Tonkin+Taylor

TC Gita Emergency Preparedness and Response

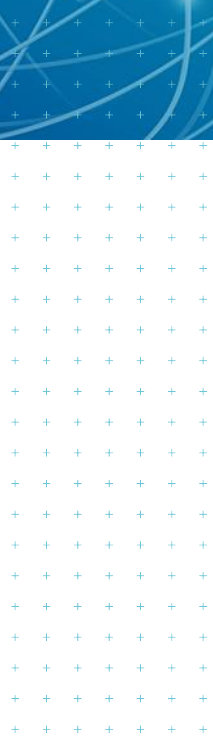**A Comprehensive Review and Lessons Learnt**

Prepared for
NEMO Tonga & UNDP

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Executive Summary

February 12 2018, near midnight, severe Tropical Cyclone (TC Gita) to impact Tonga made landfall on the islands of Tongatapu and 'Eua. This resulted in severe impacts to infrastructure and agriculture across the two main islands. However, due to the efforts of the MET Service and emergency response team, no lives were lost.

Tonga has officially adopted the Clusters approach to humanitarian and emergency relief for the first time during the response to TC Gita. To understand how the cluster system performed in practice, Tonkin + Taylor International were contracted by the UNDP to carry out an After Action Review to assist National Emergency Management Office (NEMO). The aim of this review was to determine gaps, overlaps and successes within the cluster approach and leverage opportunities from lessons learned to enhance Tonga's ability to respond effectively and minimise impacts in future events.

The review incorporated a multi-stakeholder approach with individual interviews and two workshops held with all response agencies to understand their lessons learned. Analysis focused on the role of these lessons for the cluster mechanism and how they can be incorporated into planning and response for all future cyclones. An indicator-based approach was used to determine the different elements for each cluster's response at a high level

Overall, the response to TC Gita was a success insofar as there was no loss to life. However, significant impacts to infrastructure, agriculture and livelihoods, which occurred in the wake of TC Gita, are still being experienced. A notable obstacle for an efficient cross-cluster response was the inefficient gathering of needs assessment information. Some communities were visited and assessed many times over, yet were left with little understanding of where the information went, or how the clusters would use it. Poor clarity of roles and responsibilities due to weak cluster standard operating procedures and terms of reference also created significant confusion, gaps and overlap between the responses of individual clusters.

This report examines the limitations and impact of the overarching regulatory and policy framework and details how the clusters responded. In response to identified gaps, overlaps and offers detailed recommendations (Table 5-1) with an action plan for each cluster to be implemented before the next significant Tropical Cyclone (Table 5-2). The objective is to take advantage of this opportunity for improvement, and to effectively and efficiently apply lessons learned within the current cluster management system thus assisting Tonga to become more resilient to future disasters. Government leadership provided some semblance of stability in co-ordination amidst confusion and clarity of roles.

Glossary

AAR	After Action Review
ADB	Asian Development Bank
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
FRDP	Frameworks for Resilient Development in the Pacific
FTWC	Fua'amotu Tropical Cyclone Warning Centre
HMAF	His Majesty's Armed Forces
HNWASH	Health, Nutrition, Water, Sanitation and Hygiene
IFRC	International Federation of Red Cross and Red Crescent Societies
IPCC	International Panel on Climate Change
JNAP	Joint National Action Plan
MEIDECC	Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communication
MOI	Ministry of Infrastructure
NECC	National Emergency Coordination Centre
NEMO	National Emergency Management Office
NEMP	National Emergency Management Plan
NEOC	National Emergency Operations Committee
NERC	National Emergency Recovery Committee
Non-Food Items	Non-Food Items
NGO	Non-Government Organisation
PCRAFI	Pacific Catastrophe Risk Assessment and Financial Initiatives
PDNA	Post Disaster Needs Assessment
PHT	Pacific Humanitarian Team
PREP	Pacific Resilience Programme
RESPAC	Disaster Resilience for Pacific SIDS
RSMC	Regional Specialized Meteorological Centre
SOP	Standard Operating Procedure
TC	Tropical Cyclone
TMS	Tongan Met Service
TOR	Terms of Reference
UNDP	United Nations Development Programme
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs

1 Introduction

1.1 Background

On Monday, February 12, 2018 around 11 pm, Tropical Cyclone (TC) Gita passed over the Tongatapu and 'Eua Island groups. The acting Prime Minister issued a National Declaration for a State of Emergency as the storm was expected to reach a destructive Category 5 system. While TC Gita never reached the expected intensity, it nevertheless was the strongest TC to impact Tonga since TC Isaac in 1982, with average wind speeds of 130 km/h and gusts of 195 km/h (Government of Tonga, 2018). A storm surge up to 1 metre above normal high-tide levels and 200 mm of rainfall over a 24-hour period resulted in localised flooding (Government of Tonga, 2018). Nearly 80,000 people were impacted – roughly 80% of Tonga's population – with over 800 houses destroyed and a further 4,000 damaged. Table 1-1 provides an overview of the estimated damages from the Post Disaster Rapid Assessment carried out by the Government of Tonga. A damage assessment map can be seen in Appendix A. Despite this destructive storm, efficient early warning messaging and information resulted in minimal injuries and no direct deaths.

Table 1-1: Estimated damages by sector (T$ millions) (Government of Tonga, 2018)

	DAMAGE	LOSSES	TOTAL
Productive Sectors	**54.88**	**138.47**	**193.35**
Agriculture	5.10	92.38	97.48
Commerce and Industry	23.48	31.79	55.27
Tourism	26.30	14.30	40.60
Social Sectors	**131.48**	**2.74**	**134.22**
Housing	111.60	0.02	111.62
Education	19.78	2.17	21.95
Health	0.10	0.55	0.65
Infrastructure Sectors	**22.46**	**6.08**	**28.54**
Energy	13.41	3.73	17.14
Public Buildings	5.47	1.00	6.47
Transport	2.32	0.76	3.08
Water and Sanitation	1.26	0.59	1.85
TOTAL	**208.82**	**147.29**	**356.11**

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> **LIMITATIONS**
>
> It needs to be clearly disclosed that the results shown in this report are purely based on the survey results taken by the cluster members, as well as information obtained from one-on-one interviews and a workshop. As the cluster members filled out their own surveys, and provided anecdotal information, the results are likely to be very biased towards a positive review of their cluster's actions. For example, the Social and Economic Recovery Cluster was not operational during the majority of the response, as they had no formal meetings, nor any coordination with the national or regional clusters; however they still scored themselves reasonably high results. The indicators for the clusters were based on the project scope and overall functions of the clusters. However, for the Economic and Social Recovery Cluster and Reconstruction Cluster, results were not obtained for all thematic areas, as these clusters were not fully activated and information was not provided within the timeline of this project.

1.2   Overview of the Report

The aim of this report is to review the performance of the Tonga disaster risk management arrangements (Cluster System for Humanitarian Emergency Response) during the preparedness, warning of, response to and (early) recovery efforts after TC Gita. The assessment highlights lessons learned to strengthen the coordination, efficiency and functioning of Tonga's preparedness, response and recovery efforts.

1.3   Scope of the Assessment

This assessment covers overall response, coordination, communication, and resource mobilisation with particular reference to the cluster system.

1.3.1   Overall Response

Examine Tonga's national response. This includes:

i   Timeliness and effectiveness of strategic decisions and actions by decision makers and other key stakeholders in Government in order to respond to the event; ii) internal communication and coordination flows within the NDC structure to support the National Emergency Management Office (NEMO) and clusters' efforts to respond and recover; iii) timeliness and effectiveness to quickly scale up operational capacity to undertake immediate response activities and early recovery;

ii   Review Tonga's overall preparedness for response and recovery - including the decision-making processes and their efficiency in the context of corporate response - with the view of further informing the finalisation of Standard Operating Procedures (SOPs) for the NDC and substructures;

iii   Review the timeliness and effectiveness of the overall response operation (early warning and preparedness to response) and the compliance and application of the relevant National Terms of Reference (TORs) & SOPs, including linkages to the Pacific Humanitarian Team (PHT) and decision-making processes. This part of the review will include a focus on national and TMD/NEMO level responses;

iv   Review the efficiency and effectiveness of the TORs & SOPs, as well as analyse their application, appropriateness, acceptance, uptake, overlaps and gaps in the context of the response. This includes, but is not limited to, the application of early warning procedures,

emergency procedures and rapid response processes and the operational elements of the relevant response packages (financing, deployments, recruitment, procurement, and the like);

v   Assess the effectiveness of public early warning and preparedness programmes;

vi   Review the relevance and timeliness of the surge support by partners; and

vii   Examine the operational bottlenecks and constraints faced by TMD/NEMO in terms of both operations and programme implementation.

1.3.2   Coordination

Explore the effectiveness and adequacy of engagement with the broader humanitarian action, including a review of the following:

i   The extent of coordination and cooperation with key humanitarian partners on the ground within clusters, across clusters, and the links to the 1) Coordination/Logistics Cluster, 2) National Emergency Operation Committee (NEOC), and 3) National Emergency Recovery Committee (NERC);

ii   Support to Government coordination capacities and engagement in the wider planning processes for recovery with the government and other key stakeholders;

iii   Needs assessment processes (IDA, sector-specific assessments on damages and needs including the PDNA and the comprehensive Household Survey);

iv   Humanitarian funding instruments, including the assessment of the effectiveness of partner financial contributions; and

v   Effectiveness of partner in-kind contributions.

1.3.3   Communication and Resource Mobilisation

Examine the timeliness and effectiveness of communication, including:

i   Relationship with media, content of disaster messaging both internally and externally in terms of early warning and preparedness;

ii   Resource mobilisation efforts to support response and recovery;

iii   Review the level of success in mobilising funds from humanitarian funding sources;

iv   Examine internal and external factors that impacted donor funding decisions, identifying areas for improvement; and

v   Assess donor response, identifying gaps and areas for improvement.

1.4   Methodology

Information on the overall response, coordination, communication and resource mobilisation was gathered by means of three approaches:

- Individual interviews with cluster lead agencies;
- An indicator based assessment; and
- Two workshops with all clusters following a typical After Action Review (AAR) structure (Appendix A).

The indicator-based assessment drew on multi-criteria assessment based on the TOR scope. The assessment tool was developed based on literature review of previous disaster response and recovery, case studies and lessons learned from past disasters to provide an object oriented assessment. Cluster members and other stakeholders based assessments on individual's responses from each clusters and from group discussions.

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As a group, each cluster also filled out their own indicator-based assessments and then worked through the AAR questions.

In both the interviews and the workshop, indicators were given a value of 1 – 4 (Table 1-2) based on where the participants thought each cluster was currently placed and what improvements were required.

Table 1-2:   Assessment ranking

4 - Very good	3 - Satisfactory	2 - Needs improvement	1 - Poor/non-existent

The aggregation of indicators provides an overall picture of the vulnerability of each cluster system. Additive, weight-based aggregation was adopted in this study. This approach is used widely in vulnerability studies (Fakhruddin & Chivakidakarn, 2014; Ebert & Welsh, 2004; Gbetibouo, Ringler; Hassan, 2010; Moss, Brenkert; Malone, 2001; Preston, et al., 2008)

$$V_m = \sum_{i=1}^{n} W_i \bar{I}_{mi}$$

Here, V_m is the vulnerability of a given infrastructure system (m), n is the number of indicators of the vulnerability model; W_i is the weight of importance of a given indicator i and I_{mi} are the normalised indicators.

Normalisation is required for bringing different types of indicator data into a common platform where they can be aggregated. While literature provides different normalisation techniques. This study adopted the following approach.

$$\bar{I}_{mi} = \frac{(I_{mi} - I_{i,min}) \times 100}{I_{i,max} - I_{i,min}}$$

Here, I_{mi} is the (i) indicator of the mth infrastructure system; I_i, min = min (I_{mi}) and I_i, max = max (I_{mi})

1.5   Report Structure

This report comprises five chapters and annexures, including assessment tables and details of the people met during the field missions and two workshops (20 September and 25 October 2018). Chapter outline is as follows:

Chapter 1:   Describes project objectives and scope, methodology and project background

Chapter 2:   Overview of Disaster Risk Management (DRM) in Tonga

Chapter 3:   Detailed assessment of the preparedness response and recovery for TC Gita

Chapter 4:   Describes lessons learned based on project scopes

Chapter 5:   Recommendations by clusters.

2   Overview of Tonga Disaster Risk Management

2.1   DRM in Tonga

Tonga is often classified as the second most at-risk country in the world in terms of exposure to natural hazards and the unfolding effects of climate change, after Vanuatu[1]. This high exposure directly affects Tonga's people, environments and livelihoods. Along with climate risk, Tonga is highly exposed to other natural hazards, including geophysical, hydrological, and meteorological hazards. The Pacific DesInventar[2] data for Tonga (1833-2014) reveals 85 tropical cyclone deaths and total cumulative damages of US$ 246 million. The disaster loss was assessed in more detail in the Pacific Catastrophe Risk Assessment and Financial Initiatives (PCRAFI)[3] study, which concluded that Tonga is expected to incur, on average, US$ 15.5 million per year in earthquake and tropical cyclone-related losses.

Tonga has a genuine political commitment to disaster management and risk reduction. This manifests in increased budget allocations for disaster-related activities and in the creation of a "mega-ministry" linking disaster, climate change, environment and communications (MIEDECC). Recently a lack of spatial planning in legislation has resulted in uncontrolled, unplanned urban development and uncoordinated responsibilities of agencies involved in the delivery of services and infrastructure. The National Spatial Planning Management Act (2012) could enhance urban planning and sustainable development practice, which in turn could reduce disaster risk.

Despite the growing urgency associated with climate change, there remain many opportunities to improve understanding and awareness of these issues throughout Government, such as a focus on building resilience and ensuring the prevention of maladaptive developments. The situation would benefit from enhanced collaboration between the main ministries, embracing a comprehensive approach to develop private sector links and encourage the integration of risk into business planning and decisions (JNAP, 2015). Establishing Public-Private Partnerships would also enhance cost efficiencies as well as delivering greater impact for public DRM initiatives.

The response to TC Gita showed insufficient coordination at the community level for DRM. While best practice and lessons learned are often identified after an event, it was noted that this was often not adopted nor applied to capacity building for the community.

The Emergency Shelter Cluster Pacific and IFRC for the Kingdom of Tonga Emergency Shelter and Non Food Items Cluster and Reconstruction Cluster have carried out their lessons learned workshop to produce: TC Gita 2018 Response Review Workshop Final Report. The report expressed concerns about the political influence on "building back better" and consequently disaster risk reduction strategy. This was particularly noted in relation to decisions made to distribute cash for recovery efforts, which occurred outside of formal cluster mechanisms and ministries, and did not link with response activities. Providing cash distributions encourages self-recovery, which can assist in the overall recovery of communities. However, it limits the government's ability to monitor and review reconstruction efforts and enforce building standards for risk reduction if left uncoordinated.

2.2   Policy and Institutional Arrangement

With policy development such as the Tongan Strategic Framework II, the Tongan Government aims to create a society in which all Tongans enjoy higher living standards and a better quality of life by way of good governance, environmentally sustainable private sector-led economic growth, improved education and health standards, and cultural development.

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[1] UNU-EHS, 2017 World Risk Report 2017
[2] http://www.desinventar.net/DesInventar/profiletab.jsp
[3] http://siteresources.worldbank.org/EXTDISASTER/Resources/Tonga.pdf

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Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC) is the nodal Ministry for all matters concerning disaster management, climate change, environment, and energy and information communication. The National Emergency Management Office (NEMO), coordinates all DRM activities through the development of Standard Operating Procedures, the National Emergency Coordination Centre (NECC), the National Emergency Management Plan (NEMP) (2009) and the Emergency Management Act (2007). The current National Emergency Management Act (2007) is under review. Chaired by the Prime Minister, the Cabinet forms the National Disaster Council (NDC), with overall authority and responsibility for disaster management programmes and activities, including response. The NEMP includes different organizational structures to coordinate Disaster Risk Reduction, Emergency Response and Recovery i.e., the National Emergency Management Committee (NEMC), the National Emergency Operations Committee (NEOC) and the National Emergency Recovery Committee (NERC) as shown in Figure 2-1. MEIDECC chairs three DRM coordinating committees (NERC, NEOC and NEMC) and NEMO works as the secretariat for these three committees. The Ministry of Agriculture, Food, Forests and Fisheries is involved in climate change and drought management.

The Ministry of Land and Natural Resources (MLNR) is responsible for urban development. The Planning and Urban Management Agency/National Special Planning Authority Office (NSPAO) leads the policy and guidelines for urban development. The Tonga Water Board (TWB), Waste Authority Limited (WAL) and Tonga Power Ltd. (TPL) are three public enterprises playing major roles in urban development. Urban resilience has linked PUMA with the country's disaster risk reduction and climate change institutions and they need to work closely to ensure greater resilience for Nuku'alofa. The National Special Planning Authority Advisory Committee (NSPAAC) has been developed, and under the ADB supported NUDSP project, will ensure strengthening of NSPAAC and its functions. The NSPAAC requires capacity building and strong coordination with NEMC and NECC to ensure that DRR and CCA are incorporated into urban development.

