnel (mainly from Australia and New Zealand) to assist in areas where they lack skills and resources. From an Australian perspective, this is facilitated through the Australian Defence Force (ADF), Australian Medical Assistance Team (AusMAT) and the Australian Civilian Corps (ACC); through NGOs linking directly with in-country partners and networks; or through personnel provided by RedR to support the PHT, as outlined in Chapter 4. Within PICs, health care networks exist between the national health services and NGOs such as the local Red Cross Society and Adventist Development and Relief Agency (ADRA) that draws on existing relationships with an extensive network of volunteers in the community and churches. The networks and relationships between and within Australian and PIC organisations provide a supportive environment to build health care capacity to respond to disasters, for example:

*“An approach that worked well was the arrival of the Samoan Health Mission from New Zealand consisting of health professionals working in New Zealand. Their assistance fitted well as they knew the local context in terms of meeting psychosocial needs and knew of tools and medicines relevant to Samoa.”*

However, there was a reported need for clearer guidelines and processes to coordinate in-coming health personnel, and for these to be acknowledged and followed where they exist, by in-coming personnel. The lack of clear guidelines for the coordination and registration of in-coming health staff can result in confusion, malpractice and offence to local personnel, which undermine efforts for a cohesive and effective multi-agency response and over time **constrains adaptive capacity**. These and further aspects health workforce governance, policy and management are discussed in Chapter 5.



### 3.1.2 Policy and regulations

Lack of ownership (at the national and local scales), consultation and cultural relevance often leads to poor policy development and thus **constrains adaptive capacity of PIC DRS**. Policy can also provide a **constraint to adaptive capacity** if it is rigid and does not acknowledge the varying scenarios disasters can bring.

At the broader regional and international level, compliance with international humanitarian policy is seen to **support the adaptive capacity of the DRS** by ensuring best practice is maintained by humanitarian agents in times of disaster response, accountability is constantly considered and encourages mutual respect of the practices of other organisations. Interviewees from Australian government agencies and ANGOs were all well aware of the main international policies and standards relevant to humanitarian response, e.g. Sphere Handbook on Minimum Standards in Humanitarian Response (Sphere, 2011) and the Red Cross Code of Conduct (ICRC, 1994). AusAID's Humanitarian Action Policy was also noted by some ANGOs as a significant policy to be aware of, and aligned with it where possible. Many organisations modelled their own policies on these key documents, such as this ANGO interviewee:

*“A lot of its [Humanitarian Policy] focus is on ensuring that all of our agencies are up to scratch with Sphere and with the Red Cross Code of Conduct, so in terms of specific obligations under emergency management it just asks the agencies to just align with general international standards.”*

Maintaining standards and adhering to protocols was an important element for some ANGOs, with the quotes below from ANGOs:

*“Because we are very large, we are very professional in the way we do humanitarian responses. Gone are the days of cowboy's intervention. But bureaucracy is designed to be able to be - not to slow down, but to keep minimum standards, so we have systems.”*

*“There is a pretty sturdy protocol for the first phases after a disaster - particularly big ones.”*

Most Australian agencies involved in disaster response have formalised procedures to dictate how their organisations will respond to a disaster (e.g. SOPs). For example:

*“Every office has operational manual, national preparedness and response plans, SOPs etc.”*

These SOPs outline roles and responsibilities, lines of communication and sometimes various procedures for different disaster scenarios. Having these SOPs in place can **support adaptive capacity of the DRS** as having a clear understanding of the system can translate to efficient response practices. However, rigidity in SOPs can **constrain adaptive capacity of the DRS** as impacts of each disaster event are invariably different to others, requiring some flexibility in how the response is managed. This clash between the need for clear SOPs and the need for flexibility to deal with different scenarios is dealt with in some ways through the adoption of the “all hazards approach”, which is endorsed in the Pacific's ‘Regional Framework for Action for Disaster Risk Reduction and Disaster Risk Management’ (SOPAC, 2009) and national PIC policies such as the Cook Islands Disaster Risk Management Arrangements (Government of the Cook Islands, 2009). The “all hazards approach” incorporates an adaptive approach to disaster management and response with inbuilt flexibility and recognition that future disasters may be changing.

The health sector also has various policies, procedures and regulations in place to guide the coordination of the health workforce for disaster response. For example in most countries there were clearly defined plans for disaster response and coordination of health staff, supported by legislation to empower key individuals to make decisions in times of disasters. Additionally, health disaster planning was often in keeping with national strategies and priorities, creating a supporting environment for building the overall adaptive capacity of the DRS.

*“We have a policy in place [to guide] when there is a cyclone. Both off duty staff and on duty staff are called to assemble, and on duty staff are asked to continue.”*

However, limited workforce and resources may sometimes mean that implementation does not always go according to plan, resulting in a more reactive response and with staff taking on multiple roles and a strong dependence on donors support for provision of resources.

*“While NDMO has a plan, health staffs are more reactive during disasters.”*

From the health perspective, WHO’s contribution in the region is to work **to enhance adaptive capacity** by supporting planning processes across PICs in developing procedures for disaster response, and assisting PICs in their national policy development efforts. WHO also recognises the “all hazards” model in planning for disaster management and response, with strong emphasis placed on reducing underlying risk – again working to **support adaptive capacity of the DRS**. For example:

*“In August this year, the [MOH] Emergency Health Coordinator is going to start this process of developing standard operating procedures for disasters and it will be under the revised Fiji National Health Emergencies and Disaster Management Plan (HEADMAP)..”*

Many development partners in the region provide support to disaster policy development, however in each of the PICs, the government policies surrounding disaster were found to be in various stages of development and / or ownership. Furthermore, the existence of disaster policies and plans within government ministries or at the community level sometimes had little bearing on whether or not they were used. This was mentioned by a Cook Islands government interviewee:

*“We have a [Disaster] Response Plan for the Ministry. We don’t know what it is, but there is one. There is an issue around that. I haven’t seen it yet.”*

This highlights that while linking to international and regional policies is important in aligning with broader goals and strategies, for a policy to hold any weight within an organisation or community as a whole, relevant personnel need the opportunity to provide input. Without consultation, policies, plans and official processes can **constrain adaptive capacity of the DRS** and potentially present a barrier to effective disaster response, as described by a Cook Islands interviewee:

*“The processes are an impediment to response. The protocols and bureaucracy that needs to go through before action is taken is an impediment.”*

Policies may be part of the formal disaster response architecture, but historical (informal) processes and the underlying culture are also powerful in dictating how

organisations respond. This issue could potentially **support or constrain adaptive capacity**, depending on the context. Historical processes may have evolved in such a way that results in effective and efficient response mechanisms and one in which can further adapt as needed with the impacts of climate change. Conversely, without strategic and intentional planning, key stakeholders may be left out of the consultation process, thus **constraining adaptive capacity**, as demonstrated by a Cook Islands government interviewee:

*“Development partners often want to have a direct relationship with their people here (for example partner NGOs) so we can ask them to use us [Ministry of Finance] as a focal point but they can’t be forced to use us. Although there is a policy there is also a historical process that is in place so we can’t force the issue.”*

The policy referred to is the Overseas Development Assistance Policy (2011), which encourages any assistance from donors and NGOs to be channelled through the national budget system for transparency and accountability. The important role of civil society is acknowledged as essential for an accountable political system and this could explain development partners interest in maintaining relationships (especially informational) with NGOs. Policy therefore needs to account for historical and cultural practices and not disregard them. However if past practice has been shown to be problematic, steps should be taken to overcome these issues in ways that include relevant stakeholders and show clear benefits in doing so.

### **3.1.3 Regional politics and governance**

The political situation across the region is relatively stable, enabling inter-country and regional mechanisms to work relatively smoothly in terms of movement of people and resources. However, specific regional politics, particularly in relation to Australia and New Zealand governments and their relationship with Fiji, forms part of the architecture of disaster response and at times has the potential to **constrain adaptive capacity of the DRS**. Outcomes may include the difficulty in the provision of disaster relief and ongoing DRR programming, leading to further **constraints in the adaptive capacity of the PIC DRS**. When these formal modes of operating provide barriers, it was found that the informal modes that take over. Informal modes of operating should therefore not be considered secondary, rather viable alternatives to formal diplomatic relationships. As noted in the previous chapter, the complex political situation is well understood by Fijian government interviewees, who noted:

*“NDMC [National Disaster Management Council] asks for overseas assistance. That’s very sensitive - if we declare too early, other countries think we just want money. It becomes a political thing.”*

*“During the [2012] floods / cyclone, should we need assistance, there is reservations to call overseas. For the past disasters we have been trying our best to maintain and tackle internally.”*

Internally in Fiji, mechanisms have been established to overcome challenges in accessing Australian disaster funds, highlighting the **adaptive capacity of the Fiji DRS** through its recognition of the need for flexibility. This involves the use of alternative approaches, that instead of going through diplomatic routes, organisations rely heavily upon existing relationships with NGOs, as described by a Fijian government interviewee:

*“Most donors go through NGOs, they don’t come through government. We set the PM [Prime Minister’s] Fund outside the framework of the budget, so when a*

*disaster happens it can be accessed quickly, [we] don't have to go through process. The bank account is set up outside, hoping that other donors can pour money in there, but Australia goes through NGOs. Because of the political differences it goes through NGOs."*

This demonstrates the importance of informal relationships and partnerships between donors such as AusAID and NGOs in disaster response. The Fijian government recognise this situation and the corresponding authority of NGOs as a result of the funding they receive from donors. The Fijian NDMO is keen to coordinate activities associated with disaster response:

*"In Fiji, NGO's have free reign but we prefer for those who want to be involved in disaster [response], we want MOUs - it's about synergy and maximising efficiency, accountability to the people, long term sustainability as well."*

The reliance on international assistance for disaster response in some PICs reveals underlying issues relating to aid dependence. The issue of 'dependence' cannot be overlooked in the context of this research. Pacific island countries (PICs) are inherently dependent upon international aid and assistance due to several factors, including their small size, insularity and remoteness coupled with high exposure to disasters, limited disaster mitigation and response capacity, and limited economies (ADB 1998; Meheux et al, 2007; World Bank, 2012). This need for dependence **constrains adaptive capacity of the PIC DRS** as the internal drive to be self-sufficient and to build capacity through DRR efforts is decreased, preferring to be supported by outside donors. Other studies have found that dependence upon external aid constrains adaptive capacity in that dependence prevents initiative, fails to acknowledge and use available resources and prevents innovation (Levine et al., 2011). Donors do support DRR and climate change adaptation (CCA) activities with the view to reduce vulnerability to disaster impacts. Donor supported DRR efforts often align with existing national policies (e.g. National Sustainable Development policies or National Action Plans for DRR and CCA), thus supporting national leadership and ownership on the issue. However, with constrained national budgets, PICs often become heavily reliant on donor support for DRR and CCA activities. Coupled with a sense of dependence mentality in times of disaster response, this can further ingrain the feeling that risk reduction and adaptation is the responsibility of outsiders rather than a national priority. This **constrains the adaptive capacity of the PIC DRS** as it shifts responsibility to donors and development partners, as noted by two Cook Islands interviewees:

*"There is the underlying mentality that New Zealand, Australia and France would assist if needed. This mentality reduces efforts for DRR and for disaster preparedness."*

*"We also look to call on our aid donors. There is an expectation that New Zealand will help."*

Education and awareness of the need to internally adopt a future focus (even with existing, constrained resources) is needed within PICs in order to support adaptive capacity of PIC's DRS. Incorporating capacity building into ongoing donor supported DRR programming should encourage mutual responsibility with a view to long term sustainability of the PIC DRS.

The circumstances of the Cook Islands, a state in free association with New Zealand, dictate a close relationship between the two countries. While this close relationship allows for New Zealand to respond effectively as it understands the needs and capacity of the Cook Islands, New Zealand Aid Programme is also conscious of not "over-

responding” which can **constrain the adaptive capacity of the Cook Islands’ DRS** by encouraging a dependence mentality. This is described by a New Zealand Aid Programme interviewee:

*“The big challenge for us is balancing not over-responding. Or not responding when it’s not really an emergency and balancing that with Cyclone Pat where we were criticised for a late response.”*

The latter part of the above quote mentions the “late response” of New Zealand Aid Programme, who were awaiting formal request by the Cook Islands Government. A New Zealand Aid Programme interviewee noted that pride of the national government can get in the way of timely response, and may have played a part in the delayed request:

*“Another challenge is that some PICs leave it til late to call for assistance. This is because of their intense pride and their thinking that “we can do this ourselves” which is admirable but can delay response.”*

Given the official stance of donors to await a request for formal assistance from the affected country, this issue of pride is concerning as any delay in response can have serious implications on affected populations. **Constraints on the adaptive capacity of the PIC DRS** were therefore likely if cultural pride or other political elements gain prominence over basic needs in times of disaster. Donors should therefore consider requests for international assistance as genuine just as affected countries should base their requests on need only.

## **3.2 Agency**

The issue of agency revealed the following key findings in relation to adaptive capacity of the Pacific DRS:

- Roles played by non-state actors were significant in the area of disaster response, with some NGO, faith-based and UN agents wielding considerable authority. Once again, partnerships, relationships and trust between these agents were vital **in supporting the adaptive capacity of the DRS**. Non-state development partners also have a responsibility to support the capacity of key government organisations to encourage self sufficiency of national PIC DRS.
- Power, control and decision making between agents in the DRS needs to be inclusive and participatory to ensure outcomes (e.g. disaster response policy) were acceptable and appropriate at all levels. Inclusion of a wider stakeholder group relates to **supporting the adaptive capacity of the DRS**. Currently, some PICs were better than others in including various stakeholders in decision making processes and were somewhat dependent on issues of capacity and leadership.
- Strong relationships and trust, often between individuals due to the small bureaucracies present across PICs, underpin the effectiveness of the Pacific DRS. Aligning with this culture can assist in **supporting the adaptive capacity of the DRS** by leading to effective working relationships where a good understanding is reached on roles, responsibilities and capacity.

### **3.2.1 Importance of roles played by non-state actors in the DRS**

Disaster response in the Pacific involves numerous actors, stakeholders and agents from both government and non-government sectors. The growing number of agents working in Pacific disaster response has been described as unwieldy: at times working

in an uncoordinated manner. Organisations not engaged in regional networks or lacking relationships with key institutions can find themselves isolated and without adequate information in times of disaster. This **constrains the adaptive capacity of the DRS** by introducing barriers to effective response, including poor decision making. Coordination of these emerging agents is therefore crucial in **supporting the adaptive capacity of the DRS**. The issue of coordination is noted by a New Zealand Aid Programme interviewee:

*“Another challenge is the sheer number of people doing this [disaster response]... the number of actors has grown over this time. A challenge is therefore in coordination.”*

In this context, agents were considered non-state stakeholders involved in decision making in relation to disaster response (following Biermann, 2007). Agents of significance were therefore NGOs, UN agencies, Red Cross, the Church, and multi-stakeholder groups such as the PHT. These agents form part of the overarching governance of disaster response in the Pacific. Agents exercise varying degrees of authority, at times in partnership with governments and other times separate to government. Issues such as coordination amongst this group were highlighted below by a Fijian NGO interviewee:

*“We see lots of NGOs coming in on early recovery – Red Cross, international NGOs come in, they are set up with the government. ADRA and other faith based organisations – we are looking at how many and saying no there are too many, [there is] no coordination.”*

The PHT is an example of a multi-stakeholder non-government agent with considerable authority and power within the DRS, and as already described, one which **supports the adaptive capacity** through efforts to improve coordination of humanitarian response organisations. While the United Nations Office for the Coordination of Humanitarian Assistance (UNOCHA) coordinates the PHT, other UN agencies important in disaster response include WHO, UNICEF, Food and Agriculture Organization (FAO) and UNHCR. All these agencies fall into the cluster approach through the PHT (UNOCHA, 2012a). Given the global authority of the UN, these UN agencies also hold considerable power and authority within the DRS – part of which may come from the financial resources and advocacy outreach they can sometimes provide. Partnerships with UN agencies can therefore **support the adaptive capacity of other DRS organisations** by boosting capacity, visibility and providing partnership and funding opportunities.

The Church is another non-state actor which is a key element in Pacific culture and society as described by a Cook Islands interviewee:

*“Local churches are strong – [they] provide shelter and food, supplies, psychosocial support. They are part of the social fabric of the island community”.*

Faith based NGOs such as ADRA, Caritas and Act for Peace have a strong presence in the Pacific and often implement programs through Church partners. Given their strong community presence, Church representatives can also be invited to participate on National Disaster Councils (or similar), as occurred in Samoa following the 2009 tsunami and described by the Samoa Council of Churches interviewee:

*“After the disaster, the Church was invited to be a part of the DAC [Disaster Advisory Committee].”*

The degree of authority and influence of the Church was noted by an ANGO:

*“What strikes me about the Pacific is the degree to which faith-based community groups, whether it be Church or otherwise, [are] actively involved in relief [and] preparedness type activities and [in] some places are in effect the de-facto NGO community”.*

Respect and recognition of the authority of faith-based groups and the Church more generally is needed by external agents working in the Pacific, given the presence of these groups in the Pacific DRS. **Supporting adaptive capacity** of the DRS may mean working closely with Church groups to ensure key messages of risk reduction and preparedness were being put forward to communities.

The Red Cross is generally respected as fulfilling its obligations in disaster response and **supporting the adaptive capacity of the DRS**. The Red Cross is (as noted previously) supported by its own internal mechanisms such as the Climate Centre which provides technical expertise in mainstreaming climate change considerations across Red Cross programming. As an auxiliary to government, the Red Cross often has close ties to the NDMO and these organisations work together in times of disaster response. A relationship of mutual reliance exists between the two organisations, with NDMO providing government backing to the Red Cross efforts, and also receiving considerable capacity through Red Cross networks, both internationally and locally through the wide community volunteer networks.

While non-state actors were important in the Pacific DRS, the affected national government is recognised by all members of the DRS as having primary responsibility for responding to the disaster, with the NDMO acknowledged as being the primary coordinating government body. This responsibility of coordination is often not matched by corresponding capacity (human resources, technical skills or financial capacity). This limited capacity of such key organisations **constrains the adaptive capacity of the PIC DRS**, given their role in coordinating response efforts. NDMOs were often staffed by a few people only: *“Some NDMOs only have one person! They are therefore having to do their work and obligations can be onerous.”*

Support and understanding is therefore required from partners in-country, as noted below by a UNOCHA interviewee:

*“So the emphasis has to be on national leadership and the national leadership is often equivalent to NDMO and then it is dumped on an NDMO and that’s not how it’s supposed to be led by NDMO but it’s to be supported by your Red Cross Oxfam, Ministry of Health.”*

Furthermore, humanitarian response organisations and development partners should also aim to support the ways in which NDMOs operate. New Zealand is supporting several PIC NDMOs through a mentoring and capacity building arrangement, coordinated through its Ministry of Civil Defence and Emergency Management, who meet with NDMOs several times a year to offer training, mentoring and support, thus **supporting the adaptive capacity of several PIC DRS**. This issue of supporting national capacity was also noted by a United Nations Development Programme (UNDP) interviewee:

*“Usually the national government should lead the decision making process; however some governments have more capacity to lead that, whereas others need more support.”*

### 3.2.2 Power, control and decision making within the DRS

To **support ongoing adaptive capacity of the DRS**, the authority and power of certain agents (including non-state community level agents) needs to be included in decision making processes to ensure resulting policy and procedures were acceptable at local scales. Collective, participatory decision making which specifically includes non-state actors and traditional leaders is still limited in many PICs and **constrains the adaptive capacity of the DRS** given the skills, experience, knowledge and respect this group hold.

The NDMO (or similar) is generally considered the coordinating government body of the affected PIC. Their authority is generally respected, as noted by UNOCHA and a representative from NDMO Vanuatu (respectively):

*“For the international response, we [UNOCHA] link with the NDMO at the national level...”*

*“Decisions are made collectively but the NDMO has the key role and this is respected.”*

The degree to which the authority of the NDMO is respected was found to relate to strength in leadership and capacity issues within the NDMO. Where leadership and capacity (human resource, technical and financial) was strong, the country’s DRS was generally well coordinated and more inclusive of non-state actors, highlighting elements of **enhanced adaptive capacity of the DRS**. In countries where NDMOs displayed limited capacity (i.e. one or two personnel), the DRS was less inclusive of non-state actors and relied more on informal mechanisms for communicating with non-state actors. This shows the importance of supporting the NDMO to ensure enhanced participation of non-state actors, and therefore a **DRS with increased adaptive capacity**. How involved in-country non-state actors were decision making processes was an issue identified by UNOCHA:

*“What we have identified as an issue in a lot of Pacific island countries is a lack of inclusiveness of Government disaster management structures. I don’t know what it is, but I also think it’s always this sort of “us and them” between the Government and non-Government. So the spirit of partnership needs to be much more strengthened, not only of your traditional groups, you know, the Red Cross and others like that, but also the more non-traditional the civil society group, women’s network, to have that more involved into these kind of disaster management structures. I think also it’s a matter of capacity.”*

The Red Cross distance themselves from a coordinated response with NGOs and government, in line with their principles of neutrality and independence, and do not have to await a formal request from the affected government to respond. Given the respect for the Red Cross in times of disaster, its ability to operate outside of the formal DRS mechanism highlights that formal inclusion in such networks is not necessary to **support adaptive capacity**. Rather, having clear objectives, responsibilities and support at all levels (from local to international), the Red Cross fulfils its obligations.

*“[Red Cross conduct] independent disaster response supporting the Red Cross Society in each country – needs are fed through to Australian Red Cross from local groups”.*

*“Red Cross has representatives on every island. Local government is also on every island. Those systems can be used more effectively than what they are*



*being used. There is significant capacity through these local and national structures.”*

Although this research focused on the decision making and coordination of disaster response at the national level, many interviewees noted the need for greater inclusion of community and traditional leaders in decision making processes. This acknowledges their *agency* and also provides greater legitimacy and inclusiveness to final decisions, thus important for **supporting the adaptive capacity of the DRS**. This was noted by a Cook Islands government interviewee:

*“In my view, until you have community leaders in a decision making body you won’t have a smooth run.”*

Since disaster impacts are felt at the local scale, organisations who respond will need to understand the existing local government and traditional structures in place in PICs. Organisations with a presence at the local level were therefore well placed to understand, or even be a part of these systems. A number of interviewees noted that these local systems could be seen more as a strength or a resource in times of disaster. This was found in Vanuatu, where an interviewee noted that traditional structures were not formally part of the system as they should be:

*“Legally, these traditional structures are not incorporated. It needs to become part of the local ways of responding.”*

Involving traditional leaders was noted by many interviewees as a way to strengthen disaster response, as noted by Cook Islands Red Cross:

*“One of the most important things to remember that what happens on this main island is very different to what happens on outer islands... It’s better to go with their [communities] traditional system because that’s what they know and respect. It’s important to consider the island way of doing things.”*

The level of involvement of traditional leaders appeared to vary and again was dependent on the individual and the circumstances of the island:

*“Traditional leaders get involved – depends on the island. Sometimes they are very strong and will be involved in policy discussions. They’ll be consulted.”*

Finding ways to better include traditional leaders in both disaster response planning, and disaster response itself, is suggested as a way to **support the adaptive capacity of the DRS**. Particularly in PICs with isolated and remote islands, inclusion of such leaders and their communities will reduce the burden on the central government by building resilience at the community scale. While this is not a new idea (community based programs DRR and CCA were already in place in many locations), the idea to better engage with local leaders for disaster response is worth consideration for **supporting future adaptive capacity**.

### **3.2.3 Importance of relationships and trust between agents**

Throughout this research and as already highlighted, a key finding has been that the effectiveness of the Pacific DRS is built on strong relationships and trust, often between individuals due to the small bureaucracies present across PICs. Aligning with this culture can assist in **supporting the adaptive capacity of the DRS** by leading to effective working relationships where a good understanding is reached on roles, responsibilities and capacity. This has direct implications in times of disaster response, particularly in relation to the coordination of disaster assessments. Given the Pacific’s

vulnerability as a result of low institutional capacity, the basis of inter-organisational relationships often hinges on very few people. **Adaptive capacity of the DRS is therefore constrained**, should key personnel leave their position and move elsewhere. These issues are discussed below.

Recognition and maintenance of relationships between individuals within the DRS is important to ensure timely information sharing between stakeholders, as noted by a New Zealand Aid Programme interviewee:

*“In relation to the Pacific, it works on relationships and a sense of trust. We are very conscious of that and our posts in all PICs work to maintain this. There are meetings with posts and NDMO, Australia and other donors, Red Cross and relevant NGOs – to make sure everyone understands how we all work”.*

In-country representatives of donors such as AusAID and NZAID often have close relationships with their host national government. This can lead to AusAID and NZAID representatives having formal (or observational) membership on National Disaster Committees. Inclusion on such committees allows direct access to the needs of the affected government thus **supports the adaptive capacity of the Australian DRS**. The importance of this sense of trust relates strongly to the extent that agents were included in decision making processes, as noted below by an ANGO interviewee:

*“So I know in the Fiji floods, for example, the NDMO was having a meeting just about every day and the AUSAID embassy person was there every day; would stay very much engaged.”*

Personal relationships with key individuals were important on the informal information gathering side. Agents and stakeholders linked through various networks can readily access information they need in times of disaster, which **supports the adaptive capacity of the DRS** in attempts to coordinate effectively, as noted by an ANGO:

*“I guess because I know my way around the sector very well, if I detect that we should make contact with person X or Y who might have an extra bit of information for us, that’s what judgment - that is exercise by us regularly basis”.*

Trust between agents was revealed to be a crucial element in times of disaster response in relation to disaster assessments. For a PIC country to request international disaster assistance, it needs to have a good understanding of the impact of the disaster and the needs of the affected population. This information is based on initial disaster assessments, often coordinated by the NDMO and undertaken by local government, Red Cross and NGOs in affected communities. The speed at which international assistance can be requested and granted is therefore based on timely and accurate disaster assessments. This research found that in some PICs, an absence of trust and relationships between key agents provided a barrier to effective response, thus **constraining the adaptive capacity of the PIC DRS**. Multiple disaster assessments were being undertaken as a result of some organisations not trusting the content and findings of others. Even after initial assessments have been undertaken, there is evidence that incoming humanitarian organisations often require their own assessment of disaster impacts, leading to delays in response and multiple (and possibly contradicting) disaster assessments. An absence of existing relationships and trust between agents can therefore be problematic for coordinating disaster assessments and act to **constrain adaptive capacity of the DRS**, particularly in accessing the vital assessment information. This challenge is described by UNDP:

*“A particular department or person has the data but they won’t give [it to] the other person who needs the data. Doesn’t mean the data is not there, but you can’t access the data. I think that’s one of the bigger problems and in a number of countries that happens.”*

In Vanuatu, this issue is currently being addressed by the VHT’s attempt to coordinate disaster assessments. By having a consistent approach to initial disaster assessments, it is hoped the process of providing an appropriate response will be expedited.

Lack of relationships may occur if key personnel moved out of their roles, or even if they were out of the country in times of disaster, as noted by two New Zealand Aid Programme interviewees:

*“There is a lack of succession planning. If key personnel are out of the country / or when they leave, there is often no backup.”*

*“Because of their [PIC’s] size, we are relying on individuals rather than institutions. So if a strong person goes then you lose a lot.”*

The lack of succession planning for key personnel has the potential to **constrain adaptive capacity of the DRS**. Being too reliant on key individuals is a challenge in the Pacific as the small populations mean limited human resource capacity to fill organisations. Governments and development partners in the Pacific need to better address this issue by putting ongoing strategies in place that encourage leadership and maintain institutional knowledge.

### **3.3 Conclusion**

The inter-organisational elements of agency and architecture provided a useful lens in which to view the adaptive capacity of the Pacific DRS. This chapter has highlighted the nature of Pacific disaster response architecture, and its formal and informal networks in operation. While formal networks play an important part in coordination of the numerous agents emerging in disaster response, it is often the informal approaches and underlying culture present in the Pacific that dominated how authority and respect were granted. This culture appears to have evolved in line with existing capacity constraints (particularly human resource related) and is based heavily on relationships and trust between individuals.

Supporting the adaptive capacity of the DRS should therefore involve support to key networks and respect of informal modes of operation in times of disaster, and in non-disaster times to maintain relationships. Enhanced engagement with non-state actors, especially traditional leaders, in pre-disaster planning as well as disaster response, could support adaptive capacity by acknowledging the authority they hold at the community level.

## 4. REGIONAL AND INTERNATIONAL DISASTER RESPONSE

This chapter reports on findings on the Australian and international systems that respond to disasters in the Pacific, and how these systems support or constrain the adaptive capacity of the affected PICs, particularly with respect to tropical cyclones. This chapter focuses dominantly on the perspectives of Australian and regional interviewees, which serves to contribute to a better understanding of how humanitarian aid influences adaptive capacity. The latter section of this chapter provides PIC perspectives on incoming support, which are also reported in later chapters. Caribbean perspectives of disaster management are discussed at the end of the chapter.

Results have been organised into the systems and mechanisms that support or constrain the adaptive capacity of the *Australian* DRS, and elements that support or constrain the adaptive capacity of the *PIC's* DRS. Some elements were found to have implications on *both* Australian and PIC's DRS. While specific findings for the four case study countries are found in Chapters 6-9 (where details of the perspective of PIC stakeholders are also described), key overall findings include the following:

**Table 2 : Elements of the international DRS that support or constrain the DRS**

	<b>Elements <i>supporting</i> adaptive capacity</b>	<b>Elements <i>constraining</i> adaptive capacity</b>
<b>Australian DRS</b>	<ul style="list-style-type: none"> <li>• Several inter-organisational mechanisms were in place at the Australian national level to facilitate planning and coordination of Australia’s international disaster response, involving both state and non-state actors. This facilitates information sharing and reduces duplication of efforts, thus supporting the adaptive capacity of the Australian DRS. Examples include ACFID and the Humanitarian Partnerships Agreement (HPA).</li> </ul>	<ul style="list-style-type: none"> <li>• Some Australian organisations have not considered how climate change may influence their ability to respond to disasters in the Pacific. This has the potential to constrain the adaptive capacity of the Australian DRS as the time in which to plan for and build technical capacity and future financial needs were minimised.</li> </ul>
<b>PIC DRS</b>	<ul style="list-style-type: none"> <li>• Australian and international organisations normally respond upon an official request from the affected host country government (however, there is some evidence of some flexibility of this protocol).</li> <li>• Australian efforts focus on a “whole of government” response to disasters in order to boost coordination and reduce bottlenecks in the disaster affected country.</li> <li>• Incoming disaster assistance provides support to different aspects of disaster response and is available to PICs through three main systems, each with its own objectives, including: (1) Australian bilateral assistance (e.g. Australian government to host government; or ANGO to local NGO); (2) Australia’s involvement in the France, Australia New Zealand (FRANZ) agreement on disaster response and (3) the UN Cluster System.</li> <li>• The Red Cross movement plays a unique role in supporting local adaptive capacity through its own networks and through the Red Cross/Red Crescent Climate Centre</li> </ul>	<ul style="list-style-type: none"> <li>• There is evidence of limited recognition of PIC capacity and governance structures in times of disaster response by the PHT and cluster system. A better understanding of in-country systems and capacity would allow for the building of longer term skills and experience.</li> <li>• The existence of dependence mentality on incoming support leads to lack of prioritisation of DRR and preparedness activities.</li> <li>• Lack of trust between incoming organisations leads to multiple disaster assessments and delays in relief efforts on the ground.</li> <li>• Lack of clarity within the PIC DRS of the roles and responsibilities of international partners. Coordination of NGOs reported as problematic.</li> <li>• Incoming organisations often fail to provide feedback or lessons learned to Pacific DRS. This somewhat prevents the adoption of improvements into disaster response practices.</li> <li>• Lack of focus and capacity in psychosocial support from incoming organisations leads an overwhelming need in times of disaster.</li> </ul>
<b>Both Australian and PIC DRS</b>	<ul style="list-style-type: none"> <li>• Australian government and ANGOs regard working with PIC in-country partners and local partnerships as crucial to effective disaster response. Existing relationships between Australian and PIC’s government and NGOs can in some cases assist in creating an enabling environment for support in times of disasters.</li> <li>• There is a strong sense of <i>cooperation</i> and <i>resource sharing</i> amongst responding in-country organisations to provide the most effective response to those in need.</li> <li>• Ongoing DRR activities undertaken in PICs (both donor funded and funded with PIC domestic budgets) reduce vulnerability and therefore the impact of disasters, building the adaptive capacity of PICs as well as Australian DRS organisations.</li> </ul>	<ul style="list-style-type: none"> <li>• Coordination between the three main systems of disaster response (identified above) requires improvement.</li> <li>• The Australian government’s disaster response is in part driven by pressure and expectations from the Australian public, thus incorporates a media and political element in deciding if, when and how to respond.</li> <li>• Some competition for financial resources exists between Australian responding organisations (particularly ANGOs), which can have implications for both Australian and PIC DRS.</li> </ul>

The points contained in Table 2 are referred to throughout the remainder of this chapter **in bold**, and described in the context of specific organisations within the Australian and international DRS.

#### 4.1 Australia’s disaster response system

Table 3 lists the main Australian based organisations responding to the four post-disaster humanitarian needs that were the focus of this research. The table shows that WASH is covered by the most organisations while psychosocial needs were addressed the least.

**Table 3: Examples of Australian based disaster response organisations in relation to four humanitarian needs**

Organisation	Health and Medical Care	Food and Nutrition	Water and sanitation	Psychosocial needs
ADRA (ADRA, 2011)				
Australian Civilian Corps (AusAID, 2012a)				
Australian Department of Defence (ADF, 2007)				
Australian Red Cross (AusAID, 2011b; Red Cross Australia, 2012)				
Civilian medical teams, AusMAT (AusAID 2011c)				
CARE (CARE 2008, 2011)				
Caritas Australia (AusAID, 2009; Caritas Australia 2011)				
National Council of Churches Australia (NCCA, 2007)				
Oxfam Australia (Oxfam, 2011)				
Plan Australia (Plan International Australia 2010).				
RedR (RedR Australia, 2011)				
Save the Children (Save the Children, 2012).				
World Vision Australia (World Vision Australia, 2012)				

An important finding that **supports the adaptive capacity of PIC DRS** was that the official disaster response of the Australian government and ANGOs is activated once a request for international assistance is received from the affected PIC government. This approach encourages and requires national ownership and control over decision making in disaster response activities, thus supporting the adaptive capacity of PIC DRS. The need to await formal request to respond was reported by the vast majority of Australian interviewees, and was also noted across all policy documents, illustrating the humanitarian community’s respect towards the primary role of the affected government. This process is endorsed in AusAID’s policies (AusAID, 2011a). For example, ANGO interviewees reported:

*“The trigger for us is getting official request from government.”*

*“The big thing is we don’t respond unless the country government - host government - has called for international assistance. We really hold back until they do.”*

Despite this well acknowledged need to await an official request for assistance from the national government, there does appear to be times when this approach was not followed. For example in Vanuatu, one NGO respondent indicated that:

*“Even though Vanuatu was not even calling for international assistance, the NDMO invited us to come because we have very good logistics - they asked us to come and support the logistics.”*

Situations such as these indicate the initiative of the in-country coordination body (e.g. NDMO) to seek assistance for a specific need but may also provide precedents for NGOs to respond outside the official mechanisms. This may have implications in **constraining the adaptive capacity of the PIC DRS** by losing the control and national ownership of disaster response – this is discussed further in Chapter 10.

#### **4.1.1 Australian Government**

Australian disaster response efforts focus on a “whole of government” response to disasters. This approach **supports the adaptive capacity of PIC DRS** by boosting coordination at the receiving end and reducing bottlenecks in the disaster affected country.

Key stakeholders in the Australian government disaster response system are described below.

##### **AusAID**

The Australian Agency for International Development (AusAID) is situated within the Foreign Affairs and Trade Portfolio, with its Minister being the Minister of Foreign Affairs. AusAID’s approach to disaster response and development in PICs **supports the adaptive capacity of PIC DRS** across several elements including encouraging mutual accountability and respect, supporting DRR and preparedness measures and through prioritising partnerships with a range of stakeholders. AusAID leads and coordinates Australia’s “whole of government” overseas development efforts, including response to humanitarian and disaster crises (AusAID, 2012b). AusAID’s Humanitarian Action Policy provides the overarching goals and strategies which guide Australia’s efforts in responding to disasters (AusAID, 2011a).

AusAID is key to Australia’s bilateral development efforts in the Pacific, both in terms of disaster response and ongoing development programming. This bilateral mechanism relies heavily on the knowledge, experience and relationships of in-country AusAID staff. Close relationships were reported to be maintained between AusAID in-country staff and PIC government representatives. This ensures the objectives of this bilateral mechanism are met, which were underpinned by Australia’s “Pacific Partnerships for Development” and included mutual respect and mutual accountability as core principles (AusAID, 2012b). Research findings revealed the objectives of this mechanism **supports the adaptive capacity of the PIC DRS** with AusAID proactive in understanding the needs and capacity of PICs, and tailoring support accordingly. Part of this is AusAID’s consideration of climate change impacts across elements of its programs, through efforts of “climate change mainstreaming”, i.e. integrating climate change considerations across all sectors. This too **supports the adaptive capacity of the PIC DRS** as it is future focused with a view to build capacity to a potentially changed pattern of severe weather events.

According to AusAID, Australia responds to disasters in the Pacific mainly in the following ways (AusAID, pers. comm.):

1. Provision of financial to support to national governments, the UN agencies, ANGOs and others humanitarian response agencies;
2. Provision of relief items to the Pacific – from stockpiles within Australia in addition to the procurement of stock in country to support the local economy.
3. Deployment of technical expertise through Australia’s engagement with government ministries, institutions and non-governmental organisations.
4. After providing rapid assistance, Australia ensures that the process transitions to development programs, geared at up-scaling existing programs post disaster to enhance overall in-country capacity. Disaster preparedness and risk reduction form an integral part of the response efforts by minimising the impacts of future disasters.

Ongoing partnerships with other humanitarian actors (in Australia and in PICs) and PIC governments were considered paramount in delivering effective and coordinated disaster response and were considered to **support the adaptive capacity of PIC and Australian DRS**. These partnerships allow all parties to be cognisant of the needs and capacity offered by the other, and again were enhanced by the presence of in-country AusAID staff who monitor ongoing programs as well as maintain diplomatic ties with their host government. This research revealed that these relationships can lead to AusAID in-country staff being closely engaged in key national and regional disaster management mechanisms, as is the case in Samoa (see Chapter 9). Inclusion in such mechanisms allows for a better understanding of local needs and facilitates more effective communication in times of disaster, given that “*Australia needs to ensure we don’t overwhelm local capabilities*”, as noted by an AusAID interviewee.

Building capacity to respond to more climate change driven disasters is recognised as a priority within AusAID and action is being taken through attention to DRR and vulnerability reduction. AusAID also recognise the need for partnerships in DRR, preparedness and response. DRR, preparedness and the links to CCA were considered crucial in reducing risks prior to disasters occurring and AusAID’s attention to DRR and CCA reflects an element that **supports the adaptive capacity of the PIC DRS** as it reduces the potential disaster impacts and builds resilience of the affected community. Effective DRR, CCA and preparedness activities in the Pacific also lead to a reduced need for Australian organisations to respond. The following partners were identified as significant in AusAID’s efforts, particularly for DRR and CCA (AusAID, 2011a):

- Local communities;
- Affect country (government);
- United Nations agencies;
- International Red Cross and Red Crescent Movement;
- NGOs;
- Donors and other countries;
- Private sector.



The Australian government's disaster response is in part driven by pressure and expectations from the Australian public, thus incorporates a media and political element in deciding if, when and how to respond. This potentially **constrains the adaptive capacity of both the Australian and PIC DRS** by introducing external influences that override practical needs and could favour responding in some countries over others as described by ANGO interviewees:

*"It's a huge media draw obviously - the humanitarian space - it's an easy way for politicians to be talking about something that the public cares about and positively looking to be doing something..."*

*"...there will be a political expediency to be seen to be responding, and that would be the primary driver."*

Expectations of the Australian public, moderated to some extent by what is reported in the media, also partially drive both government and non-government response. This has implications for the affected country: if the Australian public does not deem a certain disaster event a worthwhile cause, the government and NGOs may lack the corresponding political will (and public funding) to pursue a response. Conversely, the Australian public can hold the government to account. The latter situation is illustrated by an ANGO interviewee:

*"...if we start scaling up, and other NGOs start scaling up ... then you can be sure that the Australian Government will take a look at it. Also if we launch public appeals, we are also told that this is an indicator of the level of interest by the Australian public and so the Australian Government is supposed to be responding to the needs of the public [and] will use that at times as an indicator of whether they are going [to help] but of course that is their decision - there are other things but ultimately what the Australian NGOs are doing can in some circumstances be a litmus test for what the public see is happening."*

With its interim Military Government, the political situation in Fiji provides an interesting environment which the Australian Government must navigate in times of disaster. This was raised by Fijian stakeholders including Fijian NGO and government interviewees (respectively):

*"The relationship right now with Fiji, Australia and New Zealand is very political at this moment. [Disaster response funds are] coming through AusAID instead of giving to government - they are coming around to give to civil society. Government to government is not working."*

*"Because of the political differences it [overseas disaster funding] goes through NGOs."*

This situation was demonstrated in the March 2012 floods in western Viti Levu in Fiji, where Australian NGOs were provided with AusAID funds to respond in locations with ongoing NGO programs that provided the connection and partnerships to affected local communities. This reflects some flexibility in AusAID's approach to offering disaster relief, recognising the need to respond to those in need in times of disaster. **Adaptive capacity of both the Australian and PIC DRS is therefore supported** through displays of flexibility in how disaster relief is provided, which may be required with uncertainty in how climate change may affect severe weather and disaster impacts.