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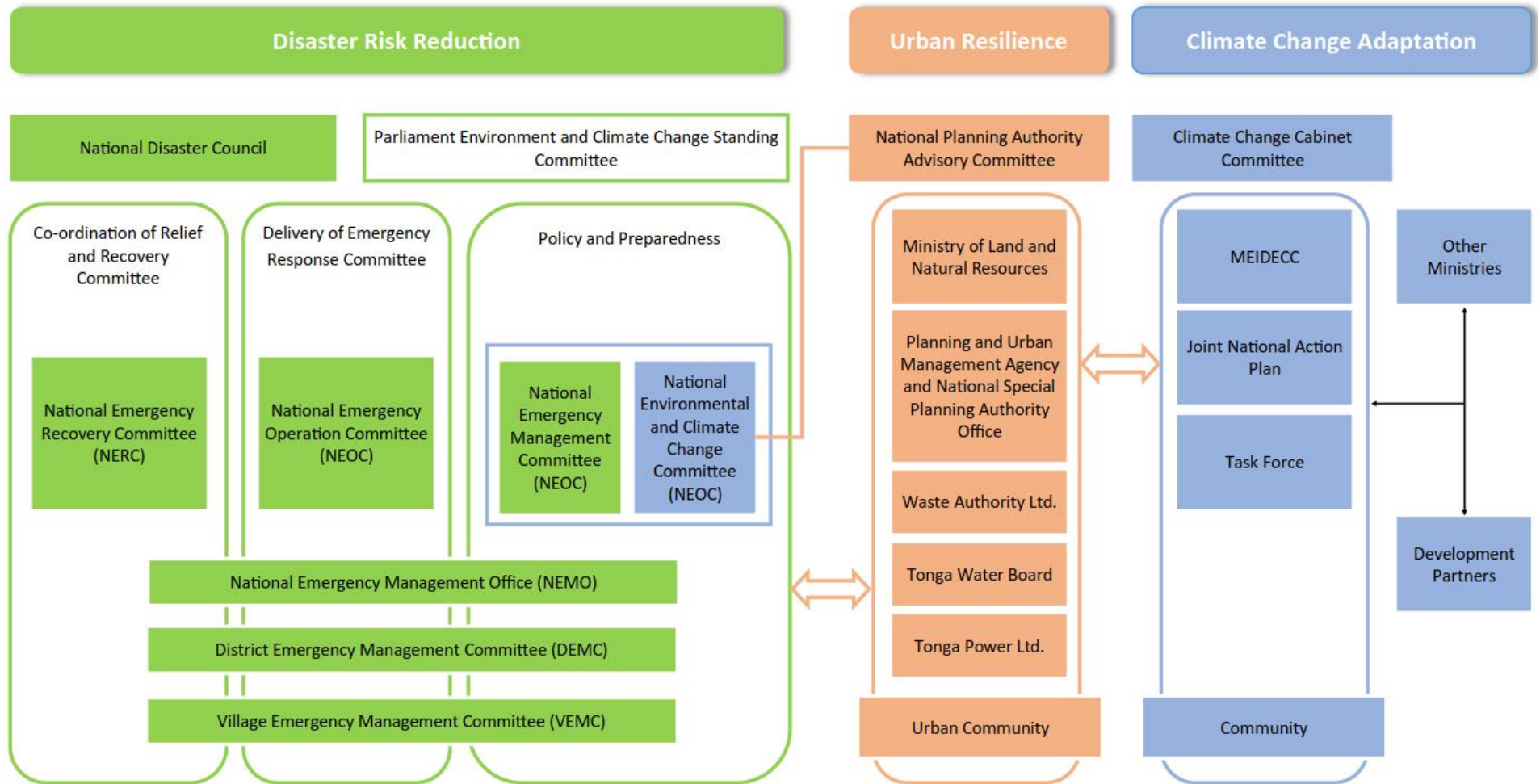
Figure 2-1 Overall institutional framework for disaster and climate change adaptation in Tonga (NUDSP, 2017)

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Figure 2-2 outlines the structure and reporting lines of the cluster system within the institutional arrangement in Tonga. The nine clusters each have a key national agency who leads the cluster. Regional and international support is then provided through agencies within the Pacific Humanitarian team. The national lead agency is then further supported by various other agencies. Worthy of note are the contributions made by faith-based organisations. Many evacuation centres and resources are provided by these organisations to their local communities. They represent a strong community network and help in building resilience throughout their local community to assist in response and recovery efforts.

Regional/ International Agency	Cluster	National Agency
WFP	Coordination and Logistics Cluster	NEMO
IFRC	Emergency Shelter and Non-Food Items Cluster	NEMO
UNICEF/Save the Children	Education Cluster	Ministry of Education
WFP	Essential Services Cluster	Ministry of Public Enterprise
World Bank/ADB/ European Commission	Reconstruction Cluster	Ministry of Infrastructure
WHO/UNICEF/OXFAM/ PMA	Health, Nutrition, Water, Sanitation and Hygiene Cluster	Ministry of Health
UNDP/ FAO	Food Security and Livelihoods Cluster	Ministry of Agriculture, Food, Forest and Fisheries
UNDP	Economic and Social Recovery Cluster	Ministry of Finance and National Planning
WFP	Communications Cluster	MEIDECC—Department of Communications
UN Women/ UNICEF/ UNFPA	Safety and Protection Cluster	Ministry of Internal Affairs

Figure 2-2 Cluster structure and reporting line

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Section 32 of the Emergency Management Act 2017 (Government of Tonga, 2007) empowers the Prime Minister to declare a state of emergency for a part of, or the whole of Tonga, if Prime Minister is satisfied that (a) an emergency has happened, is happening or may happen; or (b) if it is necessary for emergency powers to be exercised to prevent or minimise –

i   loss of human life;

ii   illness or injury to humans;

iii   property loss or damage; or

iv   Damage to the environment.

A declaration under section 32 remains in force for 28 days and may be extended by the Prime Minister as necessary, for further periods of 28 days. A declaration ends at the expiration of the period of declaration, or earlier, if the Prime Minister declares it so.

When a state of emergency is declared, the Minister may authorise any person or class of persons to exercise emergency powers under the Act provides a flexible arrangement for rapid response in the country. An authorised officer has extensive powers under the Act, including the evacuation of people and animals, entering property without a warrant, shutting off the supply of electricity, fuel, gas or other service, and removing or damaging any building or thing.

The NEMP includes different organisational structures to coordinate DRR, response and recovery (UNDP, 2016); however, this multilevel structure is often unclear in terms of their roles and responsibilities and can result in ineffective execution of disaster response. This structure and any of the other DRR relevant policies do not include any mention of the clusters for Humanitarian Response. This, along with limited guidance from an overarching strategy, makes establishing and coordinating clusters extremely difficult. There also remains meagre direction and outlines for institutional arrangements and responsibilities, all of which contribute to limited improvements in marginal living conditions (ADB, 2017).

The cluster works are not integrated into the Emergency Act, which is outdated and currently under review.While Tonga has shown a firm commitment to the process, it currently lacks a comprehensive, overarching policy framework. Various policies operate in isolation with insufficient integration among different sectors leads to delay overall coordination on disaster management. Due to frequent Ministry changes, laws and regulations sometimes create confusion. Similarly, the absence of a policy to coordinate agencies and departments may be perceived as discouraging inclusions of the plans and projects of other agencies.

District Emergency Management Committees are required under the National Emergency Management Act 2009 to develop the District Emergency Management Plans aimed at raising awareness of emergency management. However, these have not been developed and the capacity is currently not sufficient. At village level, the NEMO weakly encourages the creation of Village Emergency Management Committees for the development and implementation of village emergency management plans (Government of Tonga, 2009).

The Climate Resilience Sector Project review of community development plans notes "*The current methodology, procedures and institutional set up to develop community based plans is fragmented in Tonga. Agencies and Organisations have their own methodology and procedures on Climate Change Adaptation and Disaster Risk Reduction*" (ADB, 2017). While a standard approach has been applied in the development of community development plans, it has already been shown that they lack specific focus on vulnerabilities and resilience building. Overall, the stakeholders agree that comprehensive policies exist in Tonga, such as the National Emergency Management Plan, however they are not yet fully exercised.

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The Tongan Government has endorsed most of the international frameworks such as the Sendai Framework, Paris Agreement, Sustainable Development Goals, Samoa Pathway, Framework for Resilient Development in the Pacific (FRDP), and the like.

2.3   4W Principles on Clusters

The cluster approach was developed by the United Nations Office for the Coordination of Human Affairs (UNOCHA) for coordinating in humanitarian emergencies. Typically, there are 11 clusters led by specific agencies to spread the accountability for the delivery of services during disaster response (UNHCR, 2015). However, this can vary by country depending on the available resources and current government structures. As shown in Figure 2-3, the Tongan cluster system consists of only 10 clusters, which cover slightly different areas compared to the original UNOCHA clusters[4].

The Tongan Cluster System was initially established for the first time during the response to Tropical Cyclone Gita, which understandably led to some teething issues and will require some time to become fully functional. Each cluster meet frequently (i.e. weekly) during the response period while very less (i.e. 1 in six month) in the normal time. The presence of permanent focal point in cluster found effective for cluster and inter-cluster coordination. Due to the relative small size of the Tongan agencies, many individuals were involved across multiple clusters. This increased the ability for collaboration but made it difficult for individuals to change mind-sets and deal with the issues of specific clusters. Table 2-1 provides an overview of the cluster actions during the response to TC Gita, including the "who", "what", "when" and "where": who the lead agency was, what activities the cluster carried out, when they did it and where it was done.

Figure 2-3: Tongan national cluster response system

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Table 2-1:   4 W's of Cluster activation and activities during the response to TC Gita

Cluster	Who (Lead Agency)	What/Activities Carried Out/Challenges	When	Where
Coordination and Logistics	NEMO	Establish EOC. Provision of emergency water to hospital. Equip town and district officers with needs assessment form. Coordination and distribution of emergency shelter and Non-Food Items depending on damage state. Coordination of all emergency supplies with all other clusters. NEMO also actively worked in preparedness on evacuation	As soon as TC Gita began impacting Tonga up until weeks afterwards (i.e. active during response and disestablished before transition to recovery).	Across Tongatapu and 'Eua.
Communication	MEIDECC – Department of Communications	Assess communications network. Re-establish communications network. Lack of technical people meant an inability to restore towers immediately, provide generator back up and resource mobilization	Immediately after TC Gita up until weeks after (up to 7 weeks for full power restoration).	Across Tongatapu and 'Eua.
Essential Services	Ministry of Public Enterprise	Restoration of power. Damage assessment and coordinating repair of ports. According to situation report #11, communications had been restored to 100% by the 3 March 2018. 76% of power had been restored by the 8 March 2018 as outlined in situation report #12.	Within 1 week after TC Gita until essential services were re-established.	Across Tongatapu and 'Eua.
Economic and Social Recovery	Ministry of Finance and National Planning	Formulating response and finance plans. Lack of coordination and communication during response.	As outlined in Situation report #12, cluster had begun operations by the 12 March 2018, but no active roles were performed	Across Tongatapu and 'Eua.
Education	Ministry of Education and Training	Damage assessment of educational facilities. Coordinating with NEMO and MOI to find shelter for the relocation of schools. Coordinating with HNWASH cluster to ensure hygiene and health standards of education facilities.	Within 1 week after TC Gita and ongoing for months. Regular meeting and responses	Across Tongatapu and 'Eua.
Emergency Shelter and Non Food Items	NEMO	Provision of emergency shelter such as tarpaulins and evacuation centre supplies.	Within 1 week after TC Gita and ongoing for months.	Across Tongatapu and 'Eua.

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Cluster	Who (Lead Agency)	What/Activities Carried Out/Challenges	When	Where
Food Security and Livelihoods	**Ministry of Agriculture, Food, Forest and Fisheries**	Detailed assessments of crop damage and distribution of seedlings for new crop growth.	Within 1 month of TC Gita and ongoing for months.	Across Tongatapu and 'Eua.
Safety and Protection	**Ministry of Internal Affairs**	Survey communities within shelters and at home to determine safety of people during response and recovery.	Within 2 weeks of TC Gita ongoing for months.	Across Tongatapu and 'Eua.
Reconstruction	**Ministry of Infrastructure**	MOI take over the coordination of the event after NEMO to begin transitioning to recovery. The priority is gaining an understanding of the needs for reconstruction and/or repair of households throughout the impacted areas. MOI aims to work with the Ministry of Finance and National Planning to obtain funding for the rebuild. Funds were distributed to households based on the amount of damage identified during needs assessments.	Within 1 month of TC Gita and ongoing throughout recovery.	Across Tongatapu and 'Eua.
HNWASH	**Ministry of Health**	Provision of HNWASH kits. Coordinating with NEMO for distribution of water and food items. Coordinating of mobile health teams visiting villages. Public announcements for health issues and advisories. Respond to Dengue outbreak.	Immediately after TC Gita and ongoing months thereafter.	Across Tongatapu and 'Eua.

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2.4   Preparedness

Preparedness for a well-forewarned TC Gita allowed evacuations to be carried out according to the advice that was being received. As a result, there were no deaths and only three major injuries directly attributable to the storm (Government of Tonga, 2018). Some preparedness activities included pre-event stocktakes of emergency shelter items and Non-Food Items throughout the country by the cluster. UNDP is carrying out a preparedness and disaster governance program by engaging with the district and Town Officers and assisting in capacity building through the Ministry of Internal Affairs. The Pacific Resilience Programme (PREP) is a World Bank initiative to increase preparedness and response through the strengthening of early warning systems, risk reduction and resilient investments and strengthening the financial resilience. With donor-based projects, the Government of Tonga is working with the community to improve understanding of hazard information in limited capacity but may need enhancement. Similarly, Disaster Resilience for Pacific SIDS (RESPAC), a Russian Federation funded project, effectively addresses the consequences of, and responses to, climate related hazards and is being achieved through three components:

1   Strengthened early warning systems and climate monitoring capacity in selected PICS;
2   Preparedness and planning mechanisms and tools to manage disaster recovery processes strengthened at regional, national and local level;
3   Increased use of financial instruments to manage and share disaster related risk and fund post disaster recovery efforts.

Prior to TC Gita, the government had also increased its resilience investment for financial risk in disasters through the following initiatives[5]:

i   Government own initiatives in disaster resilience including
      a   Establishment of National Emergency Fund;
      b   Reconstituted the National Emergency Management Office's provision of nation-wide emergency stocks and Response Clusters; and
      c   Establish Sink fund to manage debt servicing.
ii   New investments, such as
      a   US$16million from World Bank PREP project;
      b   World Bank PCRAFI insurance;
      c   ADB US$23 million Climate Change Resilience;
      d   ADB US$6million Pacific Disaster Resilience Contingent Financing;
      e   ADB Urban Nuku'alofa development project; and
      f   JICA support NEW (Nationwide Early Warning System).

2.5   TC Gita Early Warning System[6]

The Fua'amotu Tropical Cyclone Warning Centre (FTWC) was activated at 11.45pm on Saturday, February 10 as TC Gita was upgraded to Severe Tropical Cyclone Status. Based on the available meteorological information, the FTWC forecasted that TC Gita would reach Category 5 as it passed directly over Tongatapu. The Director of Meteorology advised the National Emergency Management committee (NEMC) to consider declaring a State of Emergency to prevent or minimise the impacts to life and property.

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[5] Tonga Ministerial Brief, 16-19 October 2018, Warwick Le Lagoon, Port Vila, Vanuatu. Ministerial Dialogue: The Challenges and Opportunities of Building Disaster Resilience in the Pacific
[6] Information has been adapted from the Meteorology and Coastal Services 'Meteorological Report on Tropical Cyclone 'Gita', MEIDECC, 2018

Following the advice from the Director of Meteorology, a state of emergency was declared in Nuku'alofa at 8 am Monday, February 12 by acting Prime Minister Hon. Semisi Sika. This was in place initially for 28 days as required under the National Emergency Management Act (Government of Tonga, 2007). As the response required, the state of emergency was then extended for a further 28 days into April. The state of emergency led to the implementation of the following precautionary measures:

- A curfew between 8 pm and 8 am within the CBD of Nuku'alofa during the emergency period;
- Tonga Power shut down electricity at 07:55 am Monday, February 12; and
- Approximately 4,000 people self-evacuated to evacuation centres before gale, storm and hurricane force winds arrived.

Under the National Emergency Management Act (Government of Tonga, 2007), an authorised officer – any individual who has been authorised by the Minister as well as police and military offices, has the following powers to reduce loss of human lives and damage to property and the environment:

- Entering property without warrant;
- Evacuation of people and animals;
- Preventing people, animals, plants, vehicles, and other things from entering a place;
- Preventing people, animals, plants, vehicles, and other things from leaving a place;
- Taking necessary equipment onto a place to assist them in carrying out their duties;
- Directing the movement of people, animals, vehicles and other things;
- Shutting off a supply of electricity, fuel, gas or other service, and taking and using electricity, fuel, gas or water;
- Maintaining, restoring, or preventing damage to essential services;
- Shutting down or dismantling any equipment or motor;
- Removing, demolishing or damaging any building or thing;
- Placing property under the control, or at the disposal of an authorised officer;
- Decontaminating people and property;
- Erecting barriers and closing roads; and
- Requiring a person to give the authorised officer reasonable help to exercise the authorised officer's emergency powers.

Government officials, such as the CEO of MEIDECC, Director of NEMO and Director of Meteorology, regularly provided updates via radio and television, urging the community to respond to warnings and evacuate as soon as possible. However, the emergency act could delineate the authority to emergency response but was not exercised for this case. Warnings and updates were produced by the FTWC every 12 hours leading up to TC Gita's impact and then every three to six hours as TC Gita passed over Tongatapu, until the deactivation of the FTWC at 10.40 pm Monday, February 12 due to structural damages. Warnings for Tonga were then passed over to RSMC Nadi until the last cancellation advisory, which was issued at 3 pm Tuesday, February 13. Figure 2-2 shows two of the many TC Gita forecasting tracks that were produced leading up to the impact on Tonga.

AM Radio Tonga also failed around the same time as the FTWC, so warnings were restricted to FM90 and FM87.5 radio stations. While official warnings were handed over to the RSMC Nadi, FTWC remained operational and continued to provide manual support and radio updates to the public based on weather observations and barometer readings. Figure 2-5 provides an overview of the timeline during the preparedness or lead up to TC Gita and the immediate response.

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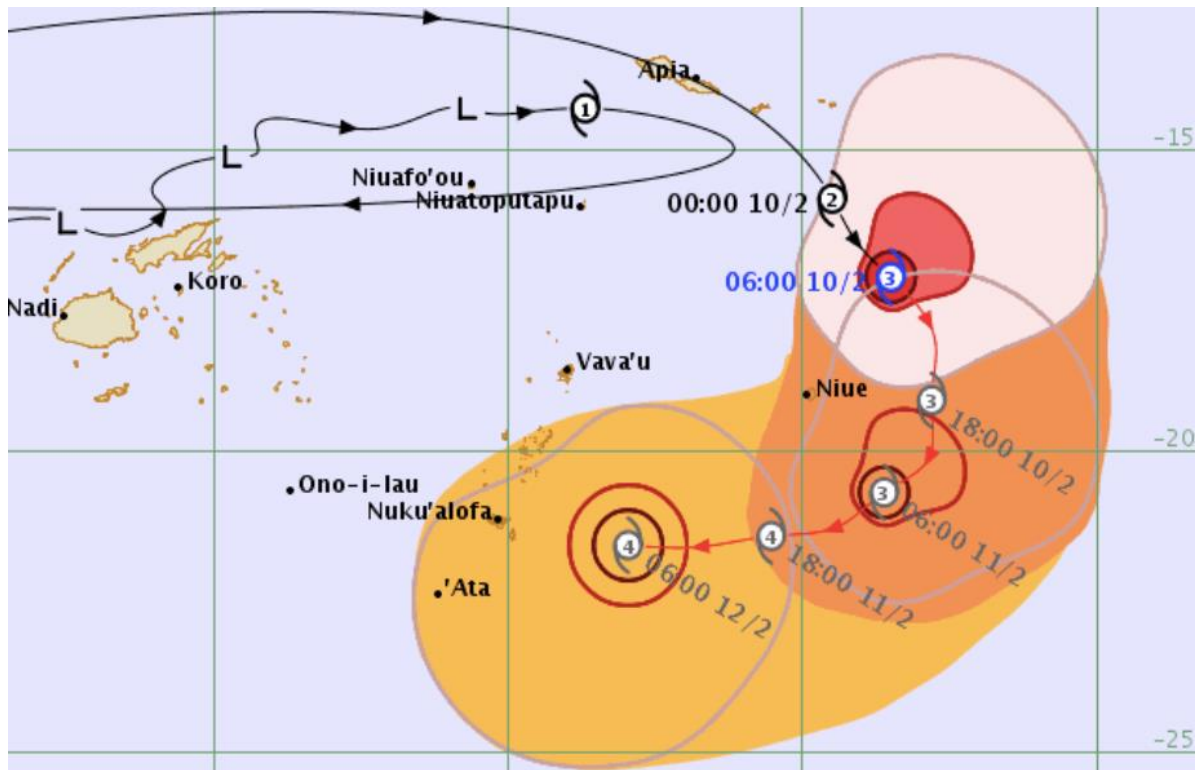
Figure 2-4: TC Gita Track courtesy of the Fiji Met Service[7]

Figure 2-5: TC Gita Response Timeline

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2.6   Response

Overall, the response to TC Gita was positive due to the dedicated staff working at NEMO and support from UN. The Pacific Humanitarian Team (PHT) in Suva Fiji was mobilized and was supposed to coordinated regular meetings for agencies, assisting with coordination of humanitarian actors remotely and physically. However, there was no daily collaboration of OCHA (representing the PHT) with NEMO. This approach aims to ensure that sectors are aligned in their approach, however it needs significant improvement. In addition, major Cluster Leads met regularly with the NEMO and aimed to improve coordination and information flow within two weeks after the cyclone.

 The biggest achievement was that no lives were lost and nearly 4,000 people self-evacuated to evacuation centres thanks to early warnings. Up until the handover of the warnings and advisories to the RSMC, the FTWC and NEMO produced regular and informative warnings, which allowed the community to respond in an appropriate manner, and meant that they generally perceived the risk correctly. A common limitation across all clusters was the availability of reliable needs assessment data. Some communities on 'Eua were visited 29 times by different agencies asking in some cases the same questions (Shelter Cluster Pacific & IFRC, 2018). This is evidence of limited collaboration and data sharing across all clusters and insufficient standardisation of data collection systems. It also reflects the absence of predesigned needs assessment prior to an event.

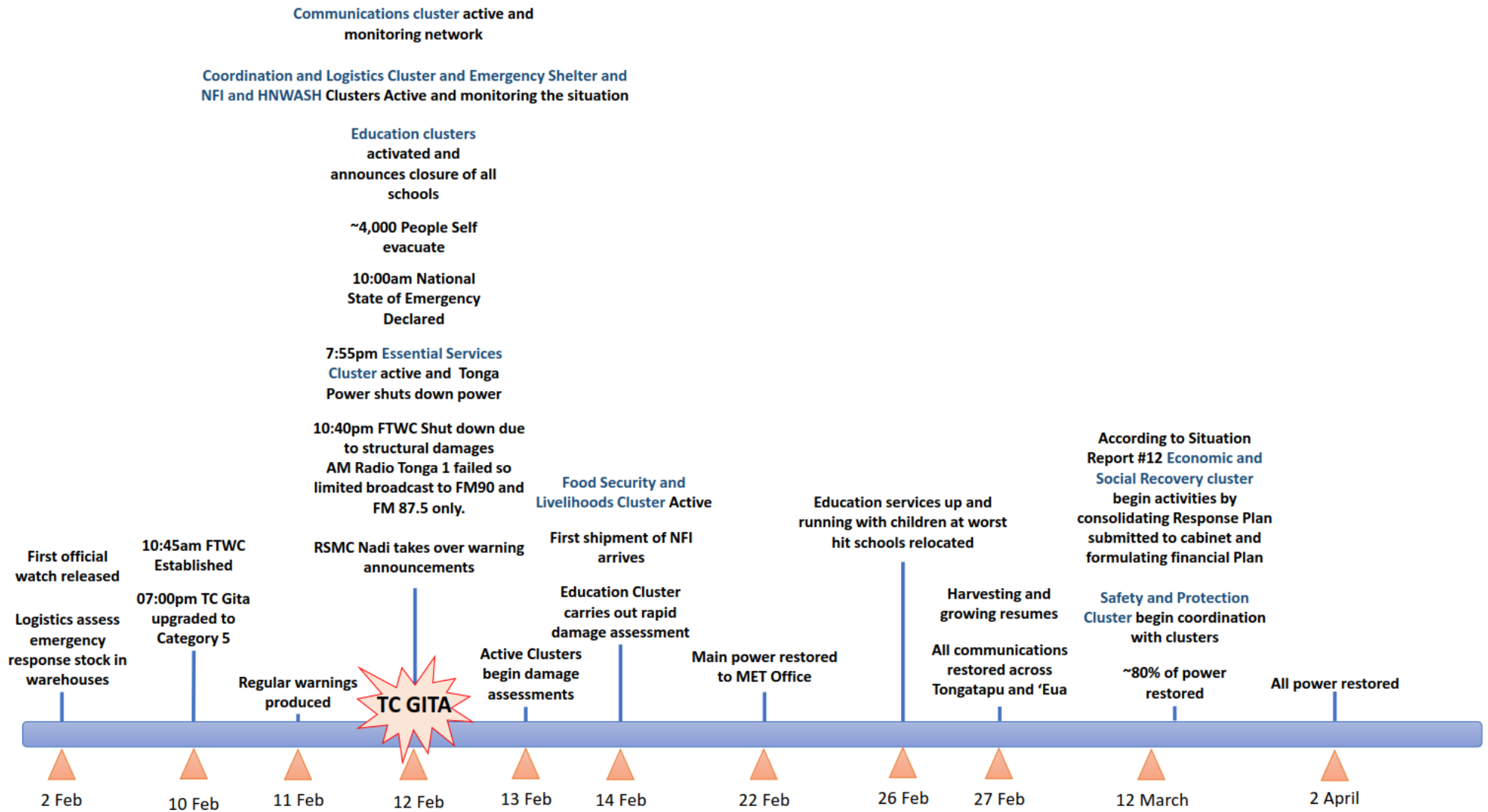There is a well-developed disaster response understanding for tropical cyclones within the Government agencies and community level through District Emergency Management Committee (DEMC) and Village Emergency Management Community (VEMC). However, the response is currently coordinated mostly at national government level, ascending to communities. This meant that some communities were adversely affected, as generallycommunitiesa are equally strengthened. The sub-national and district level capacity is weak. NEMO does not have representatives at all district or community level, which makes the institutional system weak at district, and community level. However, some districts (island groups of Vava'u, Ha'apai, Eua, Niuatoputapu and Niuafoou) are represented by a NEMO focal point and found to be functioning well.

A response strategy was developed across the clusters, which allowed NEMO, working alongside clusters and His Majesty's Armed Forces (HMAF) and Aid agencies to distribute emergency relief items. During the response phase, NEMO managed the overall response coordination as well as the shelter and logistics clusters, which created significant pressure on NEMO staff (Shelter Cluster Pacific & IFRC, 2018). The first workshop participants acknowledged the National Emergency Operations Centre (NEOC) was staffed by a good number of hard working people who coordinated search and rescue efforts, disseminated effective warnings and evacuation notices, and effectively registered incoming requests for assistance. This was aided by good support from external partners in terms of aerial assessments carried out by drones and satellite imagery.

UNICEF provided substantial support to the Education Cluster through ongoing warnings from the Suva Risk Reduction Office prior to TC Gita impact. Such support included the provision of emergency education kits and provision of a detailed assessment template for the internal use of assessing damage to education facilities.

2.7   Recovery

As response transitioned to recovery, the coordination responsibility was handed over from NEMO to the Ministry of Infrastructure (MoI). UNDP supported the Ministry of Finance; Planning Division (within Prime Minister's Office) under South-South Cooperation to collaboratively develop the draft Disaster Recovery Framework (DRF) with WB on behalf of the Kingdom of Tonga. While a framework exists for response coordination under NEMO and recovery coordination under MOI, greater coordination and transition mechanism of the handover is not clearly defined. As most clusters were

unsure of the mechanisms for obtaining funding during the response phase, the response budget has yet to be fully utilised. This means that the Ministry of Finance does not consider the response phase to have passed and therefore cannot transition into recovery financing. The Emergency Shelter and Non Food Items and Reconstruction Cluster Response Review Workshop Report (Shelter Cluster Pacific & IFRC, 2018) states that there was a lack of clarity and strategy as the response phase began to transition to recovery. This resulted in different strategies for the various phases such as the abnormal distribution of money to the community for recovery/reconstruction, where recovery activities should have built upon efforts carried out during response. The absence of a clear transition strategy and the insufficient clarity of roles also impacted the end of the response phase to recovery. Some donated relief items that were intended for NGOs in response were kept by MOI for recovery purposes instead of being distributed immediately (Shelter Cluster Pacific & IFRC, 2018). A recovery strategy with agreed standards for rehabilitation, recovery, and development is required for guiding the recovery and reconstruction process successfully.

Recovery agencies focussed on supporting self-recovery, through the provision of cash and relief Non-Food Items. However, this did not cover people whose houses had been destroyed and who did not have the ability to build for themselves (through lack of skills, resources, or due to disability) (Shelter Cluster Pacific & IFRC, 2018). Table 2-2 provides an overview of recovery needs by sector.

Table 2-2:   Overview of recovery needs by sector (T$ millions) (Government of Tonga, 2018)

	IMMEDIATE RECOVERY NEEDS	SHORT-TERM RECOVERY NEEDS	MEDIUM-TERM RECOVERY NEEDS	TOTAL RECOVERY NEEDS
Productive Sectors	**37.79**	**12.63**	**6.61**	**57.03**
Agriculture	0.99	2.73	5.11	8.83
Commerce and Industry	4.30	7.00	1.50	12.80
Tourism	32.50	2.90	NA	35.40
Social Sectors	**14.40**	**77.60**	**48.50**	**140.50**
Housing	5.80	72.10	40.50	118.40
Education	8.50	5.50	8.00	22.00
Health	0.10	NA	NA	0.10
Infrastructure Sectors	**15.61**	**2.68**	**87.78**	**106.07**
Energy	13.38	0.00	86.20	99.58
Public Buildings	0.31	NA	0.70	1.01
Transport	0.68	1.58	0.88	3.14
Water and Sanitation	1.24	1.10	NA	2.34
Employment, Gender, and Social Protection	**5.23**	**2.52**	**15.45**	**23.20**
TOTAL	**73.03**	**95.43**	**158.34**	**326.80**

Source: Estimations by Assessment Team based on government figures.
Note: NA = not applicable. A detailed breakdown of needs is included in each sector assessment.

Several clusters are still conducting their recovery activities. This includes the Food Security and Livelihood Cluster, which conducted land preparations (i.e. ploughing). After completing the first round, the cluster's second round activities are ongoing. These include distribution of planting

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materials to farmers through MAFFF & NGOs and the distribution of around 9,510 chickens to 951 households.

The Safety and Protection Cluster provides social protection activities for vulnerable groups (women, children, and people with disabilities) and are currently conducted by regional partners and local NGOs. Psychosocial support is ongoing within cyclone-affected communities. Ma'a Fafine provided education for trainers in four different districts (aimed towards people with disabilities, elderly and women).

The Education Cluster retrofitted all schools with minor damages funded by local budget, while repairs to major damaged schools, funded by ADB/World Bank, are still in progress. Additionally, World Bank recently funded US$13 million to rebuild schools. MOI have completed repairs for minor damages in schools. UNICEF are providing funding for 1 year of all education in emergency stock and pre-positioned stock. They are also providing funding for an asset management in an emergency role for the Education Cluster as well as the provision of the Rapid Pro cell phone tool for needs assessment and communications during an emergency.

The Emergency Shelter and Non-Food Items Cluster provided cash disbursements to affected families. Building materials were distributed to NGOs to assist their work on shelter and helped complete the restoration of Eua Hospital. Several NGOs such as Caritas and MORDI are assisting with the building of cyclone shelters for identified communities.

TPL completed its electricity installation to communities under the Essential Services Cluster.

The HNWASH Cluster are currently conducting serval activities at community level to ensure coordinated efforts by water and sanitation, health and nutrition and waste. There is ongoing purification and vector control spraying of community areas such as schools and churches and treatment/purification of water tanks. Dignity kits and health promotion messages are also on going and being distributed across the community. Waste management saw 86 villages covered in a clean-up campaign to remove of debris and rubbish.

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3 Detailed TC Gita Assessment

3.1 Coordination and Logistics

3.1.1 Vertical and Horizontal Coordination within Government

During the immediate response, it was reiterated that some key government ministries did not have a clear roles or responsibilities. This led to difficulties and overlaps in coordination as some ministries were trying to carry out the same functions.

3.1.2 Coordination between Clusters

Coordination between clusters ranged from lacking to moderate throughout the response. It also varied between clusters with some having good mechanisms/relationships for sharing information (e.g. HNWASH) while others showed ample room for improvement (e.g. Shelter). This varying and lack of cross-sectoral coordination between clusters was evident throughout the needs assessments that were undertaken. It was also evident during the sharing of information and process for data collection as there was no agreed or common approach. Similarly, there were no standards for information management. The statistics department, who had the ability to collect information efficiently, was not utilised from the beginning of the response. Many clusters have unclear and overlapping roles and responsibilities. However Education, Coordination and Logistics, Emergency Shelter & Non-Food Items and Safety & Protection clusters were well supported as they have defined their overall functions clearly. Other clusters such as the Economic and Social Recovery Cluster were limited or non- functional because of their unclear roles and responsibilities, performing the role of resource mobilisation on behalf of all clusters and ended up carrying out a Cabinet submission, according to Ministry of Finance and National Planning statement.

Under its TOR, the Food Security and Livelihoods Cluster is required to have close cooperation with the Tonga Chamber of Commerce and Industry to maximise the opportunity of local suppliers to provide as much of the food requirements as possible. However, the Chamber of Commerce was not contacted throughout the response to TC Gita. The Safety and Protection Cluster wasnot established fully until May, when a coordinator was employed full time. This then led to some funding being allocated to the cluster.

After TC Gita occurred, simulation exercises were carried out for HNWASH cluster, Coordination and Logistics Cluster and the Education cluster. NEMO conducted a table top exercise with His Majesty's Armed Forces and invited all clusters to attend. This excellent initiative encourages coordination and relationship building between clusters and should be encouraged and carried out on a regular basis.

3.1.3 PHT Support and Coordination

During disasters, theoretically, the PHT (Pacific Humanitarian Team) provides support to governments, non-governmental organizations (NGOs) and communities in delivering a fast, effective and appropriate disaster response. Outside of disasters, the PHT works with the Tongan governments and partners to ensure that the necessary arrangements are in place to enable effective international support to nationally led disaster response. The PHT is guided by and is committed to humanitarian principles and gender equality and promotes participation of and accountability to the affected communities. UNOCHA serves as the Secretariat for the PHT and the primary focal point for communication with all relevant organisations and all general coordination and information management matters.

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The *Pacific Humanitarian Team* (PHT) is a network of humanitarian organizations that work together to assist the Pacific island countries prepare for and respond to disasters. During disasters, the PHT provides support to governments, non-governmental organizations (NGOs) and communities in delivering a fast, effective and appropriate disaster response. Outside of disasters, the PHT works with the Pacific governments and partners to ensure that the necessary arrangements are in place to enable effective international support to nationally-led disaster response. The PHT is guided by and is committed to humanitarian principles and gender equality and promotes participation of and accountability to the affected communities.
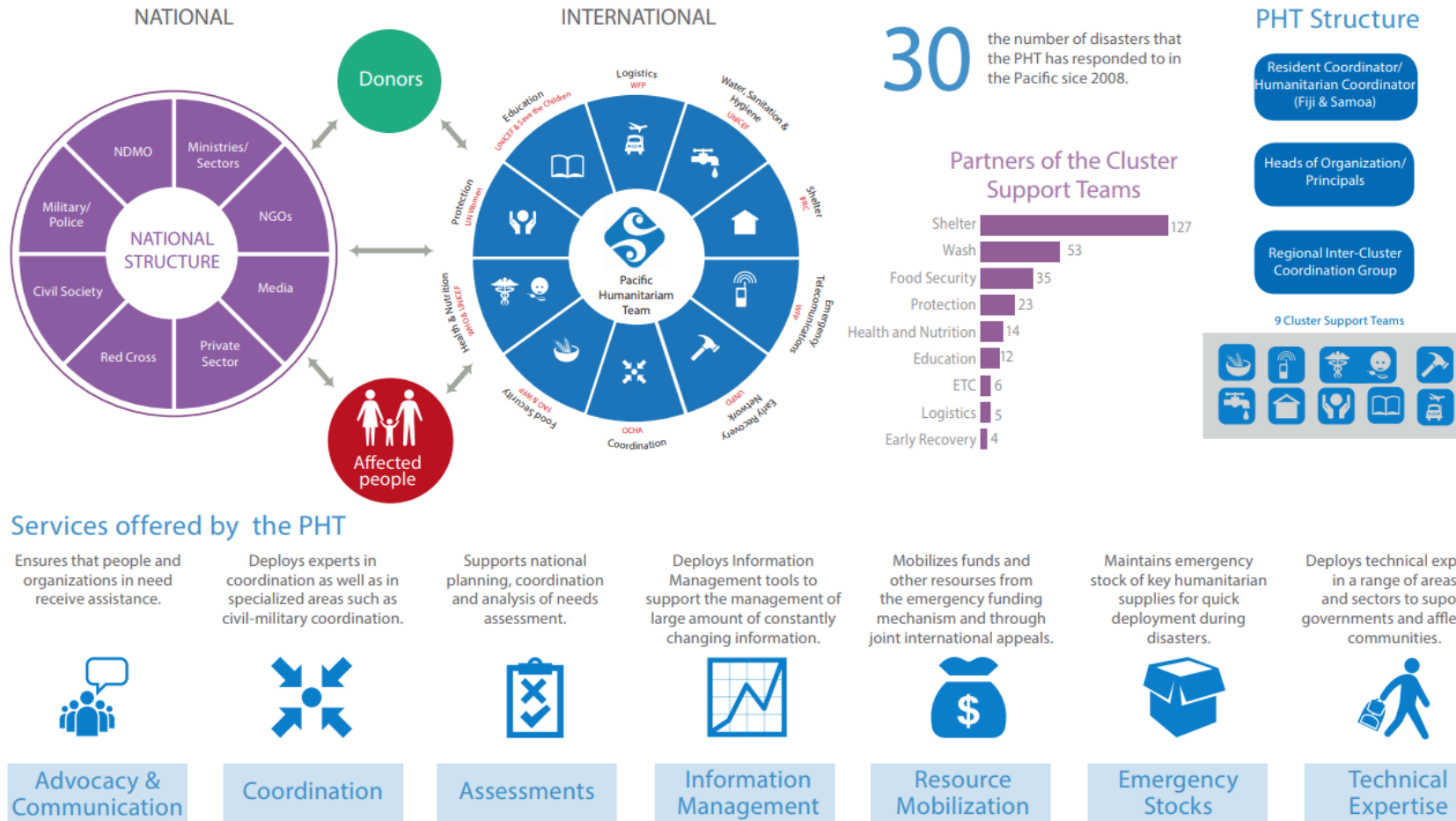
Figure 3-1 PHT overall activities (Source: https://reliefweb.int/report/fiji/pacific-humanitarian-team-glance-0)

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On February 14, 2018, The Ministry of Finance and National Planning requested the assistance of the Pacific Humanitarian Team (PHT) to support the coordination of the clusters (IFRC, 2018b). By February 16, the PHT in Suva, Fiji had been mobilised and was holding regular meetings with agencies to provide remote overall coordination of humanitarian agencies (IFRC, 2018a). However, comments from workshop participants suggested that coordination support was limited by the PHT remotely and by OCHA in country. The limited support was considered to be due to little understanding of what some members/organisations of the PHT had to offer some clusters, how the PHT Clusters aligned to the GoT sytem of Clusters, the lack of of high level coordination between PHT and NEMO?????. For example, UNICEF were greatly utilised by the Education Cluster as there was an ongoing relationship and understanding of what UNICEF had available that the Education Cluster could request. This is a good example of where a relationship is fostered during peacetime as well as in an emergency which leads to a more efficient and effective response.