### **Australian Defence Force (ADF)**

The ADF follows the “whole of government” approach to disaster response, which **supports adaptive capacity of the PIC DRS**. The ADF is utilised in immediate disaster response, providing substantial capacity by providing a secure environment, as well as transportation with its ships, aircraft and vehicles for civil and military personnel (Greet, 2008). Primary capabilities include initial disaster assessments, immediate medical care, reinstating basic engineering services and logistics (Greet, 2008).

In responding to Pacific disasters, the ADF liaise with the relevant ministry of the host government (e.g. armed forces or police) to ensure a coordinated response and one in which the host government has primary responsibility in decision making. This **supports the adaptive capacity of the PIC DRS** by allowing national ownership and supporting leadership of the affected government.

In terms of the ADF’s coordination with civil society sector and NGOs, it has been recognised that this is an area in need of strengthening (Greet, 2008). This reflects a **constraint to adaptive capacity, particularly of the PIC DRS**, as lack of coordination can result in breakdowns in important partnerships, political implications and delays in reaching disaster affected communities. See below (Australian Civil Military Centre) for further discussion.

### **Australian Civil Military Centre**

The Australian Civil Military Centre (ACMC) plays a background role in the Australian DRS. While not a responding agency, the ACMC works to improve coordination between the civil and military disaster responding organisations and draws upon a multiagency, multi-pillar approach, with staff drawn from several Australian Government departments and agencies (ACMC, 2010). The ACMC’s role is one of building capability where there is civil-military interaction and a need for cooperation, as noted by an ACMC interviewee:

*“We try to identify where it is talking about interactions and inter-agency support and narrow it down to those issues rather than dealing with single agency issues. So as I say, it’s a very specific mandate for the Centre, to work in the civilian military interaction space when it comes to disasters.”*

The role of ACMC therefore attempts to **address the constraint to adaptive capacity** in terms of lack of coordination in the civil-military interface as identified in this research. Despite these efforts, more is required to overcome the disconnection between civil / military groups and ANGOs, as described by an ANGO interviewee:

*“[There is] absolutely no coordination between civil / military groups and ANGOs. Civil / military more relates to the national government and ANGOs are left to do their own thing with in-country NGOs”.*

Given the high importance of relationships, trust and partnerships to adaptive capacity of organisations within the Australian and PIC DRS, the ACMC has an important role to play to assist in overcoming the current weakness of uncoordinated response between the civil and military response mechanisms.

### **AusMAT**

Australian Medical Assistance Team (AusMAT) are multi-disciplinary civilian health professional teams incorporating doctors, nurses, paramedics, fire-fighters (logisticians) and allied health staff such as environmental health staff, radiographers and pharmacists (AusAMT, 2012). AusMAT teams are capable of responding to

emergency events and are self-sufficient, able to respond rapidly to a disaster zone by providing lifesaving treatment to casualties, in support of the local health response.

AusMAT was not raised as a significant element of the DRS in the Pacific by interviewees either in Australia or in PICs. One ANGO interview noted, of AusMAT:

*“The expectation is that they will be disaster assistance to the north – PNG, Indonesia more so than Pacific. It’s also probably the case that there haven’t been any recent big cyclones in the Pacific to have required a medical response from the east coast.”*

While the role of AusMAT in providing emergency medical care was noted by respondents from New Zealand, who cited their response to the Christchurch earthquakes, there is not sufficient evidence of their playing a major role in Pacific disaster response within this research.

### **Australian Civilian Corps**

The Australian Civilian Corps (ACC) was announced at the East Asia Summit by the Australian Government in 2009, which aims to build a register of skilled and specialised civilian personnel to respond to the needs of developing countries in times of disaster or conflict (AusAID, 2012a). Members of the ACC are paid civilian professionals, deployed to work alongside host partner countries, international military forces and other disaster response stakeholders, with the aim to link humanitarian and emergency response programs (AusAID 2011a). Several Australian organisations were aware of the ACC, but there was some uncertainty surrounding the understanding of how the ACC sits in the humanitarian sector. Overall and as for AusMAT, there is not sufficient evidence to draw conclusions about ACC’s role in supporting or constraining adaptive capacity in Pacific disaster response.

#### **4.1.2 Australian NGOs**

Existing relationships between Australian and PIC NGOs can, in some cases, assist in creating an enabling environment and strategic entry point for support in times of disasters, thus **supporting the adaptive capacity of both Australian and PIC DRS**. Several key Australian based NGOs responding to disasters in PICs are found in Table 3. Most have dual mandates in terms of ongoing poverty reduction programming (including DRR and CCA, among others), and disaster response when the need arises. The exception is RedR, an NGO providing specific disaster response training and surge capacity through its register of personnel. RedR is closely linked to the international United Nations Cluster System (see Section 4.3.2) and is classified as a Standby Partner of four UN agencies (UNICEF, UNHCR, UNOCHA and WFP – RedR, 2011).

During stakeholder interviews, ANGOs were all quick to point out that their response efforts began prior to an official request for assistance, in the information gathering stage, as noted by an ANGO interviewee:

*“We begin a coordination process pretty much in 24-48 hours of an emergency hitting. And that would be based on information coming from the field. So it’s not necessarily a request for assistance that triggers our initial thinking.”*

This information gathering stage was found to be heavily reliant on local partners in-country, particularly those in or close to the affected location. These in-country partners support **adaptive capacity of both Australian and PIC DRS** by providing timely and context-specific information on the extent of the disaster, damage and subsequent needs. This information from on-the-ground partners in PICs helps to trigger ANGO’s

initial discussions and preparation in anticipation for the official country request. These partnerships will continue to **support adaptive capacity** as on-the-ground partners in communities learn how to take advantage of opportunities from their Australian counterparts, and Australian organisations learn from lessons in the field to ensure support is tailored appropriately, as described by an ANGO interviewee:

*“We expect the staff in-country to guide us from their perspective, from their involvement in meetings there with the NDMO and the clusters or whatever, to give us or to feed us the information so that we can help them make a decision about how we and if we will respond.”*

Given the criticality of information in times of disasters, where an ANGO does not have connections in country, they may decide not to respond and leave the response to organisations that were better placed in terms of local partners and connections as noted by an ANGO interviewee:

*“It’s really about the coordination going on in country and we would more or less respond to areas where we already have programs.”*

In times of disaster, it was found that some competition for financial resources exists between Australian responding organisations (particularly ANGOs). Competition between agencies has the potential to **constrain adaptive capacity of both Australian and PIC DRS** particularly if the process lacks transparency and introduces delays. Competition exists particularly at the time of large disasters, which were also described as a “lynch pin” to raise public funds through widespread campaigning. As noted by several ANGO interviewees:

*“[Raising funds] can be very competitive and cut-throat process”.  
“We try to grab public fund raising - it’s a competitive environment.”  
“I mean it’s a limited pot of funding, I think that’s always going to be [competitive]”.*

In the affected country, however, there is a strong sense of *cooperation* and *resource sharing* to provide the most effective response to those in need. This is illustrated by an ANGO interviewee:

*“What works well is when the agencies seek to find their value add and contribute so it’s quite interesting in the recent Vanuatu event, Oxfam gave \$10,000 to the response and ADRA implemented it. It might have been \$100,000 whatever it is; they gave money to another agency to do the response.”*

This sense of resource sharing was particularly strong in-country between local NGOs. The often close-knit community of humanitarian workers provides the environment where competition is rare and collaboration is common in times of disaster response. Organisations seemed to want to ensure affected populations were responded to efficiently and therefore channel funds and resources to those best placed to respond. This **supports adaptive capacity of both the Australian and PIC DRS**, as the practice of cooperation and resource sharing leads to maintaining relationships and trust and also provides a single channel in which disaster assistance can be delivered, thereby reducing administrative burdens for the funding organisation and receiving community. It was reported that further cooperation is needed particularly surrounding disaster assessments, which is further discussed in Chapter 10.

Some Australian organisations have not considered how climate change may influence their ability to respond to disasters in the Pacific. This has the potential to **constrain the adaptive capacity of the Australian DRS** as the time in which to plan for and build technical capacity and future financial needs were minimised. Some ANGOs have considered climate change informally – e.g.:

*“Climate Change has been discussed informally. CCA is considered in the background of the country so we focus more on DRR in the overall context of the country and during disasters.”*

*“We [are] probably one of the organisations that have it [climate change] quite high on our radar. [We] have a climate change policy - the core parts of that policy and strategy are community based adaptation. But [we are] also looking at how systems need to change... We are now realising that climate change is affecting all of our work and that the level of response needed will change”.*

Others ANGOs recognised the scientific uncertainty associated with directly linking climate change and a change in disaster events, and the corresponding difficulty in making decisions on boosting capacity in light of this uncertainty:

*“What we know about and what is happening within climate change, and then what that means for humanitarian response - we are still a long way away, because we are not able to scientifically prove that any one disaster event is of such a magnitude and frequency amplitude or anything else because of climate change itself .”*

While appreciating uncertainty is important, not acting (i.e. building disaster response capacity) has the potential to **constrain the adaptive capacity of the DRS**. However, it is also recognised that ANGOs and all responding organisations operate with limited funds and decisions were made based on competing priorities.

### **Australian Red Cross**

The Australian Red Cross is a key organisation within the DRS. An important difference in the way the International Red Cross/Red Crescent Societies operate is one of neutrality and independence. Red Cross operates as an auxiliary to governments, with legal frameworks often outlining roles and responsibilities of the Red Cross. For this reason, the Australian Red Cross is an observer to ACFID, and lies somewhat outside the NGO community, as noted by an Australian Red Cross interviewee:

*“One of the core principles [of the Red Cross] is independence at the same time we are not averse to talking with our colleagues across the sector and ensure that there are reasonable coordinated actions, but institutionally the Red Cross have to preserve its own way of working.”*

In December 2010, AusAID and the Australian Red Cross signed a three-year partnership agreement, under which AusAID will provide AU\$20 million to the Australian Red Cross. These funds were to assist the Red Cross to send aid workers overseas to assist people affected by disaster and conflict, and increase community preparation for responding to natural disasters (AusAID 2011a). The partnership is also increasing the capacity of other Red Cross National Societies in the Asia-Pacific to better respond to the needs of vulnerable populations. The partnership extends the long-standing cooperative relationship between AusAID and the Red Cross that has worked well together over many years in some of the worst humanitarian crises (AusAID 2011a).

Despite the separation of the Red Cross from some DRS coordinating mechanisms, the roles and responsibilities of the Australian Red Cross (and the Red Cross more broadly) in times of disaster were well understood. The Australian Red Cross fulfils its obligations and maintains strong partnerships with PIC Red Cross Societies and is also active in DRR programming, which strongly **supports the adaptive capacity of the PIC DRS**. This highlights that despite not fully integrating with the Australian DRS, the Australian Red Cross is active within its own network and capacity building is an important part of this partnership. Furthermore, the Red Cross/Red Crescent Climate Centre (RC/RCCC) is an international advocacy and research group that supports the efforts of the Red Cross by bringing to the forefront the humanitarian impacts of climate change (Red Cross/Red Crescent Climate Centre, 2011). The support of the RC/RCCC also strongly **supports the adaptive capacity of the PIC DRS**, given the embedded nature of national Red Cross Societies in disaster response and the influence they have in driving future disaster planning and response.

## 4.2 Coordinating mechanisms

The Australian DRS was found to be supported by several inter-organisational mechanisms which were in place at the national level to facilitate planning and coordination of Australia's overseas disaster response. These mechanisms involve both state and non-state actors and facilitate information sharing and contribute to reduced duplication of efforts, thus **supporting the adaptive capacity of the Australian DRS**.

### 4.2.1 The Australian Council for International Development (ACFID)

The Australian Council for International Development (ACFID) is the peak body for ANGOs working in the field of international aid and development. Its membership includes 77 organisations and it operates both as a sectoral coordination mechanism and representational body for ANGOs. ACFID's institutional structure includes a number of Working Groups, and those relevant to this research include the Climate Change Working Group, the Pacific Working Group and the Human Resources Working Group (ACFID 2012). The nature of ACFID and its Working Groups **supports adaptive capacity of the Australian DRS** by encouraging discussion and sharing learnings on relevant and emerging issues (such as implications of climate change on disaster response).

Since 2008, the ACFID's Humanitarian Reference Group (HRG) has acted as an ACFID Advisory Committee, coordinating emergency response systems. The HRG also works closely with ACFID's Executive Committee on policy and advocacy and further collaborating on operational activities/policy such as disaster risk reduction, protection, civil military coordination and human security issues (ACFID 2012). The process of triggering the HRG into action in times of disasters in PICs was described by an ACFID interviewee:

*“So in terms of triggering the HRG generally someone will alert me or [ACFID] Executive Director, or [ACFID] Manager of Policy and Practice.... then I will talk to these two chairs of the HRG ... and who is answering their phone and get a sense from them what they hear because my links to what is happening on the ground are through agencies. And then we would make a call - Is it necessary to seek a HRG conference within 24 hours or 48 hours? What's the time frame? What information might we want to get to AusAID quickly or vice versa?”*

The above quote highlights the importance of the relationship between ACFID and AusAID, which is again discussed below:

*“We’ve always had a strong relationship with AusAID and a fairly good information sharing dialogue. The part of our work where the dialogue is quietest would be in the phase where we are preparing for a request which hasn’t yet happened. That period of our work usually follows an initial exchange of information and dialogue.”*

This quote mentions potential tensions between organisations and highlights the need for open dialogue between partners to ensure coordination in response efforts. Maintaining this dialogue promotes the **support of adaptive capacity of the Australian DRS** as healthy partnerships can better take advantage of future opportunities in a collaborative and thus more effective and efficient approach.

#### **4.2.2 Humanitarian Partnership Agreement**

Standing agreements between AusAID and six pre-qualified ANGOs form the Humanitarian Partnership Agreement (HPA), established in 2011 by AusAID with the aim to better coordinate disaster response through a means of collaborative partnership. Given its relatively short existence, there is limited evidence yet of the HPA supporting or constraining adaptive capacity. HPA member NGOs for the period 2011-2014 are:

- Caritas Australia
- Save the Children Australia
- Plan Australia
- Care Australia
- World Vision Australia
- Oxfam Australia

The HPA is designed to allow for a swift response to disasters, with AusAID dispersing funds to HPA NGOs who have been recognised as meeting AusAID’s criteria. HPA NGOs were then responsible for submitting an application for the funds through an internally democratic process – i.e. HPA NGOs collectively make the decision of how funds were allocated. 75% of AusAID’s disaster response funds were said to be channelled through the HPA, with the remaining 25% available to other agencies. As noted by an ANGO interviewee:

*“Of the money going to NGOs in a crisis, 75% goes to the HPA agencies which means there is that 25% that if they want to use it, they can give it to other agencies. I think in the Pacific they would likely keep that 25% because you’ve got ADRA, for example, who are a big player in the Pacific”.*

HPA funding also supports DRR programming of member ANGOs. As a relatively new mechanism untested in the Pacific, ANGOs were still coming to terms with the idea, with some more supportive than others, as noted by ANGO interviewees:

*“The establishment of the HPA has sort of catapulted some of the maturity, as far as I understand, around the idea of working collaboratively.”*

*“In some respects it [HPA] is actually relatively high level of trust and maturity to make sensible decisions, on the other hand it doesn’t account for the fact that it is still a competitive process”.*

In an AusAID interview, the Executive Director of the Partnership reported:

*“The Humanitarian Partnership Agreement is a new way of working for our agencies. Instead of acting separately, we now get together and make joint decisions about who is best placed to help in an emergency. That might mean one of us, or it could mean all of us. But by working together like this, we can provide assistance very quickly and more effectively” (see James, 2012).*

With the potential for climate change to alter the frequency, intensity and location of severe weather, the HPA recognises the benefits of collaboration and partnerships, potentially **supporting adaptive capacity of the Australian DRS** by immediately providing funds to organisations best placed to respond. However, ANGOs remain dependent on external funds from government and elsewhere to respond. The HPA also only includes 6 ANGOs. These issues highlight the competitive nature of the HPA both in terms of inclusion in the mechanism, and success in receiving funds to respond. It is yet to be seen whether or not this competition acts to **support or constrain adaptive capacity of the Australian DRS**. It is possible the competitive nature of the HPA will lead to ANGOs stretching their in-country presence beyond their current capacity, with a view to be allocated HPA funds if/when disasters strike as their on-the-ground presence must be recognised. This would **constrain adaptive capacity of the Australian DRS** if this were to occur, as adequate response capacity would be lacking.

### **4.3 International and regional disaster response system**

#### **4.3.1 FRANZ**

A trilateral disaster relief and response arrangement in the Pacific is an agreement between the governments of France, Australia and New Zealand (FRANZ) to exchange information to ensure the best use of their assets and other resources for relief operations after cyclones and other natural disasters (DFAT, 2012). Termed the ‘Joint Statement on Disaster Relief Cooperation in the South Pacific,’ it was originally signed in December 1992 and reviewed by the member states in 2007 with a view to strengthening the coordination mechanisms (IFRC, 2010).

The FRANZ agreement is generally related to the coordination of military response including the use of military resources (aircrafts, ships and technical personnel) and well regarded by member organisations, as illustrated by a New Zealand Aid Programme interviewee:

*“Through the FRANZ agreement – we [France, Australia and New Zealand] agree which country is best suited to lead and what type of response or support is provided. This is a balanced approach.”*

PICs were also well aware of how FRANZ operates, as noted by a Vanuatu NDMO interviewee:

*“Sometimes, because of the FRANZ agreement, this long process [to request overseas assistance] is skipped and with the knowledge and blessings of the NDC [National Disaster Council], Council of Ministers, the NDMO will approach any of the FRANZ partners directly on behalf of the Vanuatu Government”.*

*“The FRANZ mechanism is central to us in Fiji in information sharing so we are talking very early on. Then the cluster system led by the UN is mobilised so with UNICEF, WHO, OCHA, IFRC. Then the other missions come along.”*

This indicates that the FRANZ arrangements were respected, but because of existing relationships and the continual sharing of information with FRANZ partners in-country, this can facilitate the process for respective PIC governments to approach the relevant



FRANZ partner and facilitate a more rapid response. This may reflect some disconnections in the system, but also highlights the adaptiveness of these arrangements in the PIC context and an element that **supports the adaptive capacity of the PIC DRS**. As mentioned earlier, the close partnerships between PIC governments and Australian (and New Zealand and French) governments pre-disaster **supports adaptive capacity** through information sharing, capacity building and a future focus with efforts towards climate change mainstreaming.

#### **4.3.2 United Nations Cluster System and the Pacific Humanitarian Team**

In 1991, the United Nations (UN) General Assembly passed Resolution 46/142, which enabled reforms to the systems of international humanitarian coordination (see UN, 1991). Further reforms in 2005 recognised the need to improve capacity, predictability, accountability, leadership and partnership in times of disaster response. The Cluster Approach has thus been adopted to address key humanitarian needs and to coordinate the numerous stakeholders involved across various sectors in times of crisis (IASC, 2006).

The Pacific Humanitarian Team (PHT) is the Pacific’s regional manifestation of the UN’s international cluster approach. Formed in 2008, the PHT is a collection of humanitarian response organisations in the Pacific region including Red Cross agencies, UN agencies, international NGOs (INGOs), donors and regional organisations. It is coordinated by UNOCHA, and overseen by the UN Resident Coordinator in Fiji. The PHT covers 15 PICs<sup>1</sup> 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 offered external surge capacity in times of disaster to PIC governments (i.e. PIC governments were not part of the PHT). It includes a number of clusters and cluster leads covering all stages of disaster management from prevention through to response. The PHT includes the following Clusters and Cluster Leads, which also act as Sectoral Working Groups:

**Table 4: Pacific Humanitarian Team Cluster Leads**

<b>Cluster</b>	<b>Cluster Lead</b>
Logistics	World Food Programme (WFP)
Health and nutrition	WHO
Shelter	IFRC
Protection	OHCHR, UNHCR
Food security	FAO
Early recovery	UNDP
Education	Save the Children, UNICEF
Water sanitation and hygiene	UNICEF

(Source: UNOCHA, 2012a)

<sup>1</sup> 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>).

The PHT has been activated for numerous disasters across the Pacific since its formation, with one of the most recent being the Fiji floods in March 2012. A Lessons Learned exercise highlighted areas where improvements were needed across all sectors, including standards, assessments, cross cutting issues and partnership (UNOCHA, 2012b).

Elements of the PHT that **support the adaptive capacity of the PIC DRS** include the way in which coordination *between* incoming supporting agencies is improved, and the cluster approach which is assumed to readily link to appropriate government ministries. In practice, however, this “linking” to government ministries has at times in the past disregarded national government’s response efforts and capacity. For example, in Samoa after the 2009 tsunami it was noted:

*“The UN overlooked the relative strength of the government system; they overstepped the government’s response instead of supporting them from behind.”*

Given this event occurred in 2009, UNOCHA and the PHT have since made (and continue to focus) efforts to recognise national structures in PHT response efforts. Without doing so considerably **constrains the adaptive capacity of the PIC DRS** as it has the potential to undermine national ownership and structures set up to deal with the specific needs and governance mechanisms in PICs. It is therefore recommended that the PHT and UNOCHA’s ongoing efforts place a higher priority on the needs and governance structures at the PIC national level in times of disaster response by adapting the cluster approach accordingly.

#### **4.3.3 United Nations Disaster Assistance and Coordination team**

United Nations Disaster Assistance and Coordination (UNDAC) teams are rapidly deployed to respond within 6-24 hours of a sudden onset disaster occurring. UNDAC is considered neutral, and international asset and provided free of cost to the recipient country (UNOCHA, 2012b). The Pacific region’s UNDAC team was established in 1996 and since then has been deployed to 18 missions including tropical cyclones, tsunamis, volcanoes and high sea swell events (UNOCHA, 2012bc).

An element of the UNDAC process that **supports adaptive capacity of the PIC DRS** was its approach to partnering with UNOCHA Regional Offices (who were cognisant of regional needs, capacity and preparedness activities) and the need to support long term, ongoing risk reduction and preparedness initiatives (UNOCHA, 2012c). Without doing so, the UNDAC mechanism has the potential to disregard existing response efforts and provide a hindrance rather than a support to affected PICs.

#### **4.4 Pacific perspectives on incoming disaster assistance**

While the preceding part of this chapter provided evidence and analysis surrounding support offered to PICs from the Australian and regional actors and agents of the DRS, this section provides information on incoming support from the perspective of the PICs themselves. Ironically, adaptive capacity was found to be constrained by some elements of the systems in place that aim to support PICs in times of disaster. These issues have arisen as a consequence of several contributing factors and are discussed below.

There is evidence that in some PICs, the existence of dependence mentality on incoming support has led to a lack of prioritisation of DRR and preparedness activities. This was mentioned in Chapter 3, where we highlighted that with DRR and increasingly CCA, donors were supporting risk reduction interventions with a view to build resilience

to disasters and the impacts of climate change. This reliance on outside support could be seen to increase vulnerability and therefore **constrain adaptive capacity**, because if donors withdraw such support, PICs may find significant gaps in coping with disasters and climate change impacts.

Lack of trust and coordination between incoming organisations was reported by some PIC interviewees to result in multiple disaster assessments and delays in relief efforts on the ground. This is described in Chapter 3 in relation to the importance of trust between agents. An ANGO reported that “[d]ifferent agencies have different criteria to collect data - [this] prevents consistent sharing of information”. While this is being addressed in some PICs (e.g. Vanuatu, with attention currently focused on coordinated disaster assessments), there is a need to develop a consistent approach in other PICs. Lack of communication, trust and prior relationships between responding organisations constrains adaptive capacity by creating bottlenecks and confusion. An ANGO reported that “[t]here is a communication gap between agencies, so [we] don’t know what assessments can be relied on at times.” These issues **constrain adaptive capacity** by providing barriers to an efficient disaster response from the management and coordination angle.

Some PICs reported a lack of clarity within the DRS of the roles and responsibilities of international partners. This was found to **constrain adaptive capacity**. Limited coordination of incoming and local NGOs was also reported as problematic. For example, in the Cook Islands in relation to the Tropical Cyclone (TC) Pat response, Red Cross reported:

*“There was no explanation of their role [international partners] and who they were. When UN comes, they come straight to the government. A team arrived went to Aitutaki [the affected island], we [Red Cross] didn’t get a briefing here about what their role was going to be which would have improved the use of limited resources in people and equipment, communications to meet the goal of everyone in getting assistance to the affected people.”*

While at the national scale, agents in PICs were generally aware of the key responding bodies and their roles and responsibilities, this quote from Red Cross highlights the limited understanding of the role and responsibilities of outsiders. It is important for all agents involved in disaster response to be clear about how they and others fit into the architecture to ensure capacity of all agents is maximised (with a view to building capacity of local agents) and duplication of efforts is minimised.

Some PIC interviewees reported that incoming organisations often failed to provide feedback or lessons learned to the affected country’s DRS. This presents a lost opportunity for future planning as it prevents the adoption of improvements into disaster response practices. This was raised by a government interviewee in the Cook Islands:

*“... donors fund the evaluations of their own [disaster response] programs. When donors do it, it doesn’t get put back into a report that can be used as lessons learned so it just get shelved and used for their own internal monitoring and evaluation. Examples of lessons learned could instead be put on television - so the wider population can learn about it too.”*

Other PICs similarly lacked access to donor or NGO disaster response evaluations, which may not necessarily constrain adaptive capacity, but do not support the incorporation of lessons learned into planning processes.

The lack of focus and capacity in psychosocial support from incoming organisations was raised in all four case study PICs, as well as by Australian and regional interviewees. From the Pacific perspective, this leads an overwhelming need in times of disaster and **constrains adaptive capacity of the DRS** given long term impacts disasters can have on mental health. This issue is further discussed in Chapter 5 and in the case study country chapters.

## 4.5 Caribbean perspective on disaster management

Several references have been made to the similarities between the PIC and the Caribbean in terms of their geography and vulnerability to disasters (e.g. UNDP, 2010; Decloitre, 2011). This has resulted in comparisons of the Pacific region with the Caribbean in terms of the organisation and effectiveness of disaster response. This research revealed significant differences between the Caribbean and the Pacific that must be considered before ideas and concepts can be transferred across regions. These are described below.

Significant differences exist between the Caribbean and the Pacific in terms of culture and geography – both of which can be influences on adaptive capacity. The Caribbean is a more culturally homogenous region, with similar histories to a large extent. Caribbean island populations are often larger than most PICs (excepting for some Melanesian countries). There is very little variability of in-country traditions and culture, and since most Caribbean countries are single islands, they do not face the logistical challenges associated with governance and transportation as is the case in most PICs.

Disaster management in the Caribbean has a longer history than the Pacific. In the Caribbean, regional approaches to disaster response is facilitated by the Caribbean Emergency Disaster Management Agency (CEDMA), established by Caribbean Community (CARICOM), to manage disaster response across the region with very active support from all member countries (Bishop, 2011; UNDP-Cuba 2011). This organisation is recognised, very active and functional. Structured disaster systems have long been in place in the Caribbean, with strengthening of DRR and management emerging in the late 1980s. Strong leadership and a collaborative approach exist at regional level through CDEMA, and human resources for health (HRH) programs are supported through Pan American Health Organization (PAHO) regional offices (UNISDR and UNDP, 2009; UNDP-Cuba 2011).

Financing of disaster management also differs between the two regions, with implications for adaptive capacity due to varying access to resources. Funding for Caribbean programs is mainly from partner governments, with very little donor funding which shows strong political will, self-reliance and engenders high level ownership of disaster response (Bisek et al., 2001; UNDP, 2011; Bishop, 2011). Disaster management has been embedded in local government structures for many years and is mandated by law, and mirrors what happens at the national level (UNDP-Cuba 2011). Initial Assessments were conducted by a team from local government offices, once the magnitude of disaster impacts is determined and road access granted, so line ministries can commence respective assessments.

The Pacific and Caribbean are therefore at different stages of development in terms of disaster management and response, in part due to differences in the socio-cultural, geographical and political environments. These differences serve to influence adaptive capacity, given the constraints present in the Pacific relating to geography, diverse cultures and limited access to resources. Disaster response in the two contexts, while requiring similar methodologies, may draw upon different approaches and wholesale comparison is not wise. Disaster management and response ideas and concepts can

be transferred across regions but would need to be significantly contextualised for effectiveness.

#### **4.6 Conclusion**

The Australian and international DRS provide support to PICs in times of disaster through three main mechanisms, all of which have set objectives which were generally well understood by all agents and stakeholders involved. Elements of the system that support adaptive capacity include the recognition of the need to maintain relationships and partnerships and to provide ongoing DRR interventions as a way to minimise the impacts of a disaster. Adaptive capacity may be further enhanced if DRS organisations consider how climate change may affect their future capacity to respond, and plan accordingly. This may require actions surrounding human resource capacity, technical capacity and financial resources. Consideration of the gaps in these areas of disaster response capacity may lead to the need for new partnerships with organisations capable of fulfilling certain areas of disaster response, thus continuing on with the themes of resource sharing and cooperation which were identified in some PICs. This chapter has also revealed that from the PIC perspective, adaptive capacity was found to be constrained by some elements of the systems in place that aim to support PICs in times of disaster – issues which have arisen as a consequence of several contributing factors.

## 5. REGIONAL HEALTH CARE CAPACITY FOR DISASTER RESPONSE

### 5.1 Introduction

As the health care system is directly affected by a disaster, and the community is reliant on this system for their health needs during and following a disaster, this chapter looks specifically at research findings on the capacity of the health sector across the four case study PIC countries. Further details regarding health care and health resources are also presented later in the individual country chapters.

There is growing political commitment to integrate health considerations into climate change mitigation and adaptation efforts, at both national and regional levels, but these were still limited in the Pacific region (WHO/SEARO, 2007a). Regional efforts to address climate change and health include the 'Regional framework for action to protect human health from effects of climate change in the Asia and Pacific region' and in 2009, the Pacific Islands Forum's call for immediate action to address climate change issues in PICs (UNDP, 2009). These efforts were intended to guide regional and national action towards reducing the potential burden of diseases linked to the effects of climate change in the region. The WHO regional offices in South East Asia (SEARO) and Western Pacific (WPRO) have continued to engage in and support regional planning activities on climate change and health, resulting in recommendations for action by Member States and WHO secretariat (WHO/SEARO, 2007a). One of the key priorities identified by regional stakeholders is the need for better understanding of how climate change will impact on health system's response to emergencies and disasters (APEDNN, 2010).

The impact of disasters on population health results in a need for a range of activities to be implemented by the health workforce, demanding various skills and competencies. These include skills in rapid diagnosis, disease surveillance, outbreak prevention and containment, organisation and logistics, communications, health education, promotion and awareness, emergency surgery, and to create temporary facilities, conduct monitoring and evaluation, provide medical relief supply management/control and other public health interventions (WHO/SEARO, 2007b; Urbano et al., 2010; Maclellan, 2011; Tangi 2009). The capacity of the health care sector is therefore a key determinant of overall in-country adaptive capacity. Here we report the findings from fieldwork and stakeholder interviews in Australia and four case study PICs. The findings are grouped under three main themes:

- a. Health workforce governance, policy and management;
- b. Health care capacity, skills and competencies;
- c. Human resources for health training and workforce development.

These three areas have been identified from the literature (WHO/SEARO, 2007b, Urbano et al., 2010; Maclellan 2011; and Tangi 2009) and from analysis of the interviews and workshops as being essential in determining the extent to which the health care system is able to adapt their response to disasters under a changing and variable climate. They were the focus of this chapter. A summary of key regional health care capacity issues identified in the four PIC countries, and grouped under these three areas are presented in Table 5.

**Table 5: Summary of key regional health care capacity issues for disaster response.**

	<b>Cook Islands</b>	<b>Fiji</b>	<b>Samoa</b>	<b>Vanuatu</b>
<b>Health care governance, policy and management</b>				
<b>Policy environment</b>	Policy in place to guide health workforce. Knowledge of policies affected by high staff turnover rates.	Generic policies and processes in place but need to be more clearly defined for specific disasters.	Clearly defined policies and processes in place, supported by National Development Strategy.	Lack of clear policies and guidelines for health workforce coordination.
<b>Governance and management Systems</b>	No clear guidelines for the coordination of in-coming health personnel. Mechanisms being developed to deal with this.	In-coming health personnel were usually coordinated through the UNOCHA/PHT system.	Clear guidelines for registration of in-coming health professionals; considerations being given to how to fast-track the process.	No clear guidelines for the coordination of in-coming health personnel. Policies were needed to govern this process during disasters.
<b>Leadership and involvement in disaster management</b>	Health sector is a key stakeholder in the DRS and well organised and has seen improvements since the clarification of roles and responsibilities.	Health sector is a key stakeholder in the DRS and actively involved in disaster coordination. Health sector coordination functioning well.	Health sector is a key stakeholder in the DRS however internal issues may be affecting the strength of their coordination and involvement.	Health sector is a key stakeholder in the DRS however lack of coordination within the sector and with external partners needs to be improved.
<b>Health care capacity, skills and competencies</b>				
<b>Health care capacity</b>	Clear leadership and strong partnerships with NGOs and donors; health workforce and material capacity inadequate particularly in times of disaster.	Strong leadership and external support systems from government and donors; health workforce capacity is stretched especially in times of disaster.	Strong leadership and external support systems from government and donors. Lack of cohesion within health sector limits effective utilisation of resources.	Internal leadership needs strengthening and relies heavily on external support. Limited capacity to respond to disasters against limited HRH and resources.
<b>Health care responsibilities, skills and competencies</b>	Multi-disciplinary health team actively involved in response. Inadequate capacity to address psychosocial needs.	Nursing and allied health staff actively involved, taking on a variety of roles and multi-tasking. Inadequate capacity to address psychosocial needs.	Nursing and allied health staff actively involved. Task-shifting and multi-tasking encouraged. Inadequate capacity to address psychosocial needs.	Health workforce actively involved, but needs to improve skills to deal with climate sensitive diseases. Inadequate capacity to address psychosocial needs.
<b>Human resources for health training and workforce development</b>				
<b>Health workforce education, training and development</b>	Some level of disaster training available for health workforce. Desk top and field simulations or training programs annually. Access to training for some levels of staff is an issue.	Disaster training available and included in nursing curriculum. Access to training for some levels of staff an issue.	Low intakes in nursing and medical programs undermining workforce development. Triage, emergency care, and post trauma counselling were critical areas for training.	Disaster training available and included in nursing curriculum. Additional training for village health workers and traditional birth attendants needed.

Source: Country case studies (see Chapters 6-9).

Critical aspects of each of the three areas are discussed in more detail in the following sections of the report and where appropriate in the individual country chapters.

## **5.2 Health workforce governance, policy and management**

Health workforce governance, policy and management were required for sustained workforce contributions to improved population health outcomes, including HRH capacities to address disasters. This requires clear policies and a cross-sectoral national coordination or formal mechanisms of governance including health planning, stakeholder coordination, registration and coordination of in-coming overseas HRH. Management capacity-building policies and structures should be in place and networks and partnerships of relevant committed leaders and stakeholders should be established and under pinned by the relevant operational processes (WHO, 2006; WHO, 2011).

### **5.2.1 Health care policy environment**

Interviews in the four PICs revealed evidence of a mixed policy environment in different countries to guide the coordination of HRH in the context of disaster response. For example, in Fiji there was a clearly defined contingency plan for disaster response and coordination of health staff, including legislation to empower key individuals to make decisions in times of disasters. In the Cook Islands, policies exist to provide directions for both on-duty and off-duty staff during disasters, however there was limited knowledge of the health disaster policy due to high rates of staff turnover. The Samoa National Health Service (NHS) has their own disaster plan which defines and outlines their responsibilities, which is disseminated down to the divisional level of the health sector who work closely with the communities. The NHS plan makes provision for the involvement of non-state actors such as the private medical practitioners and Samoa Red Cross Society. Conversely, there is a lack of clear policies and guidelines for health workforce coordination during disasters in Vanuatu.

In some countries, there was evidence that planning for health care response to disasters was in alignment with national strategies and priorities. While this planning does not necessarily equate with successful implementation during times of disaster due to constraints such as inadequate workforce and resources, it does create a cohesive policy environment. In Samoa for example, *“[t]he local HRH Policy for the health sector is influenced by the Samoan Development Strategy (SDS) which is the key government strategy that outlines the national development goals for the Health sector”* (MOH/NHS-Samoa). The revision of disaster plans to facilitate response to specific hazards was identified as a need by health care workers in most of the countries. For example, in Fiji a revision of the health disaster plan was undertaken following unexpected floods in early 2012, and hence they were better prepared for the second round of floods that ensued shortly after. One respondent, representative of the wider view, indicated that in the Cook Islands, *“[t]he health system has been proactive in ensuring that they have plans to deal not only with cyclones but also with the pandemic issues such as dengue fever and other health related disasters”* (Emergency Management, Cook Islands).

### **5.2.2 Health care governance and management systems**

Two very important governance/management system issues have emerged from the interviews and are presented in this section: the coordination and management of incoming HRH and the protection and management of health staff affected by disasters and involved in disaster response.

One of the key concerns for both Australia and the PICs is the coordination and registration of international health personnel in times of disasters to minimise



duplication of scarce resources, provide a transparent process, and maximise effectiveness of health personnel.

There were different approaches to the coordination of incoming international health personnel in the four PICs. In the Cook Islands, guidelines for the coordination of incoming health personnel require clarification. In normal times incoming personnel follow a registration protocol; however, in times of disaster there is no clear process, hence the recent review of legislation around international disaster response calls for stricter regulation in this area (IFRC, 2012). For instance, the request for international health staff goes through the Disaster Council and the Disaster Committee, who would then advise the MOH of who is coming (MOH- CI). However, one government respondent felt that while the requests go through the health ministry, the process can sometimes be informal process and can result in fragmented communication, as evidenced by the following quote. *“Informally all requests [for incoming health workers go to the MoH; [however]. It doesn’t always work as it can be [an] informal [process] across most sectors, which can lead to lack of sectors talking to each other”*.

The interviewee also noted the benefits of informal processes, especially in a disaster situation where informal communication channels are critical to receiving feedback to triangulate and complete evidence about resources, actions and needs in real time. Coordination was also noted to be an issue of trust, and as trust in disaster coordination committees grows, the more partners will accept to be 'coordinated' and provide more information voluntarily.

In trying to address the issues surrounding the informal request processes, disaster response stakeholders have put forward a recommendation that the Emergency Management Office should work closely with the UN Office for Coordination of Humanitarian Affairs (UNOCHA) and other external organisations that respond in times of disasters, to ensure that all personnel were registered and that a proper register of incoming support is maintained. This will ensure that incoming personnel are properly screened and facilitate quicker immigration and customs processes (EMCI).

A similar situation was reported in Vanuatu. However, the absence of policies to guide international HRH in these countries may be due to the fact that in recent times there has not been a need for international health personnel to assist with disaster response. Both Vanuatu and Fiji indicated that they rely on the Pacific Humanitarian Team/UN Cluster system which has been previously described in Chapter 3, to assist with provision of health personnel in times of disaster.

There is a system in place for the registration of incoming health professionals in Samoa. However, in the past, there have been problems with this process, mainly because some NGOs were unaware of the need to register and often bypassed the system or, if aware, chose to bypass the system. One Samoan respondent suggested that an acceptable approach would be that medical NGOs and volunteers coming from overseas should link directly with the local Ministry of Health for a centralised approach in order to avoid duplication of roles. However, there is *“[n]eed for a new fast circuit approach to facilitate the registration and checking of qualifications of HRH at the time of disasters”* (OUM, Samoa).

According to AusAID, the Australian Government is developing policies to ensure that all medical and health personnel sent from Australia to assist the PICs in times of disaster are certified to meet WHO/AusAID verification program minimum global standards. Also, most ANGOs involved in humanitarian response were signatories to several international charters governing humanitarian response including the International Red Cross and SPHERE Humanitarian Charter and Minimum Standards

in Humanitarian Response. New Zealand Aid Programme also indicated that before responding to requests from PICs for support, they would verify the type of health needs and what nature of support is required. However regardless of these external checks and balances, for efficient coordination, registration of incoming personnel will ensure the DRS know who is in-country at any given time.

Another critical issue of governance identified was the need for systems to be put in place for the protection and management of health staff affected by disasters. This was identified as one of the factors affecting health workforce ability to respond effectively in a disaster, especially since across all countries they were amongst the first responders to disasters.

For example, the ability of health workers to respond to recent flooding in Fiji was compromised due to the fact that their homes were directly affected, preventing them from getting to work as noted by MoH:

*“Those [impacts on staff homes] are huge factors that affected our ability to respond” (MOH-Nursing, Fiji).*

In the Cook Islands, shortage of staff results in existing personnel working extremely long hours, however there was no financial support for working overtime. Additionally, staff were not insured, so in the event that they were injured or die in the line of duty there is no redress (EMCI). Similar issues were identified in Samoa, where health personnel were amongst the first responders to the 2009 tsunami, arriving when the area was still relatively unsafe. However this issue may have improved post-tsunami as according to the Nurses Association, “[f]irst we look after the safety of our nurses and their families. We usually assess the areas before we send them out” (Nurses Association, Samoa). It is evident that because health personnel were first responders there needs to be stronger support systems in place to protect their wellbeing during times of disaster.

To further assist with the additional demands placed on the system by disasters, Samoa has rationalised health services at the district level to avoid placing the burden on the major hospitals after disasters. This was evidenced in the past as these community-based assessment centres provided the primary care “surge” capacity to respond to the 2009 epidemic of avian influenza (H5N1) and in response to the tsunami the same year (Buchan et al., 2011). “*The district centres were very useful to help manage casualties during the tsunami as triage centres.*” (Ministry of Finance, Samoa)

### **5.2.3 Health care involvement in disaster management**

The involvement of the health services in the coordination and management of disaster response was evident, and several strengths and weaknesses were identified across the four PICs. For instance, the health sector was recognised by both government and NGOs to be a key stakeholder involved in disaster coordination and served as members of the National Disaster Council (NDC) or similar high level group. Also, the health sector in each country had an internal disaster management structure (stronger in some countries than in others). However, while the MoH was a key stakeholder across the four PICs, the level of involvement and internal coordination differed.

In Fiji, health disaster management operated from the national level down to the district levels. The majority of respondents agreed that health sector coordination in Fiji was functioning quite well and may be as a result of qualified personnel and donor resources. According to the UNOCHA, “[t]he Ministry of Health in Fiji are probably the best organised than in most [PICs] countries; overall health is a strong sector” (UNOCHA). Also in the Cook Islands, several respondents agreed that the coordination

of health services response was well organised and has seen improvements since the clarification of roles and responsibilities and reporting relationships within the overall DRS coordination system. In Vanuatu, however there was almost unanimous agreement between government and NGO representatives that coordination of disaster management within the Ministry of Health and with the wider DRS needed improvement. According to health officials across different units of the health sector in Vanuatu it was recognised their level of involvement and coordination needed strengthening.

*“We need to strengthen [our coordination] more internally between different units in MoH. We are developing a new structure in MoH and have identified a permanent position for [coordination] of disaster; however this has not yet [been] formally approved by the Public Service Commission” .*

In Samoa, internal issues surrounding organisation and structure resulting from the division of the health services into MOH and NHS, may be affecting the strength of their coordination and involvement in overall disaster coordination as well. *“The NHS is not always represented at meetings and missing from scenario planning and drills.”* (AusAID Samoa).

Several respondents agreed that effective coordination of the health sector’s response is facilitated through ongoing national exercises, inter-organisational collaboration and liaison with key individuals in the health sector. In Vanuatu, the health sector is involved at the NDC level and through different cluster groups (WASH and health and nutrition) and works very closely with in-country representatives from UNICEF, WHO Office and NGOs that have a health focus.

However, the coordination of response on outer islands and in remote areas was a challenge identified in all countries. One respondent from Vanuatu, representative of other views, indicated that there was a need to liaise with the local governance mechanism, and *“[u]se the people in the Area Council that represent the people”* (Min. Internal Affairs, Vanuatu). In the meantime, *“NGOs fill the gaps (not just in health), but coordination is lacking”* (VMGD, Vanuatu).

Overall while the health care services were involved in the DRS in all four PICs, the factors most evident in undermining involvement were lack of inclusion of outer islands or remote communities and poor internal coordination of the MoH.

The foregoing sections reveal that aspects of health workforce governance, policy and management were evident to differing degrees in the four case study PICs. Despite the mixed policy environment and the room for improvement in policies to guide the coordination of HRH, the evidence shows that PICs were aware of, and making efforts to, address the need for policies in this regard. Some countries more than others, would require strengthening of the policy environment not only in terms of documentation, but also policy-driven standard operating procedures, in order to strengthen their capacity to adapt to changing needs for disaster response. However these could be achieved in the short term. Health sector involvement in national level disaster management and response was relatively strong across all case study countries, and despite the need for improvement of internal systems and operational processes in some cases, the flexibility of health workforce and relatively strong leadership was evidence to support their adaptive capacity. However governance and management systems mainly with regards to the coordination and registration of international health personnel in times of disaster showed weaknesses that could adversely affect PICs capacity to adapt in disaster scenarios. It is therefore necessary that each country be clear of their policies, establish a consistent process and

communicate this effectively to the humanitarian community. Existing relationships with the donor and humanitarian community and national level mechanisms can facilitate the streamlining of these processes within each country. On the other hand, limited policies to address the welfare of staff and workers compensation in disaster context will require a more collaborative government approach and could adversely affect other aspects of adaptive capacity such as health workforce self-efficacy for disaster response.

### **5.3 Health care capacity, skills and competencies**

An agile workforce with highly specialised skills is required to mount an immediate and effective response to disasters and humanitarian emergencies (WHO/SEARO 2007b, Urbano et al., 2010, Maclellan 2011, Tangi 2009). A disaster places extra demands on a health care workforce in terms of the number of workers and the skills required; and findings from the case study countries in this regard are discussed in this section.

#### **5.3.1 Human resources for health capacity**

Australian organisations have recognised that PICs can become easily stretched beyond their capacity in times of disasters, requiring external assistance to boost health care capacity. This is exacerbated if health infrastructure is damaged, requiring the need for field hospitals and temporary health care facilities, requiring specialised skills. AusAID further alluded to the fact that some countries do not have the capacity to conduct field triage or set up isolation wards, and many of the NGOs lack a clinical medical component. New Zealand consistently provides small scale disaster support to the Pacific; however they also have limited capacity for deploying field medical care and search capacity offshore.

External support for health workforce can be accessed from the Australian Civilian Corps, but they recommend their personnel would be more suited to be deployed in recovery phases.

Health services disaster response is well served by some donors. For example, New Zealand Aid Programme has standard operating procedures in place, supported by existing relationships in some countries, for the provision of health support. These mechanisms guide the provision of health care personnel from New Zealand, whilst New Zealand Aid Programme personnel work on coordination and logistics (New Zealand Aid Programme, Samoa). Additional health personnel (such as nurses) can be sourced through AusAID's emergency response procedures. According to AusAID in Fiji, their bilateral health program has an allocation each year which is reserved for humanitarian response, acknowledging the reality that in more seasons than not, a response will be needed.

When responding to requests for assistance, some international organisations recognise the impacts of the disaster on individual health workers when their families, friends or homes are directly affected. The health workforce therefore has to be managed, to meet the human resource needs in times of disaster. In Samoa for example, “[p]rivate doctors and nurses are called in to assist in times of disasters” (Nurses Assoc., Min Finance, Samoa), and alternative sources are being investigated to support human resource capacity.

There was evidence of collaboration and partnerships with NGOs, community based organisations and donor organisations to boost workforce capacity to respond to health emergencies. Red Cross Volunteers and Village Health Workers boost workforce capacity to respond to health emergencies (WHO, Fiji; UNICEF). In the Cook Islands for example, the Ministry of Health worked closely with the WHO, Red Cross and the

community to deal with an outbreak of dengue fever. In some situations capacity is managed by drawing personnel from one area (island to island, rural to urban and vice versa) to assist in another area. In both Fiji and Cook Islands it was expressed by health care workers that they want to respond to their country's needs even in the face of limited resources as they have a better understanding of local policies and cultural issues that are necessary for effective response. There was a general feeling that there was some amount of hesitation in requesting health workers from overseas, and this would be considered as a last resort because *"[i]f they [overseas health workers] come in they have to learn the guidelines and policies of the facility very quickly to be able to work in it"* (MOH-WestDiv, Fiji).

The general feeling from all PICs was that despite the lack of HRH, the lack of physical resources was even more critical and once resources were available then the limited HRH can be more effective. Limited finances, emergency medications and other disaster supplies were identified by all as major challenges. The chronic lack of financial resources affects the delivery of health services in times of disasters, especially to outer islands and remote areas.

*"Without funding we can send 8 or 9 [persons] but no medication, because we can charter a flight. With more funding we can take more staff and medicines"* (MOH, CI).

The limited resource capacity has resulted in heavy reliance on donor funding and bilateral programmes to assist with resources for the health sector's response.

*"When donors come on board, if they can help in logistics or aeroplane or shipping they will go and facilitate that assessment"* (Council of Churches, Fiji).

Given that limited HRH capacity is a reality in all four PICs, it is hardly likely that this high level of donor dependence will change in the immediate future. As a result this may indicate that HRH capacity will be less adaptive to the influences of climate change in disasters, and result in long term dependence on donor support to respond.

### **5.3.2 Human resources for health skills and competencies**

In an ideal situation, the health sector should seek to maximise the functions of the health workforce, retain an efficient mix of staff and skill to improve service which can be applied in disaster response (Mowafi et al., 2007). Disaster situations often require that the focus be changed from routine behaviour to one suited to the disaster situation.

Nursing staff were very actively involved in disaster response, based on their pre-existing roles in the community in all PICs. This speaks to their capacity to be adaptive, as one respondent noted:

*"The nurses are very accommodating - they are very adaptable to a situation"* (School of Nursing, Fiji).

As a result, the nurse is expected to play a key role in post-disaster leadership and early assessment, providing information to various organisations. The responsibility to conduct disaster assessments is sometimes delegated to nurses in their capacity as civil servants, and often the focal person in many health facilities in remote areas. However, while nurses may feel obligated to act on this delegated responsibility, in some instances some of the information required is outside of the nursing workforce's skills and expertise. According to one respondent at the School of Nursing, Fiji, hospital based nurses in urban areas need to be orientated to disaster management before

going to the outer islands, and training should be arranged regularly to facilitate this. The lack of trained professionals to deal with the immediate psychosocial needs after a disaster was identified in all PICs, as discussed in the individual country chapters. This has resulted in heavy reliance on NGOs and the Church community to assist with meeting the psychosocial needs of the community. Not only the community but the health care workers responding to a disaster were not provided with psychosocial care. There was agreement across the health workforce interviews in all four PICs that this is an area that needs strengthening. Another critical shortage was of paramedical staff to assist with field triage (AusAID, Samoa). These critical shortages in the areas of psychosocial needs and field triage were now mainly filled by international health personnel.

High levels of commitment, multi-tasking and self-efficacy beliefs amongst health workers suggest a resilient health workforce in our case study countries. However, this resilience can be undermined by the chronic shortage of health workers, resulting in severe stretching beyond their human resources capacity in times of disasters. Additionally the lack of some specialised skills, such as field triaging required for effective disaster response exacerbated the need to rely on external support, perpetuating the dependence cycle. The health workforce as well as the community is also affected by the lack of psychosocial care post disaster, and this can affect the long term capacity of health care workers to function efficiently and effectively in disaster scenarios. There is therefore need for further assessment of how the workforce capacity can be improved in terms of the numbers, skills and competencies that will be required to respond in a context where there could be a changed pattern of disasters.

There was evidence of the resilience, developed through self-efficacy beliefs of HRH and respondents' belief in their ability to cope and adapt to climate influences on disasters (McManus et al., 2007, Gillespie et al., 2007). However, the long term impact of the chronic shortage of HRH, especially if there is increased demand due to more severe disaster impacts, may eventually undermine this resilience as a result of the limited staff being stretched beyond their capacity, and their in-ability to maintain competencies and skills (Mowafi, 2011; WHO, 2011). These findings reveal a need for stronger policies to guide the development of competency-based continued learning programmes to meet current and future emergency response needs. Evidence based policies should guide the revision and establishment of training programmes to address the needs of individuals and teams involved in disaster response (WHO, 2011). These policies should further guide strategic planning and the monitoring and evaluation of continuing competence against standardized measures and the proportion of staff receiving continuing professional development (CPD) (Mowafi, 2011; WHO 2011, p383).

#### **5.4 Human resources for health training and workforce development**

The availability of workforce with highly specialised skills required to respond to the health needs of the population post disaster, required adequate training institutions and programmes where these skills were generated and updated (WHO, 2006).

Training institutions for nursing personnel were available in all four countries, however doctors from across the region are mainly trained in Fiji and a small cadre is currently being trained in Samoa. Disaster response is included in the nursing curriculum in both Fiji and Vanuatu.

In all four case study PICs, there was some effort to ensure that health workforce received some level of in-service disaster training and in most cases desk top

simulations, field simulations or training programs were conducted at the country level. The Cook Islands Red Cross' approach is to use field response as training exercises to ensure that all staff were familiar with disaster response. The health sector also has the opportunity to participate in multi-stakeholder field simulations from time to time. Generally, the health workforce across the four case study PICs was interested in accessing disaster specific training. However, one of the challenges to accessing training in the Pacific is the impact of small populations. There were so few people at post it is difficult to send people away for training, *"[b]ut the Governments are committed towards training them"* (WHO, Fiji). On the other hand, the challenge was to ensure that the right individuals were given the opportunity to take part in available training, since high level officials in some countries were constantly being nominated to take part in training which does not necessarily transfer down to other staff.

However, the trainers at the nursing school felt that *"the [nursing] manpower have knowledge and the skills, the problem is with the lack of resources"* (Med. School, Fiji). Additional first aid training for village health workers and home birthing training for traditional birth attendants was identified as a critical need in Vanuatu (MOH, Vanuatu; Care, Vanuatu). The NHS in Samoa identified triage and emergency medical care should be tailored to deal with specific disaster scenarios. Training in child psychology and post trauma counselling has been identified as critical needs in all countries. Another challenge was that the numbers of students being enrolled into medical and nursing training were inadequate to meet the demands of the country. It was indicated by representatives at the Medical School that:

*"only two doctors are trained per year at the Medical School in Samoa, and the intake of nursing students has declined as students are choosing other fields for which the entrance criteria is not as strict as nursing"* (OUM, Samoa).

In the Pacific region, specialist training for doctors is only available in Fiji and postgraduate and specialised training in medical sciences usually have to be sourced overseas. Currently the Medical School in Samoa is looking at putting in place diploma programmes and are continuously trying to improve the programmes (OUM, Samoa). The lack of capacity to train medical specialists in PICs therefore needs to be addressed through better regional coordination of existing training programs and resources. One approach to address the workforce needs is by upgrading and multi-skilling nurses to address the shortfall in nursing and medical personnel. However, this comes with additional issues as explained by one respondent.

*"Currently [we are] focused at upgrading the skills level of nurses so that they can function in an auxiliary role to GPs, but there is some resistance amongst GPs to the Nurse Practitioner Program"* (Min. Finance, Samoa).

The health workforce in PICs has limited access to various different types and levels of training both internally and supported by donors and UN agencies. There was also evidence of limited capacity for training of medical specialists in individual countries that requires better regional coordination of existing training programs and resources. Moreover, where training does occur often the most appropriate people do not or cannot participate resulting in inefficient training of those that need it the most.

Some countries have demonstrated adaptiveness by upgrading and multi-skilling nurses to address the shortfall in nursing and medical personnel. This however is not representative of all case study countries and there is still room for exploring alternative and traditional mechanisms. Health workforce training and development may therefore be one of the most vulnerable aspects of the health care capacity in PICs, and must be

addressed to improve the adaptiveness of other aspects of the health sector's response to disasters in the context of climate change.

## 5.5 Conclusion

There is a growing body of evidence that the effects of climate change are already having a negative impact on population health. An appropriately qualified and agile health workforce with trained personnel is required to mount an immediate and effective response to disasters. This chapter looked specifically at the capacity of health sector in the case study countries. From analysis of the interviews and workshops in each country in relation to healthcare during and following a disaster, there were several elements that were observed to support or constrain the adaptive capacity of the health care sector to contribute to effective response to disasters in the face of uncertainty presented by climate change.

Elements serving to strengthen the adaptive capacity of the individual country health care sectors were: Overall active involvement of the health sector in disaster coordination at the national level; evidence of various policies in place to coordinate human resources for health in the context of disaster response in some countries; health workforce self-efficacy beliefs and commitment to respond to their country's needs even in the face of limited resources; strong support from the NGO and donor community within the region, with Australia and New Zealand providing technical expertise and resources where these were lacking in respective countries.

Elements serving to constrain adaptive capacity included: The coordination and registration of international health personnel in times of disaster needs streamlining based on individual country context; lack of policies to address the welfare of staff and workers compensation during and following disasters; limited HRH capacity even in times of "normality" means that staff were stretched beyond their capacity; severe lack of material resources and effective health care infrastructure; severe shortages of personnel to deal with the psychosocial needs of the population, and first responders such as nurses, were identified in all countries; inadequate skills and competencies in field triage and post trauma counselling; limited capacity for training of medical specialists in PICs and low levels of enrolment in entry level training for nursing and medical courses. Suggestions for addressing these elements are described in Chapter 10.



## 6. FIJI

### 6.1 Country background

Fiji is a Melanesian country and has 300 islands, 109 of which are permanently inhabited. There are two main islands which support the majority of the total population of 860,623 (World Bank, 2010). The wet season from November to April is the tropical cyclone season. Tropical disturbances, cyclones and high intensity rainfall are frequent causing floods ranging in magnitude from moderate to very severe.

Fiji is ranked 100<sup>th</sup> out of 187 countries in the UNDP Human Development Index (HDI), placing the country 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).

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). This is important in terms of assistance in times of disaster as Australia is constrained in what areas it can assist and currently has to assist the government through projects or civil society.

#### 6.1.1 *Climate change impacts on disasters in Fiji*

Climate change projections for Fiji indicate that temperatures are likely to increase by up to 1°C 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 (see Gero et al., 2012b).

With the increasing influence of climate change, the extremes of too little and too much water are expected to become more extreme. With more extreme weather conditions, climate sensitive diseases are also expected to have an increased negative impact on the health of Fiji's population.

#### 6.1.2 *Key disaster response organisations in Fiji*

The DRS was viewed as having strong and effective leadership by most stakeholders. The decision makers include all levels of society from the villages, provincial authorities, and district authorities up to national and feed information both ways. The UNOCHA cluster system is being implemented at a national scale across Fiji. The key structures and organisations involved in response are described below, followed by a graphic illustrating the institutional arrangements in Figure 4.

The **National Disaster Management Council** has been established for more than a decade and 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).

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 is held in the Ministry of Provincial Development and National Disaster Management and is responsible for implementing disaster risk management policies and plans, as guided by Disaster Management Council and Cabinet.

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 Permanent Secretary acts on his behalf if needed, as was the case in the most recent floods in 2012.

The **Disaster Management Committee** (DISMAC) is activated during times of disaster as a coordinating body. It was noted in the workshop that the lines of communication and decision making were clear from the Cabinet down to this point. Below DISMAC there is confusion between roles and the links between the Divisional Commissioners and Municipalities, District Officers and down to the Community. Participants in the workshop highlighted that this area needs to be strengthened and training provided.

**Divisional Commissioners** and **District Officers** were also responsible for distribution of disaster relief supplies and services post-disaster (Government of Fiji, 1998). Pre-disaster, these Commissioners and Officers were 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** were 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 Natural Disaster Management Act 1998 in disaster response include (Government of Fiji, 1998):

- **Ministry of Works, Transport and Public Utilities Department** – responsible for providing safe water access, distribution of water containers and other “related matters”
- **Ministry of Health** – 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 were directed to work in coordination with District Officers to avoid overlap and duplication of relief efforts.
- **Ministry of Agriculture, Rural Housing and Education** were tasked with rehabilitation responsibilities (i.e. not immediate post-disaster response).

**Fiji Red Cross Society** sees disaster preparedness and response as some of its primary activities, 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 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).

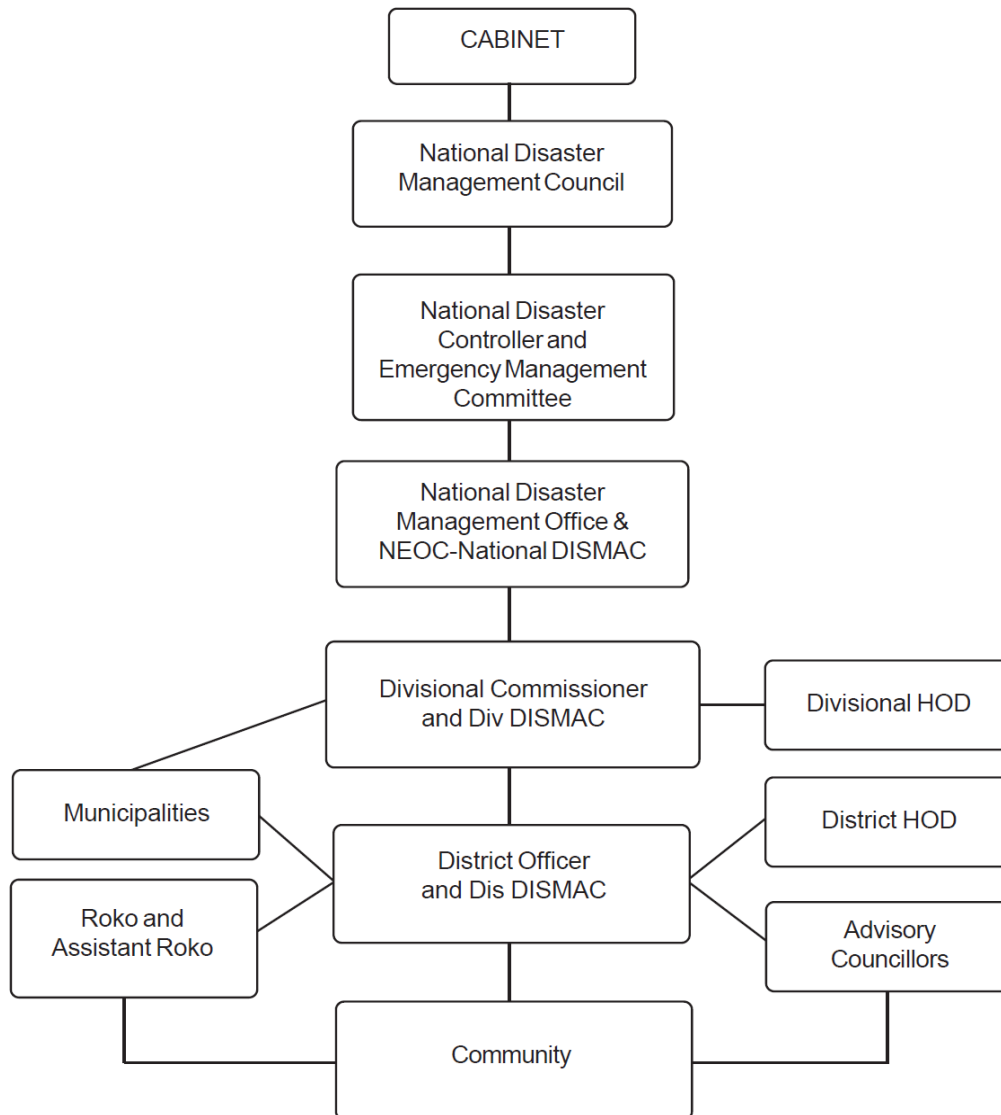
As with most PICs, the **Church** is an important social and cultural institution and active in disasters response. The Council of Churches has been disbanded; however the Church has a strong representation through the **Pacific Community-focused Integrated Disaster Risk Reduction** (PCIDRR) which represents a joint DRR program between Act for Peace (the humanitarian arm of the National PCIDRR of Australia) and the National PCIDRR and Governments of Fiji, Vanuatu, Tonga and the Solomon Islands and closely links with the NDMO.

Numerous **United Nations** (UN) agencies have regional offices in Fiji which were responsible for a number of countries neighbouring the Fijian islands and the Pacific region as a whole. Many of these UN agencies were also active in disaster response. Donors such as **AusAID**, **New Zealand Aid Programme** and **USAID** were also active in times of disaster response and coordinate with national institutional arrangements as necessary.

Organisations that emerged during the research process as being involved in disaster response were: PCIDRR, Assembly of Christian Churches, Adventist Disaster Relief Agency, Hare Krishna, Fiji Meteorological Service, Fiji Electricity Authority, Fiji Telecom, Ministry of Youth, and Ministry of Women.

The institutional structure of these organisations is illustrated below.

## NATIONAL DISASTER MANAGEMENT ORGANISATION



Disaster management structure during emergency operations.

### Figure 4: Fiji's disaster coordination system.

(Source: SOPAC/ TAF OFDA, 2009) *Note: HOD refers to Head of Department*

In-country interviews and workshops revealed some concerns with this structure of disaster management. The Natural Disaster Management Act (1998 – Government of Fiji, 1988) which outlines the above structure and all special powers during times of disaster has been in review for several years and during interviews it became apparent this process has been stalled. Also, the private sector is not formally incorporated into the DRS and it was suggested in the workshop that the private sector, along with NGOs and civil society, should be involved either in the Disaster Management Council or at a District level. Furthermore the MoH requires a stronger presence at all levels of the National Disaster Management Office.

Box 3 provides an example of past disaster response, and outlines some of the roles of organisations described above played during this disaster response.

### **Box 3: Example of past response in Fiji.**

Fiji had several severe floods in the past three years, in 2009, 2010 and 2012. Two floods in 2012 occurred in close succession, the first in mid January and the second end of March/April particularly affecting the Western Division of Fiji. A declaration of Natural Disaster for parts of the Western Division was announced 26th January. By April, the second round of floods killed four people and temporarily displaced 15,000 people, causing damages to infrastructure, schools, homes, businesses and agriculture. As a result, a State of Natural Disaster was declared for western Fiji (Reliefweb, 2012).

*“Once flood waters had receded on 4 April 2012, Government, Fiji Red Cross and NGO teams were quick to access and assess the impact on the population and provide relief. Within 10 days following the floods, electricity had been restored almost completely across the country. Water supply was partly restored and evacuation centres had rapidly emptied but as of 18 April, 748 people (144 families; 451 adults; 255 children and 42 infants) remained in 15 evacuation centres, as their homes are destroyed or still affected by flood water, mud and silt” (Reliefweb, 2012).*

*“The emergency was largely managed with national capacities and resources, coordinated by the NDMO. Government requested donors to provide specific assistance, including funding for aerial survey, logistics, tools, shelter and health supplies. Sectoral initial damage assessments amount to more than FJD 71 million (AUD 38 million) in key economic sectors” (Reliefweb, 2012).*

The adaptive capacity of the NDMO was noted as the response was smoother by the second round of flooding. For instance AusAID described:

*“If we compare local authorities in 2009 floods to where we recently had floods there is a huge difference. By the time they got to Cyclone Thomas in March 2010 the local authorities were pushing back to UN saying ‘we want control’ and they did a good job. With recent floods their director for NDMO took ill but the Permanent Secretary stepped in and he was able to excel with coordination. It was a smooth operation across the different divisions particularly with the west; because the Western Commissioner used to be the director of NDMO.”*

The ongoing nature of the floods in 2012 meant that Fiji’s capacity was stretched. One interviewee reported that: *“Flooding was so severe in Nadi... the intensity of rain was over the top”*. According to interviewees this affected some aspects of disaster response which were not well-addressed. For instance AusAID reported:

*“The government was focused on hard economic infrastructure side of response (opening roads) but less of a focus on human aspects, health, gender violence etc. it became clearer that the situations in evacuation centres weren’t great.”*

In the health sector the health workers were reportedly unable to go home or get to work. An interviewee from the Western Divisional Hospital reported they had to activate 12 hour shifts and pull local health workers into the hospital. The interviewee attributed her preparedness following attendance at the APEDNN, she had established a contact list before tropical cyclone season.

## **6.2 Humanitarian needs**

The four humanitarian needs and how they were addressed by the Fiji DRS is summarised below.

### **6.2.1 Health care**

Research found that in times of disaster, an already stretched health care system was placed under severe demand. The UNOCHA cluster system was being implemented at the national scale in Fiji, and according to the NDMO, AusAID does most of the coordination of the Health Cluster with a:

*“[b]ilateral health program that has an allocation each year which is reserved for humanitarian response. The programs have been designed acknowledging that in reality more seasons than not we will need to do response”.*

However, according to interviewees in the MoH, most of the initial assessments, coordination of health care personnel, resources distribution (such as medicine) and situational reports were conducted by the MoH. The MoH sit on the National Disaster Management Council (NDMC) with all the other permanent secretaries and when a disaster (such as the January/April floods in 2012) occurs, it provides direction and decision making. The MoH and other health representatives reported that although they have staffing shortages, they were still able to provide care during a disaster with the most pressing need being resources to carry out disaster relief. The Western Divisional Hospital representative noted the role the hospital played during the floods:

*“We had [an] emergency command centre within the hospital. From this we had to call the five subdivisions – initially we called them every 2 hours, then 4 hourly, then daily. They had to tell us how many bodies in their mortuary, could they cope, what do they need. [If] they needed intravenous fluid because of the number of dengue and typhoid, if they needed it at 10pm and one ambulance is coming across we would look in our hospital and give them 1 or 2 boxes. We would facilitate the need for the night.”*

According to interviewees, if an outer island is affected by a disaster it is usually the nurse who provides the first assessment and situational report as they were familiar with the area and inhabitants. A School of Nursing, Fiji representative explained:

*“They (NDMO) usually get the statistics from them [nurse’s office] because we get a better count. A nurse on that island would be able to tell that this village have this many people and then she can even talk about the age distribution. For disaster in the west, the Fiji National University, the Fiji School of Medicine, the Fiji School of Nursing, we combine to send out a team to help in the assessment. But the nurse who is there stays there and they mobilise their district hospital. They get help from the division in the west; they more or less help the Ministry of Health to provide the services.”*

To ensure there is also a voice from the communities, NGOs such as Partners in Community Development also have joined the cluster groups in health, food and WASH:

*“It seems the health centres have been closed in rural and remote areas. So we are working closely with provincial [health] so they can reopen health clinics.”*

But according to the Partners in Community Development, there were large differences in capacity between the health clinics on the main islands and on the outer islands.

While the overall indication from respondents was that the DRS was well structured with clear lines of decision making and communication around health care, there was still some discrepancy between views. For instance AusAID was unclear as to why the reports from the MoH were slow to be received, whereas UNICEF reported that:

*“They (MoH) were well on top of it. They were doing assessments in the area from beginning, they redeployed staff out. They handled the supplies that we gave them from our warehouse here. The coordination was functioning within MoH. [There were] delays in health communication, I can’t remember whether due to clusters and international partners meddling or whether it was internal.”*

Another interviewee in Fiji concurred:

*“The health professionals in those (affected) areas went to the evacuation centres conducted assessments there to see if people there were healthy. And they looked at maternal child health, they looked at communicable diseases, they looked at sexual transmitted diseases. They were [conducting] regular and daily monitoring of diseases and disease numbers and response in many ways and there were prevention activities as well as some response activities. They also did assessment on the ground that included disaster damage assessment. So that included assessment of health facilities if any were damaged, if water was cut, or if the facility itself was cut off because of the flood, they also looked at the extent of damages to homes and to people of course.”*

Therefore in times of disaster it was clear that an already stretched health care system is placed under severe demand. Nurses, who become the first assessors, were placed under pressure during an emotional time. The Western Divisional Hospital representative revealed that training in disaster response and assessment was critically needed for nurses, particularly those in remote areas. The workshop participants varied in their response as to the capacity of the MoH to deal with disasters with an overall view that the skill level was high but the human resources and other resources were lacking.

### **6.2.2 Water, sanitation and hygiene (WASH)**

WASH is of great concern following a disaster in Fiji and was reported to be addressed by the UNOCHA Cluster system which includes AusAID, Partners in Community Development, WHO and UNICEF. Other organisations with WASH as a main concern during disaster were reported by interviewees to be: PCIDRR, National Fire Authority, Ministry of Works, Transport and Public Utilities, and Red Cross. Issues in addressing WASH were outlined by the Partners in Community Development:

*“We try to engage donors to assist community people to set up water systems and also look at the sanitation and hygiene. Before we worried about getting water to the villages, now they have water but they are still sick so we know it’s linked with sanitation. We are trying to do it in an environmentally friendly way. We are looking at proper toilets – the flush toilets are not really good during a flood.”*

Whereas UNICEF and Red Cross work closely together providing water purification, soap, education on health and sanitation, Red Cross provides support through the distribution of UNICEF WASH kits.

The MoH has a large part to play in WASH as the nurses’ report on water and sanitation issues as well as educate the communities. An interviewee from the School of Nursing, Fiji reported:

*“The nurses are the very first ones [to see typhoid]. They are in the community so they report. They go and see the water supply and advise to boil drinking water to keep water in clean containers and see the catchment area to see where the water is sourced from.”*

UNICEF noted, in regards to the March 2012 flood:

*“Because AusAID was a major donor there wasn’t too much of an issue. They brought in additional WASH supplies but it wasn’t an overlap in terms of distribution.”*

However, because the health system is placed under such strain during times of disaster it seems it is Red Cross coordinate the distribution of WASH kits and information. As another interviewee noted:

*“They [MoH] are all interested but if they don’t have the resources there is not much they can do. So that is why they rely a lot on their partners. A lot of the times it’s the Red Cross that has more water containers or the water purification tablets or the police that has more vehicles.”*

During the workshop Red Cross consistently was considered by others to be well resourced, well organised with a good human resource capacity.

### **6.2.3 Food and nutrition**

Interviewees involved in this research did not raise food and nutrition needs in the short term following a disaster as a problem or priority. UNICEF is leading nutrition issues under the Fiji Health Cluster and the MoH monitors food issues through their assessment processes after a disaster. AusAID provided early recovery assistance in food security and WHO through the Fiji Health Cluster system:

*“looked to see if there was enough water, enough food, was there enough security in those areas...confiscating food that has been flooded. Making sure that they have been disposed properly and nobody would go and scavenge in those areas.”*

Other organisations were found to be more involved in long term food security issues, such as the Fiji Meteorology Services.

### **6.2.4 Psychosocial needs**

*“You know you can clean up your house, you can fix your car and your farm will be better after some time, but the losses you suffered at that time mentally are still with you.” (WHO).*

As in all the PICs who were part of this research, the post disaster psychosocial needs of Fiji communities were only minimally addressed. The Red Cross provided support and contact:

*“ The volunteers in the affected communities assist in cleaning up their houses, We look after their wellbeing. As we are cleaning we maintain contact..” (Red Cross)*

Also, the NDMO said they were currently communicating with NGOs such as Art of Living and Pacific Counselling Services to try to address this area but it was clear they need further assistance for addressing psychosocial needs:

*“We have looked after their physical needs but those may need counselling, if we can have some trained counsellors so they can share their problems. We need more assistance on this area.”*

Furthermore, the NDMO reported that they were liaising with health officials, expecting the MoH to address psychosocial needs. However, as noted by both interviewees from the health sector, the MoH does not have the human resources for health capacity currently to deal with psychosocial needs. One interviewee noted that:



*“[w]e don’t really have a clear picture of how that is taken care of because we don’t have something in place to take care of that,” (School of Nursing, Fiji).*

What was reported during many of the interviews and at the workshop was none of the organisations in Fiji took ownership of psychosocial support. The culture in Fiji however, should not be ignored in its provision of ongoing support. UNICEF noted that:

*“There is a lot of need (for psychosocial support) but there is a lot of capacity that can be tapped into in traditional cultures caring for each other in good times and bad.”*

It was mentioned that the churches did provide psychosocial support, but mainly to their own congregations. The MoH was reported to be already stretched with limited mental health capacity and during the workshop was very vocal as regards to the need for psychological care for their nurses, as they suffer the effects of being front line service people during disaster response.

### **6.3 Key determinants of adaptive capacity in Fiji**

A key research question concerned the identification of the most influential determinants on adaptive capacity of the PIC’s (in this case Fiji’s) DRS. The themes discussed below were identified through a rigorous systematic coding process (described earlier in Chapter 2) of all interview data and observations from Fiji.

The dominant determinants affecting adaptive capacity within Fiji were found to be: 1) Information and knowledge; 2) Risk perceptions; 3) Communication and relationships; and 4) Financial capacity and 5) Leadership and management.

#### **6.3.1 Information and knowledge**

The dissemination and retention of information and knowledge forms part of the adaptive capacity of an organisation (McManus et al, 2008). Across the DRS, the capacity to apply current knowledge to a situation in a creative manner, assigning virtual roles, and the ability of subsets of an organisation to assume responsibilities of absent members were considered adaptive features of an organisation (McManus et al., 2008). It requires an understanding of the limits of the information at hand, and the willingness or ability to obtain additional information, to respectfully use this information for positive interaction to influence behaviour change and, the development of a tolerance for uncertainty (McManus 2008). These qualities were evident in the Fiji DRS and serve to support adaptive capacity. The sequence and dissemination of information and knowledge in Fiji, according to most informants, is organised and consistently reviewed with lessons learned. Information starts with the Fiji Meteorological Services:

*“We provide forecasts for 3 - 6 months ahead so departments can do planning for conditions we forecast for. We have a direct role of providing information and we don’t tell them what to do, they decide amongst themselves what responses with the information we provide them. All our warnings and forecasts are linked with NDMC. When we provide info they activate response committees. The committees will provide what responses are needed. They are regularly looking at it. When a cyclone is approaching the communication is ongoing. They want to know to activate at the right time. We give a 48 hour early warning [which] gives them 2 days to prepare.”*

When a disaster hits, such as the 2012 flooding, information is fed up through the DRS from the villages, often through the nurses.

*“The initial people on the ground we saw – the Turaga Ni Koro – are the best people that have information in their own villages,”* as noted by the PCIDRR. However, the PCIDRR also reported that the nurses were also relied on for initial assessments:

*“We rely on the nurses in the community because they have 100% information. They know the information, they know how many people are there, how many children are there, how many disabled. They can also give us 100% information; we have a standard form that people are using. And using that form will give us the accurate information that we want.”*

The PCIDRR have developed local Disaster Management Plans. They reported:

*“There is a copy with the disaster management office, the village committee at the village, there is a copy in our office and there is a copy in the provincial office.”*

When a disaster hits, the flow of information begins from the village level leading back to the NDMO. Disaster information is not only disseminated internally, what goes to the media is also carefully controlled. After misinformation was disseminated during Cyclone Thomas in 2010, the Ministry of Information was given responsibility of what is transmitted through the NDMO to enable a single channel of communication to the media and public. PCIDRR reported:

*“We have the Minister of Information...The whole team understands that all the information that goes out from this office is based on facts. And the facts are based on the Ministry of Information who makes sure that the information are correct and rectify with sources before they release information.”*

This lesson learned from previous disasters is an attempt to control any misinformation and provide correct, trustworthy information. However, there were reported gaps in information and knowledge namely in disaster assessments and sharing of information and these serve to constrain adaptive capacity. The NDMO relied on nurses and village leaders to conduct initial assessments, however the Red Cross for instance also conducted their own assessments:

*“ We have to do own assessments because of our principles (of neutrality and independence). That system works fine in theory and they [government] employ village headmen (Turaga ni Koro). These village headmen also do assessments, Government also sends its own assessment teams out as well. In the first flood and second flood the NDMO was relying on our information.”*

The Red Cross appeared happy to share their information:

*“We think we should pass that information on to government. During response everything is working fast, a team goes out, they do an assessment. While info is coming in to us we should send on to our partners. The NDMO are open to our information.”*

However, according to one government interviewee the information sharing is not so open across government ministries:

*“This is always a problem with government agencies. Depending on what level of hierarchy you are fighting to release data, you always worried about getting flagged by your bosses. We tend to defend our turf.”*

Local stakeholders were analysing information and knowledge flows and the related the strengths and weaknesses of lines of decision making, sharing of information and who is controlling information in reflecting on the recent floods. It was clear through the interviews and workshop that the NDMO has a clear flow of information and knowledge to most relevant stakeholders and hence is seen to support adaptive capacity. However weaknesses were evident in that: the Natural Disasters Management Act (Government of Fiji, 1998) critically needs reviewing; the MoH needs involvement at all levels of the structure and notably training for nurses who were providing a lot of the initial disaster assessment information, this will in turn increase the level of trust in those early assessments; and involvement of NGOs in a structured way so duplication is minimised.

### **6.3.2 Risk perceptions**

Risk perceptions is a subjective determinant and relates to an organisation's understanding of the risks of climate change and the likely impacts on their disaster response processes. "Perceived adaptation efficacy", refers to an organisation's belief in the effectiveness of adaptation actions and perceived adaptation costs refers to the organisation's assumed costs (inclusive of monetary, personal time, effort) of undertaking the actions (Ekstrom et al., 2012; Kuruppu et al., 2011). Climate change and its potential impacts on disasters were generally understood by Fiji interviewees leading to a focus on integrating DRR and lessons learned into disaster response mechanisms. For example, interviewees noted:

*"Our communities are not resilient to such extreme events, even if not extreme but frequent then they will be too vulnerable to all these impacts."* (Fiji Meteorological Services.)

*"If things happen as we anticipate then there will be less loss to our people."* (NDMO)

*"I used to not care if it rained. Not now, now if it rains, I tell the supervisor to call the police station and find out about roads, also look at the roster and call people who are within [distance]."* (Western Divisional Hospital)

Disaster risk reduction and preparedness were found to be prioritised by interviewees, however, the research revealed there were limited resources to implement DRR and preparedness initiatives and this poses a significant threat to adaptive capacity. According to AusAID no national vulnerability assessment exists. Also it was noted that there were long term implications of where villages were located and deforestation both making the population more vulnerable to climate change impacts. This reveals additional development risks needing to be addressed alongside those associated with climate change.