UNDP deployed Director of the Solomon Islands National Disaster Management Office, Loti Yates, to Tonga to provide direct support for the NEMO director. However, due to the timing of the deployment, immediate response and ongoing response planning had already been underway and hence the Director provided input into early recovery and general support to NEMO, its Director, and the Clusters.

3.1.4 NGO and Donor Coordination

Overall, there was good communication and planning between local and international agencies and NGOs, and donor resources were tailored for the needs of the event. This was especially seen in the identification and supplying of common relief packages and distributions of pre-positioned supplies (Shelter Cluster Pacific & IFRC, 2018). There was efficient coordination and briefings of foreign medical teams and established (but under-resourced) medical outposts to worst affected areas. However, during the transition to recovery and the handover between NEMO and MOI, communications became more difficult and limited. This was especially evident in the decision to distribute cash for recovery. NGOs were reported to be working alongside communities with a focus on in-kind distribution, however, it was subsequently discovered that communities had been given cash instead (Shelter Cluster Pacific & IFRC, 2018). This distribution, which occurred outside of the formal cluster mechanisms and ministries, impacted the response programmes of existing NGOs (Shelter Cluster Pacific & IFRC, 2018). The previously outlined difficult transition phase resulted in some donated NGO response relief items being kept by MOI for recovery purposes instead of being distributed immediately (Shelter Cluster Pacific & IFRC, 2018). This was also evidence of unclear national initiatives that the NGOs and donors should be aligning with. It was also thought that, although NGOs and other external stakeholders and agencies had good intentions, there were too many working uncoordinated within the operations centre, which made work difficult.

3.1.5 Logistics Arrangements

Following the immediate impacts of TC Gita, rapid clearing of roads and reinstatement of transportation routes was efficient; water, for example, could be transported to Vaiola Hospital by NEMO staff within the first 24 hours[8]. HMAF assisted the logistics cluster in clearing roads from fallen power lines and trees. Police were efficient in setting up curfews and traffic control to assist in efficient movement of supplies along transport routes. Within three days of the impact of TC Gita, all roads had been cleared and ports and airports were fully operational almost immediately. Community initiatives resulted in roadsides being cleared from remaining fallen debris almost immediately. Although logistical arrangements were relatively efficient and resources could be transported reasonably efficiently, understanding of where pre-positioned stock is located as well as how much would have greatly enhanced the logistical abilities of the response. The availability of

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[8] Sourced from Situation Report #2, NEMO 2018

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back-up generators and fuel supply on site for all cluster operational locations will also limit the amount of logistical needs in terms of allowing clusters to become operational. It was widely noted that there needs to be better training and resourcing for staff to carry out their emergency response roles. Resourcing for field teams was limited in terms of both manpower and physical resources such as field equipment and needs assessment electronics.

3.2 Communication and Resource Mobilisation

3.2.1 Internal Cluster Communications and Mobilisation

NEMO operates under and implements decisions of the National Emergency Management Committee (NEMC). The NEMC works alongside a National Emergency Operations Committee (NEOC) and National Emergency Recovery Committee (NERC). Typically, most key cluster members were aware of their initial roles and responsibilities to establish their clusters based on cabinet approved TORs and SOPs. However, they had not been activated prior to TC Gita and therefore were not able to be as efficient in establishing their clusters once TC Gita made landfall. For NEOC and the Coordination and Logistics Cluster, some functions such as needs assessments, logistics, reporting and inter-cluster coordination were clear and understood. The NEOC is responsible for activating and liaising with Government Ministries, community groups and organisations in response to an event, carrying out an initial assessment following an event and prioritising disaster relief requirements, as well as managing the distribution of immediate relief supplies. The NERC, in close coordination with a National Controller, is responsible for coordinating the recovering process following an event, carrying out detailed assessments at community level, coordinating disaster relief supplies and overseeing all recovery and rehabilitation works. However, it was not clear if all staff members were aware of how other NEOC functions worked together and there were no daily briefings and debriefings of the NEOC. Within the first week of immediate response efforts nearly half of the clusters had been activated as per the situation reports indicated, "*Staff and resources were mobilised as information for situation reports became available*". It was also found that there were no high level representation of OCHA in NEMO office initially nor was there daily communication at any time overall.

Figure 3-2 provides an overview of cluster mobilisation and response in providing situation reports to NEMO. It was not clear whether each cluster had regular internal meetings with full representation, notes were typically not taken, lack of coordination and there was no formal or efficient method to disseminate information from meetings both internally and externally. However, the report by Shelter Cluster Pacific & IFRC (2018) mentioned some limited internal cluster communication. An example of this was presented at the Emergency Shelter and Non-Food Items review workshop, namely a presentation from the Food Security and Livelihood cluster, which focused mainly on agriculture issues as the chair, is the CEO of Agriculture. Consequently, there were no consolidated reports from the remaining cluster members.

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Clusters Present Across TC Gita Response

Pre-event to 72 hrs	1 to 4 weeks
Organisation & Logistics WASH Communication Education Shelter Cluster (emergency) Food Security Essential Services	Organisation & Logistics WASH Communication Education Safety & Protection Shelter Economic & Social Recovery Essential Services

Figure 3-2: Overview of cluster presence and activation during response. Adapted from Situation Reports. (1-12) (NEMO, 2018)

3.2.2   Efficiency of Communication between Clusters

Overall communication between clusters was perceived as reasonably efficient. This was due that regular meetings were held during the response phase, and because individual cluster members attended meetings across different clusters. Some members indicated that they had roles across multiple clusters. This made making single decisions based on a single cluster's needs difficult, due to the demands of switching mind-sets between meetings that were focused on different needs. PHT held its last coordination meeting in Tonga on 08 March at NEMO. Although regular meetings were held, typically, not all clusters were represented at all meetings, nor did they work within the same building, which slowed some communication of information. Situation reports produced by NEMO and disseminated to all clusters during the first four weeks were supported by accurate information from individual clusters. However, while the information was accurate it was generally perceived as confusing and not concise enough. This made it more difficult for NEMO to interpret the information received from clusters for inclusion into situation reports; it also limited their efficiency to provide important information to all clusters. Overall, there was a lack of communication between clusters and inter cluster meetings rarely happened both during the emergency, as well during peace time prior. The lack of an overarching communication plan (which should be in place and understood prior to a disaster) for all clusters also makes it much harder for clusters to communicate with each other as well as internally.

3.2.3   Efficiency of Resource Mobilisation

Distribution of relief items was rapid, especially those pre-positioned by NEMO, Caritas, and Tonga Red Cross in Nuku'alofa and 'Eua (Shelter Cluster Pacific & IFRC, 2018). Participants of the Emergency Shelter and Non Food Items and Reconstruction Cluster Response Review Workshop reported that the relief items were generally well received and appropriate for the needs of the community (Shelter Cluster Pacific & IFRC, 2018).

3.2.3.1   Emergency Shelter & Non-Food Items Cluster

There was adequate supply of tents and emergency shelter for most affected places including remote locations. However, there was limited to no availability of transitional housing for those whose homes had been completely damaged. A large number of people wanted to stay longer in evacuation centres, which could not be funded by MOI during recovery given the expectation that all supplies would be provided during their stay at the evacuation centres.

During the Emergency Shelter and Non-Food Items and Reconstruction Cluster Response Review Workshop, participants raised concerns about the basis of the shelter and Non-Food Items distributions. Much of this centred on the work with Town Officers who were under a range of pressures. In a number of cases, distributions went to influential people or families rather than being based only on need. Non-Food Items kits (for example kitchen sets) which were intended for one household had been broken up and distributed among different families. This resulted in some households receiving cooking pots and others receiving plates without providing a complete replacement of Non-Food Items needs (Shelter Cluster Pacific & IFRC, 2018).

Establishment and resourcing of evacuation centres (EC's) was evidently efficient as 4,000 individuals were able to evacuate prior to TC Gita impacting the islands across 108 evacuations centres in Tongatapu and 'Eua[9]. For most of the families that moved to EC's in response to TC Gita, the main concerns were personal safety, access to food and water, and access to bathrooms (Government of Tonga, 2018). The Post Disaster Rapid Assessment (Government of Tonga, 2018) reported that EC's often lacked adequate supplies to support the number of evacuees, or did not have the means to provide safe and private spaces for women, children, and lactating mothers. There were also reports that many EC's ran out of drinking water quickly, forcing families to ration out what supplies were available. EC's were often unable to provide facilities such as ramps, bathrooms, or toilets that cater for the specific needs of the elderly and those with disabilities.

3.2.3.2   HNWASH Cluster

There was minimal structural damage to health facilities across Tongatapu and 'Eua, which allowed all facilities to remain operational during and following the storm (Government of Tonga, 2018). Thanks to efficient warning and evacuation of communities, only limited injuries occurred and health centres were not stretched of resources. Backup generators at the Vaiola and Hospital ensured continuity of power despite network outages. Water was delivered to Vaiola Hospital by NEMO water pump trucks almost immediately after TC Gita had passed as water distribution facilities to the hospital became operational.

After TC Gita had passed the HNWASH cluster's primary concern was the spread of disease such as dengue fever and gastrointestinal disease. Both were minimised through an extensive vector eradication program and the provision of emergency relief kits for sanitation and disinfecting of water tanks (Government of Tonga, 2018). The majority of the affected population received water, sanitation, hygiene, health and nutrition kits post TC Gita.

3.2.3.3   Food Security and Livelihoods Cluster

Immediate response from the Food Security and Livelihood Cluster includes the provision of ploughing, fast-growing planting materials (cassava, pele, corn, sweet potatoes), and other agricultural inputs for replanting of crops; land clearance support, including chainsaws (Government of Tonga, 2018). The International Federation of Red Cross and Red Crescent Societies determined in their assessment that, during the response, the government was meeting food requirements for affected communities by providing a one-month food distribution (2018a). Generally food and water supplies were available early and uninterrupted for the majority of the affected population.

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[9] Sourced from Situation Report #6, NEMO 2018

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Seedlings for replanting were on standby from the outer islands such as Ha'apai and Vava'u for deployment to Tongatapu within 4 weeks of TC Gita's passing[10]. Although distribution of food was well regarded across the communities, some bottlenecks occurred when evacuation centres had to supply food for extended periods.

3.2.3.4 Education Cluster

Infrastructure of educational facilities was significantly impacted across Tongatapu and 'Eua resulting in full closure of all schools for 4 days after TC Gita (Government of Tonga, 2018). Rapid clean-up of education facilities allowed the least affected schools to reopen and resume their educational responsibilities as required by the cluster TORs. UNICEF emergency education kits provided emergency relief through temporary learning spaces (tents), recreation kits, backpacks for students etc. (Government of Tonga, 2018). However, these relief items did not adequately cater for the needs of the student in the Tonga climate as tents in the middle of the day became far too hot for the students to learn in. Some facilities were badly damaged that relocation of the students elsewhere was needed. Without reconstruction of schools, students will not be able to return to their school, which may cause psychosocial impact among students.

3.2.3.5 Essential Services Cluster

As TC Gita passed by the island, the power supply was disrupted across Tongatapu on Monday, February 12, at 7:55pm. By February 15, power had been restored to Nuku'alofa only and it took a further seven weeks for power to be 100% restored.

3.2.3.6 Communications Cluster

The communications cluster was able to establish itself efficiently. Initially there was no damage to the communications lines and therefore the cluster members felt no urgency to carry out any immediate response actions. By 14 February, there were some issues in communicating with 'Eua. This was initially was put down to issues with the power grid. However, further assessments were carried out over the following days, when it was discovered that there were issues with the microwave link, which was causing the communications difficulty with 'Eua. TCC and Digicel continued to work on restoring all communications across all islands, which was achieved by 27 February.

3.2.3.7 Economic and Social Recovery Cluster

The Economic and Social Recovery Cluster carried out minimal activities during the response to TC Gita. It was reported that some one on one meetings were held at a national level, however outside of this there was no communication across all members as a whole, and no communication with the wider regional team. According to the situation report #12, members of the Economic and Social Recovery Cluster began carrying out some response actions. This included consolidating a response plan that was submitted to cabinet and beginning to formulate a finance plan.

3.2.4 Dissemination of Information to the Community

Since there were no deaths reported as a result of TC Gita, the overall dissemination of warning information was evidently effective. However, in terms of response and recovery efforts, there was no clear information management, media or communications strategy, which raised concerns that existing media coverage gave false hope and wrong information (Shelter Cluster Pacific & IFRC, 2018). This is illustrated by extensive media reports about the dissemination of shelter kits; however, these kits were only available at certain locations. Information about how to use relief

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[10] Sourced from Situation Report #11, NEMO 2018

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supplies such as the shelter kits was also insufficiently disseminated. A large number of kits were distributed, but individuals did not know how to set them up.

Town Officers play a large role within their community during the response to an emergency. It was widely emphasised that Town Officers are typically under trained and unclear on their significant roles they are required to carry out during a response. Some Town Officers were lacking immediately necessary practicalities/skills, such as how to use 72 hour kits, how to set up tents and the like. This therefore significantly affects the quality of information and assistance available to some communities.

Generally, it was felt that there was no consistent terminology across clusters, NGOs, private sector or any other agencies working in the response and recovery; furthermore, the numerous acronyms made passing on information extremely confusing. Due to the large number of needs assessments that were carried out, clusters had access to a significant amount of information from the community. However, a large amount of that information could not be used because it took too much time to aggregate that data for an efficient response.

Both TCC and Digicel communication providers were operating across Tongatapu and 'Eua immediately after TC Gita made landfall. While difficulties arose over time in contacting 'Eua, it was thought to be due to power issues rather than breaks in the communication network. The networks remained at least 90% operable over the following weeks but communications outages occurred in several locations across Tongatapu and 'Eua. However, the providers were quick to address these issues and typically got the network up and running efficiently. This allowed communications to reach most affected communities across the two islands.

3.3 Financing

3.3.1 Fast-tracking of Finances

Immediate response requires immediate funding for resources across all clusters. Fast tracking of financing is widely perceived as ad hoc and does not prioritise the worst affected areas or sectors. The Tongan Emergency Fund Act established the country's emergency fund, administered by the Minister of Finance, to provide "timely and efficient relief and reconstruction" in an emergency. Although the Fund was established with an initial allocation from T$5 million pa'anga from Government, it is also open to voluntary contributions by any donor government, institution or organisation. While the current Act allows for annual allocations from the General Fund of T$5 million, it does not refer to early action based on early warning. However, there is a potential to widen or clarify the purposes for which the fund may be utilised, to include the effective implementation of an early warning system such as funding communications to key Government agencies and bodies, community groups and members of the public, if required. It will be useful if the Fund is also utilised to fund other purposes related to an event or an emergency.

Coordination between the Ministry of Finance and the clusters is limited. This lack of coordination resulted in confusion within all clusters on how to obtain funding for response activities, as well as the transition between response and recovery. Currently (Jan 2019), the Ministry of Finance still has external pledges funds available for response activities and hence does not perceive that a transition to recovery has yet occurred. This has also affected the Economic and Social Recovery's Cluster's ability to activate. Establishing a dedicated Emergency Unit within the Ministry of Finance would significantly improve the coordination between the Ministry of Finance and all clusters, and in turn improve access to funds to assist with a more effective and efficient response and transition to recovery (Ola F, MoF, 2018).

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Overall, Tonga's macroeconomic frameworks did not have sufficient measures to mitigate the risks brought on by TC Gita[11]. Tonga still recovering from internal financial disturbance, the global financial and economic crisis struck and hurt economic performance. For TC Gita case perhaps due to the magnitude of the damage, which was equivalent to 37% of the Tongan national GDP[11]. However, there was efficient mobilisation of resources in the form of over US$50 million in-kind (Table 3-1) contributions from development partners within a month of TC Gita. Examples of donated in-kind resources were provided by the Ministerial Brief[11] and are as follows:

i   Government received a pay out of US$3.5 million from PCRAFI within 9 days of activation;

ii   Government also received within two days of its request, the ADB US$6 million disaster resilience contingency financing;

iii The Post Disaster Rapid Assessment of the damages and loss with lead technical expertise from the ACP-EU National Disaster Reduction Program, World Bank, ILO, UN, ADB and EU;

iv   Government contributed over TOP$20 million (around US$10 million) to TC Gita Recovery; and

v   US$16m from World Bank PREP project for school recovery project.

Table 3-1 Contributions to the Tropical Cyclone Gita as at Friday 2nd March 2018

Development Partner	Cash		Inkind	
	Cash confirmed but yet to be received	TOP$	Inkind	TOP$
World Bank				
PCRAFI Insurance USD$3,528,744		7,551,512.16		
ADB				
Pacific Disaster Contingency Facility USD$6m		$12,845,215.16		
Asia Pacific Disaster Response Facility (APDRF) USD$1m		$2,152,852.53		
Peoples Republic Of China (PRC)				
Cash Contribution USD$500,000		1,066,072.09		
Cash Contribution TOP$40,000		40,000		
Inkind Contribution to Tonga Red Cross			USD$100,000	214,000
MFAT				
Cash for fuel for MET relocation of schools		5,400		

[11] Tonga Ministerial Brief, 16-19 October 2018, Warwick Le Lagoon, Port Vila, Vanuatu. Ministerial Dialogue: The Challenges and Opportunities of Building Disaster Resilience in the Pacific

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support announced by PM Arden NZD$7m	11,378,238			
Government of Nauru				
Cash Contribution AUD$100,000	175,000.00			
World Bank				
Pacific Regional Resilience (PREP)			USD$500,000	1,070,000
DFAT				
Humanitarian Relief Supplies, Technical Teams, Protection Services, Wash and Health Support			AUD$3.5m Inkind	6,140,350.88
MFAT				
Humanitarian Relief Supplies, Technical Teams, Protection Services, Wash and Health Support			NZ$ 1,747,916	3,066,519.30
support announced by PM Arden NZD$3m to replenish TPL supplies				4,883,013
Embassy of Japan				
Humanitarian Relief Supplies, Protection Services, Wash and Health Support				260,000
United Nations PHT				
Humanitarian Relief Supplies, Protection Services, Wash and Health Support			TBC	
Republic of Korea				
Support provided through the Tonga Red Cross for Humanitarian Support			USD$100,000	214,000
USAID				
Pledged USD$100,000			USD$100,000	214,000
EU				
Pledged USD$100,000			USD$100,000	214,000
India-UNDP partnership				

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Pledged TOP$1,000,000 (USD$500,000)			US$500,000	1,070,000
ILO (UN)				
Community Based Emergency Employment (CBEE) program			USD$10,000	21,400
Total	11,553,237.71	23,661,051.94		17,367,283

Cash received	23,661,051.94
Cash Confirmed by yet to be received	11,553,237.71
Inkind	17,367,283.34
Total Cash	35,214,289.65
Total Inkind	17,367,283.34
Total	52,581,572.99

Although these resources had been obtained by the government, there was still a weakened capacity for the government to mobilize/allocate the finance and clusters to complete procurement or prioritised and utilized properly. This is evident as, eight months after the event, the reconstruction of classrooms[11] was still not underway. While existing crisis procedures can help to fast track the necessary procurement of services and goods, it was widely felt that these procedures are too complicated to achieve during an emergency response and are not well understood.