There was an understanding that while there were limited financial resources for DRR projects, there is donor funding for climate change adaptation interventions. Fiji has been strategic in marrying the two, aligning with regional efforts of integrating DRR and CCA to reduce duplication of risk reduction efforts. For instance, the NDMO understood

*"[t]here are overlaps in disaster risk reduction and climate change. The duplications are a challenge for us now. SOPAC, part of SPC, is here to assist us with that."*

The PCIDRR added: *"[t]he government is very concerned with the community so I think if we integrate climate change adaptation and DRR I don't think the government would*

shy away.” AusAID agreed: *“Across the region people have been trying to do DRR without money. Now there is a bit of overlap with CC where there is money.”*

However, there is a gap in disaster preparedness. The School of Nursing, Fiji pointed out: *“[w]e feel there is a gap in preparedness. Many a times people don’t really act until the disaster strikes that is the gap that needs to be looked into.”* The MoH agreed, *“[s]o these were things the Ministry of Health have got to be prepared to respond to. It’s got to talk about consumables, it’s got to talk about infrastructure, it’s going to talk about staffing we already have depleting staff and doctors levels.”*

There was a recent focus on working towards preparedness, the Ministry of Foreign Affairs pointed out:

*“We are working with district offices - we have done assessments to see what vulnerabilities lie in which area. For our purpose we work closely with NDMO because they are doing a vulnerability risk profile so we’re working with them.”*

This quote highlights a shared perception of risk through disaster preparedness, and collaborative efforts aiming to minimise risks, thus supporting adaptive capacity. One major area of concern in terms of risk perception was where the population reside. Many people live in low lying areas and along the coast, as noted by PCIDRR:

*“I think the government is looking to relocate the people in the low lying areas but it depends on the availability of the land.”*

The NDMO corroborated this:

*“Most villages need to be relocated because of collapsing river banks, rising sea level, these were things that affect the villages. We need to plan well with our other stakeholders so these issues can be addressed.”*

It was not just the villages that were found to be vulnerable as an interviewee from the Western Divisional Hospital noted:

*“In Fiji our nursing stations, almost all of them are always on the beach – on all the islands. Our hospitals are always on the hills, but our health and nursing stations are always on the beach”.*

There was also a concern outlined by many interviewees about deforestation and the effects on disaster impacts. *“How the land is used in terms in upper catchment deforestation affects it,”* as noted by the Fiji Meteorological Services.

*“Huge areas of land are cleared for cultivation which is putting pressure on river systems.”*

The Ministry of Foreign affairs noted:

*“They are trying to sustainably manage it, they are doing their best but police is the major issue here. There is an issue with enforcement especially in the outer islands.”*

A government interviewee disagreed, and believed it had been managed well:

*“They’ve been harvested in last 10 years and no replanting program, because of heavy rain it just washed it all.”*

It was found that because there is a belief in Fiji of a risk of increasingly severe and more often disasters the DRS is working on lessons learned and incorporating these into their organisational structures. Preparedness for example has been recognised as an urgent need however, funding structures for climate change have not transferred into disaster preparedness especially in the health sector.

### **6.3.3 Communication and relationships**

Communication was found to be considered fundamental to the functioning of the DRS and was noted by many interviewees as impacting the immediate response and adaptive capacity of the system to respond. The three main areas impacting the communication within the DRS were: relationships, lines of communication and physical barriers to communication. Each are discussed in turn below.

The relationships between organisations involved in disaster response and with government, importantly the NDMO, assist in the effective workings of the DRS. For instance, there was evidence that the current political landscape creates a barrier to government to government communications. Research revealed that AusAID, rather than providing financial assistance directly to the government, was working through NGOs and civil society organisations who, in turn, have a direct relationship with the Fijian government, as noted by Partners in Community Development:

*“Our relationship with government is very strong, when we want to do anything in community we inform all the government set ups... We link with NDMO.”*

Breakdowns in relationships were found to have negative effects. For instance, there had been criticism that the Fijian government did not react rapidly enough in the 2012 floods. AusAID noted that:

*“[t]he Met [Fiji Meteorological Services] thinks there were delays in the announcement of emergency because floods decision came from hydrological services.”*

The Fiji Meteorological Services also noted that:

*“We forecasted correctly but coordination is not under one roof – [it was a] different ministry. During disaster there is confusion, it must be set up properly so it's coordinated. We are trying to address it on our side. We are putting up a new building very soon so that everything can be coordinated from there - with satellite, internet etc.”*

The Red Cross noted that:

*“We are not responding alone. Communication between partners involved is something we will work on. It's fundamentally important. A lot of issues could have been ironed out if we could have communicated better.”*

The lines of communication were also recognised as being vital to a coordinated response. The National Disaster Management Structure is currently in use and outlines broad lines of communication. It was found however the detailed workings of this may differ slightly.

The PCIDRR reported that the lines of communication come from the Turaga Ni Koro (traditional head of the village committee) then information is channelled to the Provincial Authorities, then on to the Division Commissioner and on to the NDMO. Training was provided to the Turaga Ni Koro:

*“last year we trained the Turaga ni Koro to do the initial damage assessment. They compile the report to commissioner and then the commissioner forwards to us.”*

Communications from, and between, the many NGOs working on the ground was found to be a major gap, as noted by PCIDRR:

*“We have NGOs working in the communities but what they have been doing in there we don’t know because we don’t have feedback... Except for Red Cross and ECHO [Humanitarian Aid and Civil Protection Department of the European Commission]. We don’t have that network in place but we are trying to work at it.”*

How information was disseminated to the public was also a source of confusion, although interviewees have confirmed the Ministry of Information has some control of this, as noted by the Fiji Meteorological Services:

*“Communication is a bit confusing in terms of who should give information out to public... In the current structure [with] tropical cyclones we go direct to media outlets; the rest goes through the NDMC.”*

The radio was found to be the primary source of communication for the public. AusAID commented:

*“Fiji’s ability to get messages out through radio is impressive. What used to happen Vodafone (private sector) used to get involved for flood warnings. That didn’t happen this year.”*

There was also information consistently updated on the Fiji Meteorological Services website however they noted that:

*“Many people hate our website in a disaster because it is slow. We have asked to increase bandwidth but it comes at a high cost. We can’t afford at the moment. We would love a donor for that.”*

On the ground communication between organisations was reported as being difficult during a disaster, an issue further exacerbated by isolated islands. The PCIDRR was working on different systems to try and ease the isolation on outer island communities:

*“The gap we have identified is the information and the communication. In Fiji we have a lot of islands so the communication between our communities to reach this office is a big problem. We want to come up with solution to this. But there is [also] a need harmonising all the communication channels that is some of the basic problems that this office is undergoing. The police are operating on their own and the health service and the National Fire service, we want all the system to be all in one so we can work accordingly.”*

The MoH also pointed to barriers in the communication systems:

*“One issue that happened was three of our small towns went out there was no power or water supply – so even a conversation on the mobiles was down.”*

The Western Division Hospital agreed:

*“What we found out in our last two disasters that we had we were telling the health centres to call us but we did not give them telecards to call us from the land line. We can’t expect that because there are some places where our mobiles don’t go and when it’s bad weather there are no boats that come from that island to the mainland. So they are out of food, canned stuff, they are living on fish from the sea but it’s bad weather, so they are living on root crops, once it is like that these people will not buy telecards!”*

To counteract this, School of Nursing, Fiji outlined how social networks were an important focus of communication. During a disaster when electricity and phones were down the Post Office is used as a focal point.

*“The nurses usually go up to the [post office] station to actually communicate and we have not found problems in the past. And they continually feed back to the DISMAC centre what is happening in the islands. So the nurses always go there and talk.”*

The three main areas impacting the communication within the DRS in Fiji were: relationships, lines of communication and physical barriers to communication. All areas that organisations within the DRS were working on overcoming to increase their adaptive capacity. The relationships and lines of communication need to be strengthened between NGOs and government, between the community and government, private sector and government and government-to-government. It was reported in the interviews and workshop that ‘debriefs’ were ongoing following the floods to ensure lessons learned were captured and integrated into the system. The physical barriers to communication were the one area that needs large amounts of funding to overcome as it involves major infrastructure costs. The NDMO is working with Japan to address some of these issues, a relationship that has reportedly been strengthened following the Tsunami in Japan 2011. However, the Fiji Meteorological Services reported that funding for this is difficult to access.

#### **6.3.4 Financial capacity**

Financial capacity of the DRS and each organisation within it greatly affect the adaptive capacity of organisations as accessing funds quickly for both material and human resources is vital during times of disaster. Financial capacity was of great concern in Fiji and was discussed by interviewees more than other “capacity” determinants (e.g. human resources, technical capacity). While steps were in place to ensure efficient access and flow of money during disasters barriers remain in place, such as an insecure political situation affecting government to government relationships and financial aid; competing priorities for where funds were spent; funds used to deal with the disaster leaving very little for preparedness and DRR; donor led disaster response rather than country led and confusion about how to access funding.

For instance a disaster fund was established outside the framework of the national budget, set up to be accessed quickly as an easy channel for donors to contribute funds, however, this does not appear to be happening. A government interviewee explained:

*“The bank account is set up outside [the budget] hoping that other donors can pour money in there, but Australia goes through NGOs.”*

Partners in Community Development was found to be one such organisation that AusAID supports:

*“AusAID is [a] main donor they meet most of our institutional costs, they pay all our administration, finance, management stuff, they pay the bills; electricity, water phone, IT, vehicle, our printers and staff, they have been for last 2 years and it’s been increasing.”*

AusAID explained: *“There aren’t national implementation plans so we put our money through programs that are already existing in country.”* However, the overall funding is quite substantial: *“Australia was the biggest provider of assistance in both floods. Collectively we provided assistance to 340,000 people. 4 million dollars was given in humanitarian assistance.”*

A government interviewee reported that:

*“The bottom line is always resources... In terms of budgeting we always put resources into priority areas, but when a disaster strikes that allocation is set aside and diverted to disaster. You are hoping there is replenishment of funds from donors but that doesn’t happen. Because it has to come through the government system so there is no replenishment.”*

With money split between the government, donors and NGOs the priorities differ accordingly which appeared to dilute the available money. One government interviewee reported:

*“Instead of money being used for infrastructure it goes to NGOs to buy water tanks or other things. In terms of priorities there is a mismatch.”*

Because of a lack of financial capacity, available funds were reported to be depleted through the immediate needs following a disaster, leaving very little for DRR. The donors and NGOs, however, appeared to be filling this gap, as noted by PCIDRR:

*“The money is set aside only for the response but for mitigation and preparedness that is where our donors play a very vital role for this office”.*

The government disaster fund is *“[m]ostly for the response and not for the day to day administration.”*

One government interviewee agreed:

*“When there is a disaster all the budgets have to be redeployed to repair infrastructure. To mitigate for adaptation purposes, the government makes a provision fund, there was not enough provisions \$2 million it’s not enough. To cater for these contingencies needs 50 million.”*

Fiji is therefore reliant on donors, which brings its own constraints as noted by the Ministry of Foreign Affairs:

*“The climate change team was defunct for a number of years, I don’t know why... the idea was that the team was linked to a project, when the project stopped it just disbanded. Before 2009 there was no budget for climate change.”*

Funding for climate change issues is being tapped into across Fiji as noted by Fiji Meteorological Services:



*“The other option (than accessing the budget) is to develop project proposals where donors can pick up projects...It is hard to get, they want more justifications, and it is difficult to meet criteria to access those funds.”*

Only the NDMO is clear on funding: *“Funds are available, 1million, for disaster response once it’s activated it’s given to NDMO, each agency does their own operations and if there are needs outside then they make a submission to Ministry of Finance.”*

However, with several channels of funding, for some there is confusion about what is available and where, and this constrains adaptive capacity of the DRS. AusAID pointed out:

*“There is no guarantee that it will flow down. You can focus on the ground level but there is no connection with the top. It’s very top heavy where the funding is.”*

The Red Cross was found to be an organisation with the ability to access a larger pool of funding, allowing them to be more adaptable:

*“We have ability to reach, depending on severity, very quickly external aid within the Red Cross family to assist us in response both money and resources/people.”*

In summary, as in the other PICs, Fiji lacks the financial capacity to be independent from donor funding, this results in constraints placed on where and how they spend the money. Funding is being channelled in through the many NGOs which is causing confusion and duplication of services and also leaving the isolated communities out. Research revealed during the recent floods the main roads and easy access villages received many WASH and health care kits while several kilometres back they received nothing. Having access to finances that were not “tagged” for a particular project that can be mobilised quickly, yet transparently would enhance the Fiji DRS adaptive capacity.

### **6.3.5 Leadership and management**

The structure of government in Fiji points to climate change being a focus. The Climate Change Unit is located within the Ministry of Foreign Affairs. This arrangement allows easier interaction with donors, other governments and NGOs. The Ministry of Foreign Affairs reported they were, *“[o]ne of the strongest ministries in any government. In terms of climate change we have our structure to communicate and get things done. At the ground level we have the policy committee who looks at objectives and implementation. We have national climate change team which goes to cabinet.”* Therefore, on a structural level climate change is integrated at a very high level.

Such high prioritisation leads to the possibility of a more effective DRS, however to be adaptive the organisations that make up the DRS must have leadership and staff who views crises as opportunities for advancement. The quality of leadership and degree of empowerment of staff is critical for an adaptive culture. It examines the following: (i) leadership and decision making structures; (ii) the acquisition, dissemination and retention of information and knowledge; and (iii) the degree of creativity and flexibility that the organisation promotes or tolerates (McManus et al., 2008).

AusAID reported that the NDMO has strong leadership which infiltrates the whole of the DRS:

*“With recent floods their director for NDMO took ill but the Permanent Secretary stepped in and he was able to excel with coordination. It was a smooth operation across the different divisions particularly with the West. Because the West commissioner used to be the director of NDMO.”*

The NDMO has a long term view of disaster response which includes strategic planning and transparency of systems:

*“We weren’t looking just at immediate response. We were looking at government strategic goals. We brought in Strategic Planning, Ministry of Finance...If NZAID [gives] 1 million [dollars] for food assistance, what we need is the implementing partners to give back acquittals – it needs to be transparent. We want to coordinate well so everyone is treated fairly and equally. It’s about accountability and transparency as well. We made a big effort on our tracking systems – so for example if Australia says we gave you five tents we should be able to tell them where.”*

With reportedly no monitoring mechanism, the NDMO measures performance through:

*“[h]ow much aid is moving out to the village level this is how we measure our performance. From operational level we measure how information is getting out: the reaction time, the effort they’ve made, the area they’ve covered that’s how we monitor performance.”*

The PCIDRR is another example of an adaptive organisation. For example they viewed the team as a vital component of good leadership:

*“What we try to put in place is increasing the capacity of the whole team. So when the regional managers is out of the office the whole team can stick together and say we can do that, we have the capacity of doing that. We have had disasters without presence of director of disaster management office. But we handled it well. It’s a just a question of increasing the capacity of the whole team.”*

The MoH had a newly appointed Disaster Management Officer:

*“I think one of the models that we are working towards is an individual focal point. That’s why in the Ministry of Health we’ve established the position and advertised it. Before it was the Director of Public Health but now things are getting more demanding the Ministry has recognised we need a focal person.”*

Across many interviews and during the workshop it was apparent that leadership and management were considered important for the DRS to function effectively. Participants agreed to the line of decision making as outlined in the National Disaster Management Structure. Participants reportedly complied with decisions made by their leaders as there was a deep level of understanding that during a disaster, where there is automatically an element of confusion, each organisation needed to take orders from their leader. Furthermore, the Permanent Secretaries of each Ministry is involved during times of disaster with the NDMC. However, during the debrief and lessons learned following a disaster the Ministries and other organisations such as Red Cross, private sector, NGOs were invited to attend NDMC meetings, this is an informal process and reliant on the NDMO deciding on who. A more formal structure would help confusion on who is able to be involved at this stage. A review of the Natural Disaster Management Act (1998) as stated is needed to outline this process and set in place clear lines of leadership and decision making.

## 6.4 Conclusion

The most important determinants affecting adaptive capacity in Fiji were found to be: information and knowledge; risk perceptions; communication and relationships; financial capacity and leadership and management. For the most part Fiji had a strong, well defined DRS with clear lines of authority. While communication was found to need strengthening, especially between MoH and the broader DRS, there were some key strengths of the Fijian DRS. For example, leadership was viewed as being strong and effective. The decision makers include all levels of society from the villages, provincial authorities, and district authorities up to national and feed information both ways. Overall the interviewees were well aware of Fiji's vulnerability to climate change and its impacts. They were motivated to prepare but were constrained by finances, resources both material and human. The political situation in Fiji was also found to cause some barriers with the international donor sector as most donor funds were channelled through NGOs and particular projects. This has the constraint of fragmenting financial resources and causing confusion for some on how and where to access money.

## 7. VANUATU

### 7.1 Country background

Vanuatu has a population of 262,691 (Vanuatu National Statistics Office, 2013), and its geographic location in the Pacific renders it vulnerable to earthquakes, volcanic eruptions, tsunami and tropical cyclones. It is therefore ranked alongside the Solomon Islands as one of the most disaster prone countries (GFDRR, 2008). Vanuatu is ranked 125<sup>th</sup> out of 187 countries in the UNDP HDI, placing the country 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 concerned that graduation from LDC status will lead to reverses in development progress (UN, 2012). Vanuatu's economy is based on subsistence and small-scale agriculture, with 80% of the population living rural, subsistence lifestyles (Government of Vanuatu, 2007).

#### 7.1.1 *Climate change impacts on disasters in Vanuatu*

Climate change projections for Vanuatu estimate that temperatures are likely to increase by up to 1°C 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.

Tropical cyclones in Vanuatu's region are predicted to occur less frequently, but the proportion of severe storms are expected to increase (Australian Bureau of Meteorology and CSIRO, 2011). 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 than is currently the case (see Gero et al., 2012b).

#### 7.1.2 *Key disaster response organisations in Vanuatu*

Vanuatu's disaster response arrangements were observed to be in a state of transformation at the time of this research. The establishment of the VHT represents progress towards better coordination between the government and non-government sectors, both in terms of DRR and preparedness, and for disaster response. Recognition of the need for better coordinated disaster assessments was a high priority at the time of in-country research, and these efforts contribute to supporting the ongoing adaptive capacity of Vanuatu's DRS.

**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, 2011). It is the responsibility of the NDC to request international assistance, should a disaster become outside the capacity of national

response efforts. The NDMOs responsibilities include coordination of preparedness, risk reduction, response, relief and recovery efforts of all humanitarian agents involved.

**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, 2011). 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).

**National Advisory Board on Climate Change and Disaster Risk Reduction (NAB)** is an emerging agent responsible for coordinating policy advice and program implementation of related activities.

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

- 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), however in practice, these governance structures lack capacity and support from the national level. **Area Councils** are more localised governance structures and these too were found to lack support to fulfil any real obligations. 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, medical, and community welfare in times of disaster response (Government of Vanuatu, 2008).

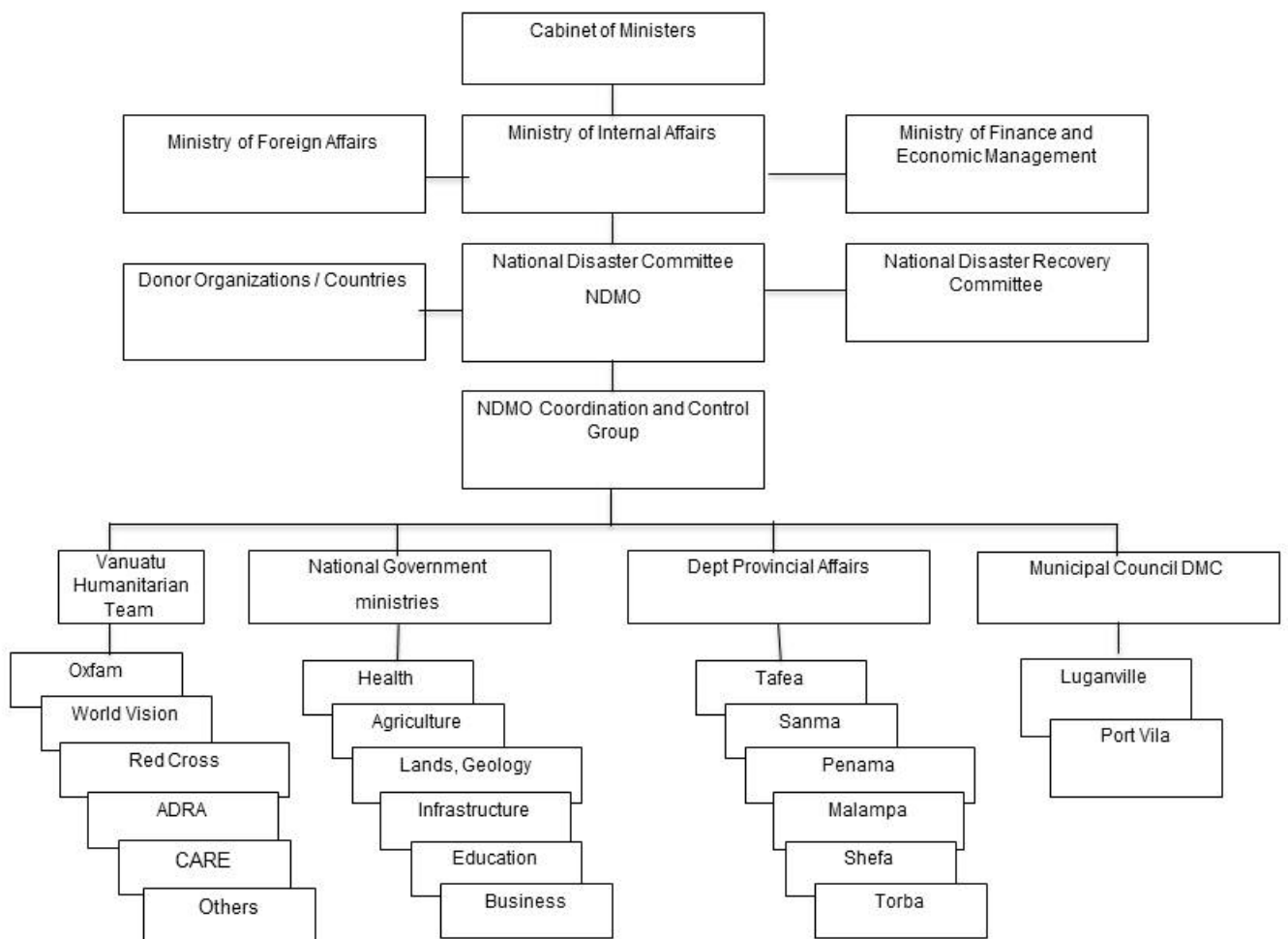
A 2008 Government of Vanuatu report also notes the **Church** as a response organisation, responsible for providing counselling and support after a disaster (Government of Vanuatu, 2008). The **Vanuatu Christian Council** has since been successful in receiving AusAID funds for community programs, indicating their agency and authority at the national scale.

**Vanuatu Humanitarian Team (VHT)** is a national version of the PHT and provides a coordinated approach from the NGO and donor community in efforts to respond to disasters aligning with the cluster approach.

Numerous civil society organisations, NGOs and international relief organisations operate ongoing DRR, CCA and related programs in Vanuatu, and many of these organisations are involved in disaster response. Many have Memorandums of Understanding (MoUs) with the Government of Vanuatu, some of which are facilitated through the Diplomatic Privileges and Immunities Act of 1982 (IFRC, 2011). At the national level, Vanuatu Association of NGOs (**VANGO**) has had a MoU with the government since 2004.

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

The institutional structure of these organisations is illustrated below.



**Figure 5: Vanuatu's disaster coordination system.**

(Modified from IFRC, 2011).

Box 4 provides an example of past disaster response, and describes some of the roles of organisations included in Section 7.1.2.

#### **Box 4: Example of past response in Vanuatu.**

Tropical Cyclone (TC) Jasmine, struck Vanuatu's southern islands in February 2012. Damage to agricultural crops, water resources and communications and infrastructure were sustained in Tanna. The response to TC Jasmine was one of the first times the VHT's cluster approach was engaged, with each cluster working together to operationalise coordinated response efforts.

TC Jasmine was deemed not a big enough event to require support from Australia, and one NGO interviewee noted that *"TC Jasmine was like a dress rehearsal. It allowed people to practice how to respond"*. Another NGO interviewee noted that *"We did a Rapid Assessment and found enough players were already responding"*. The FRANZ Agreement was activated, however, with French support in New Caledonia providing aerial surveillance based on FRANZ since they were best placed to respond (as reported by a FRANZ partner Vanuatu interviewee).

The NDMO noted that the:

*"NDMO responded after being advised by the MetGeo Office. The EOC [Emergency Operation Centre] was then activated... Monitoring took place until the cyclone had passed. A surveillance fly-over was done to assess if any damage was done, then an Initial Assessment on the ground was done to collect data. This was followed by rapid assessment"*.

However, the general response from several government based interviewees was that TC Jasmine was not declared a disaster and hence the government did not treat it as such in their response.

Some interviewees from the MoH, when asked about their response to TC Jasmine, noted:

*"It was not a disaster. Churches responded – ADRA and churches. We don't know of any report from the event. Not much damage occurred that warrants the MoH to respond... There was minor damage to an aid post and minor WASH issues. Partners like NGOs attended to these."*

The latter part of the above quote highlights the uncertain responsibilities of government versus non-government organisation in immediate disaster response. While it is likely that NGOs on-the-ground responded quickly based on their ability to do so, it also raises the issue that doing so can lead to levels of reliance on NGOs, and if support is withdrawn, communities may be left vulnerable.

## 7.2 Humanitarian needs

A summary of the main DRS actors responsibilities relating to the four themes of the research in Vanuatu is provided below.

**Table 6: Organisations active in disaster response in Vanuatu in relation to the 4 post-disaster humanitarian needs, as identified by in-country stakeholders.**

Immediate Humanitarian Needs:	Responsible National Actors and Stakeholders
Health Care	<ul style="list-style-type: none"> <li>• Ministry of Health</li> <li>• Police</li> <li>• Fire</li> <li>• Red Cross</li> <li>• Local NGOs</li> </ul>
Food and Nutrition	<ul style="list-style-type: none"> <li>• Ministry of Health</li> <li>• Ministry of Agriculture</li> <li>• Community</li> <li>• NGOs</li> </ul>
Water and Sanitation	<ul style="list-style-type: none"> <li>• Red Cross</li> <li>• NGOs (e.g. Oxfam, ADRA, CARE, World Vision)</li> <li>• Rural Water Supply</li> <li>• Provincial Disaster Committees</li> </ul>
Psychosocial needs	<ul style="list-style-type: none"> <li>• Churches</li> <li>• Community Leaders</li> </ul>

### 7.2.1 Health care

Addressing health care needs in Vanuatu, with a population spread across many islands, is a challenge and is the focus of both government (through MoH) and NGO partners in Vanuatu. The MoH led the Health and Nutrition cluster as part of the Vanuatu Humanitarian Team (VHT), and was supported by WHO and UNICEF. The NDMO noted that:

*“Ministry of Health is involved as a line ministry and included in [disaster] assessments, and Ministry of Health leads the Health and Nutrition cluster which looks at health infrastructure, outbreaks, health centres and medical needs”.*



MoH's focus in providing health care included in disease surveillance by monitoring health facilities, such as evacuation centres, for disease outbreaks, as noted by a MoH interviewee.

The ability of MoH to meet its obligations in delivering and coordinating the Health and Nutrition Cluster in times of disaster was reported to be severely limited. An NGO interviewee noted:

*“There has also been less buy-in from [Ministry of] Health and this may be related to the fact that they are having major human resources capacity issues.”*

As reported in Chapter 5, the MoH's limited ability to respond has led to a lack of visibility in times of disaster, as noted by an interviewee from the faith-based community: *“I don't know how MoH are involved in health response. I haven't seen a MoH Team”*. The lack of an adequate number of trained staff has led to a high reliance on external support. In terms of maternal health for example,

*“[m]others have to walk very long distances to deliver. Midwives are needed in these areas. There are severe shortages of health personnel.”*

This statement from a government interviewee was reflective of the perspective of the health sector as a whole, in that human resource shortages are chronic, particularly at the local level as noted by a NGO interviewee:

*“District Hospitals are short staffed. They have enough to keep going now (just) but once something happens they could not keep up”.*

Health and medical supplies were also severely lacking even in normal times, leading to high levels of vulnerability in disaster situations where supplies were needed on a large scale, as noted by a NGO interviewee:

*“After Tropical Cyclone Jasmine, assessments revealed low levels of health care supplies in health centres. The issues were reported to the MoH but not sure if anything was addressed.”*

Red Cross, with the support of AusAID and other donors, had prepositioned supplies around Vanuatu for disaster response, including health and medical supplies.

The locations of health facilities were also raised as an issue, particularly in relation to changing levels of risk associated with climate change. An NGO interviewee noted that:

*“[Health] facilities located in high risk prone areas need to be relocated. However relocation is not that simple as there are land issues. The Village chief would need to give permission for the land to be used and this can be a very long and drawn out discussion process involving the community over a long time”.*

Cultural issues always need to be taken into account to ensure outcomes are delivered that are aligned with community values and practices.

## **7.2.2 Water, sanitation and hygiene (WASH)**

WASH was described as a major concern and focus of the MoH and was also the core program of several NGOs including ADRA, Oxfam, CARE and World Vision. Despite this high priority, WASH continued to be a challenge in Vanuatu, with an NGO interviewee noting that *“[i]n communities – a lot of people do not have water and*

sanitation". In times of disaster, meeting these basic needs is an even greater challenge.

In terms of the cluster system, it was noted by a NGO interviewee that:

*"Some clusters work better than others; for example the WASH cluster is very strong... WASH is the strongest capacity here".*

This may be because of the high focus of NGOs who are able to work together in attempts to providing WASH needs. An NGO interviewee also noted that gender in WASH was considered, revealing the WASH Cluster's inclusive approach to disaster response.

Other areas where WASH was supported in times of disaster response is through the distribution of fresh water and containers, water quality testing kits, water purification units, WASH information, repairs to infrastructure and water tanks, by organisations such as Red Cross, WHO and UNICEF.

AusAID also supported the WASH sector, and it was noted that:

*"Any prepositioned supplies that are used are replenished by AusAID. AusAID also supports initial assessments and in the tropical cyclone [Jasmine], provided funds for aerial assessment of Tafea the main affected Island."*

Prepositioned supplies for WASH needs were also provided by ADRA.

### **7.2.3 Food and nutrition**

Food and nutrition needs after disasters were not prioritised by organisations within the current DRS in Vanuatu, and respondents indicated that the Food Security and Agriculture cluster appeared to be very weak. When interviewers raised the issue, interviewees mostly responded by outlining broader issues of long term food security challenges rather than any insight on how immediate needs post-disaster are dealt with.

According to the VHT cluster system, nutrition was addressed with the health cluster, with food security a standalone cluster. When asked about food and nutrition after a disaster, an NGO interviewee said "[t]he Government did much of the food distribution during [Tropical Cyclone] Vania." It was also thought that the strong social support mechanisms that feature in Vanuatu culture (and throughout much of the Pacific), coupled with the subsistence livelihoods of much of the population, leads to the ability to source adequate food within communities after a disaster occurs. As noted above, government may supplement this, however it was not considered a priority among any of the NGOs or development partners interviewed.

### **7.2.4 Psychosocial needs**

*"If there are increased disasters of a greater magnitude, the community will have more psychosocial needs because the loss will shock them."*

This quote from an NGO interviewee highlights the implications of increased disaster magnitude and frequency on mental health issues. Despite this established need, addressing post-disaster psychosocial needs remained a significant gap within Vanuatu's DRS, and a challenge going forward given the potential increase in disasters resulting from climate change. This was raised by a faith-based interviewee:

*“We have food and water, but the people we often forget. It is sometimes neglected – there are limited activities around psychosocial needs”.*

The MoH noted that:

“[r]egarding psychosocial needs - UNICEF have an assessment. [But it is] not really a focus. We need to work more on this. There’s no real need lately as no major event has occurred.”

An NGO interviewee agreed the focus on psychosocial support was limited: *“Psychosocial needs focus is quite small”* while Red Cross noted that regarding psychosocial needs after a disaster: *“Volunteers may do this by default”*.

A faith-based interviewee raised that the *“Church would do something”*. This quote may provide some insight into the issue, given the strong presence of Christianity in Vanuatu, and the reliance on the Church for spiritual health. In times of disaster, it is proposed that there is an assumption that the Church would provide psychosocial needs. However, provision of post-disaster psychosocial support requires specific skills and approaches not always available from Church leaders, who may themselves be in need of support. The MoH noted that some capacity exists at the local level: *“Psychosocial needs - we have nurses on the ground with counselling skills”*. It was clear, however, that the capacity to meet local needs was limited, and the extent to which the MoH could meet these need would be limited.

While NGOs provide tangible and physical support after a disaster, psychosocial needs and the support required are intangible, and can go unnoticed. Without a specific directive to focus on the mental health of communities after a disaster, it is likely that this gap in humanitarian response will continue unless the MoH or VHT take steps to address it.

### **7.3 Key determinants of adaptive capacity in Vanuatu**

A key research question concerned the identification of the most influential determinants on adaptive capacity of the PIC’s, in this case Vanuatu’s, DRS. The themes discussed below were identified through a rigorous systematic coding process (described in Chapter 2) of all interview data and observations from Vanuatu.

The five key determinants of adaptive capacity found to dominate in Vanuatu, in order of level of influence, were: 1) Communications, relationships, information and knowledge; 2) Leadership, management and governance; 3) Capacity; 4) Risk perceptions; and 5) Strategic vision and outcome expectancy.

Vanuatu’s DRS was led by a NDMO with relatively high capacity and supported by NGOs, donors and civil society organisations who respect the authority of the government’s leading role. The participatory nature of the VHT, and the moves to better coordinate DRR and CCA through the National Advisory Board (NAB), provided for a DRS that had a future focus and a vision of how it would like to progress towards a system which puts into practice better coordination and activities that reduce vulnerability prior to disasters occurring. The strategic vision of many individuals within the DRS highlighted their shared perceptions of risk and their ability to implement steps to move towards a system with enhanced adaptive capacity. While the health sector’s perceptions of risk were aligned with those of the rest of the DRS, the health sector’s limited capacity (particularly government) currently constrained their ability to fully participate in implementation of the strategic vision.

### **7.3.1 Communications, relationships, information and knowledge**

In the context of this research, communications and relationships relate to accountability (McManus et al., 2007). Trust is developed within governance systems, and between their stakeholders and constituents when they are found to be credible, stable, inclusive and accountable. The development of effective communications pathways based on mutually respectful relationships is critical. Closely related to this concept is information and knowledge; the dissemination and retention of which forms part of the adaptive capacity of an organisation (McManus et al., 2008). The capacity to apply current knowledge to a situation in a creative manner and to assign roles, as well as the ability of subgroups within an organisation to assume responsibilities of absent members are considered adaptive features of an organisation.

This research found that in Vanuatu, the strength of relationships, the degree of inclusivity in dialogue on disasters and how organisations communicate led to effective collaborations that highlighted adaptive capacity of the DRS. Changes have been made to the physical location of the Vanuatu NDMO, which:

*“[u]sed to be housed elsewhere but moved for closer relationship and communications with Meteo [Vanuatu Meteorology and Geo-Hazards Department]” (VMGD).*

Furthermore, the VHT headquarters are based at the NDMO. This arrangement acknowledges the benefits face-to-face communications bring to relationship building and trust.

The VHT brings together members of the DRS from government, UN, donor, NGO, faith-based and civil society sectors for a collective and collaborative disaster response. A development partner interviewee in Vanuatu noted that after Tropical Cyclone Jasmine in 2012 – *“VHT helped the NDMO to coordinate assistance and disaster response and donor responsibilities.”* VHT efforts are focused on working together, with coordinated disaster assessments the specific focus at the time of the in-country research. As noted earlier, disaster assessments underpin the decision as to whether or not international assistance is requested. Historically, these assessments have been the main source of delays, with poor coordination between organisations leading to multiple assessments and resulting in confusion. The VHT’s efforts to address this hurdle have led to more effective disaster response, as noted by a development partner interviewee in Vanuatu interviewee regarding the VHT’s role in responding to Tropical Cyclone Jasmine:

*“It was noted that assessments were more thorough, information was more credible. There were mechanisms that could be used as cross-checks and this showed less discrepancies compared with previous tropical cyclone responses.”*

Past events illustrated that that the speed and effectiveness of response was also reliant on being connected to the right people. These connections (or relationships) are heavily based on trust between individuals, as noted by an NGO interviewee:

*“People are everything. Attitude and behaviour go a long way. People develop good coping skills and foster relationships that are very important even during coordination times” and also a health sector interviewee: “Overseas help is coordinated if they know who to talk to.”*

As noted in earlier chapters, adaptive capacity in disaster response in PICs is therefore heavily built on personal relationships. This is in part due to the small bureaucracies in the Pacific, where organisations or government ministries are often made up of few staff.

Elements surrounding physical communications in Vanuatu remain a critical hurdle given the isolation and remoteness of some of Vanuatu's outer islands. A Vanuatu NGO respondent noted:

*“Communication is a huge challenge. I would put a satellite phone on every island as a priority”. Others from government believe communications are less of an issue – “We have a good communications through the telecommunication system. We use VHF radios - we are aware of some VHF holders in some islands, and Red Cross is planning to put some more in communities”.*

This difference in opinion regarding telecommunications may reflect varying expectations of what the baseline should be, also perhaps varying understandings of the situation in remote areas and also access to resources. Another interviewee from the health sector noted: *“Many communities lack access to communication and depend mainly on radios. Few people have their own radios”.*

Limited communications prior to and during a disaster place a heavier emphasis on remote and isolated communities having the information and knowledge to prepare for and deal with disasters without immediate outside support. DRR, CCA and preparedness efforts are effective ways of building community resilience (Gero et al., 2011) and are the focus of many Vanuatu Government, donor, NGO and faith-based ongoing programs. The Vanuatu Christian Council (VCC) forms an extensive network across the country through its partnership of five mainstream churches (Howell and Hall, 2010). The VCC has a strong partnership program with the Act for Peace, which is the international aid agency of the National Council of Churches in Australia (NCCA). The Pacific Community focused Integrated Disaster Risk Reduction, (PCIDRR) and the Pacific Community Climate Change Risk Reduction, (PCCCR), are Australian aid funded project through the Act for Peace. The VCC is recognised as being an important element of the DRS and maintains a close relationship with the NDMO, as noted by a VCC interviewee: *“We had been working with 78 communities and we act as a link between the NDMO, the provincial government and the community. We are still working on this to strengthen the working relationship between these institutions.”*

Donors such as AusAID recognise the VCC as an important link to communities for DRR and preparedness activities through initiatives such as the Vanuatu Church Partnership program, which is supported by AusAID and brings together the VCC and the Government of Vanuatu. Such initiatives support adaptive capacity through recognising key relationships between organisations, and drawing on these to enhance DRR efforts at the local level.

As a result of the dispersed nature of Vanuatu's island geography, local communities are in some ways far removed from the national DRS. However, efforts of the NDMO and VCC partnerships and numerous NGO programs are supporting DRR and disaster preparedness, leading to stronger disaster response and governance mechanisms. Adaptive capacity of Vanuatu's DRS could therefore be further supported by making better use of local capacity in times of disaster through more inclusive disaster assessments. By drawing on local knowledge and understanding, the time needed for outsiders to assess damage would be reduced, allowing for more accurate and timely information gathering.

### 7.3.2 Leadership, management and governance

The quality of leadership and degree of empowerment of staff within organisations is critical for an adaptive culture (McManus et al, 2008). This was found to be particularly relevant in Vanuatu, with the leadership of the NDMO especially important. A development partner interviewee noted that:

*“The NDMO is at the centre of everything” while an NGO interviewee noted “The NDMO has developed strategic plans, policies and SOPs to guide their work.”*

The NDMO’s leadership is respected by organisations within the Vanuatu DRS. This is in part due to its future focus, and its adaptive nature to better cope with future disasters, as noted by the NDMO:

*“Many of our documents are ‘live’ so once we have assessed a response, lessons learnt are incorporated after each disaster” and also regarding future capacity: “The NDMO is restructuring and part of the process is to identify how to increase capacity.”* Other organisations have observed the increased role and leadership of the NDMO: *“Disaster response will always depend on how the NDMO directs. Previously coordination was poor but it has got much better”* (Nursing school).

While national leadership from the NDMO may be strong, provincial and local governance structures appear to lack the same support. As noted by a Vanuatu development partner interviewee:

*“The main challenge is where the passing down of information from the provincial level to communities is quite weak. Where provincial leadership is already weak, the link between province and community is usually weak.”*

This highlights the importance of leadership in maintaining the relationships and communications that have been highlighted as crucial elements of adaptive capacity. Gaps in leadership can therefore have significant implications for connecting local communities with provincial governance arrangements.

National leadership across government sectors was also found to vary. The Ministry of Health (MoH) has a focal point for disaster response, and the Environmental Health Officer role also has disaster response as one of its priorities, as noted by a MoH interviewee:

*“Once there is a disaster, this person [Emergency Health Focal Point] becomes the lead person. Similarly at the national office – someone from MoH sits on the Emergency Operations Centre.”*

Leadership, however, within the MoH was constrained by limited internal coordination and capacity, as noted in Chapter 3. While the MoH has a draft National Health Plan for Disaster Management, it appears to lack strong leadership and a coordinated system where roles and responsibilities are clearly articulated and staff have the resources they need to respond. Without these mechanisms and support structures, it became apparent that some government ministries relied on the leadership and capacity of NGOs rather than taking initiative themselves, as noted by an NGO interviewee:

*“During TC Jasmine, the Ministry of Internal Affairs did not want to commit funds for disaster response, and instead left the response solely to the NGOs.”*

*Instead, the Government should have said, “we will handle it and if help is needed we will ask assistance from NGOs.”*

This sense of reliance on non-government support was echoed from MoH interviewees, who relied heavily on WHO, UNICEF and local NGOs support to fill gaps in the delivery of basic services even outside disaster times. Some MoH interviewees gave the impression that if NGOs are best placed to respond to a disaster first, then government may not need to respond, for example in relation to TC Jasmine: “*There was minor damage to an aid post and minor WASH issues. Partners like NGOs attended to these.*” This highlights the limited leadership within MoH which is likely to be the result of limitations in capacity (human resources, technical, financial).