The Emergency Shelter and Non Food Items and Reconstruction Cluster Response Review Workshop Report concludes that un-prioritised distribution of funds could be in part a result of the government's unclear priorities for response and recovery; further it reflects the influence of different ministries and departments on decision making processes. According to the Post Disaster Rapid Assessment (Government of Tonga, 2018), the Government currently has two core social assistance programs, the Social Welfare Program and the Disability Welfare Scheme. These programs provided existing beneficiaries with a one-time top up payment to aid in helping the most pressing needs. These beneficiaries reached nearly 20% of the population, or 20,000 people, totalling T$800,000. It also states that there were donor contributions in the order of T$23,000,000. However, it was widely agreed that there are limited finance tracking systems and unplanned distributions of donor finances. Both element contribute to slow down the financing for essential response resources and limit the cluster's ability to respond in a timely manner to potentially minimise impacts. A tax exemption for imports intended for TC Gita response allowed for quicker imports of relief items (Shelter Cluster Pacific & IFRC, 2018).

The Shelter Cluster Pacific & IFRC report identified a confusion between roles and responsibilities during the transition between response (led by NEMO) and recovery (led by MOI). This resulted in an intervention by the Ministry of Finance adopted a cash-based recovery strategy, which did not incorporate or build upon existing work done during the emergency phase (Shelter Cluster Pacific & IFRC, 2018). The cash distribution from Government was based on formal land tenure, which disadvantages groups such as women (especially where there is no male over eighteen in the household), renters, and people living in informal settlements. These groups are significantly limited in their ability to obtain response/recovery finances (Shelter Cluster Pacific & IFRC, 2018). Concerns were also raised that the cash based distribution would not incentivise 'build back better' strategies across the country.

The Communications Cluster also felt their response and ability to maintain their communications responsibilities is limited by the poor investment into redundant communications systems for back up.

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3.3.2   Procurement Policy

Tonga's efforts to align policy and budget are directed through the Tongan Strategic Development Framework – A more progressive Tonga: 2015-2025 (TSDF II). The framework sets the strategic direction for the Government for the next 10 years and sits at the apex of the policy and budgeting hierarchy as shown in Figure 3-3. A monitoring template and planning, Budgeting and M&E Tracker Database, which aims to monitor the TSDFII and Agenda 2030 Sustainable Development Goals linking to the MDA Corporate Plans and Budget, will be led and managed by the National Planning and Economic Division. This UNDP funded toolkit is designed as an integral part of an overall, single process to be consistent with the results-based approach. Tonga has been active in maximising the avenues through which disaster management financing is received. In particular, this includes donor funds for relief and reconstruction, budget relocation under the Public Finance Act, external debt, and flash appeals etc.
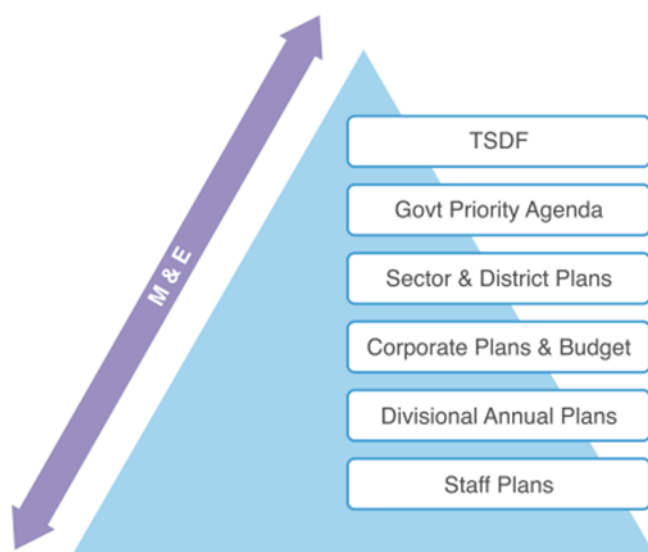
Figure 3-3: Policy, planning and budgeting hierarchy for the Government of Tonga[12]

Tonga has some agreements in place with contractors, but they are not well formalised[13], and allocations for maintenance and routine upkeep of all emergency/relief equipment is inadequate. Benefits and compensation packages are known to be available, but the procedures for application of such policy not in place. Affected/beneficiary lists are transparent; benefits, compensation, and entitlement criteria are in the public domain; grievance redress procedures are in place[13]. Contingency plans were also limited across sectors, which again inhibits agencies and organisation to be able to obtain the funding needed during an emergency.

3.4   Needs Assessment

The following Table 3-2 provides an overview of needs assessments that are typically carried out during an emergency response. Tonga did not carry out Post Disaster Needs Assessment, however they produced an extensive Post Disaster Rapid Damage Assessment Report.

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[12] Government of the Kingdom of Tonga, 'Tongan Strategic Development Framework II: A more progressive Tonga, 2015-2025', Ministry of Finance and National Planning, 3 March 2015, p.61
[13] http://www.spc.int/wp-content/uploads/2017/01/Tonga-2014.pdf

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Table 3-2:   Overview of needs assessments carried out during response to TC Gita

Assessment Type	Time Frame	Elements of Assessment
Initial Assessment	First 48hrs	High level damage situation - Qualitative
Rapid Damage Assessment	48 hr to 3 days	Cluster wise damage assessment – Semi Quantitative
Post Disaster Needs Assessment	Onwards from three days	Comprehensive assessment that estimates damages and losses, and identifies the needs of the affected population[14] – Quantitative

3.4.1   Efficiency and Effectiveness of Needs Assessments

The needs assessment process was identified as one of the most notable limitations for response efforts. As stated previously a significant number of assessments were carried out across Tongatapu and 'Eua with some communities or individuals visited a number of times – 29 separate assessments across 'Eua alone (Shelter Cluster Pacific & IFRC, 2018). These visits often resulted in the same question being asked more than once and produced a huge amount of unusable data. Not only is this frustrating for the clusters trying to build a complete picture of the needs across the impacted area, but it causes the community to become frustrated and lose faith in the agencies carrying out the response.

Generally, there was a coordinated process for post disaster rapid assessments for continuous improvement, which could be fed into an action report. There was some coordination of rapid needs assessment across the clusters, but it also featured inconsistent standards for collecting data. Data standardisation and collection can assist in building trust among agencies in the robustness of information. It allows for a single process of data collection where all agencies have agreed on the data that needs to be collected and any individual can be trusted to collect the correct information. This also assists in a country's reporting under the Sendai framework for Action. Rapid impact or damage mapping allows the response agencies to prioritise their response immediately by building a broad picture of the worst hit areas. It also assists in understanding what the disaster response objectives will be such as life safety, incident stabilisation, property preservation, and the like. Rapid impact assessments within the first 24 hours of response were limited to the main island of Tongatapu and main population areas.

Initially after the worst of TC Gita had passed, the town/district officers met at NEMO and were briefed on a standard initial household damage assessment form to be completed within the following two days. The assessment required the officers to provide each individual household with a damage rating out of none, minor, major or destroyed. This information was then reported back to NEMO for distribution of emergency shelter. The damage ratings were intended to correspond with a direction action for the provision of shelter. For example, no damage would mean no emergency shelter is needed; for minor damage, a tarpaulin was distributed to the household; major damage would result in distribution of a tent; and destroyed would mean full emergency shelter would need to be provided for the household. There were some issues around gathering this data as the damage rating was interpreted differently by individuals, and some came back with added categories such as moderate. This made collating information difficult and slowed down NEMO's time to respond.

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[14] Definition from UNDP http://www.undp.org/content/undp/en/home/climate-and-disaster-resilience/disaster-recovery/post-disaster-needs-assessments.html

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3.4.2   Sharing of Information between Agencies and Clusters

Sharing of information was aided by holding regular meetings with all clusters and is generally considered as coordinated and effective across clusters. However, in practice not all clusters were present; moreover, they were not working within the same building, which can hinder communication and information sharing. It was noted that there is still some pushback on a data sharing culture. This was also evident through the number of needs assessments that were carried out during the response with the same questions being asked. The development of standard templates and fostering a culture of sharing information will enhance the ability for agencies to carry out a prioritised and efficient response.

Some clusters, such as the HNWASH and the Safety and Protection Cluster, have a designated coordinator role. This role is designated to assist the cluster leads in coordinating the response, allowing the person to be fully focused on sharing information within and between the clusters. The coordinator role, which only came into place in May 2018, has already obtained funding for the cluster due to the coordinators assistance in the response and recovery.

3.4.3   Vulnerable Population and Community Initiatives

It was widely commented that vulnerable groups, which were identified throughout the communities/country, were ineffectively reached due to inefficient mechanisms for dissemination of information and gathering of needs data. Generally, vulnerable groups (women, children, disabled) were not well represented in assessments or response plans given insufficient methods for obtaining feedback and information from such groups (Shelter Cluster Pacific & IFRC, 2018).

The Tropical Cyclone Gita: Disability Inclusive Situational Analysis (CBMNZ & PDF, 2018) concludes that 10.6% of the Tongan population have disabilities; this number is likely to rise through increase life expectancy and a high rate of non-communicable diseases. Generally, people with disabilities are underrepresented in the workplace and often live in highly vulnerable situations putting them at greater risk. Findings from the Situational Analysis report concluded that 45% of surveyed people with disabilities did not received any assistance within two weeks of TC Gita.

Those who received some assistance from evacuation centres reported physical, communication and attitudinal barriers, which hindered their ability to receive quality assistance. Physical barriers included no ramps for wheelchair access or transportation to evacuation centres, which significantly affects the ability for some to evacuate. Communication barriers included complicated language, which meant limited understanding of warnings and limited information for blind, and deaf. Attitudinal barriers included feelings of perceived uselessness and inability to contribute to their own safety or response for others. This provides evidence of the limited understanding relating to the needs for vulnerable people and the inability to address basics such as transportation and access to evacuation centres. While the problem is recognised, there are currently very limited arrangements made for groups which special needs.

Locally led response and recovery initiatives were typically supported in certain areas, but often carried out with a top down approach rather than being solely led by the community. An overall systematic cluster or response-wide system for understanding community views of the response was also not available. Much of this was carried out through churches and the private sector without cluster representation, and mainly focussing on their own work and communities (Shelter Cluster Pacific & IFRC, 2018).

The Education Cluster was able to mobilise its communities very effectively to help with the clean-up of education centres. They sent information to their pupils and families to request assistance to help remove debris and rubbish from the grounds, which was a significant help and allowed schools to return to their education responsibilities within two weeks.

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In general, communities were quick to clean up debris within their area. However limited training and understanding on what to do with the debris often lead to illegal or inappropriate disposal of rubbish. Examples of this were disposing of green waste into the landfill, which lead to it becoming over filled, or the illegal burning of debris/waste.

3.5 Policy and Legislation

Tonga has a strong political commitment, but is typically seen as having insufficient action; procurement policy is a barrier and significantly limits the clusters to obtain the appropriate resources for a timely response. The current National Emergency Management Plan (NEMP) (Government of Tonga, 2009) and the Emergency Management Act (Government of Tonga, 2007) make no mention of the cluster system for response and recovery. The clusters therefore do not have an overarching framework, which would provide them with a strategic way forward that is agreed upon post-disaster. This likely also impacts the understanding of individual cluster roles and responsibilities and may result in gaps and/or overlaps during response and recovery efforts.

Developing a sectoral policy for cluster led agencies will support all clusters to function according to their Terms of Reference (TOR) and Standard Operating Procedures (SOPs). A sectoral level policy will also aid in increasing linkages and coordination with the National Emergency Operations Committee, National Emergency Recovery Committee and the clusters. The development or strengthening of institutions, legal mechanisms and capacities can then aim to build resilience throughout the recovery process. Prior planning and development of such policies will enhance integrated disaster risk reduction planning and a work plan that can be monitored pre and post Tropical Cyclone season.

Currently there are some policy mechanisms for the transition from response to recovery/reconstruction outlined in policies such as the NEMP and Emergency Management Act. However, coordination of this transition is ad hoc and not well organised or detailed. This also limits the ability to monitor, evaluate and tackle the lessons learned for future events. Recovery and reconstruction is also limited by the absence of a recovery-housing policy, which should provide direction on how recovery and reconstruction is carried out. Most government agencies and businesses have uncomprehensive and insufficiently developed and practiced continuity plans. Again, this likely limits the ability for agencies and businesses to respond and be self-sufficient during response and recovery activities.

3.6 TOR & SOP Review of Clusters

Terms of Reference have been provided and review for all clusters and approved by the cabinet in 2008. Overall, the TORs appear to be uncomprehensive and do not clearly define roles and responsibilities. There have been discussions to review the TOR for each cluster. It was found that the Protection and Safety Cluster does not have approved/endorsed TORs and SOPs and many of the cluster members were not aware of it. Standard operating procedures have currently only been received from the Food Security and Livelihoods Cluster. There was a wider understanding that SOPs were available for other clusters but similarly to the TORs, they are typically uncomprehensive and do not provide clear roles and responsibilities.

Table 3-3 provides an overview of the current cluster responsibilities based on their existing TOR and roles and responsibilities in major areas, which were assessed for this AAR. However many of these functions were not performed by each clusters which already explained in earlier sections. This shows the current overlaps and gaps within the current TORs and is reinforced by Table 3-4, which shows areas occupied by more than one cluster with potential requirements for strong coordination among clusters. Information in Table 3-3 has been taken directly from the clusters TOR and SOP and summarised into a table format. Therefore, if an area of the table is not filled in for a certain area of a cluster it means there are currently no requirements for that cluster within their TOR. For example,

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there are currently no economic requirements under the Social and Economic Recovery cluster. Table 3-3 therefore helps to point out the significant gaps that are present within and between the clusters TORs. Some of this has also been emphasised through other lessons learned reports that have been produced by the individual clusters. For example, the Emergency Shelter and Non-Food Items clusters mentions that the TORs need to be finalised but further clarification of roles and responsibilities is essential. In line with the findings of this report, this is essential for defining the transition between response and recovery as coordination hands over from NEMO to MOI.

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Table 3-3:   Cluster functions from TOR

	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
Coordination and Logistics	Work in close cooperation with other Ministries stakeholders in both Tonga and the Pacific, likely to be intensely supported by the PHT. Activation of all ten clusters. Ensuring that there is close coordination with district governing authorities, and through them, village communities. Ensuring that assessment or humanitarian response teams are correctly tasked, coordinated and debriefed. Coordinating the logistical support, both by air and sea.	Liaison with the Essential Services Cluster, Ministry of Internal Affairs, Tonga Chamber of Commerce and Industry (TCCI), Emergency Shelter and Non-Food Items Cluster.	Discussions with the Ministry of Finance/Westpac /ANZ to allow humanitarian teams visiting outlying islands to take reasonably large quantities of cash to pay for required inputs. Financial commitments being tracked through UNOCHA's Financial Tracking Service.	Establishment of communications, water and power. Ensuring that the airport and the port are rapidly made serviceable to receive humanitarian assistance. Ensuring that land logistical routes throughout the country are cleared as soon as possible. Ensuring that there are adequate fuel supplies in country. Ascertain stocks of supplies for humanitarian assistance.	With support from OCHA, and in close cooperation with other clusters, the preparation, dissemination, management, and analysis of the Standard Rapid Assessment Form	Address in the planning for; response to; and recovery from a major hazard.	Ensuring that assessment or humanitarian response teams visiting remote locations carry sufficient maps, satellite phones, GPS.
Communica	Increasing the governance structure's capacity to communicate and operate effectively.	Effectively managing Disaster Risk Management information. Communicating with communities.	Investing in Disaster Risk Management ICT. Financial requirements as			Strengthening capacity to deliver Multi-Hazard Early Warning services and products.	

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	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
	Strengthening the decision-making capacity of the governance structure. Strengthening NGO, donor and UN partnerships. Strengthening existing and establish new public private partnerships to support Disaster Risk Management.	Strengthening media capacity to increase public awareness of disasters. Increasing the public profile of Disaster Risk Management and Multi-Hazard Early Warning System. Establishing communication measures that will improve Disaster Risk Management activities and outcomes. Using the latest Social Network Technologies. Support NEMO in producing regular, concise and accurate Situation Reports. With UNOCHA as the key driver, to develop and share the additional information with the national and international community.	summarised in a UN Flash Appeal, and with financial commitments being tracked through UNOCHA's Financial Tracking Service.			Monitoring and evaluating Disaster Risk Management activities and outcomes. Building capacity of Disaster Risk Management agencies, NGOs and communities to adopt best practice.	
Education	Re-establishing an effective education system for primary, secondary and tertiary students because of a major hazard. Numbers of children may well require		The MET may decide to temporarily waive school fees, or payments for school uniforms or books.	Rapid decisions will be required to temporarily repair these schools, including the insertion of tarpaulins to provide temporary roofing, as well as outside shelter.		Schools must be safe, and education must not be interrupted Child Protection must be a priority before, during and after a disaster. Community infrastructure must	The MET and MOI may well negotiate with a mixture of bilateral and multilateral donors to have some major educational reconstruction carried out.

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	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
	some form of psychosocial counselling. This will require liaison with health staff from the HNWASH cluster. In the medium to long term more substantial repairs (and in some cases complete rebuilding) will be required. This is the responsibility of the Reconstruction Cluster managed by the Ministry of Infrastructure (MOI).			Tarpaulins, combined with water containers, can also be used to provide a temporary water harvesting system. There will be the need to clear the debris from the area in and surrounding schools. In order to function properly, schools will need to be connected to the power system, and functioning toilet and water systems re-established.		be safe, and emergency relief and recovery must help reduce further risk Disaster Risk. Reduction must reach the most vulnerable people. All schools should be constructed so that they adhere to existing national building codes. Ideally, they should also be made as cyclone and earthquake proof as possible. Schools are often preselected to act as temporary Evacuation Centres. If that is the case, strong systems need to be set in place beforehand, these relating to staff management; eating/cooking/washing/toilet/recreation arrangements. Priority of schools will be to revert to their educational function. Alternative temporary housing may be	

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	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
						needed for some IDPs.	
Economic and Social Recovery	Repair to the social fabric for both individuals and communities, which might have been affected by the severe hazard. Support of individuals, families and communities to carry out self-recovery initiatives.		Financial commitments are tracked through UNOCHA's Financial Tracking Service.		Multi Sector Working Groups, comprising members from different Clusters, may be established to carry out initial assessments. These could use a combination of the Standard Rapid Assessment Forms, or more detailed documents such as the World Bank's Post Disaster Needs Assessment.	Carry out business or governance continuity plans to prepare for the likelihood of potential disasters.	
Emergency Shelter and Non-Food Items	Ensure that there is sufficient emergency shelter and Non-Food Items available for affected or displaced community members following a major disaster. Distribution of Non-Food Items (Non-Food Items), such as bedding, mosquito netting, kitchen sets, hygiene sets, buckets soap, tarpaulins,			Close liaison with the Coordination/Logistics Cluster will therefore be required for large quantities of materials brought in from outside of the country.		To establish workable SOPs for the activation and management of evacuation centres. DRR planning could also involve this Cluster to liaise with the Tongan Chamber of Commerce and Industry (TCCI), with the purpose of accessing needed materials from commercial suppliers. Clarify payment	

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	tents, ropes and tool kits. In addition to this, people may also require food and water. There is thus the need for NEMO to coordinate closely with both the Food Security and Livelihoods, and the HNWASH as well as safety and protection for evacuation centres.					details with these suppliers, ideally Memorandum of Understanding should be drawn up between NEMO and identified potential key suppliers.	
Essential Services	The Ministry of Public Enterprise (MPE) is the Cluster Lead Agency, but this needs to work in close cooperation with Tonga Power, Tonga Water, Tonga Communications Corporation (TCC), as well as with the private Internet Service Provider (ISP), namely Digicel. World Food Programme (WFP) heads up the Emergency Telecommunications Cluster, and will be	Initial priority is to try to establish communications with individuals and communities. Internet initial priority will be Nuku'alofa and the other main urban centres, with outlying islands. The Tongan Broadcasting Corporation, which liaises closely with NEMO and the Tonga Meteorological Service, will endeavour to re-establish its radio and TV services across the country.		Where regular power supplies remain inoperable, solar charger and portable generators will be required to recharge satellite phones, laptops and other essential communications equipment. Reliable supplies of fuel will be needed for the generators.		Ideally, all businesses and government departments should develop business continuity and governance continuity plans.	

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	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
	able to help coordinate the following resources: • Expertise as provided by groups such as Telecoms sans Frontieres • Teams of experts and/or volunteers working in Emergency Telecommunications Clusters (ETCSs)						
Food Security and Livelihoods	Close cooperation with the Tonga Chamber of Commerce and Industry to maximise the opportunity of local suppliers to provide as much of the food requirements as possible.		Effective assessments and replacement livelihoods programs will be required.	Repair and replacement of rain harvesting materials as soon as possible. This can include the clever use of tarpaulins to capture rainwater. On the larger landmasses, the drilling of bore-wells to access groundwater supplies. Establishment of water purification processes or desalination plants, together with accompanying water			Livestock experts will be required to ascertain animal feed, water, disease patterns, and animal shelters.

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	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
				tanks or bladders, to provide fresh water in the short to medium term. Transport of fresh water to isolated locations (such as small islands. Food packages distributed. Replacement seeds, examples being cucumber, beans and squash. Hand tools may be required including cutting tools.			
Reconstruction	Repair and reconstruction of houses, but also a spectrum of government and public buildings (e.g. schools and hospitals), private buildings and key infrastructure such as roads, bridges, fuel depots, market places, churches and community buildings. Whilst many families will return home to repair their houses, there may well be a		Financial commitments will be tracked through UNOCHA's Financial Tracking Service.	The Ministry of infrastructure is responsible for reconstruction, as well as the clearing of building debris. Work has been carried out across Tongatapu to identify evacuation routes in the event of a possible tsunami. In the immediate aftermath of a disaster, temporary shelter in the form of tarpaulins and tents are distributed to	Initial assessments are likely to use the national Standard Rapid Assessment Form. More detailed later assessments will use processes such as the World Bank's Post Disaster Needs Assessment.	Key structures, but particular public buildings such as schools and hospitals, will adhere to national building standards. On a practical level, individual houses or schools in coastal or rural areas can be 'retrofitted' which allows them to be made more resistant to either TCs or earthquakes.	

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	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
	need for a percentage of people to be housed in temporary accommodation. This is a role, which the MOI, supported by NEMO and other stakeholders, will need to address.			families and school by various stakeholders.		All the stakeholders involved must 'build back better'.	
Safety and Protection	To ensure right from the outset, that the initial humanitarian needs take particular care of the needs of the most vulnerable members of the community. The Protection and Safety Cluster has a responsibility of working with NEMO to ensure that effective management strategies for ECs are put in place. Safety and Protection Cluster will be responsible to looking in to the need, and subsequently managing, of a	Allow women and other vulnerable groups, to fully contribute to important and strategic decision making.		Delivery of water and food to most vulnerable people.			

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	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
	number of potential Working Groups. Examples of these would include Internally Displaced; Disability; Child Protection; and Gender Based Violence.						
HNWASH	A major disaster may precipitate the arrival of a number of Foreign Medical Teams. These will need to be managed by the MoH. Health centres or clinics may be damaged by a disaster, and items such as tarpaulins will be required to both cover damaged roofs, as well as providing outside shelter for out-patients. At the same time, by default, these locations become de facto Emergency Medical Outposts for triage, patient stabilisation and reference.	Clear transport and communications routes will need to be established between Emergency Medical Outposts and the main airport at Fua'amotu. There will be a need for strong public health messages to be disseminated throughout the media, and close cooperation with the Communications Cluster is required here.	In the short to medium term, the MOH may decide to waive some health charges for severely affected poorer families.	Repair and replacement of rain harvesting materials as soon as possible. On larger landmasses, the drilling of bore-wells to access groundwater supplies. Establishment of water desalination plants or water purification plants as required, together with accompanying water tanks or bladders to provide fresh water in the short to medium term. Use of water purification measures to provide temporary drinking water. Transport of fresh water to isolated locations.			Repairs may be needed for both the power and water infrastructure. There will also be the need to replace damaged or destroyed toilet and washing facilities. This is a particular priority for buildings such as hospital and schools. Interagency Diarrhoeal Disease Kits and Oral Rehydration Solution can help counter diarrhoea.

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	Coordination	Communication	Financing	Logistics	Needs Assessment	Policy and Planning	Resourcing
	Re-establish health clinics to their ongoing services, functions such as care of new-born children; health promotion; immunisation; medical/surgical consultations; psychosocial support.						

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Table 3-4:   Common responsibilities based on current TOR for clusters (X represents common area of responsibilities)

Topic	Subtopic	Coordination /Logistics	Essential Services	Emergency Shelter & Non-Food Items	Safety & Protection	Communication	HNWASH	Food Security & Livelihoods	Education	Economic & Social Recovery	Reconstruction
DRR Stage	Including Build Back Better in long-term plan.						X		X		X
	Reach remote areas and outlying places.		X						X		
	Dealing with drought.										
	Early warning system.										
	Giving public education.										
	Financial tracking service.										
	Ensure transparency in the operation.										
Emergency Response Stage	Establish communication.		X			X					
	Shorten decision-making process in emergency.	X				X					
	Rapidly re-establish temporary shelter and evacuation centres.		X	X	X				X		
	Protect vulnerable people.				X				X	X	
	Purify water for drinking.						X	X			
	Provide temporary shelters.			X			X		X		X
	Establish temporary evacuation centre.			X					X		X

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Topic	Subtopic	Coordination /Logistics	Essential Services	Emergency Shelter & Non-Food Items	Safety & Protection	Communication	HNWASH	Food Security & Livelihoods	Education	Economic & Social Recovery	Reconstruction
	Coordination among transportation, communication and accommodation in emergency hub.	x		x			x				x
Recovery Stage	Prioritise infrastructure.	x	x								
	Develop business continuity.		x							x	
	Ensure the equality for vulnerable groups that they will not be excluded.				x						
	Clear debris from important nodes and paths.	x							x		x
	Reconstruct based on a safe building code.								x		x
	Adapt construction material for temporary water catchment in small scale.			x			x	x			
	Using larger landmasses for water catchment.						x	x			
	Provide psychosocial counselling.			x			x	x	x	x	
Responsibilities	Regularly meeting to update and improve the plans.	x	x	x	x	x	x	x	x	x	x
	Provide training and exercise for all the clusters to cooperate.	x	x	x	x	x	x	x	x	x	x

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Topic	Subtopic	Coordination /Logistics	Essential Services	Emergency Shelter & Non-Food Items	Safety & Protection	Communication	HNWASH	Food Security & Livelihoods	Education	Economic & Social Recovery	Reconstruction
	Mobilise cluster members by NEMO.	x	x	x	x	x	x	x	x	x	x

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3.7 Indicator Based Assessment Results

The individual cluster results are shown in Figure 3-4 to Figure 3-13.

3.7.1 Coordination and Logistics Cluster

Results from the Coordination and Logistics Cluster are shown in Figure 3-4 and coordination and communication were the lowest ranked areas. As coordination is the main role of this cluster, it is important that it is done well and hence a larger weighting was applied to this area. Coordinating support from PHT/UNOCHA was rated as little or ineffective. This was due to the limited understanding of what the PHT team could offer and how to request assistance. Other areas that were ranked low for coordination included identifying the needs of vulnerable people and the overall coordination efforts that were deemed to have overlaps and duplications.

Communicating with vulnerable populations, – an essential element for coordinating the response to an event – was also seen as poorly done, as was the sharing of information between clusters. This was further impacted by the inconsistency in needs assessments that were carried out across all clusters.
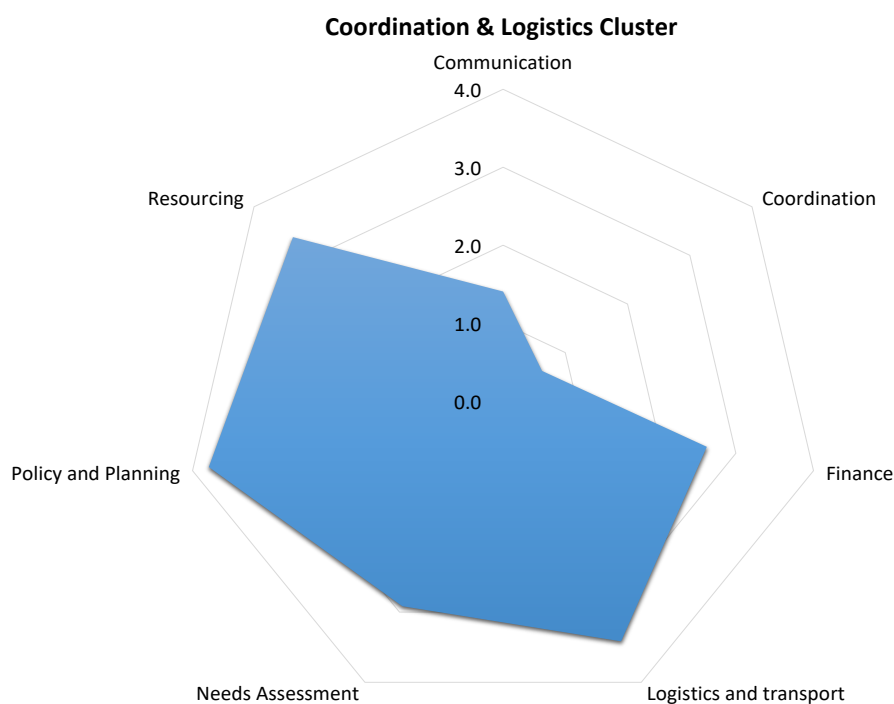

Figure 3-4: Results from Coordination and Logistics Cluster

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3.7.2 Communications Cluster

Results from the communication cluster are shown in Figure 3-5. Financing of the Communications Cluster was ranked as the lowest performing area. The Communications Cluster felt there needs to be more available funding for building redundancy into their systems as well as further financing for investing in emergency ICT.
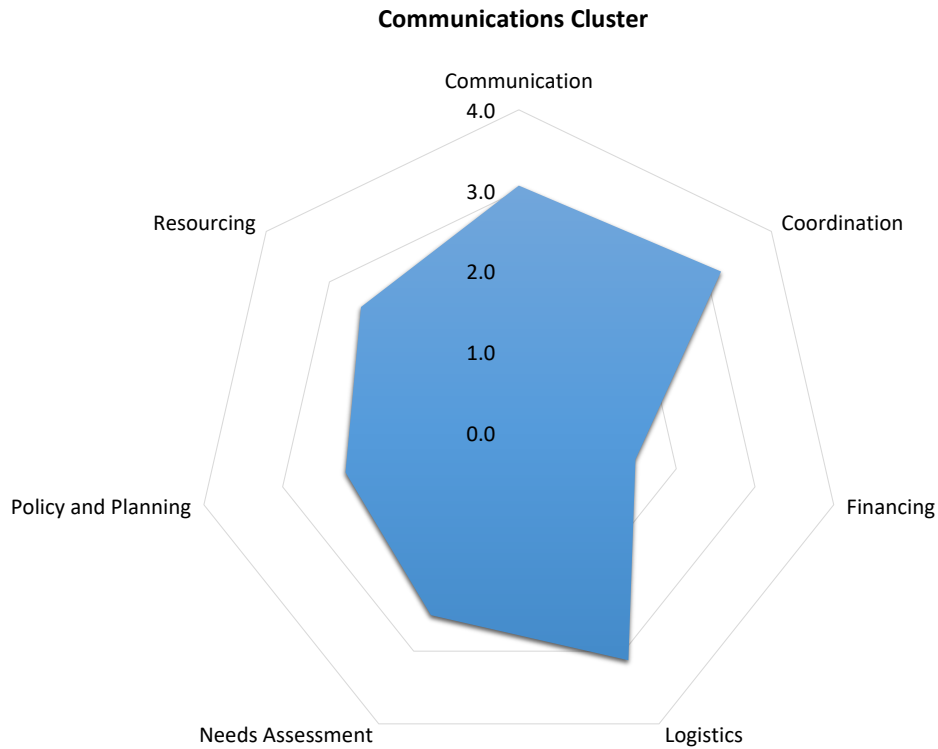

Figure 3-5: Results from Communications Cluster

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3.7.3 Economic and Social Recovery Cluster

Results from the Economic and Social Recovery Cluster are shown in Figure 3-6. This cluster is to highlight the importance of both the economic livelihoods recovery of the affected population; as well as the repair to the social fabric for both individuals and communities. The Ministry of Finance and National Planning (MFNP) is the lead agency of the cluster.

Coordination was the lowest ranking area for the Economic and Social Recovery Cluster. This was due to the limited understanding of other clusters in terms of the procurement procedures to obtain funding, which meant coordinating for emergency financing very hard. There were also limitations around being able to mobilise cluster members efficiently and having arrangements in place for communities with special needs/high vulnerability. There was no needs assessment carried out for the economic and social recovery cluster, as well as a lack of policy and planning. During consultations, MFNP didn't acknowledge the weakness of this cluster and were bias in the results they provided.
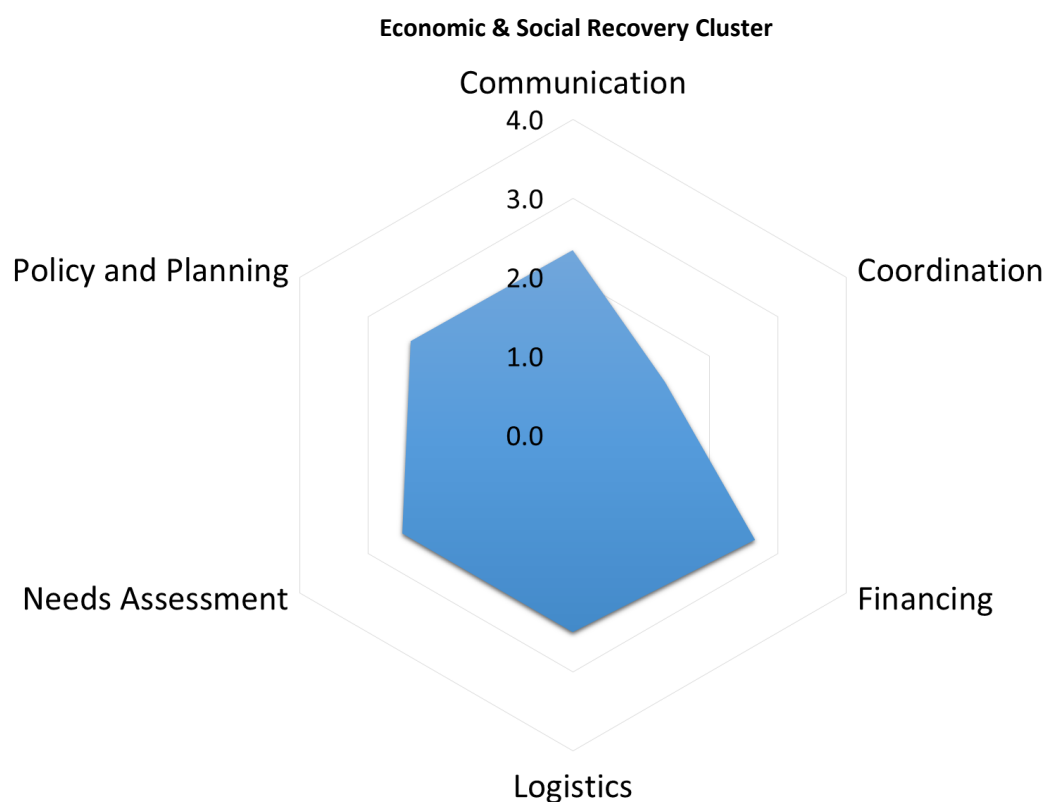
Economic & Social Recovery Cluster