While leadership of the national DRS is from the NDMO, the VHT is coordinated by Oxfam Vanuatu, with a view to shift this leadership over to the NDMO in the future. The clusters are led by government ministries, with co-leads coming from the UN and NGO sectors. This governance structure supports national leadership and ownership of disaster response and provides the necessary backstopping that may be needed as a result of limited capacity within some government ministries. What is needed to support adaptive capacity and transition to a fully functioning government led DRS is a clearly articulated process to ensure each sector of government can meet their obligations and responsibilities in times of disaster. This may be policy and legislation that provide details of organisational roles and responsibilities in times of disaster, standard operating procedures to guide response, plans and strategies regarding mainstreaming of climate change considerations that appreciate existing challenges and find ways to build on lessons learned to overcome them.

Leadership, when combined with a focus on future needs, provides for an adaptive and robust organisation (McManus et al., 2008). Vanuatu is therefore fortunate to have the NDMO, who embody these traits, as it is the key coordinating organisation in the DRS. The NDMO is leading by example through reflecting on past response, looking to future needs and maintaining strong partnerships across government and non-government sectors. Support is needed to provide similarly strong leaders in other government sectors and at provincial levels to ensure connections are made across the DRS nationally, and maintained between local communities and higher levels of governance. NGOs in Vanuatu should understand their roles in this provision of support, and are generally well placed to include leadership strengthening across all scales of their programs as a priority. By doing so, the adaptive capacity of the DRS will be enhanced.

### **7.3.3 Capacity (human resource, financial and technical)**

The extent of an organisation’s access to various assets and how they are utilised to enhance performance is an important determinant of adaptive capacity (Ekstrom et al., 2012). Financial assets include funding available to organisations undertaking disaster management (DRR, preparedness and response), whilst human resources include the skills and knowledge of staff related to disaster management. Defining the technical capacity in a DRS is important for understanding how the system functions, how monitoring / evaluation of response outcomes is undertaken for identifying gaps for future exploration and analysis, and the ability to adapt to unforeseen stresses such as climate change impacts.

Health workforce shortages in Vanuatu means that external doctors and nurses are needed to assist with disaster assessments. The Health sector in Vanuatu had limited capacity to respond to disasters, and was plagued by severe shortage of health personnel, under-staffed and ill equipped health facilities, as noted in Chapter 5. This was the general feeling voiced by nearly all organisations in Vanuatu. According to

Oxfam, in Vanuatu this was evident in disaster assessments, which revealed low levels of health care supplies in health centres. The MoH indicated that the hospitals were most vulnerable and currently they did not have the capacity to deal with mass casualties.

Rural and remote facilities had the largest problems with staffing and resources.

*“Local capacity is the biggest challenge. We have basic community people, dispensaries with nurses and stationed officers; but [we are] lacking in Field Officers, to go from place to place but this is a huge task considering populations and distances” (Shefa Health, Vanuatu).*

Access to health facilities in remote areas and location of some facilities in high disaster prone areas were additional challenges. This was a complicated process, as relocation is not a simple issue as described above. The MoH indicated that a full time disaster coordinator was needed to improve their response to disasters. The health sector was collaborating with local NGOs such as Oxfam, ADRA and Red Cross, and UN agencies such as WHO and UNICEF to fill the resource gaps.

Climate change was seen as an additional burden to an already stretched health system in Vanuatu, since the patterns of diseases were changing resulting in a demand for different types of skills, drugs and additional health facilities. According to two respondents the:

*“Current establishment [is designed to focus] on communicable disease response, for example Tuberculosis and Malaria, [but] there are new diseases emerging with climate change and we do not have the capacity or skills [to deal with them]” (Shefa Health, Vanuatu); and “some staff lack training and continuing professional development” (Meteo, Vanuatu).*

The NDMO has been fortunate to be supported financially both through the national government and through external donor support, as recognised by a NGO interviewee: *“I think there are people now putting money behind NDMO and they have some authority.”* The financial support has translated into effective management, leadership, and coordination of the DRS, as described above and noted by another NGO interviewee:

*“Over last 5 years the NDMO has become much stronger. Other donors are making more demands of them and putting pressure on them, which has led to better outcomes”.*

The latter quote highlights that with increased support comes increased responsibility and obligations, however the NDMO appears to be meeting these obligations and looking forward to meet future needs as well.

Being housed next to the Vanuatu Meteorology and Geo-Hazards Department (VMGD) also supports the capacity of the NDMO, as technical skills can be more readily shared between staff. VMGD noted that national government support had been forthcoming as the Department had prioritised service delivery – something the national government sees as important. VMGD therefore makes strategic decisions to address the government’s priorities and notes:

*“Budgeting for more staff needs to be argued, and a case presented as to why they [more staff] are needed”.*



VMGD also incorporate an adaptive and innovative approach: *“We are innovating – gone beyond our norms. [We are] more concerned about service delivery.”* By taking this approach, VMGD are able to prove to government that funds are well spent, and correspondingly rewarded with ongoing financial support, rather than relying on ad hoc project funds from donors, as noted by a VMGD interviewee: *“Funding is only stable from government – [donor] projects will eventually end, then it’s back to proposals”*. This highlights the leadership of the VMGD and also the adaptive nature of the organisation in recognising the need to be innovative and flexible as so to maximise financial support from both government and donors.

Adaptive capacity is supported in Vanuatu by the presence of NGOs and Red Cross. NGOs in Vanuatu include local offices of Oxfam, World Vision, CARE, ADRA and Live and Learn (among others). Red Cross is also a strength of the Vanuatu DRS, with a close relationship with the government which is formalised through legislation. These NGOs and Red Cross are supported in various ways through their wider “parent” organisation, in terms of financial capacity, access to training and other levels of support. At the same time, local NGO offices often have delegated authority on which programs are funded and where, as noted by a NGO interviewee: *“We have clear policies and good quality early communication system with delegated authority.”* The capacity of the NGOs in Vanuatu is therefore relatively strong, and supports the adaptive capacity of Vanuatu’s DRS through access to a range of assets.

At the time of the in-country research, numerous workshops, trainings and missions from regional partners on disaster management and climate change were occurring, most with a view to build capacity for disaster response or addressing longer term climate change challenges. For example, UNOCHA were holding a workshop on coordinated disaster assessments, the World Bank was visiting the NDMO and the NGO’s Climate Change Team had several activities and meetings. This highlights the crowded space in which Vanuatu’s DRS (and climate change community) must operate. Training (at the national scale, and in the capital, Port Vila) is considered readily available to DRS organisations, as noted by a NGO interviewee:

*“Training is always available for DRR. VHT, NDMO, and other agencies always hold training- so there is no shortage of training... Although there are so many meetings and limited staff capacity.”*

Vanuatu’s Nursing School also offers specific training in disaster response:

*“The centre for Nursing Education includes emergency and disaster training in their curriculum. Some sessions are delivered by the NDMO.”*

Interviewees were in agreement, however, that better coordination of training and workshops is required. An NGO interviewee noted that:

*“The people are workshopped-out... and there needs to be a more streamlined way of organisations working together to avoid duplication of workshops and trainings... There is no shortage of training we just need to ensure that these are managed in a coordinated way.”*

Therefore, while the technical capacity is being built, the uncoordinated approach to disaster management training somewhat constrains adaptive capacity. This finding is supported by a recent review of Pacific disaster response training by UNOCHA, who notes *“[a] more coordinated approach still needs to be achieved to improve the effectiveness of disaster management in the Pacific Island region”* (UNOCHA, 2012d:5). With 15 recommendations in total, UNOCHA recommends each PIC develop

a training strategy, and that training should include a variety of learning opportunities (UNOCHA, 2012d).

Training at the provincial and local scales was found to lack adequate financial support, as noted by the Nursing School:

*“Training is also provided at the provincial level, but there is a severe lack of funds... The Village Health Workers are most vulnerable and their training courses need to be strengthened.”*

This view was echoed by NGO interviewees, although there is an increase in the number of NGO programs that are targeting building the capacity of local communities for disaster response, as noted above.

Capacity to deal with disaster response in Vanuatu has its strengths (e.g. skills and personnel in key organisations such as the NDMO, VMGD and NGOS) and weaknesses (e.g. highly stretched health sector and uncoordinated nature of training and capacity building). The adaptive capacity of the DRS is in part dependent on the ability of key individuals knowing how to operate in times of disaster and with potential changes to the nature of disaster with climate change. It is therefore important for the DRS to better coordinate internally, and also the support offered externally to ensure skills are strategically strengthened. Leadership and communication will be required to ensure this can occur.

#### **7.3.4 Risk perceptions**

This subjective determinant examining perceptions relates to an organisation’s understanding of the risks of climate change and the likely impacts on their disaster response processes. “Perceived adaptation efficacy” refers to an organisation’s belief in the effectiveness of adaptation actions. Perceived adaptation costs refers to the organisation’s assumed costs (inclusive of monetary, personal time, effort) of undertaking the actions (Ekstrom et al., 2012; Kuruppu et al., 2011). Risk perceptions in terms of climate change influences adaptive capacity as it determines if or how individuals prioritise the incorporation of uncertainty and changes in risk over time. Climate change and its potential impacts on disasters were generally understood by Vanuatu interviewees, evidenced by the changes to governance structures and the number of DRR and CCA activities underway, with some noting:

*“As a responder, with the increases in disasters, we will have to keep on top of things” and “Since there are so many studies showing the potential effects of climate changes on disasters, storm surges, sea level rise, etc., we need to help the government get up to speed.”*

One MoH interviewee was reluctant to think there would be more disasters – “Currently we are not trying to think we will face more disasters” with this view likely related to the MoH’s already constrained capacity to manage the basic needs of the health sector.

The general acceptance that climate change is occurring and its potential (and uncertain) effects on disasters has led organisations to attempt to incorporate “climate change mainstreaming” into various programs and operations. Availability of donor funding for CCA is also a driving mechanism. As noted by a Vanuatu development partner interviewee: “Climate change is not always openly discussed but it is starting to be mainstreamed in discussions.” This issue of mainstreaming climate change, and risk in general, was highlighted by a health sector interviewee:

*“We had an exercise a few years ago on mainstreaming risk. A plan was developed as part of the Pacific Plan. Disaster preparedness and risk reduction were discussed – but this is yet to trickle down into sectors.”*

The idea that risk and “*DRR is everybody’s business*” (as noted by VMGD) was generally accepted. Taking the steps to minimise risk, including future risks associated with climate change, was found to be lagging somewhat, particularly within government, and even more specifically, at the provincial and local scales as noted by a government interviewee:

*“Climate change needs to be embedded in the Provincial Structure. Disaster is an important issue that requires adequate budgetary allocation. A disaster fund should be set up for Area Council and a trust fund for provincial levels to manage disaster risk and response.”*

An NGO interviewee believed that with more disasters, the national DRS:

*“probably will struggle, especially financially. It may mean more reliance on NGO and other external support. Provincial levels will struggle even more.”*

NGOs have been able to act more quickly in incorporating climate change considerations into programming, as noted by an NGO interviewee:

*“CCA is a key component and we are now bringing together long term partners of our organisation [on the issue]”.*

An insight into why government sectors took longer than their NGO counterparts (often led by expatriates) to move quickly on CCA was offered by a health sector interviewee, who noted “*[i]t’s the Melanesian way - we want to see things first then act later*”. An element of cultural practice, and the need to see something before acting, may therefore explain some of the lag in some government agencies’ response to climate change mainstreaming. However, it is not unique to the Pacific to want to see climate change impacts prior to action, as acting according to the precautionary principle and implementing “no regrets” measures are a challenge across developed and developing countries. Access to assets is also likely a contributing factor.

Another key perception of risk amongst most interviewees was the need to focus on risk reduction and preparedness, rather than with a reactive approach to response only, as noted by a government interviewee:

*“We need to look more at disaster response issues as currently we only do assessment after the event.”*

A MoH interviewee noted this approach was the norm:

*“MoH is currently operating as mitigation or preparedness entities. This is already an advantage as we are already operating in the mood of managing with small resources. We have more energy to respond with this mindset.”*

Similarly, Red Cross noted the need to be “*proactive and linking response with DRR and preparedness. It’s about monitoring the situation and linking with preparedness.*” This emphasis on reducing risk and being prepared enhances the adaptive capacity of the DRS as it encourages flexibility in approach and recognition that by its very nature,

disaster response is uncertain. This is an issue also raised by Red Cross: “Organisations that deal with disasters have to be flexible. They need the systems to be in place to deal with this”. Elements of the DRS architecture (such as plans and policies) therefore need to acknowledge the requirement of flexibility as a key component of how the system operates.

Climate change and disaster risk were not always prioritised amongst organisations interviewed. This was particularly true for the health sector. Some interviewees saw other social issues surrounding urban migration and population growth as more critical development issues needing urgent attention, for example: “Population in [Port] Vila is a huge issue. This is more crucial than climate change.” This highlights how the immediacy of current risks and the need for the health sector to meet basic needs are prioritised over those associated with climate change – most of the effects of which are yet to be seen.

Given the fact that climate change impacts in countries such as Vanuatu now have the potential to attract significant funds from donor partners, environmental problems, no matter what the real cause, are often blamed on climate change. Poor development practices are prevalent in parts of Vanuatu, with an NGO interviewee noting:

*“Coconut trees are now standing in water – they used not to be. But there is also sand mining and coral mining – is this the result climate change or bad human practices?”*

The perceived risk of climate change may therefore be amplified in the hope of receiving funds on the basis of climate change impacts. This constrains the adaptive capacity of the DRS as a healthy environment is needed to support the vast population dependent solely on subsistence livelihoods in Vanuatu.

Risk perceptions surrounding climate change and disasters in Vanuatu are in part dependent on the priorities and obligations of each organisation. While most agree on the need to prioritise DRR, attempts of following through with actual activities and extending efforts to mainstream climate change considerations are varied. Doing so would exemplify the flexibility needed to move the DRS towards a system that addresses current and future needs.

### **7.3.5 Strategic vision and outcome expectancy**

An organisation’s vision for resilience provides a defined purpose or vision statement that underpins its operations (McManus et al., 2007). It has been found that regardless of how well defined the purpose or vision, the operational reality and the communication of this vision can vary from one extreme to another throughout organisations. Regardless of the degree of organisational vision, three critical aspects should be considered from an adaptive capacity perspective (McManus et al., 2007): (i) How well is the vision articulated and communicated through the organisation? (ii) How well do the day-to-day operations represent that organisational vision? (iii) How well does the organisation look towards that vision for direction when engaging in emergency situations? Organisations with a clear sense of purpose and vision are able to articulate and communicate this effectively in their day-to-day operations. These three critical elements of this key determinant were explored for the Vanuatu context.

(i) How well is the vision articulated and communicated through the organisation?

Vision statements from selected organisations in the Vanuatu DRS are provided in Box 5.

#### **Box 5: Vision statements of organisations from Vanuatu's DRS**

*“Building a secure resilient and better Vanuatu for tomorrow”. (Vanuatu Ministry of Internal Affairs)*

*“The vision of the service is: Skilled and motivated staff, using modern science and technology within a sound, efficiently managed organisation, providing high quality meteorological services that are widely available, effectively applied, beneficial, and highly valued by all sections of the community.” (Van Meteorological Service)*

*“Our vision is to have an integrated and decentralised health system that promotes an effective, efficient and equitable health services for the good health and general well-being of all people in Vanuatu.” (MoH)*

*“Oxfam’s vision is a just world without poverty. We envision a world in which people can influence decisions which affect their lives, enjoy their rights, and assume their responsibilities as full citizens of a world in which all human beings are valued and treated equally.”*

*“We seek a world of hope, tolerance and social justice, where poverty has been overcome and people live in dignity and security.” (CARE Australia)*

*“To improve the lives of vulnerable people in Australia and internationally by mobilising the power of humanity.” (Australian Red Cross)*

Most interviewees were aware of the strategic visions of their organisations (such as those described above), and also the less formalised visions more directly related to disaster response and climate change (as described by interviewees), for example a development partner noted:

*“Strategic discussions have been held with colleagues from Suva to look at our program and climate change proofing. We need to determine how we will incorporate climate change scope into program design and implementation.”*

Other government departments were less clear about their organisation’s vision specifically regarding addressing climate change, or whether it was a priority, for example:

*“I am not aware of any strategic or formal discussions or planning about how to deal with climate change into the future within my organisation only through the NAB [National Advisory Board – see below].” (MoIA)*

The NDMO acknowledges its role as a coordinating body for disaster risk management, and noted that

*“Currently [the] new direction is trying to incorporate the CCA into a JNAP [Joint National Action Plan for DRR and CCA]. Implementation has started.”*

However, an interviewee from the donor community notes that *“DRR and DRM are quite important and should be brought to the forefront as they are key to every sector. There is a lot of will but this needs to be transformed into political will, however this is hard based on the competing needs.”*

A potential weakness is therefore the communication of the vision of the NDMO to integrate DRR and CCA into a JNAP to other sectors. Sectors, as noted in the quote, are lacking political will, stemming from the numerous priorities they have to address. The vision therefore needs to be pitched such that benefits in addressing risk reduction can be clearly expressed.

*(ii) How well do the day-to-day operations represent that organisational vision?*

Despite not being fully aware of their organisation's vision in addressing climate change impacts, most interviewees were able to describe approaches being taken that address resilience building within their organisation. This came in the form of training, for example from the NDMO:

*"The [training] process is continuing and we are looking at doing secondment of officers to other PIC NDMOs to learn from their experiences, or get someone from another country to assist our staff here."*

This addresses current and future technical and human resource capacity needs and could also support adaptive capacity by boosting national leadership efforts of the NDMO.

Modifying the national governance arrangements for disasters and climate change also enacts elements of strategic vision. The NAB for climate change and disaster risk management is being formalised to better integrate these overlapping issues, as noted by a development partner:

*"Vanuatu is currently bridging the divide between climate change and DRM by establishing a National Advisory Board (NAB)".*

This push to integrate is flowing to other sectors, as noted by a development partner:

*"The NDMO and the Meteorology and Geohazards departments have pushed to have DRR and climate change integrated into government agendas."*

This again reflects the vision of the NDMO and VMGD to better coordinate responses to climate change and disaster. The NDMO also notes the need to be flexible in how it operates:

*"We understand that climate change is coming slowly but surely, so we need to be flexible. For example, now we are not only willing to respond but also assist with emerging needs."*

This flexibility in daily operations highlights adaptive capacity in terms of having a future focus and displaying leadership and adaptiveness in approach.

While this future focus exists within some organisations, other government sectors do not appear to have the same vision, or at least do not have the capacity to enact it. For example, it was noted that:

*"Budgets are usually prepared after an assessment has been done, and usually there is no money set aside by line ministries and so money is usually taken from other approved programs."*

This quote highlights a lack of vision in accounting for disaster response in budgets. It is likely that funds are already accounted for in meeting basic needs, for example in the health sector, which lacks capacity across a range of areas as described by a MoH

interviewee: *“We are operating in a high service demand. [We are] paying more people than budgeted. A new structure is being approved which is an absorbing structure. That’s the only thing we have going to address future resource needs.”* (MoH)

Despite this acknowledged challenge in the health sector, the MoH interviewees note also that:

*“We [MoH] are playing a part in DRR. The location of facilities is something we consider and try to put new developments away from the sea on higher ground. Strategic planning and thinking is happening.”*

This highlights that some strategic thinking is considered in day-to-day operations, where possible within the constraints of existing capacity.

NGOs and Red Cross were able to describe activities that supported their strategic vision, for example, Red Cross noted: *“We are trying to be proactive and use seasonal forecasts to trigger preparedness action”*.

*(iii) How well does the organisation look towards that vision for direction when engaging in emergency situations?*

Vanuatu’s NDMO noted that: *“SOPs are being developed to guide how NDMO operates with other partners.”* This would better enable the strategic vision of enhanced coordination, however as noted earlier, SOPs need to be both robust and flexible to account for the range of scenarios disasters can lead to. Similarly, the VHT has coordination as a focus, with Oxfam noting:

*“The VHT is trying to streamline all these issues and get national actors involved in order to get the response system to where it should be.”*

This too supports the strategic vision of the VHT, which aims to enhance national leadership in times of disaster response. Coordinated disaster assessments provide the means to achieving a DRS with enhanced adaptive capacity. The current focus on coordinated assessments therefore enacts elements of a strategic vision.

The strategic vision of organisations and their ability to enact them in practice were found to be somewhat dependent on capacity. Strategic visions relating to climate change usually required some technical capacity and experience and knowledge, without which climate change mainstreaming is difficult.

## **7.4 Conclusion**

This research revealed that in Vanuatu, the five key determinants of adaptive capacity, in order of level of influence, were: 1) Communications, relationships, information and knowledge; 2) Leadership, management and governance; 3) Capacity; 4) Risk perceptions and 5) Strategic vision and outcome expectancy. Vanuatu’s NDMO provides a level of leadership that is supported by relatively high capacity and support from other organisations within the DRS both in Vanuatu and from outside the country. The credibility and legitimacy of the DRS is therefore heavily tied to the NDMO, and also the VHT, with its multi-sectoral membership that functions effectively as a result of pre-existing relationships and an internal governance arrangement (through its clusters) that is well understood. Moves to have the VHT led by government ministries was found to be constrained by shortages in human resources, skills and financial backing, particularly in the health sector. A recommendation is to develop a longer term strategy to build this capacity through a range of approaches including policy and

legislation and policy and plans, all of which should be developed in close consultation with relevant stakeholders and led by individuals or organisations who are already part of the DRS.

The shared perceptions of risk across Vanuatu's DRS, coupled with (or perhaps as a result of) the existence and leadership of the VHT, have led to an overall shared strategic vision for coping with the impacts of climate change and disasters in Vanuatu. The establishment of the NAB, provides an example of a DRS that has a future focus and a vision of how it would like to progress. The strategic vision of many individuals within the DRS provides the capability to move towards a system with enhanced adaptive capacity. While the health sector's perceptions of risk were aligned with those of the rest of the DRS, as noted above and throughout this chapter, its limited capacity currently constrains their ability to fully participate in implementation of the strategic vision. Capacity building is therefore required, appreciating elements of culture, geography and lessons from the past in the development of future initiatives.



## 8. COOK ISLANDS

### 8.1 Country background

The Cook Islands are comprised of 15 islands, all but two of which are inhabited. With a population of 14, 974 (Government of the Cook Islands, 2011a), 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<sup>2</sup> across an expanse of ocean of 2 million km<sup>2</sup> (Government of Cook Islands, 2010)

#### 8.1.1 *Climate change impacts on disasters in Cook Islands*

Projections for the Cook Islands indicate that temperatures are likely to increase by up to 1°C 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; Gero et al., 2012b).

#### 8.1.2 *Key disaster response organisations in Cook Islands*

Many organisations are involved in disaster response in the Cook Islands. These are described below alongside their roles and responsibilities for disaster response.

**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 Council is comprised of the Prime Minister, Financial Secretary, Police Commissioner, Emergency Management Cook Islands (EMCI) Director, Public Service Commissioner and Secretary of Ministry of Infrastructure and Planning (IFRC, 2012).

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)** is established as a division under the Office of the Prime Minister. Its responsibilities 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).

**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).

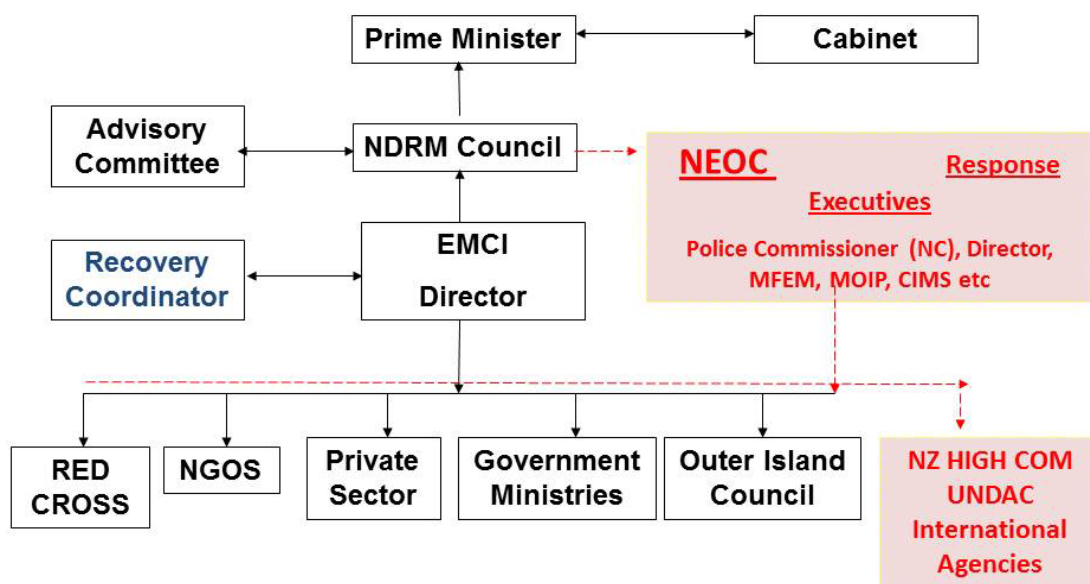
The **Ministry of Health** is responsible for appointing a **Health Official** to assist the Disaster Coordinator. The **Ministry of Works** is also important in disaster response from a coastal hazards and infrastructure perspective (Reed, 2004).

**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 Civil Society Organisation (CICSO)** is the new umbrella group representing civil society and NGOs in the Cook Islands. It supersedes Cook Islands Association of NGOs (CIANGO) which was disbanded due to financial troubles.

**New Zealand Aid Programme** is also active in times of disaster response and coordinate with national institutional arrangements as necessary. AusAID provides funding for development and disaster response through New Zealand Aid Programme, aiming to support donor harmonisation efforts.

The institutional structure of these organisations is illustrated below.



**Figure 6: Cook Islands disaster coordination system**

(Source: pers comms. Carson, 2012)

Important and relevant policies relating to DRR and disaster response in the Cook Islands include:

- National Disaster Risk Management Policy 2005 (Government of the Cook Islands, 2005)
- Te Kaveinga Nui 2020 and the National Sustainable Development Plan 2011-2015 (NSDP - Government of the Cook Islands, 2011b)

- National Disaster Risk Management (DRM) Act 2007 (Government of the Cook Islands, 2007)
- DRM Regulations 2010 (Government of the Cook Islands, 2010)
- Joint National Action Plan for Disaster Risk Management and Climate Change Adaptation 2011-2015 (JNAP, Government of the Cook Islands, 2012)
- National Disaster Risk Management Arrangement 2009 (the Arrangement)

Box 6 provides an example of past disaster response, and describes some of the roles of organisations included in Section 8.1.2.

## Box 6: Example of past response in Cook Islands

On February 10th 2010, category three 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, however TC Pat was unusual as it came without a sea surge – the typical warning sign of an impending storm. 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 (NZ Aid, 2010). Immediate funds of NZ\$350,000 were also provided for response, while a further NZ\$5.5 million were made available for reconstruction (NZ Aid, 2010).

Opinions amongst interviewees on the coordination of TC Pat varied. For example, an interviewee from the Ministry of Internal Affairs noted that:

*"There weren't a lot of existing processes of what we should do... a difficulty was not being sure what was expected of us".*

The Ministry of Health had a more positive response with regard to their internal efforts:

*"We have a policy in place when there is a cyclone - off duty staff and on duty staff have to assemble".* New Zealand Aid Programme noted that *"In Polynesia, NZ Aid acts to position itself as a first responder".* Some organisations were clear on their roles and responsibilities and other were not. Perhaps as a result of this varied response, a strong opinion was held by one interviewee in particular:

*"This event highlighted the completely dysfunctional nature of disaster response in the Cooks" (Consultant).* This view was held because *"Government took a long time to understand what had happened... Mobilising emergency response takes too long". (Consultant)*

Delays in response were reportedly due to multiple assessments, and that no supplies could be sent until assessment reports were received. This was seen as a frustration by one interviewee in particular, who noted:

*"There is no imagination of what might be urgently needed – for example water, generators etc."*

Furthermore, regarding the processes needing to be followed:

*"The protocols and bureaucracy that we need to go through before action is taken is an impediment".*

Lack of finances for disaster response amongst government ministries provided a significant obstacle to the provision of immediate needs. For example, an interviewee noted:

*"Tiaponga (the Power Company) were on standby for 3-4 days because there was not enough money to purchase their airline tickets to get them to Aitutaki."*

The newly established Disaster Trust Fund is an initiative designed to overcome this obstacle, and a direct learning from the TC Pat response. Regarding lessons learned, one government interviewee noted that:

*"The experience of responding to TC Pat isn't widely known why and what happened, what worked what didn't. It would be good to have lessons learned in a way that people can digest."*

Red Cross was reported to have a strong presence, especially with their local counterparts on Aitutaki. Red Cross reported that their approach was linked in with that of government:

*"We were with Minister of Health who had hand-picked a special team to respond that night. We met about what roles we would be doing. We briefed ourselves before we sat in with the Island Council."*

This highlights that some elements of the initial response was well coordinated, with the Red Cross heavily involved. It was also mentioned that a lessons learned exercise was conducted by Red Cross in Aitutaki after the TC Pat response, with EMCI in attendance.

## 8.2 Humanitarian needs

A summary of the DRS capacity relating to the four themes of the research in Cook Islands is provided below.

### 8.2.1 Health care

Health care in the Cook Islands suffers from limitations due to shortages in personnel, particularly in times of disaster where staff work long hours without a break. The following points summarise the health care situation in the Cook Islands, as noted in Chapter 5).

- Policy is in place to guide health workforce, but knowledge of policies is affected by high rates of staff turnover.
- No clear guidelines exist for the coordination of in-coming health personnel but mechanisms are being developed to deal with this.
- The health sector is a key group of stakeholder in the DRS and is well organised since improvements in the clarification of roles and responsibilities
- The health sector has clear leadership and strong partnerships with NGOs and donors. Health workforce and material capacity is inadequate particularly in times of disaster. However, local health professionals are keen to be able to provide care to country but required material resources to be able to meet this responsibility.
- The health sector are often the first responders and first to carry out disaster assessment
- Some level of disaster training available for the health workforce. Desk top and field simulations or training programs are provided annually. Access to training for some levels of staff is an issue.

An interviewee from government noted that “[h]ealthcare is mostly nationally funded and Red Cross mobilises [their] workers quickly” (DCD). This highlights the collaborative and cooperative nature of health sector organisations, including the role of the Red Cross. The Red Cross are able to provide health care through a funded program:

*“The Pacific Regional Health Program includes... \$50,000 a year to do community health programs – this includes before, during after disasters ... This includes psychosocial support which is a strong link between health and DRM.”*

The Red Cross also note that when they visit communities,

*“We always link in with the hospitals. Most of the time they say they need to upgrade their first aid skills. First Aid has to be [about] disaster preparedness and you have to be First Aid trained while out in the field. That is a package of the DM [disaster management] program - [it] is first aid training.”* (CI Red Cross).

Provision of health care is supported by the pre-positioning of supplies in most of the Cook Islands.

In addition to health care provisions in the Cook Islands, the diplomatic ties between the Cook Islands and New Zealand have other implications, as noted by New Zealand Aid Programme:

*“They [Cook Islanders] are New Zealand citizens they have access to New Zealand healthcare.”* This is seen as a benefit to Cook Islanders, who can readily access the health care they may need by travelling to New Zealand. This ease of access, in

addition to the other facilities and opportunities available in the New Zealand, is also part of the reason why so many Cook Islanders are migrating temporarily or more permanently, to New Zealand. Thus, the health workforce (and other sectors) needs to cope with fewer personnel.

### **8.2.2 Water, sanitation and hygiene (WASH)**

As for Vanuatu, WASH as an ongoing development issue, as well as a post-disaster need receives the greatest attention when compared to the other three humanitarian needs. This is reflected by national government interviewees from two sectors: “*Water and sanitation is the biggest funded [sector]*” (DCD) and “*Water and sanitation a priority for us here now.*” (MoIP)

Several key DRS organisations prioritise WASH and are relatively well equipped to source materials and trained personnel either internally or externally. Coordination and understanding of roles and responsibilities is also fairly well established, for example the National Environment Service considers its role in WASH: “*Water and sanitation – in terms of water and waste.*” (NES) The MoH has some personnel with skills in WASH in disasters:

*“[For] Water/sanitation, Environmental Officers in the Ministry of Health - they would be on the plane [to the disaster area]. Two doctors and nurses [would also be] on the plane.” (MoH).*

The MoH noted however, that due to financial constraints, they sometimes have to make the decision as to whether they send personnel or supplies, as space on the plane and the cost of aircraft fuel are limiting factors.

The Ministry of Infrastructure and Planning (MoIP) is a key government agency with a focus on WASH infrastructure in disasters and notes:

*“In water we have a Water Sanitation unit. [We] also [have] a program with waste management under the one program. [There are] lots of linkages with water/ sanitation with health, the [National] Environmental Service - we work together on all responses.” (MoIP)*

Red Cross is the key organisation outside of government for WASH and has a specific team and equipment dedicated to WASH needs: “*Water and sanitation equipment - a unit concentrates on just this during and after disasters*” (Red Cross). Red Cross receives support from regional and global partners in times of disaster as well and it was noted by a Police interviewee that at the time of TC Pat:

*“Red Cross supplies for TC Pat came mainly from NZ Red Cross. This included a lot of WASH supplies including a desalination unit” (Police).*

### **8.2.3 Food and nutrition**

Immediate food and nutrition needs post-disaster were not raised as a priority amongst Cook Island interviewees. The mention of food and nutrition needs usually led interviewees to mention longer term food security issues, for example the National Environment Service (NES) interviewee noted their role for food and nutrition was “*[i]n terms of biodiversity and food security*”. Furthermore, the NES interviewee noted that “*[a]fter TC Pat the food was also destroyed; we had recommendations about replanting.*” Another national government interviewee noted that “*[f]ood and nutrition (or Food Security) is probably the theme for next year’s Development Partners meeting as it’s underfunded but needs more.*” (DCD).

The MoH indicated that provision of immediate food needs was not funded by government, rather the staff themselves:

*“Food / nutrition - before we left to Aititaki [for the TC Pat response] there was a contribution [of food] from staff and then we sent the food to Aititaki. Otherwise it's from the Red Cross.” (MoH)*

The Red Cross noted that in assessing needs post- TC Pat: *“The crop food seemed okay at this point but this only lasts for 2 weeks.” (Red Cross)* This indicates that some of the food and nutritional needs can be sustained from crops surviving disaster damage, however this does not last long, and so plans need to be in place to meet these needs in food requirements.

#### **8.2.4 Psychosocial needs**

*“People die in the sea [as a result of disasters] and then afterwards people don't want to go in and fish because of what they think.” (MoH)*

As noted in the Chapter 5, all four case study countries have inadequate capacity to meet post-disaster psychosocial needs. This has implications for the affected population as well as the ability of health care workers and other community leaders to function effectively in times of disasters. One challenge this research identified is uncertain roles and responsibilities regarding psychosocial support. An interviewee from the Ministry of Internal Affairs (MoIA) noted that:

*“One area of weakness for the ministries was there was an expectation that we [MoIA] would have people who can go and counsel, but we don't actually employ counsellors - we don't have funds for that.”*

After TC Pat, the need for psychosocial support was clear so MoIA was able to find one person:

*“We [MoIA] had one person who had received some social counselling training so they were freed up to go and be part of a team.”*

Dedicated and trained personnel were also found to be lacking in the MoH, and MoIA noted that as part of the TC Pat response:

*“Internal Affairs does not generally provide counselling services, the Ministry of Health has primary responsibility for mental health and wellbeing and therefore had some capacity through the provision of nurses and doctors.”*

Together, MoH and MoIA were able to coordinate with a team of counsellors who came from New Zealand 3 months after TC Pat to offer psychosocial support. MoH workshop participants reported that there is *“limited formal counselling. School guardians, mental health service in Ministry of Health.”*

Given MoIA and MoH were able to meet at least some of the post-disaster psychosocial needs, the expectation from other ministries is maintained – that psychosocial needs are met by both MoH and MoIA, despite the internal inadequacies that remain in both agencies, as noted by the MoIA interviewee:

*“Expectations is an important one. Even after, there is still expectations we will provide counsellors and we don't have people. So now internally we have to look at how we manage those expectations.”*

Red Cross interviewees were aware that psychosocial needs were a gap:

*“The 2005 [tropical cyclone] event exposed psychosocial needs to be significant. From lessons learned it's been recognised counselling etc. needs to be involved. Psych support is recognised as needed and included in DRM Plans ”.*

Part of the gap relates to supporting community and traditional leaders, who are important points of contact for incoming support. Traditional leaders, or mayors, are often faced with additional role of being the community's disaster coordinator. As Red Cross noted that for TC Pat response:

*“First point of contact was [the disaster] coordinator, who is the Mayor of the island. His first comment was he was not up to it and , so we knew we needed another coordinator because he has been traumatised, he was distressed, he had not been able to get back to where he should be. So we decided we needed a coordinator to help”.*

Support is needed for communities affected by disasters, including key community leaders, as well as those offering the support, who can be faced with the situation of needing to offer comfort to their own communities while in distress themselves. One interviewee noted that of the research's four humanitarian needs, the first three are more tangible, while psychosocial needs are more difficult to understand and address. This remains a challenge in the Cook Islands despite being recognised as a need since 2005 at least.

### **8.3 Key determinants of adaptive capacity in Cook Islands**

Analysis of field results (both interviews and workshop results) and supplementary literature were analysed and interrogated to identify the key determinants of adaptive capacity of the Cook Islands' DRS.

Four key determinants adaptive capacity found to be most influential (in order of significance): 1) Communications and relationships; 2) Leadership, management and governance; 3) Capacity; and 4) Risk perceptions.

As a country with such a small population and with a scattered population across vast distances, key individuals and their relationships and trust were crucial determinants of adaptive capacity. This issue permeated the other key determinants, with positions of leadership and the governance of the DRS supported by a few personnel. These few people's perceptions of risk were seen to drive the progress and pathway towards efforts of risk reduction and addressing key issues surrounding resilience.

#### **8.3.1 Communications, relationships, information and knowledge**

In the context of this research, communications and relationships (McManus et al., 2007) relate to accountability (Biermann, 2007). This means that governance that is credible, stable and inclusive must be considered to be legitimate by all stakeholders, and is held accountable for its actions and representatives by its constituencies. Trust is developed between governance systems, their stakeholders and constituents when they are found to be credible, stable, inclusive and accountable. The creation of effective communications pathways based on mutually respectful relationships is critical. Closely related to this concept is information and knowledge; the dissemination and retention of which forms part of the adaptive capacity of an organisation (McManus et al., 2008). The capacity to apply current knowledge to a situation in a creative manner and assigning roles, and the ability of subsets of an organisation to assume



responsibilities of absent members are considered adaptive features of an organisation.

This determinant was observed to both support and constrain adaptive capacity in the Cook Islands in different ways. Firstly, the geographical nature of the Cook Islands, with its main centre in Rarotonga and small and scattered population across outer islands, provides a challenging environment in which to manage disaster response. Logistically, communications are difficult with outer islands in times of disaster, as noted by a Cook Islands Police interviewee with regard to communicating with affected population in times of disasters: *“Communications [are] still the biggest challenge. Once comms are lost, it is just a waiting game”*. Efforts to overcome this challenge have focused on disaster preparedness and DRR so the population can cope without immediate assistance; this is described in further detail in Section 8.4.4 (Risk perceptions).

The small population is seen as a strength to some, and a constraint to others. For example, an New Zealand Aid Programme interviewee notes that *“[s]ize helps. It’s a small place, you can’t come on the island without people knowing you are here”*. A small population could be seen to support adaptive capacity if everyone knows who is who and how they fit into the DRS. However, small populations also mean low institutional capacity, as raised by New Zealand Aid Programme: *“Because of their size, we are relying on individuals rather than institutions so if a strong person goes then you lose a lot.”* Population decline was reported as an issue by several interviewees from a range of sectors. The loss of skilled personnel is discussed below (Section 8.4.3, Capacity).

Ministry of Health interviewees noted that the management of disaster response:

*“[is] personality driven. If there is someone good on the [disaster] committee then we are represented and it [information] filters back”*.

This emphasis on the importance of key individuals was also highlighted by a NES interviewee:

*“The [NES] director is key as he knows the people on the [Disaster] Council and has experience that he can call and inform us.”*

These quotes provides examples of the importance key people, and the formal and informal roles they play, in supporting adaptive capacity of the DRS. With the right people in the right roles who are connected to the right people, information can flow to those who need it. In terms of the importance of informal communications, nurses present at the workshop noted that discussion and incorporation of lessons learned after a disaster happens informally.

An example of where the lack of a relationship has limited the inclusion of an organisation in the DRS is that of the Cook Islands Civil Society Organisations (CICSO), which is the newly established umbrella group of civil society and non-government organisations. A CICSO interviewee notes that:

*“There is a definite lack of relationship between government and CICSO so national policies are not relevant to us. The policies do not come down to us... We want to partner with them [Government] and be able to provide input where we have relevant knowledge, skills and experience – and contacts / networks. We want to be part of the consultation process.”*

This shows that without the relationship with government (or key individuals within government), the ability of CICSO to participate in the DRS is limited and from CICSO's perspective, the governance of the DRS lacks credibility given its limited inclusiveness. It would therefore be worthwhile for both government and CICSO to work towards developing ways to work together, given the mutually beneficial partnership and feelings of legitimacy and credibility this may lead to, particularly with regard to disaster response.