Figure 3-6: Results from Economic and Social Recovery Cluster

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3.7.4 Education Cluster

Results from the Education Cluster are shown in Figure 3-7. Logistics, policy, planning, and resourcing were all rated as being poor or needing improvements for the Education Cluster. For logistics this related to the limited availability of back-up generators or power supplies (for their cluster and education centres), as well as having arrangements in place to be able to access remote areas. The Education Cluster felt that current SOPs and TORs are weak and result in much confusion in terms of understanding roles and responsibilities. Finally resourcing for staff was regarded as problematic as they had to carry out business-as-usual roles as well as assisting in the emergency response. This meant that the cluster was often understaffed or members were over worked and having to deal with their own impacts within their families.
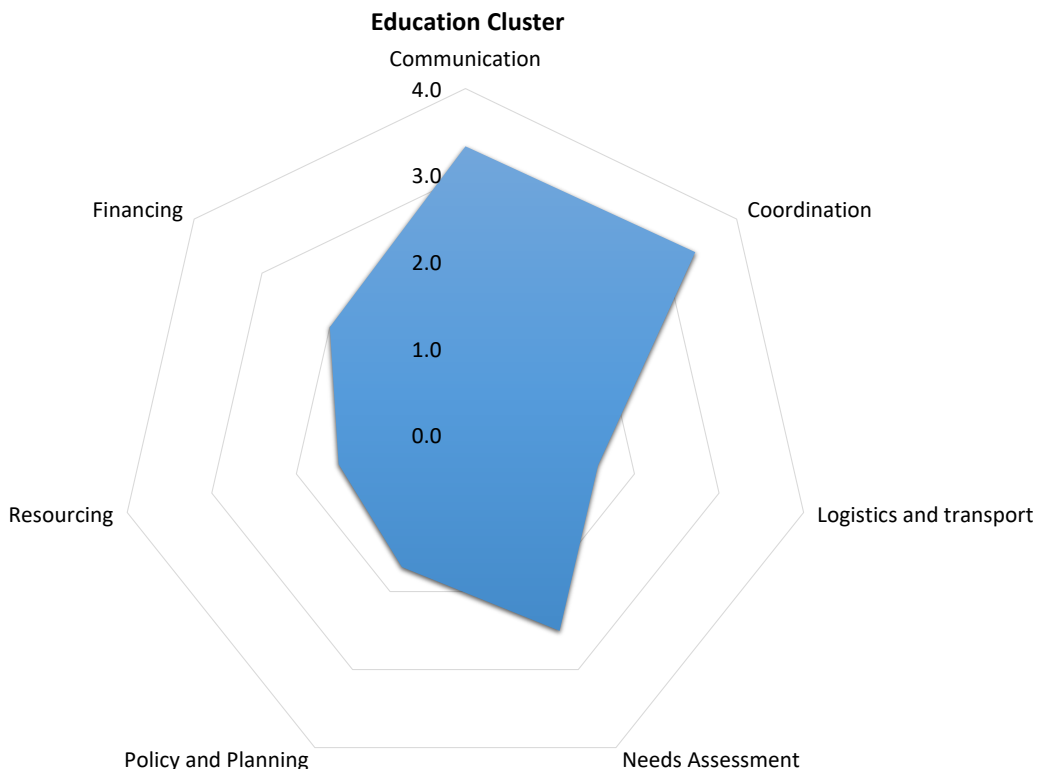
Education Cluster

Figure 3-7: Results from Education Cluster

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3.7.5   Emergency Shelter and Non-Food Items Cluster

Results from the emergency shelter and Non-Food Items cluster are shown in Figure 3-8. The emergency shelter and Non-Food Items cluster ranked lowest in needs assessment and resourcing areas. There was significant lack of rapid impact assessment information, which made coordinating emergency shelter, and Non-Food Items extremely difficult and created confusion during procurement processes as information was continuously updated. Understanding the damage to housing was confused by not having a standard assessment form. Accordingly, the distribution of emergency shelter, which in turn was based on the housing damage assessments, was impacted by skewed interpretations of the damage state. Resourcing was weak in terms of humanitarian response teams' being equipped with appropriate resources for field visits such as maps, satellite phones, GSP etc. Lastly, it was considered that they were not appropriately briefed.
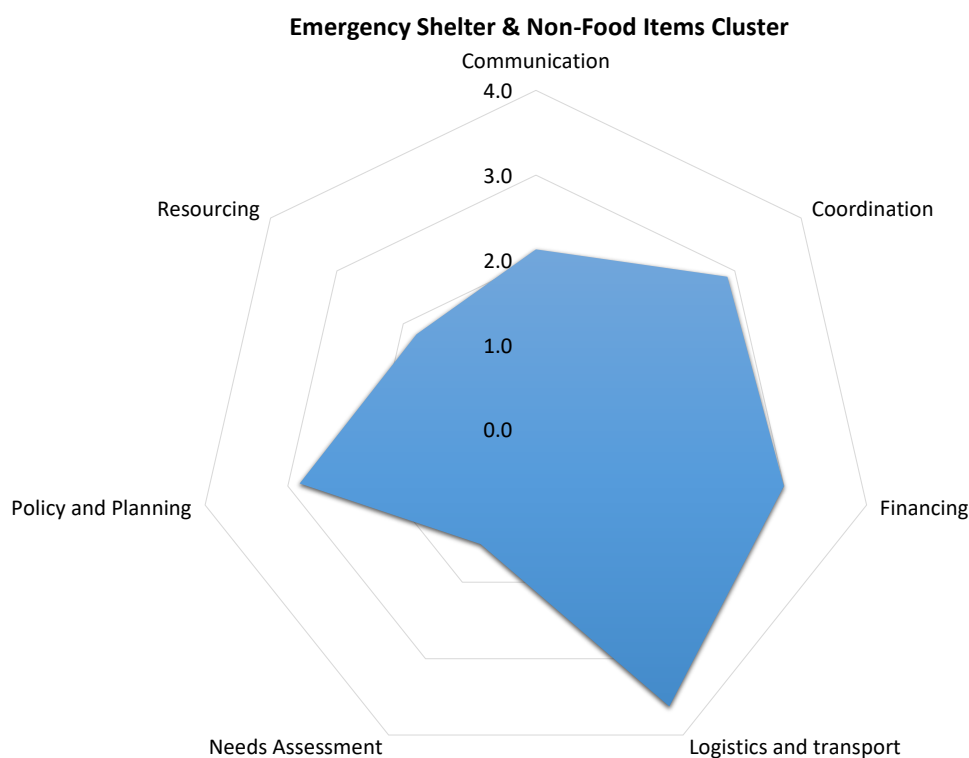

Figure 3-8: Results from Emergency shelter and Non-Food Items cluster

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3.7.6   Essential Services Cluster

Results from the emergency services cluster are shown in Figure 3-9. Resourcing was ranked as the lowest area for the Essential Services Cluster. The biggest contributing factor was the lack back-up generators and fuel for the public enterprises. All power was restored across Tongatapu and 'Eua after seven weeks and this could have been improved by having better resourcing of qualified staff to assist in repairing the damaged power reticulation infrastructure. However, the Government appreciated in-kind support from MFAT and DFAT.
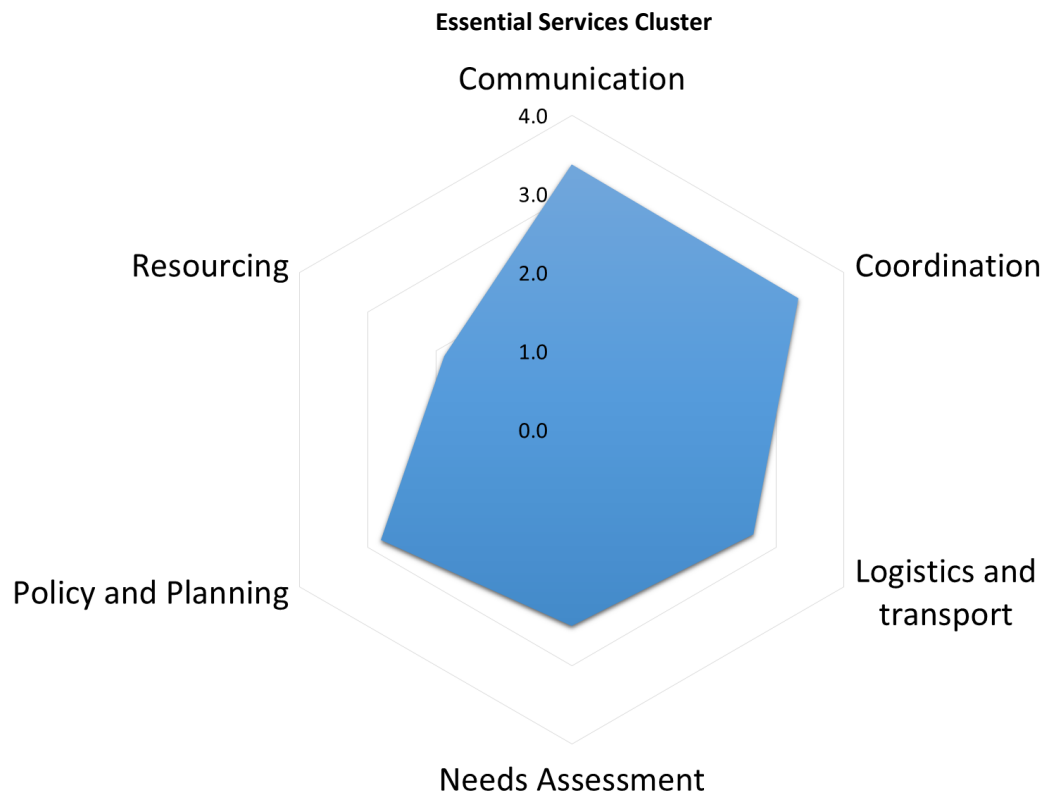

Figure 3-9: Results from Essential Services Cluster

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3.7.7   Food Security and Livelihoods Cluster

Results from the Food Security and Livelihoods Cluster are shown in Figure 3-10. The agricultural sector had the biggest impacts from TC Gita with the lowest overall rankings in communication, coordination, logistics and resourcing. Communication of information to the most vulnerable populations and between the clusters was viewed as an inhibiter to efficient response. The food security and livelihood's cluster limited understanding of the needs of vulnerable populations also impacted its response in terms of coordination. Limited local supplies of food as well as limited support for locally lead initiatives further inhibited this. Due to limited arrangements for remote areas, the cluster could only provide support to one in seven families within a village. They also had very limited support in the establishment of water purification processes as per their TOR, which also overlapped with HNWASH cluster mandates (i.e. establishment of water desalination plants or water purification plants as required, together with accompanying water tanks or bladders, to provide fresh water in the short to medium term). Additionally, the cluster had limited access to back up generators and fuel supplies as well as limited availability of staff for the cluster and resourcing of humanitarian response teams.
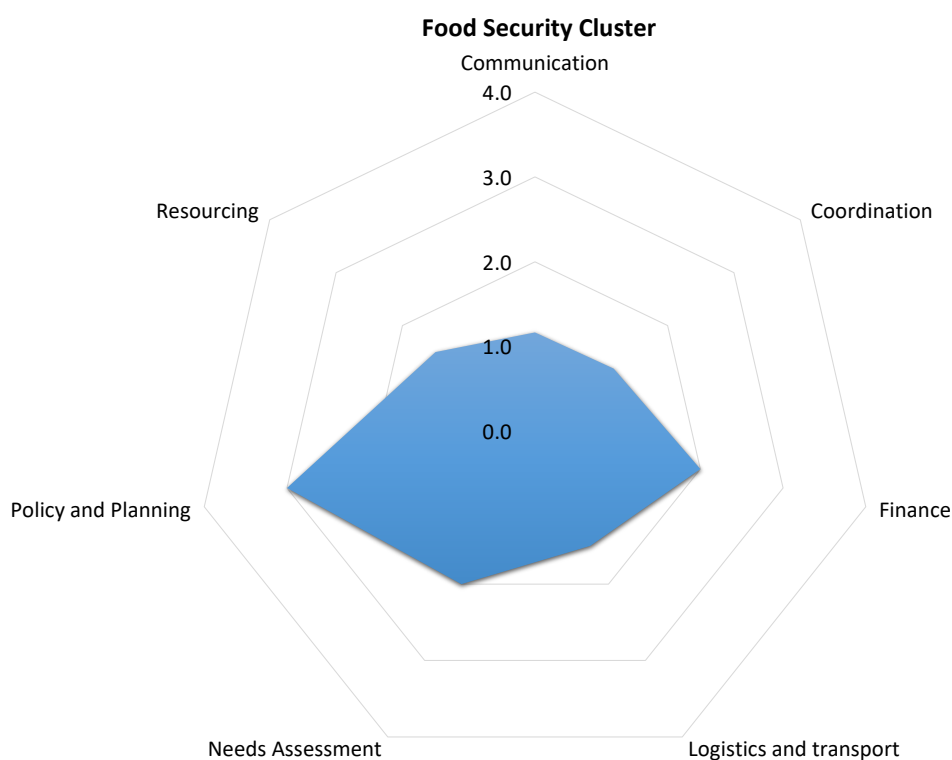

Figure 3-10: Results from Food Security and Livelihood cluster

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3.7.8 Reconstruction Cluster

Results from the reconstruction cluster are shown in Figure 3-11. The reconstruction/rebuild and recovery cluster had low ratings across most areas. This significantly low performance can be mostly attributed to the poor understanding between the transition from response to recovery, and the fact that recovery is currently ongoing. This is reinforced by the fact that coordination is the lowest ranking area as a whole and closely followed by policy and planning. Both of these areas are greatly influenced by having a clear understanding of roles and responsibilities for the coordination of recovery efforts, which should be outlined within clear policies and plans such as SOPs and TORs.
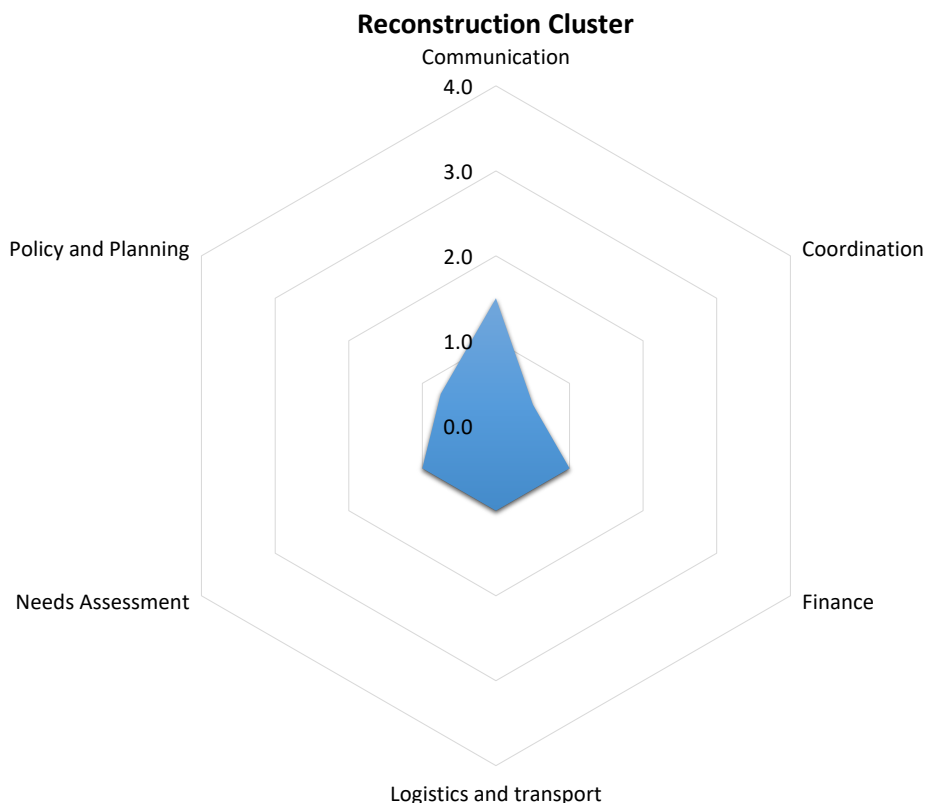

Figure 3-11: Results from reconstruction cluster

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3.7.9   Safety and Protection Cluster

Results from Safety and Protection Cluster are shown in Figure 3-12. Similar to the reconstruction cluster, the Safety and Protection Cluster had overall quite low ratings. The Safety and Protection Cluster was not mobilised from the beginning of TC Gita and was not fully established until May 2018 when a designated coordinator was assigned to assist the cluster. This significantly influenced the cluster's low overall ranking in the response phase. Financing was ranked as the lowest area, because no finances were assigned to the Safety and Protection Cluster until May 2018. Roles and responsibilities of the Safety and Protection Cluster were poorly understood and it was assumed that the cluster would not need any support funding and could obtain this through the other clusters.
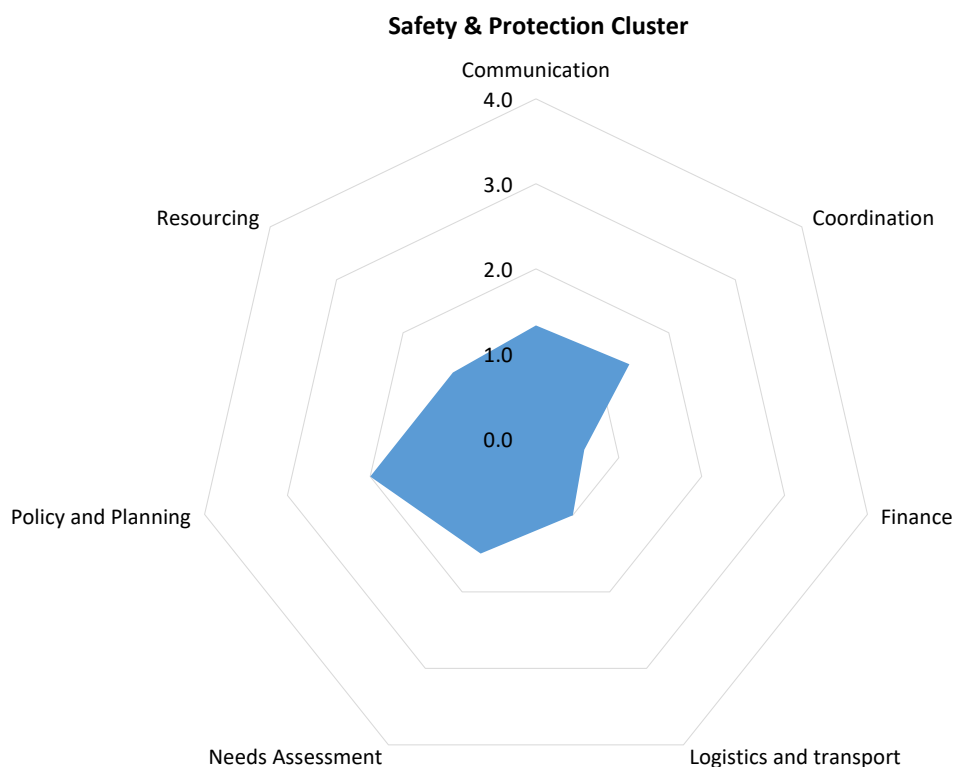

Figure 3-12: Results from Safety and Protection Cluster

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3.7.10   Health, Nutrition, Water, Sanitation and Hygiene Cluster

Results from HNWASH cluster are shown in Figure 3-13. The HNWASH cluster ranked lowest in cluster resourcing and communication areas. The under resourcing of emergency medical teams was felt to impact the cluster's ability to respond as medical staff were carrying out their business-as-usual jobs as well as attending to the emergency response needs (such as disease control). Overall, it was felt that the dissemination of information to vulnerable groups needed improvement as along with the ability to communicate with the other clusters. It was also noted that the waste member of this cluster had issues trying to communicate with the community around how to deal with Green waste such as fallen trees etc. This often confusion arises by waste sub-cluster as legal or illegal disposal of green waste, such as burning and disposing of green waste to the landfill, during the response, which could have been addressed/improved with better communication and education. However, this was filling up the landfill so fast that it took years of the projected use of the landfill and was completely unnecessary as this can be used for fertilizer or building materials instead.