The concept and importance of trust in these relationships was also crucial in the Cook Islands where the DRS is comprised of relatively few people. When asked about the key skills people need to manage the response to disasters, a government interviewee responded:

*"We need people who are good relationship managers, so a level of trust is maintained at a high level. So when an emergency happens we can sit down and make quick decisions. [We] have to deal with politics to get resources out there, you have to go through channels and respect local decision making systems so staff need to understand these politics."*

This response highlights that above other skills, relationship management and understanding formal and informal modes of operating is crucial.

Informal modes of operating include the way in which communications are often through word of mouth in times of disaster, for example: *"We are relying on family and friends networks. We walk around if the phones go down"* (Ministry of Infrastructure and Planning). So long as close relationships are maintained, this system can support adaptive capacity. However if key individuals or communities are left out of this method of communication, their ability to be kept informed, and therefore prepare or respond appropriately, is limited.

Another informal (or unofficial) mode of operating relates to the unwritten understanding that Red Cross personnel are included on the team conducting initial disaster assessments (which occur after the local nurses assessment):

*"It's not a written arrangement, it's verbal, that the first flight that goes out a Red Cross person is to go. So far [it is] being observed ... it's just been happening - it's not yet written as a policy. But it wouldn't hurt, because people come and go"* (Red Cross).

Red Cross recognised, perhaps as a result of the interview questions, that their inclusion on the government's initial disaster assessment team was based on an "understanding" rather than a policy. So long as key individuals involved in decision making understand this, as mentioned in the quote, this process will continue. However with high staff turnover and population decline, the lack of formal agreement has the potential to limit Red Cross inclusion in the future.

In summary, communications, relationships, information and knowledge in the Cook Islands centre around personal relationships and trust between key individuals, which is particularly pertinent given the small population. Adaptive capacity can be supported by this key determinant so long as key individuals within the DRS have a clear understanding of the roles and responsibilities of others and information flows are unobstructed. Informal modes of operating within this system are important and also rely heavily on the existence of trust and strong relationships.

### 8.3.2 Leadership, management and governance

The quality of leadership and degree of empowerment of staff is critical for an adaptive culture (McManus et al., 2008). Strength of leadership across the Cook Islands DRS organisations was found to vary. As noted in Chapter 5, there is clear leadership within the health sector and strong partnerships exist with NGOs and donors. Red Cross in the Cook Islands also provides strong leadership in times of disaster, and has a solid reputation in delivering critical support to disaster affected communities. As a result, Red Cross enjoys some support from government, and it was reported the Government had a building specially built for them.

The central government has shown leadership in the establishment of the Climate Change Office which sits within the Office of the Prime Minister (OPM), as noted by a staff member:

*“Government is taking a bold step with establishing the Climate Change Office. It’s a good step to coordinate better and recognises the need to improve synergies and results”.*

Emergency Management Cook Islands (EMCI – the equivalent to NDMOs in other PICs) has also been recently shifted to the OPM, and an EMCI interviewee notes *“[i]t is good politically to be under the Office of the PM”*. Furthermore, as a result of past events:

*“The government is being very supportive. I guess after Cyclone Pat there is probably a rude awakening for the previous government and then they started putting things together and then the new government that came on are very supportive especially having the PM and drove lots of things here. It’s good that we have a government that support our work.”*

Despite this support for the leadership of EMCI, capacity to fulfil its coordination obligations remain limited (see next section). This highlights the need for leadership to be supported by sufficient personnel and financial capacity to undertake necessary activities and initiatives.

The vast majority of Cook Islands interviewees acknowledged the leadership of EMCI in terms of their role in coordination of disaster response. There was uncertainty, however, in the broader leadership of decision makers, including who and how external assistance is requested and who is included on key decision making bodies. Regarding the latter issue in relation to decision making for the TC Pat response, an interviewee from government noted, *“[t]here were too many chiefs. So that caused a lot of delays especially in terms of emergency response”*. EMCI also recognised the need to limit numbers on key decision making bodies because *“[t]he last thing we need is having this huge number of people in the operation room so you can get a decision made”*. Some flexibility exists in terms of the stakeholders involved in decision making, as noted by EMCI: *“The Response Executive is a part of the Operation Team, depending on the disaster [it] can add people to the Executive.”* While this shows a degree of adaptiveness and flexibility, evidence from past events shows that clearer guidelines are needed to ensure decisions can be made quickly. This too was pointed out by a government interviewee:

*“It’s important to have key people that know what to do... that people are recognised as leaders in those circumstances”.*

This lack of clarity in leadership on decision making bodies extended overall governance mechanisms in times of disaster. As noted by a Cook Islands interviewee:

*“On paper there are processes, but as in most Pacific island countries, the Cooks Government is known for its decisions to be made ad-hoc in times of disaster. It isn’t about who shouts the loudest, but this government can find it convenient to forget procedures in times of crisis.”*

Such procedures being “forgotten” may be the result of policies, plans and SOPs being inappropriate in times of disaster – perhaps too rigid, unspecific and vague, or developed without adequate consultation. Inclusion of traditional leaders and how this leadership is managed in times of disaster led to much discussion amongst workshop participants, including one comment that:

*“It’s a fight of who is in charge in outer islands – the secretary, the traditional chief, mayor, member of parliament etc etc... and their wives”.*

This reflects the need for a flexible approach to including and communicating with local government and leaders in outer islands.

An example of misunderstanding of the disaster response procedures at the time of TC Pat was revealed by EMCI, in terms of how the MoH responded:

*“It’s us [EMCI] that activate the response; any request that comes from the outer islands comes through us. But what happened was the health people [in Aitutaki] were liaising directly to their people over here [in Rarotonga] and bypassing the system ... they thought they could just go ahead and order the stuff, then they realise that they couldn’t do it unless to us and formally through the government. Eventually we ironed out all of those communication issues.”*

This example reveals that MoH were likely responding according to their own procedures, where roles and responsibilities have been clarified (as noted in Chapter 5). The miscommunication between EMCI and MoH could therefore be the result of limited ability of EMCI in communicating national disaster procedures to other sectors, or high staff turnover, which was revealed to lead to limited knowledge of policies (see Chapter 5).

This issue of miscommunication had implications for the coordination of disaster assessments for the TC Pat response. A Cook Islands interviewee noted that:

*“People felt they needed to “see for themselves” – for example those in different government departments, rather than rely on previous assessments. As a result, numerous assessments were conducted”.*

This feeling of lack of coordination for disaster assessments was echoed by several Cook Islands interviewees and workshop participants, highlighting the need for a clearly developed approach to conducting and sharing results of disaster assessments. This understanding and coordination is needed for external organisations offering assistance too, as noted by an NES interviewee: *“Overseas organisations want to help but don’t know how, so they do an assessment.”* As described in Chapter 4, it is important to have clearly understood roles and responsibilities of all DRS agents (including those from overseas) to ensure efficiency in response and minimised duplication of efforts. Adaptive capacity can be enhanced with a streamlined process for disaster assessments, as support can be provided quicker, reducing potential medium to longer term impacts.

Effective leadership in the Cook Islands is important for efficiency in disaster response and adaptive capacity in the uncertainty presented by climate change. Key DRS decision making bodies need to be comprised of individuals who are recognised as leaders. This acknowledgement of leadership is in part dependent on the relationships and levels of trust between individuals, as described in the previous section. Effective leadership is also dependent on the capacity of individuals (or organisations) to fulfil their obligations.

### **8.3.3 Capacity (human resource, financial and technical)**

The extent of an organisation's access to various assets and how they are utilised to expand adaptive capacity is an important determinant. Financial assets include funding available to organisations undertaking disaster management (DRR, preparedness and response), whilst human resources include the skills and knowledge of staff related to disaster management. Defining the technical capacity in a disaster response system is important for understanding how the system functions, how monitoring / evaluation of response outcomes is undertaken for identifying gaps for future exploration and analysis, and the capacity to adapt to unforeseen stresses such as climate change impacts.

As a key determinant of adaptive capacity in the Cook Islands, capacity (in terms of human, financial and technical resources) was found to generally constrain adaptive capacity due to limitations to access to a range of assets. Perceptions of levels of capacity, and what is considered adequate, varied amongst research participants. This was made clear in a workshop activity which focused on obtaining the views of participants on levels of capacity of various organisations within the DRS. The activity focused on coordination, human resources and skills and exposed interesting views. Whereas severe constraints in human resource capacity were mentioned in interviews, participants in this exercise gave some organisations relatively high scores for human resources, e.g. the MoH received scores of 3 and 4, Red Cross received 3 and 5, while Police (key in immediate disaster coordination) received 2.5 and 5. The MoH scores are perhaps the most surprising in light of staff shortages. However, it may point to the Cook Islanders wanting to draw on all of their own capacity first. It was mentioned several times that they wanted to look after their own people prior to requesting external assistance. To be able to do this they need material resources. For example, the WHO CC have been working on re-establishing the School of Nursing to be able to produce more local educated nurses. Full results are provided in Appendix 9.

Inherent in the capacity challenge is the small population of the Cook Islands, which a government interviewee acknowledged: *"In a small island state, we will never have all the technical skills."* Key DRS organisations, such as EMC1 who are the coordinating body for disaster risk management, only have two staff. This limited human resource capacity constrains their ability to fulfil their leadership and coordination role, and therefore has implications for the adaptive capacity of the DRS in the Cook Islands.

Accessing training, which is often delivered overseas, is difficult when staff are needed to perform their daily duties, as noted by workshop participants in terms of prioritising needs, and also a Met Service interviewee: *"Training is out of country a lot. The maximum we can send is two staff because they're needed here."* Capacity building in-country was identified as a priority, and needs to be incorporated as a matter of course, as highlighted by a Climate Change Office interviewee, regarding CCA projects:

*"There is not much use having developed countries funding CCA projects to be prepared for DRM [disaster risk management] if there's no component for capacity building."*

It was also noted that the small numbers of staff in organisations:

*“Makes capability and capacity development building tricky because you’re building capacity of individuals not institutions” (Cook Islands New Zealand Aid Programme).*

Interviewees also reported that this can lead to a loss of institutional knowledge, because *“[i]f a strong person goes, then you lose a lot.”* (New Zealand Aid Programme). The challenge of limited human resources and technical capacity was found to be occurring as a result of outward migration, as noted by a Met Services interviewee:

*“We have a lack of skilled personnel mainly because of outward migration. It’s not as we want it. There needs to be a policy to be created by government to have some incentive to keep skilled people.”*

Implications of limited human resource and technical flow on to the ability to implement programs, as reported by EMCI:

*“[i]n terms of the donor funding - there’s a lot of funds there. The challenge there is we don’t have the capacity to implement a lot of these things.”*

Adaptive capacity is therefore clearly constrained by the limited ability to make use of available funds for CCA programs.

Limited financial capacity was an issue raised by most interviewees, for example these quotes from government interviewees: *“Funding capacity is a core issue”* and *“Money is more an issue than finding people who can do the work”*. The financial capacity to cope with immediate disaster response has recently been boosted in the Cook Islands with the establishment of a Disaster Trust Fund of NZ\$200,000, as described by a government interviewee:

*“There has been money appropriated into a Disaster Trust Fund which can be directed immediately. [It is] not a big fund but allows money to be freed up immediately.”*

This was developed as a learning from past events, which revealed the limited ability of government ministries to respond due to severe funding constraints. Not all interviewees (both government and non-government) were aware of the Disaster Trust Fund, indicating that communication of its existence, and understanding of the ability to draw from it, still requires broader communication. Workshop participants raised the point that some funds would be better invested into preparedness activities, rather than keeping all funds for response.

Similarly, not all interview and workshop participants were aware of the recently developed Joint National Action Plan for Disaster Risk Management and Climate Change Adaptation (JNAP – see Government of the Cook Islands, 2012). Despite EMCI, the Climate Change Office and other organisations holding this document in high regard as the key guiding document for climate change and disaster planning, several research participants were unaware of its existence. The issue of limited capacity was once again raised as the reason for this, as few staff and funding provisions were provided for wide stakeholder consultation. A workshop participant noted that:

*“We have to question whether it [the JNAP] is of any use. If it sits on the shelf there is no use doing it. You have to get the right buy in to make it useful.”*

As reported in Chapter 5, the Cook Islands health workforce and material capacity is inadequate, particularly in times of disaster. In most disaster situations, health sector capacity is managed by drawing personnel from one area of the MoH to assist in another area, mainly from Rarotonga, where the majority of workforce is located. Workshop participants noted that “[t]here is no budget to increase the workforce, retired nurses have to come on board to assist. [It is] all hands on deck”. The chronic lack of financial resources, however, affects the delivery of health services in times of disasters, especially to other islands.

*“Without funding we can send 8 or 9 [personnel], because we can charter a flight; but without medication. With more funding we can take more staff and medicines”.*

The MoH felt that they could cope with a minor disaster. However there is a lack of the infrastructure, transport, supplies, and staff to cope with a large scale disaster.

*“Thinking about when we [are] hit by a big disaster, how can we manage: I don't know where we will get all these people, and we don't have enough beds in the wards, so we can't manage. We will need people to come in and assist us” (CI-MOH).*

Cook Islands Red Cross take a pragmatic approach to their limited resources, as noted by an interviewee:

*“We use what resources we have – money and connections – to make things happen, and we have become clever about this over the years. We don't say we don't have money, we can't do it, we find what we have to make things happen”.*

Part of the Red Cross's approach is to recognise connections between issues – for example disaster management and health at the community level. The Pacific Regional Health Program, for which the Red Cross has funding, therefore incorporates a disaster management angle.

Capacity challenges in the Cook Islands DRS provide a significant challenge to efficiency in disaster response, and constrain the adaptive capacity of the DRS, given the challenge in addressing current risk. Some capacity issues have been addressed in recent years, e.g. immediate financial capacity through the Disaster Trust Fund. However, a future focus towards capacity building across all sectors needs to be mainstreamed, with innovative approaches sought to ensure skills are not lost when key individuals move on. The flexible use of the Disaster Trust Fund (using it for DRR or disaster preparedness) was identified as a way to enact a future focus on disaster response. External assistance in times of disaster should acknowledge capacity (both existing and gaps) and always act to build skills, experience and knowledge throughout all stages of the disaster management cycle.

### **8.3.4 Risk perceptions**

This subjective determinant examining perceptions relates to an organisation's understanding of the risks of climate change and the likely impacts on their disaster response processes. “Perceived adaptation efficacy” refers to an organisation's belief in the effectiveness of adaptation actions and perceived adaptation costs refers to the

organisation's assumed costs (inclusive of monetary, personal time, effort) of undertaking the actions (Ekstrom et al., 2012; Kuruppu et al., 2011).

While risk perceptions were generally similar across organisations in the Cook Islands DRS, the degree to which risk reduction measures were implemented (e.g. policy development, technical upskilling and relocation of risk prone infrastructure) was constrained by human resource, technical and financial capacity, as described in the previous section.

There was general consensus amongst Cook Islands interviewees that risk reduction and disaster preparedness are important, for example, an EMCI interviewee made this clear:

*“If people are focused on disaster risk reduction then there is a possibility that there will be no disaster. That will make our work easy. If they don't do their jobs, then there will definitely be a disaster. And in terms of preparedness I am 100% behind that I think we should be prepared at all times”.*

Part of “doing their jobs” involves government ministries having a disaster risk management plan, which describes internal roles and responsibilities for times of disaster. These ministry disaster plans are a requirement under the Disaster Risk Management Act 2007; however, some government ministry's plans have not yet been developed, remain in draft, or are not widely communicated to staff, as noted by a NES interviewee:

*“[w]e don't have a Disaster Response Plan for our office. We have been talking about it, we know what to do but it's not written down.”*

Workshop participants also agreed on the importance of Disaster Response Plans, as they provide details of what to do and where to go. This reveals that despite organisations and individuals saying they acknowledge the importance of risk reduction and preparedness, actions are sometimes limited in putting these words into practice. EMCI voiced some frustrations in obtaining buy-in from other government agencies:

*“There is lot of preparation on our behalf and to me there was – not a failure – but it was a bit more challenging to get our agencies to respond as soon as we would like to.”*

Prioritisation of implementing preparedness actions is needed to support adaptive capacity of the DRS, especially since the Cook Islands DRS is dependent on few people, meaning that all individuals need to understand their (and each other's) roles and responsibilities in times of disaster response.

Most interviewees were aware that climate change had the potential to affect the frequency and severity of severe weather events, including tropical cyclones, with an interviewee from the Met Service reporting:

*“There may be fewer cyclones but those that happen are likely to be more intense. So we need some new policies to cater for those events also conveyed across to the remote areas.”*

Interviews revealed that it was not only climate change experts who were incorporating climate change into policies, as a MoH interviewee noted that:



*“It used to be just emergency and disaster, now we have talked about climate change. We never used to think of climate change affecting health but now we see it does. Even our strategic plan has a component of climate change and health and what’s our response to it.”*

While not always explicitly mentioned, climate change considerations were found to be incorporated where possible:

*“There’s no specific reference to climate change but if you’re building a clinic then they are now being built to withstand higher categories [of tropical cyclones]” (MoFA).*

There were of course limitations in relocating existing buildings, an issue raised by several interviewees, particularly the Met Service who note, regarding their building’s location (on the waterfront): *“There has been talk in government to relocate.”*

Climate change and its impacts were raised by several interviewees as one of a number of pressing issues for the Cook Islands. For example, two government interviewees noted that: *“Climate change isn’t THE issue. It’s part of the problem”* and

*“What’s relevant here is a move to work towards livelihoods, then they [communities] have a better capacity to cope with disaster than those without livelihoods”.*

Another interviewee noted strongly that *“[t]here is almost no need to talk about climate change as we are not even managing current risk”*; while a workshop participant noted that *“[w]e need to invest in things to do today, [more] than things that need to be done in the future”*. Broader development planning was also raised as an important factor, with one Cook Islands interviewee noting that:

*“People understand risks will increase with climate change. But risks are already increasing because of poor planning”.*

The perception of climate change and disaster risk was seen by some interviewees alongside development challenges, and one which could not be managed in isolation.

The perceptions of disaster risk and climate change are relatively consistent across the Cook Islands DRS. Most agree that climate change is shifting the baseline risk to a world with potentially more unpredictable and severe weather. What differs across the DRS is the degree to which this perception of risk has led to actions to reduce risk. Those more directly related to the issue (e.g. EMCI and the Met Service) have the advantage of risk being core to their work. Other sectors believe themselves to be more distanced from the issue, thus less concerned about taking steps to develop policy or plans for disaster response. Adaptive capacity is therefore somewhat constrained, as all stakeholders are not (for various reasons) prioritising risk reduction and preparedness as part of their work.

## **8.4 Conclusion**

The key determinants of adaptive capacity for the Cook Islands that were most significant were strongly related to each other and included communications, relationships, information and knowledge; leadership, management and governance; capacity and risk perceptions. As for other case study countries and across the regional DRS, relationships and trust were key to an effective and adaptable system of disaster response in the Cook Islands. With low institutional capacity due to a small

population, efficiency in disaster response requires the smooth flow of information between responding agencies, and these responding agencies need an understanding of the formal and informal modes of operating. If relationships are strong, then agents within the DRS are aware of each other's roles, responsibilities, capacity and gaps, which in turn lead to a legitimate and credible governance structure. Incoming support to the Cook Islands in times of disaster also need an awareness of the modes of operating, including issues surrounding culture and traditional governance structures. By doing so, external assistance can work towards building adaptive capacity in ways which are more sustainable and aligned with Cook Islands cultural practices.

Past events have revealed some gaps in the capacity and coordination of the Cook Islands' DRS, and some steps have been taken to overcome them, for example the establishment of the Disaster Trust Fund. The capacity of the health sector is highly constrained in times of disasters, however, it was clear that Cook Islanders are keen to draw on the capacity they have and be supported by external assistance only when gaps are evident. Leadership of key responding bodies, such as EMCI, is crucial for future adaptive capacity, however capacity constrains the ability of some organisations to take necessary steps in implementing important initiatives. Policies and plans are needed to ensure disaster response efforts (including disaster assessments) are appropriately coordinated, however some flexibility is needed given the nature of disasters. Such policies and plans need adequate consultation of all relevant stakeholders to ensure a collective level of ownership exists, resulting in an inclusive and collaborative DRS.

## 9. SAMOA

### 9.1 Country background overview

Samoa has a population of 187,820 (Samoa Bureau of Statistics, 2011) and is located in the south west Pacific. 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). Samoa is comprised of two main islands, Upolu and Savai'i, which are of volcanic origin, and several smaller islands. Samoa is a Polynesian country and has an estimated population of 217,000 (Daly et al., 2010).

The United Nations Development Programme (UNDP) Human Development Index (HDI) ranks Samoa 99th out of 187 countries. Despite its modest HDI, Samoa is still listed as a LDC; a topic of much discussion with the United Nations for several years. However the Government of Samoa is pushing the UN for an extension of its graduation, in part due to the devastating nature of the 2009 tsunami, with the new date for graduation from LDC status scheduled in 2014 (UNDESA, 2009).

#### 9.1.1 *Climate change impacts on disasters in Samoa*

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 than is currently the case with potentially less time in between such events (see Gero et al., 2012b).

#### 9.1.2 *Key disaster response organisations in Samoa*

Leadership throughout the DRS was viewed by interviewees as being strong and effective. The decision makers include all levels of society from the villages, provincial authorities, and district authorities up to national and feed information both ways. The UNOCHA cluster system is being implemented at a national scale in Samoa however it fits into the existing national disaster structure rather than the UNOCHA structure being imposed. The main organisations comprising the DRS include the following.

The **National Emergency Operation Centre (NEOC)**, is the operational centre from which disaster response is coordinated.

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, 2011a). 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.

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, 2011a). 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 oversees the implementation of the National Disaster Management Plan during disasters (Government of Samoa, 2011a).

**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 Women, Community and Social Development, which has links to the local village level governance.

**Samoa Red Cross Society (SRCS)** and the Government of Samoa have a 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.

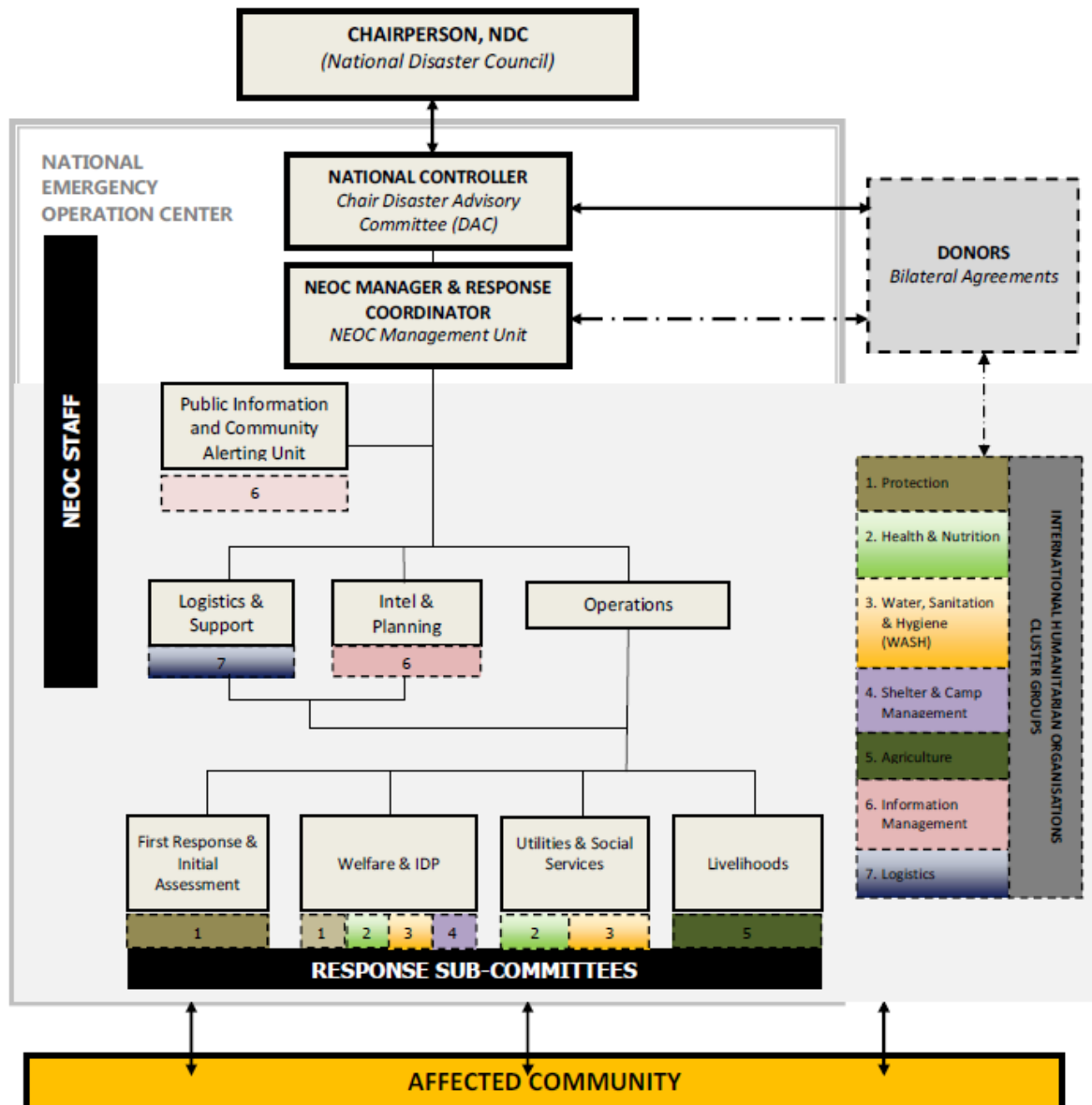
**Samoa Council of Churches** is also an important stakeholder in disaster response, given the high proportion of Samoans who identify strongly with the Church.

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 World Meteorological Organization (WMO) all have a presence in

Apia and are also active in disaster response. Donors such as AusAID and New Zealand Aid Programme are also active in times of disaster response and coordinate with national institutional arrangements as necessary (e.g. through the DAC).

Other organisations provide services considered critical to effective disaster were also identified by workshop respondents in Samoa such as as donors, and providers of scholarships for disaster training including Rotary, New Zealand Aid Programme, UNDP, WHO, Japanese International Cooperation Agency (JICA).

The institutional structure including the above organisations is illustrated in Figure 7 below.



**Figure 7: Samoa's disaster response institutional arrangements**  
(Source: Government of Samoa, 2011a).

Box 7 provides an example of past disaster response, and describes some of the roles of organisations mentioned above.

### Box 7: Example of past response in Samoa

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).

However the 2009 tsunami was the focus for all the respondents in this research and while not directly induced by climate, is used as the example as it required the rapid response structures in the DRS to be implemented. On 29 September 2009, an earthquake measuring 8.2 on the Richter scale caused, within a matter of minutes, successive tsunami waves of up to 15 meters in height causing widespread destruction (UNOCHA, 2012a). An estimated 3,000 Samoans had completely lost their homes and 2,000 houses suffered severe damage. With 143 people confirmed dead, and four people still missing, the tsunami response and associated recovery presented a major challenge to the nation of 184,000 inhabitants (UNOCHA, 2012a).

After a request by Samoa, a United Nations Disaster Assessment and Coordination (UNDAC) Team provided coordination support to the emergency relief operations and initial assessments through a team from the Government of Samoa, Red Cross, NGO's, Australia, New Zealand and the UN Country Team. The Inter Agency Standing Committee, under the leadership of the Emergency Relief Coordinator, then activated the cluster system in Samoa (UNOCHA, 2012a).

*"AusAID was the first donor to be approached for funding. Teams from Australia were in country within 24 hours of the disaster, and a disaster response centre set up. This reflects the fact that the Government of Australia is ready and willing to assist. In the field Australian responders assisted with medical attention, search and rescue, and translation services."* (AusAID).

The Church played a large role in the DRS post tsunami. According to ADRA: "During the tsunami they distributed mainly clean-up tools. Church members donated a lot of money to the churches and they have links to the Church leaders in each village." However, according to Fire and Emergency Service (FES), coordination was a major issue:

*"During the last disaster, the country was not very organised, so the response wasn't well managed. People from overseas were going where they pleased. All organisations started out working on their own in different areas. At that time there were no policies in place to coordinate multi-stakeholder response. This became a major challenge and the need for an emergency operations centre was soon realised. The temporary EOC was set up in the field. The affected areas were then mapped using a grid, and each team was dispatched to a grid for thorough searching."*

The MoH coordinating the health workforce were under-resourced and thankful for the incoming Samoan's who lived in New Zealand.

*"They didn't have enough staff so there was a doubling up of responsibilities. An approach that worked well was the arrival of the Samoan Health Mission from New Zealand made of health nurses and professionals working in New Zealand. Their assistance fitted well as they knew the local context in terms of meeting psychosocial needs and knew of tools and medicines relevant to Samoa."*

As the 2009 Tsunami was such a large scale and recent disaster it was fresh in the minds of interviewees during the time of this research and significantly informed their views.

## 9.2 Humanitarian needs

A summary of the DRS actors responsibilities relating to the four themes of the research in Vanuatu is provided below.

**Table 7: Organisations active in disaster response in Samoa in relation to the 4 post-disaster humanitarian needs, as identified by in-country stakeholders.**

Immediate Humanitarian Needs:	Responsible National Actors and Stakeholders
Health Care	<ul style="list-style-type: none"> <li>Churches, Fire Authority, Ministry of Health, Rotary, private GPs, Red Cross, WHO, Village Council</li> </ul>
Food and Nutrition	<ul style="list-style-type: none"> <li>Caritas, Churches, FAO, Ministry of Agriculture, Ministry of Health, Rotary, Nurses Association, Red Cross, SUNGO, Village Council</li> </ul>
Water and Sanitation	<ul style="list-style-type: none"> <li>Caritas, Churches, Ministry of Health, Rotary, Nurses Association, Red Cross, SUNGO, Village Council, Ministry of Works, Transport and Infrastructure</li> </ul>
Psychosocial needs	<ul style="list-style-type: none"> <li>Caritas, Churches, Ministry of Health, National Health Services, Rotary, Red Cross, SUNGO, Village Council</li> </ul>

### 9.2.1 Health care

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), Samoa has a relatively low HRH capacity. The HRH Density is <1 per 1000 population for physicians, nurses and midwives (WHO 2011). The uneven distribution of health workers that results in low availability in rural/remote and poor urban socioeconomic areas is 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, 2011b).

In times of disaster, health professionals from overseas are often requested to assist health services which are primarily delivered by the Ministry of health and National Health Services, supported by WHO, several private health care providers and the Rotary club. However in times of disaster, the HRH shortages in remote areas cause limitations, for instance an interviewee from ADRA stated:

*“During the tsunami the district hospitals couldn’t cope and everyone was transported to the central hospital.”*

A weakness pointed out by one group of health care professionals indicated that the capacity to deal with infectious disease outbreaks after disasters was limited.

*“There will also be increases cases of water-borne and vector-borne diseases. Our capacity to monitor these isn’t very good in Samoa. We don’t have on-site testing kits in the peripheral hospitals; these are centralised in Apia which hinders early detection” (OUM, Samoa).*

Currently health care needs are only partially dealt with by existing HRH capacity but that capacity is insufficient to address both the immediate needs during a disaster and the long term health issues that ensue.

### **9.2.2 Water, sanitation and hygiene (WASH)**

WASH is a significant and urgent issue in times of disaster, as well as an ongoing challenge with the provision of fresh water and adequate sanitation across Samoa's islands. Within the context of disasters, according to the NDMO, the:

*“Ministry of Health (MOH) and National Health Services (NHS) are the lead in Water, Sanitation and Hygiene cluster.” (NDMO, Samoa).*

However under the WASH Sub-Sector Master Plan, four sectors are involved in the WASH sector: Ministry of Natural Resources and Environment (landfills), MOH (hygiene, water quality and food safety), Water Authority (Water Supply), Samoa Ministry of Works and Transport. Coordination among the WASH sector needs to be improved and WASH is an ongoing issue on Samoa:

*“Water and sanitation was an issue because people moved inland after the tsunami into areas where there was no piped water system. The government had to find source of water (Lake). The recovery in Samoa [after the tsunami] was extremely quick, but it took almost a year to get a piped water system running in these villages.” (New Zealand Aid Programme).*

Water quality and supply is an issue in Samoa that needs addressing which is exacerbated during times of disaster and may have ongoing issues arising because of the changing climate.

*“People in the remote villages are still using natural drinking water supplies such as rivers and streams as drinking water catchments so there is a need to study the water quality in these, especially from saltwater intrusion which we believe is causing increased rates of hypertension. If you are looking at capacity to respond to climate change then you need to look at these issues.” (OUM)*

Therefore WASH is a concern in Samoa currently as well as ongoing issues. Coordination needs improving within the WASH sector to facilitate the cohesion of the four areas involved. WASH is an ongoing issue on Samoa.

### **9.2.3 Food and nutrition**

Following a disaster, relief food items are provided using a multi-sectoral approach which includes all levels of civil society and the private sector. Food was donated by Pacific Council of Churches, New Zealand Aid Programme and other donors. However it is the Church that plays the most integral role in providing food to the community in disasters.

*“The Mormon Church was the first to be on the ground when the tsunami hit as they had all the necessary resources in terms of food, clothing and money at the time of disaster. They were able to land helicopters and distribute food and clothing immediately, long before the Red Cross and Government came in to do their assessments. They opened up their Church in the affected communities as places of shelter, immunisation as well as addressing psychosocial needs.” (Min. of Agriculture).*



While food is donated and distributed through several avenues, organisation of this process is needed particularly to reduce duplication.

The majority of respondents however discussed long term food security issues in the context of climate change as affecting their adaptive capacity. Several interviewees noted the government is actively addressing longer term food security and livelihoods through the introduction of several programs. For instance:

*“The government programmes such as the food security projects are encouraging people to stay on the outer islands.”* (Samoa Council of Churches).

*“After the tsunami, the government introduced a stimulus package for Samoans who were unemployed and instead of providing money they taught farming and gardening skills and provided seeds and training.”* (Nurses Association).

Several NGOs Samoa are also involved in longer term food security and livelihoods projects. One example is the Women in Business that helped people affected by the tsunami to start planting crops such as lady finger bananas, yams and also built coconut oil manufacturing sites in some of the tsunami affected areas. Another example is ADRA that is helping communities through projects that improve livelihoods e.g., food security and income generation.

#### **9.2.4 Psychosocial needs**

As for the other case study countries, psychosocial support as an element of disaster response is a clear gap in Samoa. Samoa’s Mental Health Unit under the National Health System is the key point of contact to address the psychosocial needs of the community. Several other organisations are also involved including: The Red Cross Society, Village Councils, Churches/Council of Churches, Theological colleges and several local NGO groups. However, the provision of services to meet the psychosocial needs was considered to be inadequate, particularly in reference to the most recent disaster. The overall situation on psychosocial services was summed up by several respondents.

*“We also need investment in post trauma counselling and education services for nurses. Currently this is not available. In general there are no facilities for proper counselling of people; it is good to document people’s stories about how they feel after an event. Mental Health Unit at time of tsunami did help out with counselling programmes but their capacity needs to be strengthened”* (Samoa Nurses Association).

*“Faith based systems and their interventions were already entrenched in the social system so people were able to turn to these during the tsunami. This is why people were more resilient than expected; they were able to recover quickly because of these social groups. However, we need more structures [and] systems to deal with psychosocial issues e.g. in child psychology, [as] we don’t have these skills in-country. After the tsunami a lot of people turned to substance abuse, alcohol abuse and domestic violence.”* (Samoa OUM).

The lack of psychosocial services affected both the community and first responders, including health care professionals. A few interviewees indicated that counseling services were not immediately considered for the actual responders. The need was recognised later and some organisations had to seek external assistance (from New Zealand Aid Programme) to provide psychological counselling for their employees. ADRA noted:

*“The government sent councillors from Australia and New Zealand to counsel those that were affected. The workers and staff were also provided counselling.”*

*“Psychosocial needs are a major challenge in disasters. Initially no consideration was given to this for either community or the emergency service providers. The MoH and the National Health Services along with some NGOs are the main actors in addressing psychosocial needs. NGOs mobilised Church groups to assist with the psychosocial counselling. At some point during the tsunami response it was recognised that responders were also affected and needed counselling and so were invited to participate in the counselling program- including training for those involved in disaster response. It is not customary for the community to talk about their emotions as traditionally people don't discuss personal issues. Pastoral Care was provided through the Theological colleges by trained personnel.” (Min of Finance, Samoa).*

The impact of the 2009 tsunami was still evident within the society and the memories were still quite fresh and personal for many respondents. It is therefore likely that the magnitude and impact of the disaster highlighted the large gaps in meeting psychosocial needs in Samoa as compared with other case study countries, whereas in fact other countries probably have similar needs.

### **9.3 Key determinants of adaptive capacity in Samoa**

A key research question concerned identification of the most influential determinants on adaptive capacity of the DRS of each case study PIC, in this case Samoa. The themes discussed below were identified through a rigorous systematic coding process (described earlier in Chapter 2) of all interview data, workshop data and observations from Samoa.

The four main key determinants identified as of most important influence on the adaptive capacity of Samoa's DRS were (in order of influence): 1) traditional and social practices; 2) resource capacity; 3) leadership and management; and 4) tools, methods and approaches.

#### **9.3.1 Traditional and social practices**

Three main thematic areas emerged within the traditional and social practices as important areas that were either supporting or constraining the adaptive capacity of the Samoan DRS and broader society to respond to disaster. These are agricultural and subsistence practices; village leadership and community involvement; and Church and belief systems.

##### **Agriculture and subsistence practices**

In Samoa, there was evidence that the government, NGOs and the community were looking at ways to address long-term food supply and security in the context of climate change. By increasing food security in normal times the population is better equipped to withstand a major disaster as their overall health is better and their livelihoods more secure. A majority of respondents indicated that the government is encouraging people to go back to traditional farming practices and diets and to move away from the processed foods and imported products. To this end, the Ministry of Agriculture has developed strategies to address food security. Some of these strategies and activities include: community-based agricultural projects; introduction of traditional foods into diets; promotion of organic farming; agricultural shows; and providing skills in marketing products. For instance:

*“The Ministry of Agriculture has started agriculture shows that include farmer competitions to [encourage farmers to] display their produce and shows how people are involved in agriculture and food security” (Ministry of Agriculture).*

Samoa NGOs including ADRA, Women in Business and Red Cross are also actively supporting food security and livelihoods projects. According to an ADRA representative,

*“[w]e are introducing crops that are drought tolerant and healthy at the same time. We are also introducing composting, financial training and [assistance in] finding markets to sell the produce as well.” (ADRA)*

However poor dietary practices resulting in non-communicable diseases and indiscriminate fishing practices decreasing fish populations were identified as factors that were likely to constrain the adaptive capacity of the country to meet their food and nutrition needs which would only be compounded during times of disaster.

### **Village leadership and community involvement**

Several respondents indicated that strong community leadership and support systems in Samoa enabled people to bounce back from the effects of disasters leading to enhanced adaptive capacity. Coordination during times of disaster at the village level involves regular meetings, including schools, Churches and the community at large. The Women’s Committees at village level are key institutions for communities.

One NGO indicated that their programs are channelled through the village representatives who report directly to the Ministry of Women, Community and Social Development (MWCSD).

*“The Ministry of Women, Community and Social Development ensures that government agents at local levels are mobilised in times of disaster to ensure relief reaches those in need and that data is fed to the national government.”*

The fact that most Samoans own their own land enables them to relocate readily, should a hazard develop where they live. Policies are in place to guide the evacuation and relocation of persons and civil society and the community are aware of these and endorse them. The active involvement of traditional leaders and of the community in the planning and implementation of disaster response provides a strong foundation for a proactive approach to disaster preparedness. This strong leadership coupled with a strong family and village based system supports the adaptive capacity for disaster response.

Through lessons learned from the 2009 Tsunami several systems are in place at the community level:

*“In Samoa we have a strong extended family system so we always have a strong support system.” (NDMO, Samoa).*

*“A policy has been put in place [to ensure] that if an earthquake is serious enough to be felt, the community should immediately move to [the] identified sites at higher ground and NOT wait for official warning.” (Min. Finance, Samoa).*

*“Everyone is instructed that once they hear the warning they should come to the shelter with their emergency backpacks (already prepared with emergency supplies to last 48 hours) and walk up to the Primary School. The people who*

*live further inland are then instructed to vacate their places and move further inland to allow those moving from below to occupy their places.”* (Church of Jesus Christ of Latter Day Saints, Samoa)

The long term implementation of these plans is more likely to succeed as they are integrated into the culture of the community rather than driven by high-level policies. A lesson that could be learned across all PICs. Traditional systems such as this help strengthen adaptive capacity of the community in the long term even if the interval between disasters is lengthy.

However the high cost of living in Samoa has led to both a heavy reliance on remittances from overseas relatives and a high urban drift from villages to the main city of Apia. Reliance on remittances has resulted in a dependency mentality and increased financial vulnerability in the population. This prevents future planning and can therefore undermine the process of building adaptive capacity. *“People who are vulnerable are those households where no one works or rely mainly on remittances”* (ADRA). The urban drift to Apia to allow better access to education and employment opportunities also affects people’s vulnerability as it weakens the social structures (social capital) and support mechanisms available in the villages further creating vulnerability to shocks.

Furthermore, following the 2009 tsunami some NGOs were offering ‘cash-for-work’ which according to one government interviewee had an impact on the adaptive capacity of the community:

*“When the local authorities asked for community assistance later, they requested payment. This was very unusual as previously ‘community spirit’ was the default way of response. This has affected the adaptation of the community.”*

### **Church and belief systems**

The Church plays a very important role in Samoan culture and social life and is actively involved in helping the community to cope in times of disaster. Many respondents indicated that churches are well organised and that very strong support systems exist through churches. They are a hub for communicating information and they have a wealth of volunteers to assist in disaster response activities. For instance interviews made comments such as:

*“The Church is the most important organisation in times of disasters in Samoa.”* (Council of Churches).

*“Each stakeholder [group of churches] had 5-6 mini buses going out daily with volunteers and relief to assist the affected families.”* (Church of Jesus Christ of Latter Day Saints, Samoa).

*“In a disaster, both members and non-members are invited to seek refuge at each site (shelter). The sites are fortified to withstand all types of disasters and provide shelter for the entire community in times of disasters.”* (Church of Jesus Christ of Latter Day Saints, Samoa).

Mention was made specifically of the role of the Church of Jesus Christ of Latter Day Saints, Samoa, which had a very well organised disaster response system:

*“The Church of Jesus Christ of Latter Day Saints, Samoa (LDS) was the first to be on the ground when the tsunami hit. They were able to land helicopters and distribute food and clothing immediately, long before the Government and other*

*responders came in to do their assessments. They opened up their Church in the affected communities as places of shelter, immunisation as well as addressing psychosocial needs.” (MAF-Transport)*

Respondents across both government and NGOs suggested that the faith based belief systems (mainly Christianity) in Samoa have built resilience in people and serves to provide strong elements for supporting their adaptive capacity. Different elements of this were evident in the following comment:

*“Faith based systems and their interventions were already entrenched in the social system so people were able to turn to these during the tsunami. This is why people were more resilient than expected; they were able to recover quickly because of these social groups.” (OUM, Samoa).*

Two constraints evident in this otherwise supportive system are some traditional practises that hinder disaster response. For instance one traditional practice noted by workshop participants was that during the 2009 tsunami the dead were given priority for transportation during the triage process and the injured left until the dead were removed. One participant indicated that this was *“[s]een culturally as a way of showing respect to the dead.”* However it is possible that this practice may have reduced the access to care for the injured.

### **9.3.2 Resource capacity (human resource, financial and technical)**

Limited financial, human and technical resources for disaster response were identified as a challenge in Samoa. However these limitations were more pronounced with respect to health care resources (see Chapter 5). Inadequate quantities of appropriate emergency supplies was cited as an issue in the past and emphasises the need for attention to what supplies and tools are needed in the field during disaster response (MOH/NHS Samoa, Nurses Assoc). Also human resource challenges constrain adaptive capacity since there are not adequate healthcare personnel to respond. However, it was noted, *“[m]ulti-skilling communities to help themselves partly addressed the shortage of nurses and medical practitioners in Samoa”* (OUM, Samoa).

Because health care in Samoa is not free it was evident during the tsunami this placed constraints on the adaptive capacity of the health system by placing further burden on certain health care providers, *“[m]ost people prefer to go to the central hospital where service is cheaper and provide better medical attention”* (ADRA, Samoa). A representative of the NHS felt that in order to address these issues, there was a:

*“need to develop the capacity of staff at the divisional level to treat victims and how to [determine] when it’s relevant to recommend patients to the central hospital; this [will] then reduce the burden on staff at the main hospitals”* (MOH/NHS Samoa).

Financial capacity and the organisation and distribution of funds was also noted as a weakness of the DRS. Disaster response in Samoa is funded mainly by the fiscal budget through an emergency fund (referred by interviewees as Unforeseen Events Fund) that facilitates the immediate provision of emergency supplies after a disaster. There are also clear arrangements with the private sector for the delivery of emergency supplies after a disaster. (Min Finance). Respective agencies can directly approach donors for financial assistance; however, all funds are managed through the Aid Coordination Unit of the Ministry of Finance. (NDMO)

*“All proposals arising out of unforeseen events (floods, tsunamis etc) are addressed through this fund (unforeseen events fund), and it is a very transparent process with high level accountability.” (MWTI)*

The Aid Coordination Unit has put into place accounting systems to ensure transparency and accountability as a result of past negative experiences where the government was accused of misappropriation of relief funds.

The interview process also revealed further financial support is provided by the private sector and civil society, as noted by the Ministry of Finance, *“[t]he private sector and community groups raised over \$14million for post-tsunami rehabilitation.”*

However, the organisation and distribution of these funds was not efficient, the Council of Churches noted that help did not reach many in need during the initial phases post disaster.

*“This was very disappointing because people believed that God had showered blessings on the country in the magnitude of aid that was supplied.” (Council of Churches)*

This breakdown in organisation and distribution of funding has been recognised by the DRS and the:

*“Ministry of Finance is developing a Climate Change Framework for Samoa and will look at how to better channel donor funding. We [Red Cross] can pool funding from other programmes and that is part of our flexible structure” (Red Cross).*

A lack of technical capacity for immediate response, and weak relationships between responders, was also highlighted by many interviewees. The FES provided emergency paramedics but lack adequate numbers of ambulances, whilst NHS provided ambulances but lack paramedical staff. However, there was some indication of *“a lack of cohesion between these two services.”*

A final capacity issue was the lack of trained professionals to deal with psychosocial needs, which was identified by nearly all respondents in Samoa. The need was considered great, since there was little to no in-country capacity aside from the Church to deal address this issue.

Lack of resources constrains adaptive capacity of Samoa. During a disaster the human resources are stretched, particularly within the health care system; financial organisation and distribution may not reach those most in need; and technical expertise and cohesion between responders is lacking.

### **9.3.3 Leadership and management**

Following the 2009 tsunami many lessons learned and are currently being integrated into disaster plans and structures. Strengths in leadership and management that were highlighted by interviewees and during the workshop included: good representation of all stakeholders on the DAC, inter-sectorial collaboration and community participation, and a well organised NDMO. Weaknesses that were highlighted were: financial management, under resourced NDMO, and coordination of NGOs.

Government and civil society organisations are well represented on the DAC, and most organisations, including civil society are involved in disaster planning:

*“During a disaster, the normal procedures are suspended and a National Advisory Board comes in to deal with all immediate relief donations and to help transition into the recovery phase. A recovery plan is developed in collaboration with all sectors and approved by the DAC.” (Min of Finance).*

The NDMO in Samoa is well organised, recognised and provides clear leadership. However, they are severely under-resourced with currently only two people on staff.

*“They [NDMO] have a very good disaster management plan, but few staff. They depend highly on their very well skilled DMO manager but if this person is away then this becomes a major issue.” (AusAID)*

There is much evidence of inter-sectoral collaboration and community participation in the disaster response decision making process. The National Advisory Board deals with all immediate relief donations and helps transition into the recovery phase, guided by a recovery plan, which was developed in collaboration with all sectors and approved by the DAC. All villages are required to have disaster plans and response teams under the direction of the Mayor.

*“Under the Disaster Management Act, each Ministry has their own Disaster and Emergency Response plan that stipulates how to respond during and after a disaster.” (MWTI).*

However not all respondents agreed on the smooth implementation of response mechanism: *“There were many gaps in coordination of the response. This resulted in the Government being accused of misappropriation of funds” (Council of Churches).*

An Aid Coordination Unit has been set up in the Ministry of Finance through which all DRR and climate change funds are channelled and managed centrally to avoid duplication. There is a national committee which includes most project coordinators (donors) and lead agencies and is supported by the Samoan Climate Change Policy. However this is not supported by legislation.

*“There is only a national climate change policy in Samoa but it does not mandate anyone to do anything. There is no implementation to support the policy. The government is currently looking into climate change legislation” (Red Cross)*

Evaluation of past response has resulted in the identification of gaps in the DRS, which were used as lessons learned across sectors, and has resulted in strong partnerships across government and non-government sectors. For instance:

*“Coordination of NGOs is still a problem. One strategy/recommendation is to place the information on what procedure NGOs should follow on each Ministry’s website. This includes contact details for whom to contact in each department if interested in providing aid to a disaster affected country” (Min of Finance)*

Disaster assessments historically were done by each sector individually due to lack of policies to coordinate multi-stakeholder response. Various lessons were learned post-tsunami which led to the revision of the national disaster plan and disaster response arrangements. According to interviewees disaster response now utilises a multi-stakeholder approach coordinated by the NDMO.

Coordination of disaster response is reliant on a combination of communications and existing relationships. However respondents suggested there were some areas that needed strengthening. These include: (i) strengthen lines and channels of communication and risk communication; (ii) strengthen partnerships in terms of commitment and team work; (iii) clearly identify roles and responsibilities of each organisation, and (iv) communication of procedures to NGOs through better explanation of the Disaster Management Plan and clear identification of NGO roles during disaster and emergency and facilitate ongoing awareness of these roles. *“The main problem now is boosting our communication capacity.”* (FES)

The adaptive capacity of Samoa is evidenced by participants in this research noting that Samoan stakeholders in disaster response are continuing to work towards a more coordinated DRS by integrated lessons learned from the tsunami in terms of the management of funds, coordination of NGOs, inter sectorial and intergovernmental communication and relationships and the formalisation through legislation.

#### **9.3.4 Tools, methods, approaches**

The adaptive capacity of the DRS in Samoa is enhanced through a concentration on preparation through training, drills, early warning systems, capacity building, and prepositioning of emergency supplies. This is coordinated through a whole of government/ a whole of country approach to address all hazards, and includes risk management and recovery.

Simulation exercises, training and drills are conducted at the village level and coordinated by the Village Teams in collaboration with the Red Cross. The NDMO and the Red Cross undertake drills to prepare all DAC members and their organisations for future events. The advantage of this was seen because, for example, simulation exercises were conducted about three weeks before the tsunami struck so people were well prepared to respond, and several aftershocks were used as drills.

*“We are fostering self-reliant communities because they are the first responders. This is done through training and drills, coordinated by the Village Teams and monitored by the Red Cross.”* (NDMO, Samoa)

The country is also looking at improving early warning systems including training in some sectors.

*“Climate services [within the Ministry of Natural Resources and Environment] provide early warning for climate issues and cater to the needs of all sectors.”* (NDMO, Samoa)

Other methods utilised by the government to increase the capacity of individuals and communities to withstand both short and long term implications of climate change are the introduction of stimulus packages for Samoans who were unemployed and instead of providing money they teach skills in farming and gardening, provided seeds and training. The government as well as NGOs involved in agricultural programmes are encouraging organic farming practices, incorporating Integrated Crop Pest Management approaches.

Also, after the tsunami the government is now looking at pre-positioning of emergency supplies similar to what is done by NGOs like Red Cross, and is building a database of where these are located.

Disaster awareness programmes are being implemented by various sectors. For example, the Ministry of Agriculture provides advice for farmers through TV and radio



in preparation for natural disasters on what to do before, during and after disasters and how to preserve different crops.

Several of these approaches focus on building the resilience of the population to withstand shocks and recover at a faster rate. Using lessons learned and building these lessons into methods and approaches such as training, drills, early warning systems, capacity building, and prepositioning of emergency supplies is evidence of adaptive capacity of the DRS.

## **9.4 Conclusion**

The key determinants of adaptive capacity for Samoa that were most significant were traditional and social practices; resource capacity; leadership and management; and tools, methods and approaches.

Traditional and social practices were found to play a major role in supporting the affected communities after a disaster. The Church and family/social structures for the most part enhance the adaptive capacity as individuals feel supported. This strength has also led to informal and formal practices of equipping the communities with rules of engagement when a disaster strikes. By including government, NGOs, the Church and the community in the decision making processes, education and training and lessons learned are more easily integrated into the DRS and sustainable practises made possible.

There is a strain on resource capacity in Samoa in particular with human resources for health, financial capacity and technical capacity. This makes the DRS more vulnerable as the HRH issues are causing the health system to be over stretched in times of disaster. Weak financial capacity is causing a reliance on remittances and is also having a detrimental impact on social practices through movement from the village to the main city of Apia. Also poor financial organisation of incoming donor funding, while currently being addressed, has caused issues in the past. During the immediate period after the tsunami a lack of technical capacity of front line responders was further exacerbated by strained relationships between organisations, causing confusion, and both duplication and gaps in response. Resource capacity would need to be improved in order to build long term adaptive capacity.

The NDMO is considered to be strong in leadership but lacks human resources. However as the tsunami was so recent there are many lessons learned being discussed and implemented throughout the disaster response organisations. Tools, methods and approaches are being incorporated across all levels of the society including the government, NGOs and civil societies. Some of these are yet to be implemented and/or realised but appear to enhance the adaptive capacity of the DRS.

## 10. DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

This research set out to investigate adaptive capacity from two perspectives. Firstly, it investigated the adaptive capacity of the DRS in PICs in terms of internal coordination, capacity, and how external assistance is received. Secondly, it investigated the adaptive capacity of Australian emergency response organisations to provide effective disaster response, given the potentially heightened risk of simultaneous disasters under a changing climate. This chapter brings together key findings and discussion on how they answer the research questions.

It is structured to address each of the three research questions. This chapter provides both a synthesis of the findings across the four countries as well as describes relevant implications and recommendations for policy-makers and practitioners. Recommendations are provided for both Australian and PIC DRS organisations and lead agencies are noted *in italics* in brackets for each recommendation.

### 10.1 Research Question 1: What constitutes the DRS for immediate humanitarian needs post-disaster?

Research Question 1 asks: 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)?

The scope of this research focused on these four identified immediate humanitarian needs, with the aim of developing specific and relevant policy recommendations. The DRS for each of the four humanitarian needs is described below.

#### 10.1.1 Health care

In the four case study countries, health care needs are met mainly by the national health services and supported by various NGOs, UN agencies such as WHO and UNICEF and bilateral donor programs. Overall, the health sector was actively involved in disaster coordination at the national level, providing frontline response to the health care needs of the population in each of the case study countries. There was also evidence of various policies in place to coordinate human resources for health in the context of disaster response. However, having a policy in place was not a guarantee of its implementation. It was evident across all countries that health personnel are willing to provide health care and want to be the first respondents to the immediate needs of their community. Local nurses normally provide the first assessment of a disaster area being the most knowledgeable person of the community and health care needs. However, the effectiveness of the health care response is often significantly constrained by limited resources and workforce capacity to respond at the moment of the disasters. Health professionals were willing to respond to the immediate health care needs, however their main concern is the provision of adequate resources to support their response.

Australia’s international disaster response involves both state and non-state actors that respond to the immediate humanitarian needs in PICs. This is facilitated by several inter-organisational mechanisms at the Australian national level to facilitate planning, coordination and delivery of the necessary response. Australian organisations provided some of health care services; however the greatest capacity for emergency health care is available through the ADF and AusMAT. Neither of these mechanisms was activated in a recent disaster in the Pacific. However, technical personnel provided through

RedR and other ANGOs are relied on by UNOCHA and the PHT where the needs arise.

Australian organisations acknowledged that a request (from a PIC) for emergency medical care from Australia was an indication that the health care capacity of the respective PIC had exceeded its limit. This research found that the availability of emergency medical staff from Australia and elsewhere and support for PICs is somewhat limited. Some of the healthcare needs can be outside the scope of practice of the ADF health care personnel (e.g. obstetrics and gynaecology) and New Zealand has limited capacity for deploying field medical care offshore.

#### **Key Recommendations:**

- MoH should ensure that adequate considerations are given to HRH needs for disaster response under a changing climate, in any new or revised National Health Plans or HRH strategic policies
- PICs MoH to lead (supported by Australian and regional / international organisations) the assessment of how the health workforce capacity can be improved in terms of numbers, skills and competencies in the context of changed patterns of disasters.
- Australian DRS organisations to address the capacity of Australian and New Zealand field medical services with respect to the needs that may be faced in the field in times of disasters. Some of these gaps can be addressed through continuing professional development programs specifically designed for emergency response.
- Australian DRS organisations in partnership with PIC DRS organisations to provide ongoing educational support and capacity building for nurses in PICs, especially those who are first respondents to the disaster.

#### **10.1.2 Water, sanitation and hygiene (WASH)**

WASH is an ongoing development issue for many PICs, and as a result several key DRS organisations prioritise WASH and are relatively well equipped to source materials and trained personnel either internally or externally. This area was heavily served by local and international NGOs in Cook Islands, Fiji and Vanuatu. NGOs prioritising WASH were fewer in Samoa, and WASH needs were provided by four government agencies. Australian resources were well placed to respond to Water, sanitation and hygiene (WASH) needs, as the majority of ANGOs focus on this area and possess technical capacity to respond. WASH appeared to receive the greatest attention in comparison with the other three humanitarian needs post-disaster.

#### **10.1.3 Food and nutrition**

Food supply can be adversely affected by disasters both in the short term and long term. Disasters impact on the availability and supply of food, the quality and variety of foods available for adequate nutritional needs. This can lead to long term health issues, some of which can be severe, particularly in vulnerable groups such as young children, people with chronic diseases, nursing and pregnant women (Urbano et al., 2010; Maclellan, 2011; WHO/SEARO, 2007a).

Food and nutrition were not highly prioritised by disaster response organisations in the short term following a disaster. This suggests that immediate food and nutrition needs post disaster was less of an issue for PICs, and could be a reflection of the subsistence livelihoods of much of the population in case study countries, providing adequate food sources after a disaster occurs. Where food and nutrition needs were identified, the Church and faith-based NGOs such as ADRA play an integral role in providing food to the community in disasters, and food packages were distributed with the assistance of Red Cross volunteers. More emphasis was placed on long term food security, which was a major issue identified across all PICs. The seriousness of this issue was made evident by several government, donor and NGO initiatives focusing on food security, climate change and resilient livelihoods.

#### **10.1.4 Psychosocial needs**

Psychosocial concerns can be both acute and chronic following a disaster, and may arise from the impact of displacement, loss of life, property, and the sheer stress of the disaster itself (WHO/SEARO, 2007a). Chronic psychosocial health conditions can be exacerbated by disasters and hence there is need for adequately qualified personnel to provide special trauma counselling and support systems to assist affected communities to coping with the effects of the disaster (Urbano et al., 2010; WHO/SEARO, 2007a).

This research found that all four case study countries lacked the capacity to meet post-disaster psychosocial needs. In some locations NGOs are assisting with psychosocial needs (as noted in Table 3), however, there is no systemic support available in a widespread way, and not for health care staff involved in disaster response. This area was least served by Australian organisations and has resulted in heavy reliance on local NGOs and the Church community to assist with meeting the psychosocial needs of disaster affected communities. This is culturally appropriate for the affected population, but has implications for the ability of health care workers and other community leaders to function effectively in times of disasters. The strong Christian faith and abundance of faith-based support systems in PICs means that the Church is a ready source of spiritual comfort and counselling. However, the capacity to deal with acute mental health and psychological issues arising from or exacerbated by disasters is limited; a fact acknowledged by health professionals, Church leaders, and government respondents alike across the case study countries. Efforts to address this gap are being made, for example there was a meeting of mental health experts in Suva in August 2012 to discuss post-disaster mental health and psychosocial support (see Burese, 2012).

Psychosocial support is one of the areas for which overseas personnel are sought to bridge this internal gap in PICs. However, this has limitations since there are cultural sensitivities unique to each country that must be understood and incorporated in meeting psychosocial needs of the affected individual /community. The lack of psychosocial care for health care workers involved in the response is also critical, as workers are exposed for long periods to persons affected by trauma and loss, and in small populations like the PICs, health care workers often know or are related to the affected persons. This can affect the long term capacity of health care workers to function efficiently and effectively in disaster scenarios.

### **Key Recommendations:**

- PICs MoH to lead (supported by of Australian and regional / international organisations) an urgent comprehensive assessment, including further research, of psychosocial support needs and technical capacity in each of the case study PICs, both in terms of affected populations, health providers and other first respondents to disasters.
- MoH/National Health Services (supported by Australian and regional / international organisations including WHO) to develop a strategic plan addressing emergent findings from assessments of psychosocial support capacity. This will ensure that adequate consideration and provisions are made regarding the specific psychosocial needs of the affected population, health worker support and disaster response personnel.

## **10.2 Research Question 2: How do inter-organisational determinants serve to strengthen or reduce adaptive capacity?**

Research Question 2 asks: How do the inter-organisational determinants 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 examples from other regions e.g. Caribbean.

### **10.2.1 Architecture**

As described in Chapter 3, the architecture of disaster response in the context of the Pacific includes networks, systems and institutions, which are guided by various policies, procedures and regulations in culturally diverse environments. The policy environment surrounding the coordination of in-coming international health personnel varied across the four countries. Fiji and Samoa were more organised with respect to the guidelines for registration and coordination of in-coming health professionals, and the need for improvement in this was identified for Vanuatu and the Cook Islands.

This research found that formal and informal networks can be effective mechanisms for information exchange and the development of relationships both in Australia and in PICs. This aspect of the DRS architecture was an essential element which acts to support adaptive capacity through the forging of partnerships, personal relationships and trust. It is therefore necessary that both Australian and Pacific agents within these networks recognise these formal and informal mechanisms, and align with and support them to be considered as "legitimate" agents of the DRS.

Regional organisations such as WHO work to enhance adaptive capacity by regional networks, training, supporting planning processes across PICs in developing procedures for disaster response, and assisting PICs in their national policy development efforts. Policies are needed to address the welfare and compensation of health workers in the disaster context, and should be developed using a multi-stakeholder approach.

Regional political and governance issues can constrain adaptive capacity of the DRS. When relationships between DRS organisations at the national or international scale are confronted with political barriers, provision of disaster relief and ongoing DRR programming becomes more difficult. When these formal modes of operation provide barriers, it is the informal modes that take over. Thus informal modes of operating

should not be considered secondary, but in some cases the viable alternative to formal but constraining diplomatic relationships.

#### **Key Recommendations:**

- Australian and PIC DRS organisations to continue to appreciate the need for regular interaction/meetings to develop and maintain links with emerging DRS agents, regional networks, donors and international organisations (e.g. Secretariat of the Pacific Community's Applied Geoscience and Technology Division (SOPAC), Pacific DRM Partnership Network, WHO, UN agencies, SPCNMOA, and APEDNN) to continue to support the smooth functioning of the overall coordinated response by PIC and external organisations.
- The National Disaster Council (NDC) or equivalent, with the support of Ministry of Foreign Affairs, to review, simplify and streamline national policy and processes for requesting international assistance which can be understood and followed by all stakeholders. This supports both the affected country and those offering support.
- PIC MoH to develop clear and transparent policies on staff welfare and compensation of health workers during disasters, and maintain a system to implement these policies.
- PICs MoH (with the support of Australian and regional / international organisations) to ensure that clear guidelines are in place for in-coming personnel registration to facilitate efficient and effective HRH management, immigration and customs processes in each country.

#### **10.2.2 Agency**

Drawing on concepts such as power, control and decision making, agency goes beyond intergovernmental co-operation and requires an understanding of the partnership between 'whole of government' and non-state actors and institutions. The effectiveness of the Pacific DRS is built on strong relationships and trust, often between individuals due to the small bureaucracies present across PICs. Recognition and maintenance of these relationships is important to ensure timely and accurate information sharing between stakeholders. Developing and maintaining in-country partnerships also assists in having a clear understanding of formal and informal ways of operating, and supports understanding local needs and capacity. The absence of trust and relationships between key agents in some PICs resulted in barriers to effective response, hence constraining the adaptive capacity of the PIC DRS. This was evidenced by multiple disaster assessments by several organisations, leading to delays in response (and possibly contradictory reports), and delays in relief efforts on the ground. An absence of existing relationships and trust between agents can therefore be problematic for coordinating disaster assessments and act to constrain adaptive capacity of the DRS, particularly in accessing the vital assessment information. In an environment where there are a growing number of agents working in Pacific disaster response, sometimes in an uncoordinated manner, it is crucial to understand the importance of relationship and trust in the PIC context. It is also important for agents to aligning with this culture in order to assist in supporting the adaptive capacity of the DRS.

In-country representatives of donors such as AusAID and New Zealand Aid Programme often have close relationships with their host national government, resulting in formal (or observational) membership on National Disaster Committees. This facilitates direct involvement in the discussions around the immediate needs of the affected government thus supports the adaptive capacity of the Australian DRS. However, the abundance of and ease of access to donor funding has somewhat resulted in dependence on incoming support, that has led to lack of prioritisation of DRR and preparedness activities in PICs.

**Key Recommendations:**

- PICs NDCs (through National Disaster Management Offices (NDMOs) as key coordination agency) to ensure that traditional leaders are formally involved in both disaster planning and response, where this currently doesn't occur. This also includes NDMOs proactively working with village /traditional leaders in remote and isolated communities to build resilience at the community level.
- PIC DRS organisations, led by NDMOs as key coordination agency, to ensure that adequate resources and budgetary allocations are made for the involvement of traditional leaders in disaster planning for village, provincial and national level.
- PICs NDC (or similar) to ensure that churches are formally involved in disaster response at the national level.
- NDMOs to ensure systems are in place to facilitate a structured post-disaster debrief that encourages feedback of lessons learned from all agencies into national policy and planning processes. This may include involvement of UNOCHA to support regional sharing of learnings.

### **10.2.3 Adaptiveness**

Adaptiveness, as a key concept in Earth System Governance (Biermann, 2007) was included in analysis of results as it was found to be a recurring concept across the case study chapters. The challenge of adaptiveness in Earth System Governance is associated with the requirement of long term sustainability, coupled with flexibility to cope with the speed of change.

Attention is being given to DRR and CCA, which supports the adaptive capacity of the PIC DRS as it reduces the potential disaster impacts and builds resilience of potentially affected communities. There is ongoing support from both donors and in PIC national budgets for DRR and CCA interventions with a view to build such resilience. However the bulk of the support is donor funded (much of it for CCA interventions) and should this discontinue, PICs could significant challenges in coping with disasters and climate change impacts.

The long term dependence on aid may result in PICs becoming overly reliant on external assistance rather than aiming to develop national systems of self-determination. Regional organisations, donors and international partners should therefore look at ways to assist PICs to build internal capacity to respond to their own needs. Approaches should take advantage of traditional systems and knowledge, the strong sense of cooperation and resource sharing amongst in-country organisations,

and make use of existing regional networks and relationships. The design of plans to incorporate known vulnerabilities and uncertainties as well as drawing on past experiences and existing relationships are adaptive approaches being used for disaster response.

- The research considered regional mechanisms used in other regions, notably the Caribbean. However, it is evident after some assessment, that PICs and the Caribbean are at different stages of development in terms of disaster management and response and that the socio-cultural, geographical and political environments are inherently different. Disaster response in the two regions, while requiring similar methodologies, may have to utilise different approaches because of these differences,. Disaster management and response ideas and concepts may be transferable across regions but must be contextualised for effectiveness.

**Key Recommendation:**

- Regional organisations, donors and international partners should put greater priority and investment into building PICs internal response capacity particularly by drawing on traditional systems and knowledge.

### **10.3 Research Question 3: Which objective and subjective determinants are most significant in influencing the adaptive capacity of the organisations within the ‘disaster response system’?**

Research Question 3 relates to the adaptive capacity *within* organisations, and asks: What are the characteristics of an organisation with high levels of adaptive capacity?

Studies of determinants of adaptive capacity often consider those that are objective, including indicators such as wealth, technology, information and technical skills (IPCC, 2011). Intangible, or subjective, determinants are also critical in determining the ability of individuals and organisations to adapt (Bowen et al., 2012).

This research found that for organisations in the Pacific, both objective and subjective determinants of adaptive capacity were important. Table 8 displays the most influential determinants for the four case study PICs based on the analysis of this research. Several key determinants of adaptive capacity were similar across the PICs. Communications, relationships, information and knowledge appear to be the most influential key determinants for two of the four countries, with Information and knowledge being the most important determinant for Fiji. Leadership, management and governance is also crucial for all four PICs, as is capacity. Risk perceptions was an influential determinant for three of the four countries. In Samoa Traditional and social practices; and Tools methods and approaches were rated as significant - elements not present for the other three countries. Vanuatu has Strategic vision and outcome expectancy as a fifth key determinant – included due to its strong connections to Risk Perceptions.



**Table 8: Summary of most influential determinants of adaptive capacity for the four case study countries.**

Cook Islands	Fiji	Samoa	Vanuatu
1. Communications and relationships, information and knowledge	1. Information and knowledge	1. Traditional and social practices	1. Communications and relationships, information and knowledge
2. Leadership, management and governance	2. Risk Perceptions	2. Capacity (human resources, financial and technical)	2. Leadership, management and governance
3. Capacity (human resources, financial and technical)	3. Communications and relationships	3. Leadership, management and governance	3. Capacity (human resources, financial and technical)
4. Risk Perceptions	4. Financial Capacity	4. Tools, methods and approaches	4. Risk Perceptions
	5. Leadership, management and governance		5. Strategic vision and outcome expectancy

Based on the above synthesis across the four case study countries, the overall determinants identified as most important for adaptive capacity of organisations in the Pacific are described below, along with recommendations on how to further support adaptive capacity for disaster response.

### **10.3.1 Communications and relationships**

In small island governance structures, trust and personal relationships between individuals were found to have a strong influence on the adaptive capacity of the DRS. Adaptive capacity of organisations is enhanced if individuals and organisations maintain relationships with key institutions both within PICs and in the region, and are engaged in regional networks. Not doing so may lead to organisations being isolated and without adequate information in times of disaster. As noted in Section 10.2, networks and relationships between and within Australian and PIC organisations provide a supportive environment to build capacity to respond to disasters, both in the health care sector and beyond.

Understanding local culture is crucial for organisations in the DRS. Respect and recognition of the authority of faith-based groups and the Church more generally is required of external agents working in the Pacific, given the presence of these groups in the Pacific DRS. Supporting adaptive capacity of the DRS may mean working closely with Church groups to ensure key messages of risk reduction and preparedness are being put forward to communities.

**Key Recommendations:**

- Communication and coordination between the NDMO and MoH in PICs needs to be strengthened to improve effectiveness and efficiency of disaster response.
- Organisations of the Pacific DRS to encourage new or emerging disaster response organisations (including regional / international response organisations) to align with the culture that is based on both formal and informal relationships and trust to assist in the flow of information in times of disaster and supporting the adaptive capacity of the DRS.
- Recognising the importance of formal and informal networks for maintaining relationships and trust in PICs, donors (such as AusAID) and UN agencies should systematise the coordination of regional meetings based on agreed agendas and outputs, and ensure stakeholder inclusion and attendance is based on relevance of issues being discussed.

**10.3.2 Capacity (including financial, technical, training and human resources)**

Low institutional capacity of organisations in PIC's DRS leads to relatively high levels of vulnerability, given that the basis of a country's DRS often hinges on the contribution of only a few people. Adaptive capacity of the DRS is therefore constrained, should key personnel leave their position and move elsewhere. A disaster places extra demands on the DRS, including the health care workforce in terms of the number of workers and the skills required. There is therefore need for further assessment of how workforce capacity can be improved in terms of the numbers, skills and competencies that will be required to respond in a context where there could be a changed pattern of disasters. Some countries have demonstrated adaptiveness by scope of practice and multi-skilling nurses to address the shortfall in nursing and medical personnel.

Limited capacity (human resources, financial and technical) of key responding bodies, such as NDMOs and MoH constrains the ability of the national DRS to interact and work effectively with regional partners. Overall, while the health care sector was involved in the DRS in all four PICs, the factors most evident in constraining their involvement were limited HRH, lack of inclusion of outer islands or remote communities and poor internal coordination of the MoH. A significant HRH gap identified was the lack of technical capacity in psychosocial support internally as well as from incoming organisations, leading to an overwhelming unmet need in times of disaster. There was also an identified need for a regional approach to address the training requirements to meet the HRH requirements, through better coordination of existing training programs and resources.

### **Key Recommendations:**

- Australian and regional / international DRS organisations, in partnership with SOPAC and NDMOs, to better coordinate capacity building, technical up-skilling and training programmes relating to disaster and health response (aligned with UNOCHA's own recommendations). This is to include needs based content and systematic selection of participants and may include discussion on how to effectively consolidate regional training programs to address the human resources for health capacity issues.
- Donors such as AusAID to continue to support CCA initiatives in line with PIC driven national risk reduction needs and their integration with broader PIC adaptation priorities.
- Ministries with responsibility for Finance (MoF), supported by the donor community, to lead discussion on the best approach to provision of access to national emergency funds in times of disaster. Further research into the optimal financial management approaches, to ensure effective DRM in PICs should be undertaken; including the use of nationally led and owned Trust Funds as a specific modality.

### **10.3.3 Leadership, management and governance structures**

Power, control and decision making between agents in the DRS needs to be inclusive and participatory to ensure outcomes (e.g. disaster response policy) are acceptable and appropriate at all levels. Currently, some PICs are more inclusive of a breadth of stakeholders in decision making processes and are somewhat dependent on issues of capacity and leadership. Collective and participatory decision making with relevant stakeholders, including traditional leaders, was found to be important to ensure an appropriate and timely disaster response and one that recognises the agency of local stakeholders including traditional leaders and the Church.

This research found that rigid policy frameworks can sometimes provide a constraint to effective disaster response and therefore constrain adaptive capacity if they do not acknowledge the varying scenarios disasters can bring. Policies and plans need clearly defined roles and responsibilities through SOPs for agents to understand their own and each other's actions in times of disaster. Furthermore, without consultation, policies, plans and official processes can constrain adaptive capacity of the DRS and potentially present a barrier to effective disaster response. A key area where policy is relevant is the coordination of international in-coming support, especially with respect to health care – a major focus of this study. The lack of clear guidelines for the coordination and registration of in-coming health staff was evident in most countries, and where these exist they needed to be clearly communicated to the wider community. Lack of awareness of these policies can result in confusion, malpractice and offence to local personnel, which undermine efforts for a cohesive and effective multi-agency response and over time, constrains adaptive capacity.

Finally, there is a need for the development of clear policies through a consultative approach, that takes into consideration cultural issues and national pride, which can result in delayed requests for international assistance. A lack of consultation and lack of understanding of cultural relevance can lead to poor policies and thus constrain adaptive capacity.

### **Key Recommendations:**

- AusAID and other development partners to recognise and support NDMOs, given their strategic leadership and coordination role for disaster preparedness and response.
- Given the importance of the health services in disaster response, MoH should actively strengthen their involvement in the wider DRS. This may involve more active participation of MoH in the Pacific DRM Partnership Network and closer ties with NDMOs.
- NDMOs, with the support of the PIC DRS, to improve the coordination of disaster assessments through the development of clear Standard Operating Procedures (SOPs) and reporting guidelines for relevant clusters or sectors.
- PIC DRS organisations (with NDMO as key coordinating agency) to develop and implement sound policies and plans for disaster response (based on an 'all hazards approach') which appropriately balance flexibility and clear SOPs for all stakeholders.
- PIC DRS to adopt a nationally and culturally appropriate version of the Pacific Humanitarian Team as evidenced by the effectiveness of the VHT and its potential for increasing the adaptive capacity of the DRS.

#### **10.3.4 Risk perceptions**

Education and awareness of the need to adopt a future focus (even with existing, constrained resources) is needed within PICs in order to support adaptive capacity of PIC's DRS. Having a shared perception of the changing nature of risk associated with climate change is important for the adaptive capacity of a DRS. Incorporating capacity building into ongoing donor supported DRR and CCA programming should encourage mutual responsibility with a view to the long term sustainability of the PIC DRS. Strengthened strategic planning with a future focus that incorporates changing risk is therefore needed for organisations to enhance their future adaptive capacity. This is required even within resource constrained organisations as a way to shift the mentality towards one which acknowledges capacity challenges and embraces uncertainty associated with climate change.

Some PIC interviewees reported that incoming organisations failed to provide feedback or lessons learned to the affected country's DRS. This presents a lost opportunity for future planning as it prevents the adoption of improvements into disaster response practices.

### **Key Recommendations:**

- PIC DRS organisations, led by NDMO as key coordinating agency) to embrace a strengthened 'future' focus for disaster response to enable incorporation of changing risk to shift the mentality towards one which acknowledges capacity challenges and uncertainty associated with climate change. This is likely to involve strengthening DRR initiatives which incorporate planning for uncertainty as a means to strengthen adaptive capacity.
- Australian disaster response organisations, including ANGOs, to increase their focus on the impact climate change may have on disaster response in the Pacific and incorporate this uncertainty into strategic planning in a way that will increase adaptive capacity within PICs

## **11. CONCLUSION**

This research investigated the Pacific and Australia's adaptive capacity relating to disaster response in a climate where the pattern of disasters is changing. Important findings emerged from primary information gathered from key stakeholders across the Australia-Pacific region.

A range of key influences on adaptive capacity were uncovered and provide useful considerations for policymakers and practitioners to acknowledge and address. For instance, adaptive capacity of the disaster response system was found to be enhanced by the presence of strong informal communication and relationships that operate beyond formally established mechanisms. In addition, appropriate participation of traditional leaders and churches in disaster planning and response were shown to support a more legitimate DRS. Furthermore, appropriate recognition and support for the critical role NDMO's play in disaster coordination also enhanced adaptive capacity. Finally, a lack of clear policies for requesting overseas assistance was found to constrain adaptive capacity, as did the lack of coordinated disaster assessments, limited capacity including limited human resources for health and disaster response.

Two further key findings are important to mention. Firstly, psychosocial support was observed to be lacking in post-disaster settings, and increased capacity was needed, in keeping with limitations of local health resources and Australian medical services to meet specific needs post-disasters. Secondly, it was found that a strengthened 'future' focus would benefit both Australian and PIC disaster response agencies, assisting individuals and organisations better plan for uncertainty and changing risks.

Addressing these findings and related recommendations will contribute to enhancing capacity within PICs, as well as improve Australia and overseas disaster response with a view to support PIC development of adaptive capacity to a future affected by climate change.

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## APPENDIX 1: PROJECT REFERENCE GROUP (PRG) MEMBERS

Organisation/network	Role	Contact Person
Applied Geoscience and Technology Division of the Secretariat of the Pacific Community (SOPAC/SPC)	Disaster Response: Technical / Scientific Role, strong understanding of Pacific Islands capacity	Dr Kirstie Méheux
Asia Pacific Emergency Disaster Nursing Network (APEDNN)	Expert in Emergency and Disaster Management; Member: APEDNN	Lisa Conlon
World Health Organization Western Pacific Division (WHO WPRO)	Regional Advisor, Nursing/Director Health Sector Development Unit	Kathleen Fritsch
South Pacific Chief Nursing and Midwifery Officer's Alliance (SPCNMOA)	Chair	Prof. Pelenatete Stowers and Dr. Jane O'Malley
Caritas Australia / PNG	Program Co-ordinator	Beatrice Tabeu
CSIRO	Researcher with the Sustainable Cities and Coasts area of CSIRO's Climate Adaptation Flagship. Project Leader for Climate Adaptation through Sustainable Urban Development' with case studies in Asia.	Dr Matthew Inman
Professor of Global Health and Development Faculty of Arts and Social Sciences	Principal Investigator, Public Health Emergencies	Prof. Anthony Zwi
Humanitarian Partnership Agreement	Director of HPA	Helen Horn

## APPENDIX 2: KEY DETERMINANTS OF ADAPTIVE CAPACITY

The key determinants of adaptive capacity are an important element of the Conceptual Framework and lie at the centre of the research focus. Drawing on a range of literature that spans Earth System Governance (Biermann, 2007), climate change adaptation (Ekstrom et al., 2012), health resources (WHO 2011; WHO, 2006), resilience in institutions (McManus et al., 2008) and practice theory (Strengers, 2010) the following key objective and subjective determinants of adaptive capacity of the DRS are proposed:

*Inter-organisational determinants (objective and subjective):*

Inter-organisational determinants draws on the concept of Earth System Governance (ESG), which involves the participation of varying public and private, non-state actors at different levels of the decision making process (Biermann, 2007). ESG is defined as “the sum of the formal and informal rule systems and actor- networks at all levels of human society set up in order to influence the co-evolution of human and natural systems in a way that secures the sustainable development of human society” (Biermann, 2007: p329).

Biermann suggests four principles of Earth System Governance described as follows:

- i. that governments must commit resources both domestically and through transnational mechanisms in support of mitigation and adaptation policies, that will be reciprocated through time and space, thus producing credibility;
- ii. that the ESG system is able to withstand political changes over decades both locally and internationally;
- iii. that it provides a framework for an effective and equitable adaptive governance in that it enables the actors to respond to new situations without harming stability and credibility of the system; and
- iv. that the governance system is widely inclusive of non-state stakeholders, through methods and mechanisms considered as legitimate, effective and fair by all stakeholders.

In addition to the above principles, Biermann identifies five fundamental research and governance challenges, which are noted as cross cutting themes in global change research. These problem structures, or the “five A’s”, are Architecture, Agency, Adaptiveness, Accountability and Allocation. Our research will therefore seek to draw on the most relevant of these concepts to understand the inter-organisational determinants of adaptive capacity under three main headings. (Biermann, 2007: p329-332)

1. **Architecture** is “the interlocking web of principles, institutions and practices that shape decisions by stakeholders at all levels” (Biermann, 2007: p332). In the context of this research, the architecture involves the systems and institutions associated with disaster response across both national and international scales. In order to define this architecture, it is therefore important to define what the institutions and practices are that shape decisions by stakeholders at all levels, and understand the following: (i) the extent to which state sovereignty is restricted by this architecture; (ii) the legal framework or constitutional norms required to support this architecture; (iii) the mechanisms required for the effective interaction within and across governance systems at all levels, and; (iv) the need for universal inclusion and participation among states.

Architecture requires that consideration be given to the National, regional, international policy and regulatory framework and Australian response structure: (IFRC 2010, AusAID 2011). Australia's emergency response organisations and management structures are well developed, to manage the response to and recovery from, disasters within Australia and overseas (IFRC 2010, AusAID 2011). In trying to define the architecture of a country's disaster response system, additional questions to be addressed include: (i) What are the National, regional, international policy and regulatory framework, that guides the response to humanitarian needs post disasters? (ii) What are the policies, guidelines, response organisations and management structures in place in Australia and in PICs that guide their response to disasters? These all form part of the architecture of the disaster response system in the context of our research.

2. **Agency:** the role of actors beyond the nation state, i.e. power, control and decision making (Biermann, 2007) An effective and credible governance system requires the endorsement and participation of non-state stakeholders, including intergovernmental bureaucracies, private organisations. Non-state stakeholders not only contribute to lobbying and advising of governments but also participate in decision making processes and setting the standards required for overall governance. Agency goes beyond inter-government co-operation but requires an understanding of the partnership between 'whole of government' and non-state actors and institutions. (Biermann, 2007) One therefore needs to know who are the non-state stakeholders that contribute to and participate in (i) the overall governance (ii) the decision making processes; and (iii) setting the standards.

3. **Adaptiveness** of governance mechanisms (decision making, exercising authority, rule making, policy development) to cope with the rapid global change we are currently facing. The challenge of adaptiveness in Earth System Governance requires long term sustainability, coupled with flexibility to cope with the speed of change (Biermann et al., 2009b; Kelman and West, 2009).

#### *Determinants within organisations*

##### *Objective determinants:*

1. **Access to assets** (financial and human resources) (subset of Ekstrom et al., 2012) The extent of an organisation's access to various assets and how they are utilised to expand adaptive capacity is an important determinant. Financial assets include funding available to organisations undertaking disaster management whilst human resources include the skills and knowledge of staff related to disaster management. Moreover, it examines the extent of access of staff to new information and programmes to support their skills development in the field of disaster management (greater details is provided under 4. Health workforce).

2. **Leadership, management and governance structures** (McManus et al., 2008): An adaptive organisation is one in which its leadership and staff views crises as opportunities for advancement. The quality of leadership and degree of empowerment of staff is critical for an adaptive culture. It examines the following: (i) leadership and decision making structures; (ii) the acquisition, dissemination and retention of information and knowledge; and (iii) the degree of creativity and flexibility that the organisation promotes or tolerates. (McManus et al., 2008; pg 83)

3. **Technical capacity, tools, methods and approaches** (FAO, 2008, pg 21-29) including early warning systems, scenarios/drills, preparedness measures etc: Defining the technical capacity, tools, methods and approaches included in a disaster response system serve is important for understanding how the system functions,

monitoring/evaluation of response outcomes, and identifying gaps for future exploration and analysis, and the capacity to adapt to unforeseen stresses. This could be addressed by answering several questions focused at different stages of disaster risk management process, including: awareness raising and dissemination of risk information; early warning; Preparedness; immediate response and/or relief.

**4. Health workforce education, training and continuing competence** (WHO WPRO Human Resources for Health (HRH), 2011 – 2015) An agile workforce with highly specialised skills is required to mount an immediate and effective response to disasters and humanitarian emergencies. The availability of skills required to carry out rapid diagnosis, surveillance, organisation and logistics, containment, communications, emergency surgery, and to create temporary facilities, require adequate training institutions and programmes where these skills are generated and updated. (WHO 2006, p31) An assessment of this will require information on: (i) the number of students in medical, nursing and midwifery pre-service/post-service education programmes, (carried out by qualified instructors and monitored); (ii) guiding policies and quality control systems that guide these programmes; (iii) The percentage of graduates in each cadre passing national competency examination on the first attempt; (iv) procedures in place to ensure that data are monitored, reported and evaluated to ensure quality, safe competencies for practice. Adequate policies must be put in place to ensure the establishment of integrated and coordinated programme for continuing competence and lifelong learning of all health professionals. (WHO 2011, p83) This can be accomplished through scaling up of integrated, competency-based continued learning programmes for individuals and teams. This will be evidenced through (i) Policies and processes in place that support the continuing competence of individuals and teams, (ii) evaluation data on continuing competence; (iii) the tracking of number of HRH entrants into health professional training programmes (with nationally approved curriculum) within last three years (iv) guiding policies for CPD; (v) trend analysis for CPD; (vi) an annual training budget per worker; (vii) designated annual number of days for continuing professional development (CPD); (viii) percentage of staff are receiving CPD.

**5. Human resource for health governance and management systems, policy, finance, education, partnership, leadership** (WHO, 2006; WHO, 2011): There is a need for HRH governance, leadership and partnerships for sustained HRH contributions to improved population health outcomes, including HRH capacities to address disasters. This requires a cross-sectoral national coordination body or formal mechanisms of governance (including health planning, education, finance, labour, public or civil service commission) for HRH strategic planning including application of labour market data, stakeholder coordination, and HRH sustained investment, the production, distribution, utilisation and issues surrounding migration. This will be evidenced by the following (i) HRH plan developed and evaluated with participation of various stakeholders and sectors; (ii) HRH policy integration into other sector policies and programmes; (iii) Commitment of national government and international community to HRH plan implementation and sustainability, including – (iii.a) costed HRH plan, (iii.b) commitment to appropriate or increased allocation from national sources, (iii.c) receipt of donor funding (iii.d) data availability: HRH expenditures as% of public expenditures and GDP; and (iv) Ongoing evaluation of policies and outcomes to ensure HRH responsiveness to evolving population health needs. Leadership capacity-building policies and structures should be in place and networks and partnerships of relevant committed leaders and stakeholders should be established. This will require operational processes that speaks to (i) Mechanisms for capacity-building and upgrading in place at all levels; (ii) Strengthened capacities in: data literacy, analysis, reporting skills; (iii) Evidence and research applied to changes in HRH policies, practices, service delivery models, skill, staff mix, etc; (iv) Policy recommendations

adapted and implemented by government; (v) Dissemination and publication of outputs and technical work products resulting from networks and partnerships.

*Subjective determinants:*

**6. Risk perceptions and perceived adaptation efficacy and costs**

This subjective determinant examining perceptions, relate to an organisation's understanding of the risks of climate change and the likely impacts on their disaster response processes. "Perceived adaptation efficacy", refers to an organisation's belief in the effectiveness of adaptation actions and perceived adaptation costs refers to the organisation's assumed costs (inclusive of monetary, personal time, effort) of undertaking the actions (Ekstrom et al., 2012) (Kuruppu et al., 2011).

**7. Self-efficacy beliefs (Ekstrom et al., 2012)**

This subjective determinant examines the extent an individual within an organisation believes in their own ability to adapt to the impacts of climate change. (Ekstrom et al., 2012) (Kuruppu et al., 2011).

**8. Silo mentality (McManus et al., 2008)** – relates to adaptiveness (Biermann, 2007). Silo mentality represents a decentralised structure, with a more individualistic approach to achieving goals, based on a limited understanding of the overall vision of the organisation. It is an intrinsic feature of the modern autonomous decision making structures, and is important for ensuring loyalty and pride, as well as competition, into an organisational framework. However, silo mentality can have a significant impact on the overall resilience or adaptiveness of organisations. Adaptiveness requires that organisations have the ability to change governance elements to respond to new situations within a stable framework, without harming the credibility and stability of the entire system. Aspects of silo mentality need to be purposefully identified and managed to understand how they impact on the adaptiveness of organisations involved in disaster response. Areas to be considered include: (i) knowledge of roles and responsibilities of others in the organisation; (ii) understanding and utilisation of communications pathways; (iii) identification of destructive and detrimental relationships developing both internally and externally; (iv) definition of governance and decision making structures; (v) establishment of trust and loyalty between staff and others; and (vi) defines realistic expectations of key stakeholders.

**9. Communications and relationships (McManus et al., 2007)**, relates to accountability (Biermann, 2007 p 333-334) Governance that is credible, stable and inclusive must be considered to be legitimate by all stakeholders, and is held accountable for its actions and representatives by its constituencies. Trust is developed between governance systems, their stakeholders and constituents when they are found to be credible, stable, inclusive and accountable. The creation of effective communications pathways based on mutually respectful relationships is critical. However, the effectiveness of communications and relationships in an organisation can be influenced by the silo mentality. There is therefore a need to understand: (i) what are the potential impacts of communications and relationships on the organisation in a crisis (large or small scale). (ii) How easy is it for general staff to communicate and relate upwards in the organisation; (iii) how easy is it for senior and executive staff to communicate and relate to each other in the organisation (iv) How easy is it for senior and executive staff to communicate and relate to general staff. (v) What are the strategies in place to deal with problems in communication strategies at different levels of the organisation? (vi) What are the strategies in place to deal with communication problems between stakeholders? (vii) What can be done to encourage engagement with and a better understanding of staff expectations and limitations? (McManus et al., 2007)

10. **Strategic vision and outcome expectancy** (McManus et al., 2007) an organisation's vision for resilience relates to resilience management. It provides a defined purpose or vision statement that underpins its operations. (McManus et al., 2007) It has been found that regardless of how well defined the purpose or vision, the operational reality and the communication of this vision can vary from one extreme to another throughout organisations. Regardless of the degree of organisational vision, three critical aspects should be considered from an adaptive capacity perspective: (i) how well is the vision articulated and communicated through the organisation? (ii) How well do the day-to-day operations represent that organisational vision? (iii) How well does the organisation look towards that vision for direction when engaging in emergency situations? Organisations with a clear sense of purpose and vision are able to articulate and communicate this effectively in their day-to-day operations. Heightened situation awareness guided by the organisational vision is important for responders to be clear about their roles in the aftermath of a crisis in the context of the wider community of stakeholders. The strategic vision and outcome expectancy of an organisation will determine: (i) how organisations see their role in the community post-crisis (ii) what the expectations of their own organisational recovery could be; (iii) the level of awareness of the overall organisational network; and (iv) the perception of their ability to weather the problems faced.

11. **Health workforce strategic response** to evolving and unmet population health and health service needs is important (WHO WPRO Human Resources for Health (HRH), 2011 – 2015). This can be achieved through Health workforce plans and strategies that respond to population and service needs with emphasis on the most vulnerable and excluded groups (focusing on gender, equity and vulnerability), evolving health worker functions and technological advances. The following are indicators of this outcome: (i) the existence of a funded human population health and health service needs, including disaster response; (ii) clearly defined and documented workforce plans and strategies; (iii) Adequate number of health workers as well as number of doctors, nurses and midwives per 10000 population (critical density is 25/10000 pop); (iv) distribution of health workers by rural and urban location; and (v) access to adequate and competent productive health workforce (WHO 2011) (Thompson Oct 2011).

12. **Information and knowledge.** (McManus et al., 2008) The dissemination and retention of information and knowledge forms part of the adaptive capacity of an organisation. The capacity to apply current knowledge to a situation in a creative manner, assigning virtual roles, and the ability of subsets of an organisation to assume responsibilities of absent members are considered adaptive features of an organisation. It requires an understanding of the limits of the information at hand, and the willingness or ability to obtain additional information, to respectfully use this information for positive interaction to influence behaviour change and, the development of a tolerance for uncertainty. (McManus 2008 p82) Information and knowledge sharing requires that organisations: (i) have a policy of encouraging staff to gain experience in a variety of roles and with a variety of responsibilities around the organisation; (ii) ensures that individuals with specialised knowledge are readily accessible for others in the organisation; (iii) consider the nature and format of information that is required to maintain an emergency response and successful recovery; (iv) has a clear plan that details how information would be transferred to key people in the absence of traditional communications networks; (v) conducts scenario planning or consequence scenarios to enable the organisation to identify foreseeable events and consider how they might cope with unforeseeable outcomes; (vi) provide a vehicle for addressing the failure of stakeholders/partners and; (vii) presents a platform to simultaneously prepare for hazards with similar outcomes and impacts. (McManus 2007 p34; McManus 2008 p85)

13. **Elements of social practice:** Practical knowledge, common understandings/norms/culture, rules and material infrastructure (Strengers 2010) Social practices are defined as a co-ordinated entity of four intersecting theoretical concepts and mutually reinforcing 'components' (practical knowledge, common understandings, rules, and material infrastructures), which are reproduced at particular moments in time and space. These components/practices are established, sustained and changed through routine and repetitive processes.

## APPENDIX 3: RESEARCH CONSENT FORMS

### *Consent Form for Australian Stakeholders*

I \_\_\_\_\_ agree to participate in the research project being conducted jointly by the Institute for Sustainable Futures and WHO Collaborating Centre for Nursing, Midwifery and Health, both located at the University of Technology Sydney. The research seeks to understand the capacity of both Pacific Island Countries (PICs) and Australia's emergency response to a potential increase in disasters driven by climate change. The focus is to assist in the building of long term adaptive capacity, and thereby reduce vulnerability to climate driven disasters. Funding for this project has been provided by Australia's National Climate Change Adaptation Research Facility (NCCARF).

I understand that I have been asked to participate in this research because of my employment in an Australian organisation that is involved in disaster response in Pacific Island Countries. My participation in the interview implies consent in the research, and consent for this interview to be recorded solely for research purposes. I understand that my personal identity will not be revealed and that all data emerging from the interview will remain strictly confidential.

I understand that while I will not be identified by name or position, quotations may be linked with my organisation. I give consent for my organisation to be identified in research reports over the course of the research project.

Or [please tick if you disagree with above statement and wish to nominate an alternative below]  
I give consent for my organisation to be identified in research reports however I wish to have the opportunity to review and approve written material that refers to my organisation before it is finalised

I prefer for my organisation not to be identified in research reports

I am aware that I can contact ISF Research Director Dr. Juliet Willetts (+61 (2) 95144605) and WHO CC Head Prof. John Daly (+61(0)409 777 890) if I have any concerns about the research. I also understand that I am free to withdraw from this research project at any time I wish, without consequences, and without giving a reason.

I agree that \_\_\_\_\_ (researcher's name) has answered all my questions fully and clearly.

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Signature (participant)

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Signature (researcher or delegate)

#### NOTE:

Studies undertaken by the Institute for Sustainable Futures have been approved in principle by the University of Technology, Sydney, Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research you may contact ISF Research Directors Emma Partridge [tel: +61 02 9514 4954] or Chris Riedy [tel: +61 02 9514 4964], or ISF Institute Manager Carroll Graham [tel: +61 02 9514 4975]. You may also contact the UTS Ethics Committee through the Research Ethics Officer, [tel: 02 9514 9615]. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.



## *Information Sheet and Consent Form for Pacific Island Based Stakeholders*

This research project is being conducted jointly by the Institute for Sustainable Futures and WHO Collaborating Centre for Nursing, Midwifery and Health, both located at the University of Technology Sydney. The research has two linked objectives. Firstly it seeks to understand the capacity of Pacific Island Countries (PICs) to respond to a potential increase in disasters driven by climate change; secondly it seeks to assess the capacity of Australia's emergency response to the same challenge.

The aim is to assist in the building of long term adaptive capacity, and thereby reduce vulnerability to climate driven disasters. 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 project 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), 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,

The four case study countries are: Fiji, Samoa, Vanuatu and Cook Islands. As part of the research, we have conducted background desk based literature reviews to develop an understanding of the relevant stakeholders and of the governance frameworks that support disaster response in Australia and the Pacific. We are now at the stage of conducting key stakeholder interviews with Australian and Pacific respondents.

The research is funded by Australia's National Climate Change Adaptation Research Facility (NCCARF), who will be able to share our research findings with a wider audience and potentially advocate for any changes as recommended in our research. Regarding ethical considerations, may we draw to your attention that as the respondent, your participation in the interview implies your consent in the research. With your permission, the interview will be recorded, solely for research purposes. While you will not be identified by name or position, quotations may be linked with your organisation. The interview will take approximately 1 hour.

Do you feel sufficiently informed about the research and research process and are you happy to confirm your participation in the research?

[Please tick to nominate an option below]

I give consent for my organisation to be identified in research reports over the course of the research project. I understand that while I will not be identified by name or position, quotations will be linked with my organisation.

I give consent for my organisation to be identified in research reports however I wish to have the opportunity to review and approve written material that refers to my organisation before it is finalised.

I prefer for my organisation not to be identified in research reports

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Organisation

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Signature (researcher or delegate on behalf of participant, given verbal consent)

**NOTE:**

The study has been approved by the Internal Institutional Review Committee of the Institute for Sustainable Futures, which have been approved in principle by the University of Technology, Sydney, Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research you may contact ISF Research Director Juliet Willetts [Juliet.Willetts@uts.edu.au] or ISF Institute Manager Carroll Graham [tel: +61 2 9514 4975]. You may also contact the UTS Ethics Committee through the Research Ethics Officer, [tel: +61 2 9514 9615]. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

## APPENDIX 4: AUSTRALIAN AND NEW ZEALAND INTERVIEWEES

Organisation	Date of Interview	Interviewer/s	Location of Interview
• ACFID	10/05/2012	Michele Rumsey and Anna Gero	ACFID Office, Canberra
• CARE Australia	11/05/2012	Michele Rumsey and Anna Gero	CARE Office, Canberra
• AusAID	11/05/2012	Michele Rumsey and Anna Gero	AusAID Office, Canberra
• Caritas Australia	14/05/2012	Anna Gero and Stephanie Fletcher	Caritas Office, Sydney
Australian Red Cross	1. 14/05/2012 2. 01/06/2012	1. Anna Gero and Stephanie Fletcher 2. Michele Rumsey and Stephanie Fletcher	Both Telephone Interviews
• RedR	16/05/2012	Anna Gero and Stephanie Fletcher	RedR Office, Melbourne
• World Vision	16/05/2012	Anna Gero and Stephanie Fletcher	World Vision Office, Melbourne
• Oxfam	17/05/2012	Anna Gero and Stephanie Fletcher	Oxfam Office, Melbourne
• Plan	17/05/2012	Anna Gero and Stephanie Fletcher	Plan Office, Melbourne
• Save the Children	17/05/2012	Anna Gero and Stephanie Fletcher	Save the Children Office, Melbourne
• ADRA	22/05/2012	Anna Gero and Stephanie Fletcher	ADRA Office, Sydney
• NZ Chief Nurse	25/05/2012	Stephanie Fletcher and Michele Rumsey	Telephone Interview
• Australian Civil Military Centre	18/06/2012	Anna Gero and Stephanie Fletcher	Telephone Interview
• Australian Defence Force	18/06/2012	Anna Gero , Stephanie Fletcher, Natasha Kuruppu	Telephone Interview
• Act for Peace	03/07/2012	Anna Gero	Act For Peace Office, Sydney
• NZ Ministry of Foreign Affairs and Trade/ NZAID	06/09/2012	Stephanie Fletcher, Anna Gero	Telephone Interview

## APPENDIX 5: RESEARCH INTERVIEW GUIDE (AUSTRALIAN AND NEW ZEALAND INTERVIEWEES)

### Background information to be explained verbally (along with information sheet)

This research project is being conducted jointly by the Institute for Sustainable Futures and WHO Collaborating Centre for Nursing, Midwifery and Health, both located at the University of Technology Sydney. The research has two linked objectives. Firstly it seeks to understand the capacity of Pacific Island Countries (PICs) to respond to a potential increase in disasters driven by climate change; secondly it seeks to assess the capacity of Australia's emergency response to the same challenge. The focus is to assist in the building of long term adaptive capacity, and thereby reduce vulnerability to climate driven disasters.

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 project 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), 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

Our four case study countries are: Fiji, Samoa, Vanuatu and Cook Islands. As part of the research, we have conducted background desk based literature reviews to develop an understanding of the relevant stakeholders and of the governance frameworks that support disaster response in Australia and the Pacific. We are now at the stage of conducting key stakeholder interviews with Australian and Pacific respondents.

The research is funded by Australia's National Climate Change Adaptation Research Facility (NCCARF), who will be able to share our research findings with a wider audience, potentially advocate for any changes as recommended in our research.

Regarding ethical considerations, may we draw to your attention that as the respondent, your participation in the interview implies your consent in the research. With your permission, the interview will be recorded, solely for research purposes. All data emerging from the interview will remain strictly confidential and your personal identity will not be revealed. Responses will be confidential but not completely anonymous – your organisation may be identified, but not your name. However, if organisations are to be identified through respondent quotations, then prior consent will be obtained prior to publication. The interview will take approximately 1 hour. We ask you sign this consent form to confirm you agree to participate in the research.

## Australian Stakeholder Interview Questions:

Our key focus is on the impact of climate change on natural disasters, with emphasis on tropical cyclones, and the future capacity to deal with them. We have structured the questions in 3 parts. The first refers to national and regional inter-organisational elements – i.e. the disaster response sector, and how your organisation fits in to this. The second refers to elements within your own organisation while the third refers to your own personal views.

### Inter-organisational

1. We're interested in understanding who are the key agencies and actors responsible for responding humanitarian post-disaster needs in the Pacific...?
  - a. Thinking of the last main Pacific disaster that your organisation responded to, can you describe briefly the main agencies and actors that were involved?
  - b. Does this diagram represent institutional arrangements as they happen in reality? In what way? (*Probe: Where does your organisation fit into the current diagram*)
  - c. How do these different agencies/individuals interact with each other generally, and in the event of a disaster [*including relevant public, private, non-state actors*]
  - d. And with respect to 4 humanitarian needs [potentially address each separately], who are the key actors? [Present prepared table of stakeholders and ask respondents to add or subtract accordingly, and also present diagram of institutional arrangements]
  - e. At this inter-organisational, or 'meta-level', how are key decisions made?
  - f. Who has power/agency/authority? How are agencies held to account?
  - g. What works well in this approach; what are the strengths?
  - h. In a response that went well, how did agencies interact?
  - i. What are the barriers that prevent organisations from working together more strongly?
2. Does your organisation have membership in Australian, Pacific national or regional groups or networks that work on disaster response? (*Probe: What are they/give a list?*)
  - a. How reliant is your organisation on this/these group/s, and what level of engagement do you have with these groups?
  - b. Is this membership informal or formal?
3. What do you see as the most important Australian national policies that guide disaster response [in PIC/ the region?]

- a. What legislations/regulations are in place to govern disaster management and response?
  - b. How are policies developed, who provides input/is consulted?
  - c. Are funding allocations appropriate given allocated agency responsibilities?
  - d. Is there adequate funding to implement actions in the policy?
  - e. What new policies do you think are needed to improve disaster response in the context of climate change?
4. What regional or international policies (eg Hyogo Framework for Action) influence your response to disasters in the Pacific? How?
  5. In the scenario where climate change causes changes in disasters and their frequency and severity, particularly with reference to the Pacific, how do you think Australia's system of disaster response will cope?
  6. In times of disaster response, how do you see the Australian disaster response system coordinating with that of the affected country?
    - a. Can you give an example of a well-coordinated response and how things worked between and across different agencies- including Australian, international and national agencies of the country where the disaster took place? (*N.B. This refers to the overall DRS in Australia*)
    - b. What are the strengths of the current approach?
    - c. What needs to be strengthened? Specifically consider what needs to change within Australia's disaster response system to build our own national adaptive capacity to respond to disasters in the Pacific? Specifically consider what needs to change in the affected country's institutions to build their adaptive capacity?
    - d. To what extent does the Australian response support or detract from building this capacity?

## **Organisational**

*[Remind the respondent that questions now refer specifically to issues within their own organisation]*

1. What is the scope of your organisation with respect to its involvement in Disaster management? (Global, Asia-Pacific, Pacific, Some PICs, one PIC?)
2. Within your organisation, which of our 4 humanitarian post-disaster needs do you respond to? (*Reminder: these are health care; food and nutrition; water and sanitation and psychosocial needs*)
  - a. Are there any that fall outside this list? If so, what other areas do you focus on?
  - b. In what way does your organisation respond to these 4 humanitarian needs?

- c. How are key decisions about humanitarian response post disaster within your organisation made? (*Probe: When to respond, which countries to assist, amount of funding to be allocated etc*)
3. What is/are your funding source/s?
  - a. Is your funding stable? Has it grown or reduced significantly in the last three years?
  - b. Is the level of funding appropriate to support your organisation to carry out your disaster response responsibilities?
  - c. Is there any flexibility with the use of funds (*Probe: Can funds be used where needs arise such as in the climate change scenario or are they allocated to specific areas?*)
4. Do you have an organisational policy or strategy that underpins your work in this area of disaster response? [*Interviewers to focus on 4 humanitarian needs if possible*]
  - a. Is it used?
  - b. How useful/effective is it?
5. Can you describe an example of a past disaster response in the Pacific where you feel your organisation responded well/made a strong contribution?
  - a. What enabled this?
6. Can you describe an example of a Pacific disaster response where you were unable to respond well? Why?
7. What key skills do your staff require for disaster response? Is training for emergency response offered / available for your staff? If it is available, is it accessible internally or externally?
8. How have lessons from past responses been incorporated into planning processes? [*check if systematic or ad hoc*]
9. Have you had strategic discussions/planning about how to deal with climate change into the future within your organisation with respect to disaster response?
10. Climate change brings with it a high degree of uncertainty. How do you think your organisation will be able to respond creatively/flexibly?
11. What are the risks for your organisation, with a potential increase in tropical cyclones and severe storms? [*Probe: risks to the organisation, its people, what the organisation does now, its services, its focus on PICS*]

### **Individual**

*[Make it clear to the respondent that the following answers will be confidential and the organisation will not be named in relation to responses.]*

1. How are key decisions around disaster response made in your organisation?

2. In your organisation, how important are key individuals to effective disaster response?
3. Do you feel clear on your organisation's direction and contribution to wider planning/policy in disaster response? [*sector level, Australian national level*]
4. What is your perception of the most appropriate use of resources: Either investing resources in being highly prepared for uncertainty (eg more severe storms/cyclones etc) OR rather use such resources directly for responding to disasters when an event happens?
  - a. Do you think that organisations should make big investments to make sure they are well prepared for potentially more uncertainty, and the possibility of more storms or cyclones? Or
  - b. Do you think that these resources should be saved and used directly at the moment any disaster strikes?
5. How do you as an individual obtain the information you need at the time of disaster?
6. Do you feel there are opportunities to be creative within your organisation to be responsive to climate change?
7. Considering your own work and role within your organisation, the questions below refer to an actual response. [If respondent isn't involved in response but in another part of the disaster cycle, then adjust questions appropriately – e.g. focus on disaster preparedness, DRR, Climate change]

When a disaster takes place and there is a need to respond:

- a) What actions do you usually take? How do you decide what actions to take (what influences this decision for you?)
- b) Do you feel there are understood 'right' and 'wrong' ways of acting within your organisation when there is a need for disaster response? (*These may be unvoiced perceptions*) What are these?
- c) Besides any formal rules, are there informal rules which you have to follow which affect what you do? What are they?
- d) Do you feel you have access to the sorts of communication infrastructure etc. (or other infrastructure) that you need to do your job well at that moment of disaster response? If not, what would increase your ability to be effective?

That concludes our interview questions. Is there anything else you would like to share, or add?

Thank you so much for your time. We will be sure to contact you regarding the use of any quotes. [*Ask interviewee if they are interested in receiving research reports.*]



## APPENDIX 6: PACIFIC ISLAND COUNTRY SELECTION CRITERIA

### 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 altered patterns 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
- Samoa
- Fiji
- 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.<sup>2</sup>

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<sup>2</sup> 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:					Development indicators						
					DFAT <sup>3</sup>	UNDP <sup>4</sup>			CHIPS <sup>5</sup>		WHO <sup>6</sup> , HRH Hub <sup>7</sup>
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)	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),	100000 (2010)	0	85	0.624	48 (2008)	158 (2005)	4

<sup>3</sup> DFAT country fact sheets. Available at <http://www.dfat.gov.au/geo/index.html>. downloaded 1 March 2012

<sup>4</sup> UNDP: Human Development Report 2011. Available at [http://hdr.undp.org/en/media/HDR\\_2011\\_EN\\_Complete.pdf](http://hdr.undp.org/en/media/HDR_2011_EN_Complete.pdf)

<sup>5</sup> WHO Western Pacific Region.(2010) Country health information profiles. (CD-ROM) Revision 2010

<sup>6</sup> WHO. Global Atlas of the Health Workforce. Available <http://apps.who.int/globalatlas/default.asp>

<sup>7</sup> HRH Hub 2009

				National Water Resource Policy							
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	182000 (2010)	5	0	0.688	13 (2004)	3 (2006)	2
Fiji	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 <sup>8</sup>	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

<sup>8</sup> Taken from Barnett, 2008.

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
Tuvalu <i>(although we don't have a Micronesian country, Tuvalu is an atoll country and has many challenges similar to those in Kiribati and RMI)</i>	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) <sup>ii</sup>	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 7: PACIFIC ISLAND COUNTRY INTERVIEWEES

Country	Organisation
<ul style="list-style-type: none"> <li>Cook Islands</li> </ul>	Ministry of Finance and Economic Management – Development Coordination Division
	Cook Islands Red Cross
	Independent Pacific Consultant
	Ministry of Infrastructure and Planning
	Ministry of Health
	Police
	Ministry of Internal Affairs
	National Environment Service
	Cook Islands Civil Society Organisations
	Religious Advisory Council
	Cook Islands Meteorology Service
	NZAID
	Cook Islands Climate Action Network
	Cook Islands National Council of Women
	Ministry of Foreign Affairs and Immigration
<ul style="list-style-type: none"> <li>Vanuatu</li> </ul>	AusAID
	Ministry of Geology and Mines
	GIZ
	Live and Learn
	Vanuatu Meteorology and Geohazards Division
	Ministry of Health – Shefa Provincial Health Division
	Ministry of Health – National Health Planner and Environmental Health
	Vanuatu National Council of Women
	Vanuatu Red Cross
	Vanuatu Christian Council
	World Vision
	Vanuatu Chamber of Commerce
	Adventist Disaster Response Organisation (ADRA)
	CARE
	Oxfam
	Ministry of Internal Affairs
	Vanuatu Rural Development and Training Council Association
	National Disaster Management Office
Ministry of Health – Nursing School	

•	Ministry of Health – Primary Care
• Fiji	AusAID
	NDMO
	UNICEF
	Ministry of Works, Transport and Public Utilities
	National Fire Authority
	Red Cross
	Partners in Community Development
	Meteorological Services
	Ministry of Health
	SOPAC
	UNOCHA
	WHO
	US Embassy
	Council of Churches
	IUCN
	School of Nursing, Fiji
	UNDP
Ministry of Foreign Affairs	
Divisional nursing management	
• Samoa	Ministry of Works, Transport, and Infrastructure
	Ministry of Agriculture and Fisheries_ Transport Division (MAF)
	National Health Service and Ministry of Health
	Ministry of Finance- Aid Co-ordination
	National Disaster Management Office (NDMO)
	Samoa Nursing Association (SNA)
	AusAID
	Samoa Red Cross and Independent DRM Consultant
	Fire and Emergency Services Authority (FEMS)
	Oceania University of Medicine Samoa (OUMS)
	Church of Jesus Christ of Latter Day Saints, Samoa (LDS)
	Samoa Council of Churches (CoC)
	United Nations Development Programme (UNDP) Climate Specialist
	New Zealand Aid Programme/High Commission (NZAID)
	United Nations Development Programme (UNDP) Climate consultants
	Adventist Development and Relief Agency (ADRA)
	Ministry of Agriculture and Fisheries_ Crops (MAF crop)
Women in Business Inc.	

## APPENDIX 8: PACIFIC ISLAND COUNTRY INTERVIEW GUIDE

Our key focus is on the impact of climate change on natural disasters such as tropical cyclones, and the future capacity to deal with them. We have structured the questions according to themes, and we are also interested in your views about your organisation, the wider system at the national and regional level, and also your own personal views.

### Theme 1: Past Response – an example

1. Thinking of the last major natural disaster that your organisation responded to, can you describe what it was?
2. How did your organisation respond? [Probe – what did they do? What actions were taken? What were the interactions with others? ]
  - a. What enabled this / what were the strengths?
  - b. What do you believe needs to be improved in your organisation so that can respond better to climate induced disasters?
3. At the national level, does this diagram represent institutional arrangements as they happen in reality? [*Probe: Where does your organisation fit into the current diagram*]
  - a. Does this differ from how things happened in the example you just described? If so, how?
4. Are there any additional national organisations that are missing from the diagram that were involved in responding to this disaster? [*Probe: Government, non-government, private sector, Church --- and where would they fit in?*]
5. How did these national level organisations interact during the disaster response? [Probe: Was it an organised / systematic response, or Ad-Hoc? Are there Standard Operating Procedures (SOPs) that were followed, regular meetings held with multiple stakeholders etc.]
  - a. What were the main strengths of this approach?
  - b. What were the main challenges or gaps that were faced in terms of coordination and communication?
6. How was the Ministry of Health involved in the coordination of in-country health staff during the disaster? – if/ how did this link in with incoming support? [*Probe: capacity for HRH?*]
7. How did incoming Australian or overseas support affect your organisation's ability to respond? [*Probe: Did you work with external orgs?*]
  - a. Do you feel it supported or detracted from your organisation's ability to respond?
8. How did any incoming Australian and overseas assistance coordinate with that of your country? [*Probe – government and NGO support esp for Cooks*]
  - a. Do you think there are areas that need to be strengthened at the international donor coordination level? If so, please explain? [*Probe – any barriers to this?*]
9. Have any lessons from past responses (such as your example) been incorporated into improving planning processes at the national and organisation levels? [*check if systematic or ad hoc*]

## Theme 2: Decision Making

10. Which organisation/s have authority in decision making around disaster response at the national level? [Probe: How are these organisations held to account? How do other organisations voice their concerns/issues to these decision makers? Does this process need improvement?]
11. In times of disaster, who makes the decision to request overseas assistance?
  - a. What is the process?
12. How is the health sector involved in the decision making process regarding requesting external assistance? What role do they play?

## Theme 3: Organisations and Networks

13. Is this example disaster you just described a “typical” example of a disaster response in your country? Are there any key differences in what normally happens?
14. Within your organisation, which of our 4 humanitarian post-disaster needs do you respond to? [Reminder: these are health care; food and nutrition; water and sanitation and psychosocial needs]
  - a. Are there any that fall outside this list? If so, what other areas do you focus on?
15. Does your organisation have membership in national, Pacific regional groups or networks that work on disaster response? [*Probe: What are they/give a list Is this membership informal or formal?*]

## Theme 4: Policy for Disaster Response

16. Does your organisation have a policy or strategy that underpins your work in the area of disaster response? [Interviewers to focus on 4 humanitarian needs if possible. And if there is such a policy - What is it called? Is it used? How was it developed? Who provides input/is consulted?]
17. **SPECIFIC TO MINISTRY OF HEALTH / RED CROSS:** Does your country have policies in place to coordinate HRH in times of disaster? [*Probe: formal policy/ informal understanding of how things operate?*]
  - a. Are there registration issues for incoming health professionals?
18. What do you see as the most important national policies [in your country] that guide disaster response? [Probes: What legislations/regulations are in place to govern disaster management and response? How are these policies developed; who provides input/is consulted? Does your organisation provide input into national policy development?]
19. Do you think new policies are needed to improve disaster response in the context of climate change? [*Probe: At the national level? Organisationally?*]
20. Are there any regional or international policies (e.g. Regional Disaster Framework, Hyogo Framework for Action) that influence your response to disasters? How?

## Theme 5: Links to climate change

21. In a scenario where climate change causes an increase in disasters and their impacts, how do you think your organisation will cope?



22. Have you had strategic or formal discussions/planning about how to deal with climate change into the future within your organisation with respect to disaster response?
  - a. What about at the national level?
  - b. Are there national discussions or actions regarding integrating disaster risk management and climate change?
23. How do you think the national system of disaster response will cope if disaster frequency and intensity increases? *[This is particularly in reference to existing limited HRH capacity.]*
  - a. Do you think this will impact on your organisation?
24. Does your organisation have the ability to respond flexibly and adapt to any changed priorities as a result of any increase in disasters? *[Probe: capacity to be flexible within the organisations structure and processes?]*

#### **Theme 6: Resources and Skills**

25. Does your country have a national emergency disaster fund? *[Probe for details]*
26. **TAILOR SENSITIVELY TO RESPONDENT:** Can you describe your organisation's funding source/s?
  - a. Is your funding stable? Has it grown or reduced significantly in the last three years?
  - b. Are any changes needed to improve access to these funds and how they are administered?
27. Can you describe your organisation's capacity to carry out your disaster response responsibilities relating to available resourcing? *[HR, financing, supplies etc]*
  - a. Can funds be used flexibly where needs arise such as in the climate change scenario or are they allocated to specific areas?
28. What key skills do your staff require for disaster response?
  - a. Is training for emergency response offered / available for your staff? If it is available, is it accessible internally or externally?
29. How important are disaster risk reduction and preparedness as a use of resources, in considering effective disaster response efforts?

#### **Theme 7: Information and Communications**

30. How do you as an individual obtain the information you need at the time of disaster?
31. Do you feel you have access to the sorts of communication infrastructure etc. (or other infrastructure) that you need to do your job well at that moment of disaster response?
  - a. What would increase your ability to be effective?

#### **Theme 8: Personal reflections**

32. How are key decisions made about disaster response within your organisation?
  - a. Are any changes needed to make the process more inclusive of stakeholder views?
33. In your organisation, how important are key individuals to effective disaster response?

- a. Why?
  - b. What are their roles?
34. When a disaster happens, what actions do you usually take? How do you decide what actions to take?
- a. Does your response in practice differ from that on paper? If so, how do these differ?
35. Do you personally feel that your training has been adequate to prepare you to respond to disasters? [*Probe for details*]
36. What do you personally think needs to change to improve your own and your organisation's ability to respond better, given a climate change scenario with more disaster events?
37. Do you have plans for future human resource needs? [*Probe – own staff etc*]

## APPENDIX 9: COOK ISLANDS WORKSHOP ACTIVITY RESULTS

### Workshop Activity:

Workshop participants were encouraged to discuss the level of capacity (giving a score out of 5) to the organisations involved in disaster response. They had the opportunity to add organisations at the end, which some did (these are at the end).

	CAPACITY					
	Coordination		Human Resources		Skills	
	Table 1	Table 2	Table 1	Table 2	Table 1	Table 2
Emergency Management Cook Islands (EMCI)	2	4	1	2	3	3
Disaster Risk Management Council	3	4	3	4	3	4
Police	2	4	2.5	5	2	5
Cook Islands Red Cross Society	4	5	3	5	3	5
Ministry of Health	3	4	3	4	3	5
Ministry of Infrastructure and Planning	1	3	1	3	1	3
Churches	2	4	2	4	2	3
CICSO	1	2	1	4	1	2
Ministry of Internal Affairs	2	2	2	4	2	3
AusAID		2		5		5
NZAID	3	4	3	5	3	5
Climate Change Division (OPM)	2		2		3	
Chamber of Commerce		5		5		5
Public Service Commission	3		3		3	
Media Association	1	2	3	5	3	2
MFEM	1	4	3	5	3	4
Telecom	2	4	5	5	5	5
Island Council / Island Admin		3		2		2
Local Government (Table 1 included above in Local Govt)	1	5	1	5	2	3
Ministry of Transport		4		3		3
Ministry of Agriculture	1		2		2	
Met Service		4		1		3
Power Co	2		5		4	
Border Control		4		4		3

	CAPACITY					
	Coordination		Human Resources		Skills	
	Table 1	Table 2	Table 1	Table 2	Table 1	Table 2
National Environment Service	2		3		3	
Cabinet (Table 1 inclusion)						
Ministry of Foreign Affairs (Immigration)	1	3	3	3	3	2
FRANZ		5		5		5
Ministry of Education		5		5		3
Tourism		4		4		3
Marine Resources	1		3		3	
Cook Islands Investment Corp	3		3		2	
National Disability Council (No rating provided)						
National Sustainable Development Commission (No rating provided)						

## APPENDIX 10: SAMOA WORKSHOP ACTIVITY RESULTS

### Workshop Activity:

Workshop participants were encouraged to discuss the level of capacity (giving a score out of 5) to the organisations involved in disaster response. They had the opportunity to add organisations to the list, which some did. The average score from two groups are presented for each organisation listed in alphabetical order.

	CAPACITY		
	Coordination	Human Resources	Skills
Australian Agency for International Development (AusAID)	4.5	5	5
Caritas	4.5	4.5	4.5
Churches <sup>d</sup>	3.5	5	4
Disaster Advisory Committee (DAC)	4.5	5	5
EPC	4.5	3.5	4
FAO	4.5	4.5	4.5
Fire and Emergency Services Authority	4.5	4	3.5 <sup>9</sup>
Samoa Red Cross Society	4.5	4.5	4.5 <sup>10</sup>
Meteorology Office	4	3	3
Ministry of Agriculture and Fisheries	4	4	4
Ministry of Health	4.5	3.5	3.5
Ministry of Land Transport authority	4	4	4
Ministry of Women, Community and Social Development	4.5	4.5	4
Ministry of Works, Transport and Infrastructure	4.5	4	4
National Disaster Council (NDC)	4	5	4.5
National Disaster Management Office (NDMO)	4.5	2	4.5
NHS	4.5	3 <sup>11</sup>	4

<sup>9</sup> FEMs need to improve on safety and communications equipment/skills.

<sup>10</sup> Red Cross needs to improve management of implementation

<sup>11</sup> NHS need more HRH and improved medical equipment.

	CAPACITY		
	Coordination	Human Resources	Skills
NZAID	4.5	5	5
Police	4	4.5	3.5
Samoa Council of Churches	3	5	4
Samoa Nursing Association	4	4	4
Samoa Water Authority	4	4	4
SUNGO	4	4.5	3.5 <sup>12</sup>
UNDP*	4	4	4
UNESCO	4.5	4.5	4.5
Village Councils	4	5	3 <sup>13</sup>
WHO	4.5	5	4.5

<sup>12</sup> SUNGO needs to improve on communication and delegation skills.

<sup>13</sup> Village councils need improved skills in first aid and response skills.