Health, Nutrition, Water, Sanitation and Hygiene Cluster
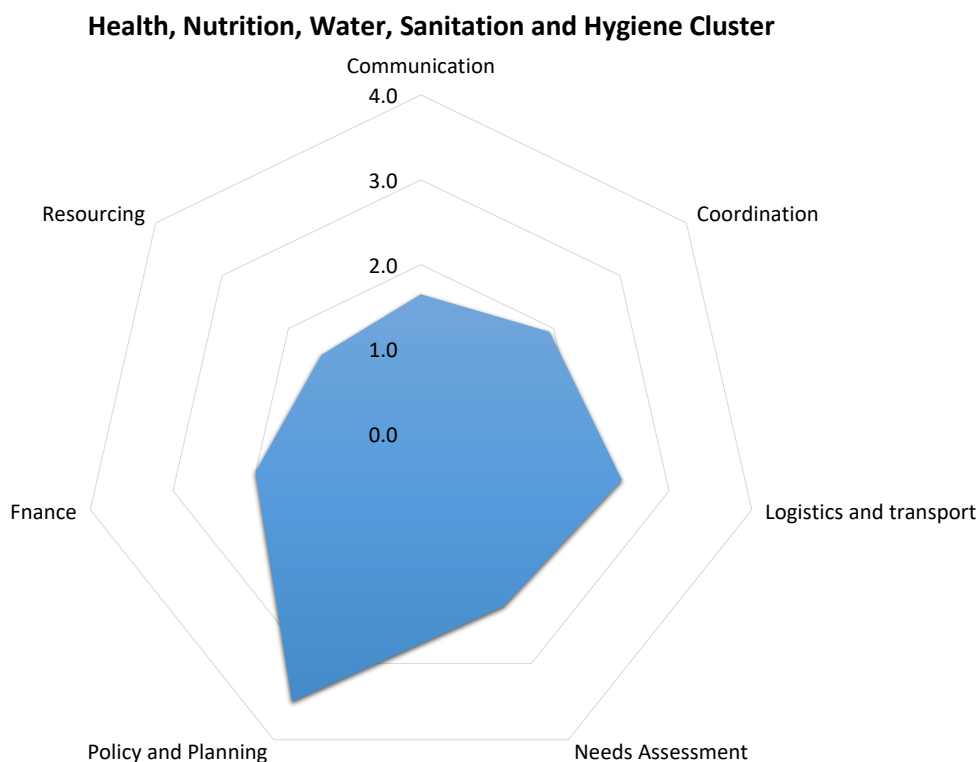

Figure 3-13: Results from HNWASH cluster

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3.7.11 Summary

The aggregated results from cluster members and groups for indicators based vulnerability assessment are shown in Figure 3-14 and Figure 3-14: Indicator results. Red dash line indicates anything below needs significant improvement (Survey results, T+T, 2018) below the individual cluster overviews. Figure 3-14 and Table 3-4 provides a clearer comparison between all the clusters. As outlined at the beginning of the report, it needs to be noted that the cluster members filled out their own surveys, and provide anecdotal information, the results are likely to be very biased towards a positive review of their cluster's actions.

Table 3-5:   Cluster's strengths and weaknesses based on multi-criteria assessment (Survey results, T+T, 2018)

Cluster	Coordination & Logistics	Communication	Economic & Social Recovery	Education	Emergency Shelter & Non Food Items	Essential Services	Food Security	Reconstruction	HNWASH	Safety & Protection
Elements	Index									
Communication	1.4	3.1	2.3	3.3	2.1	3.4	1.2	1.5	1.7	1.4
Coordination	0.6	3.2	1.3	3.4	2.9	3.3	1.2	0.5	1.9	0.6
Finance	2.6	1.5	2.7	1.6	3.0	2.8	2.0	1.0	2.4	2.6
Logistics and transport	3.4	3.1	2.5	1.6	3.6	2.7	1.5	1.0	2.4	3.4
Needs Assessment	2.9	2.5	2.5	2.5	1.5	2.5	2.0	1.0	2.3	2.9
Policy and Planning	3.8	2.2	1.6	1.7	2.9	2.8	3.0	0.8	3.5	3.8
Resourcing	3.4	2.5	0.0	1.5	1.8	1.9	1.5	NA	NA	3.4

Poor	0-1
Need Improvement	1.1-2
Satisfactory	2.1-3
Very Good	3.1-4
Not Applicable	NA

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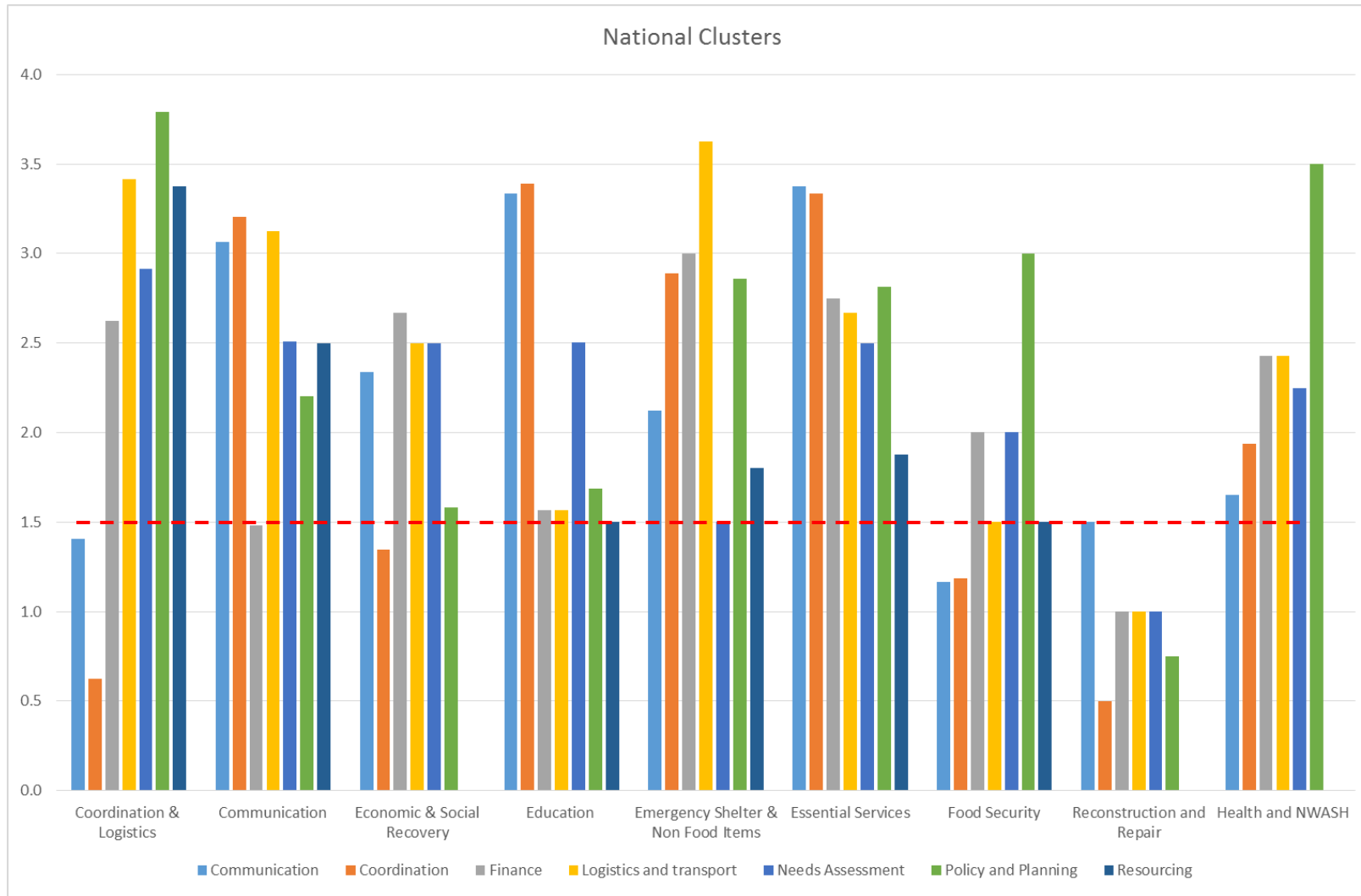NEMO Tonga & UNDP

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Figure 3-14: Indicator results. Red dash line indicates anything below needs significant improvement (Survey results, T+T, 2018)

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4 Lessons Learned

The following lessons learned have been developed through the interview (list of interviewees in appendix F) and workshop process as well as consolidating recommendations from the literature and other after action reviews that have been conducted. By the time of this assessment several clusters had their AAR completed and summarized a list of activities are shown Appendix G.

4.1 Communication

Currently there are either no communication plans in place for clusters, or they are out of date and therefore redundant. This causes confusion regarding the clarity of information and relationships between the response agencies and media, which often leads to the dissemination of incorrect information. Having a designated public information manager role within the NEOC could help to clarify this relationship and ensure the dissemination of correct information to the public. A standard guide for terminology for communicating information during a disaster needs to be established to ensure consistency and safeguard that the correct information is being relayed in both directions, to the public and to NEMO/government. This could be assisted by developing simpler and shorter weather bulletins to relay information (currently underway through the PREP programme). Further, maintaining the communication between clusters during 'peace time' is part of the TOR currently but not well maintained properly. This need to be maintained with relationships and promote a consistent understanding of roles and responsibilities.

4.2 Planning and Policy

The cluster system is currently not mentioned in any of the significant national emergency management plans such as the NEMP (Government of Tonga, 2009) or the Emergency Management Act (Government of Tonga, 2007). Updating act and plan could provide an overall framework for the operation of all clusters and provide a base to establish clear roles and responsibilities with limited gaps and overlaps. Once an overarching framework is established, individual clusters and the NEOC SOPs and TORs should be reviewed. This will allow clusters to plan their individual roles and responsibilities based on a common understanding of the overall cluster system. Once roles and responsibilities are clearly identified across all levels of policy, a subsequent investment in training and capacity building should focus on drills and exercises. Again, this will assist during a disaster period to ensure a more efficient response and help to minimise impacts. This capacity building should also extend to community level to ensure a wider understanding of the roles and responsibilities of the individual clusters. This will help to alleviate some of the pressure on NEMO, as typically the community will focus on collecting information from NEMO.

Pre-disaster planning should incorporate collecting data to better understand where vulnerable populations are, current housing situations, where relief stock is located, and the like. This will improve the ability to efficiently determine where impacts are more likely, thus helping to prioritise response efforts to worst hit areas. In addition, this will provide a baseline to compare the effects and impact with thus enabling a more comprehensive Post Disaster Needs Assessment and subsequent Disaster Recovery Framework or Plan.

4.3 Recovery Planning

The official transition from response to (early) recovery was slow and uncoordinated. Whilst recovery begins in the onset of a disaster, official transition indicates that the responsibility of recovery efforts transitions from NEMO to the Ministry of Infrastructure. This uncoordinated transition of responsibility meant recovery efforts did not build upon work that had been carried out during response and this led to confusion for all stakeholders involved. A recovery framework, which outlines clear roles and responsibilities for the transition phase and throughout recovery, will allow

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recovery efforts to be combined with response efforts and create a cohesive vision across all activities post disaster.

4.4 Financing

Dedicated budgets and financing should be planned and allocated for each cluster's response and recovery activities. Clusters need to sensitize for timely procure process and apply emergency situation procurement policies. This could hinders accessing resources for efficient response efforts as well as delay to response period. Continual investment in disaster risk reduction initiatives, (i.e. risk assessment, early warning, baseline and historical data, inter-communities' engagement, awareness, training), will continue to help reduce impacts and build resilience.

4.5 Needs Assessment

Needs assessments and data gathering was a significant issue that was raised throughout the interviews, workshops and literature. There was minimal communication or coordination of assessments and received data, which led to confusion and frustration for all parties. These issues arose from having no shared standard method across all clusters for the collection of needs and damage data. Nor was there an effort to have joined exercises between the Clusters. This may be because there were no Inter-Cluster Coordination meetings where the need for assessments (and joint assessments) should have surfaced. Due to the number of assessment that were said to have occurred it's likely that internal cluster organisation and coordination was also poor, resulting in multiple needs assessments that were carried out. In instances where a method was used within a single cluster, such as the rapid damage assessment used by NEMO and the Town Officers, there were discrepancies between the damage states of homes. A specified damage assessment tool will aid in creating common language and descriptions for determining the damage state of homes. The Kobo tool was thought to be an effective way of gathering information and could be a good way forward for having a standard data collection method across sectors. A disaster loss and damage data collection system will significantly help in situational understanding as well as post disaster analysis for reporting against the Sendai Framework for Action. An overview of one example of such a data collection system can be seen in Figure 4-1.
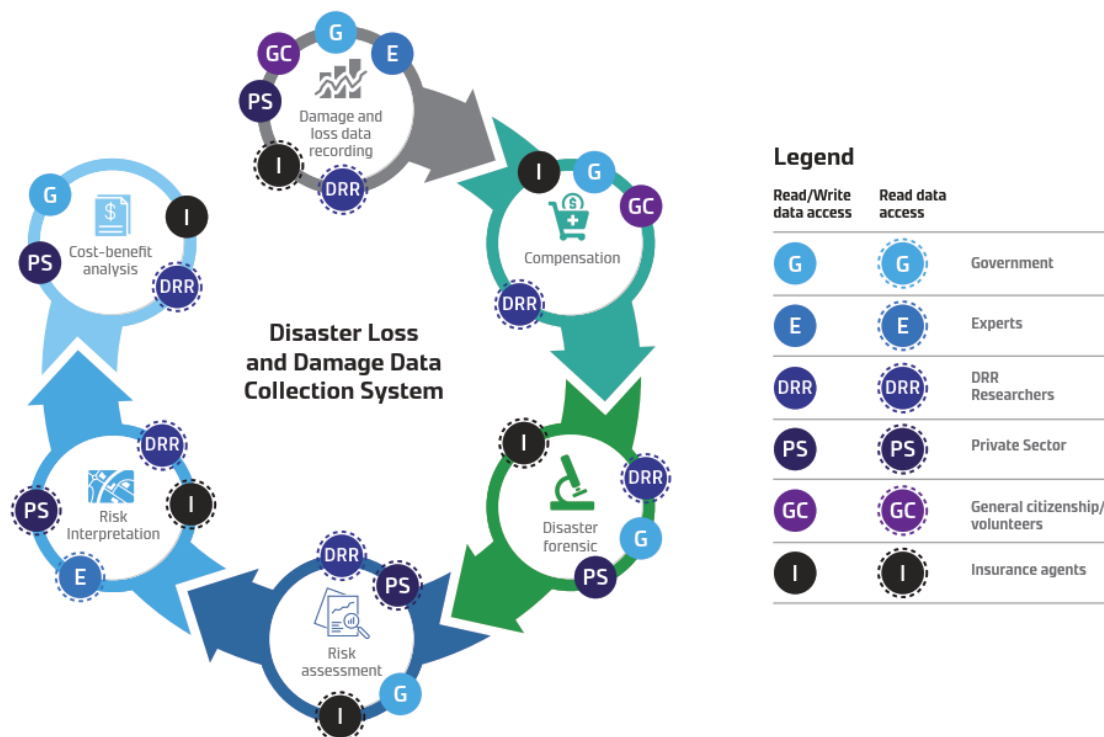
Figure 4-1: Disaster loss and damage data collection framework for Sendai Framework (Fakhruddin et al., 2017)

4.6 Capacity Building and Staff Consistency

Staff who are expected to be deployed to assist in emergencies and possibly work within the NEOC often have access to training prior to an event. However, it is common for these staff to either end up being deployed to other situations to fill gaps, or possibly just not being around to be able to assist. As a result, significant roles for coordination and assistance during response may be filled by junior staff with no emergency training. While this situation cannot be avoided altogether, in context of an immediate response there is no time to brief new staff. An overview handbook would assist in providing new staff with basic information to assist in transition to response work.

4.7 Coordination

Coordination is a critical aspect for any successful disaster response and recovery. UNOCHA serves as the Secretariat for the PHT and the primary focal point for communication with the PHT and all general coordination and information management matters. It is recommended to coordinate well with each PHT member and national cluster in regular interaction. Better coordination and cooperation with NGOs will help to align all response and recovery efforts. It was broadly felt that NGOs lacked in aligning their efforts with government instead of their own agenda/needs likewise other international agencies. Better delineation of authority between clusters, NEMO and National Emergency Management Committee will help with overall coordination and spreading the responsibility of decision making across multiple actors. This can create a more efficient process as one person does not need to be present to allow for information and plans to be presented or shared to have decisions and actions moving forward.

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5 Recommendations

Table 5-1 outlines the recommendations for all clusters in order to incorporate the lessons learned that have been outlined above.

Table 5-1:   Recommendations for clusters to incorporate lessons learned from TC Gita

Recommendations	Cluster
Coordination	
All clusters should have regular Inter Cluster Coordination Meetings for cluster leads to report on cluster (intended) activities and issues whilst planning a joined assessment/response/recovery.	All clusters.
More efficient interaction with PHT and understanding of what resources are available. It has been recommended to develop a work plan for each cluster in consultation with PHT members and to enhance the capacity of national clusters' regular interactions.	Coordination and Logistics Cluster. Communication cluster. Essential Services Cluster. Food security and livelihood cluster. Economic and Social Recovery Cluster. Reconstruction cluster. Safety and Protection Cluster. HNWASH cluster.
Designated coordinator role within each cluster. Some clusters have benefitted from the development of a dedicated coordinator roles to support and maintain coordination among sub-clusters. All national and PHT clusters have agreed need for a dedicated coordinator to support cluster activities. The TOR should specify requirements for such position.	Coordination and Logistics Cluster. Communication cluster. Education Cluster. Essential Services Cluster. Food security and livelihood cluster. Economic and Social Recovery Cluster. Reconstruction cluster. Education Cluster. Emergency shelter and Non-Food Items cluster. HNWASH cluster.
Better delineation of authority and adoption of command and control structure among clusters and agency. NEMO has adopted coordinated incident management system (CIMS). CIMS allows its users to adopt an integrated organisational structure to match the complexities and demands of single or multiple incidents in a coordinated effort. All clusters could adopt a similar capacity slowly and gradually to work as multi-agency coordination efforts using CIMS.	All clusters.
Better alignment of NGOs and national government initiatives for emergency response and recovery. Identifying coordinated efforts for effective collaboration with HMAF and other organizations. Development contingency and operational plan to promote a whole–of-government approach in response to a large-scale disaster.	All clusters.
Increase communication and coordination with UNOCHA/PHT members for coordination of response. Fostering relationships	Coordination and Logistics Cluster.

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Recommendations	Cluster
during 'business-as-usual' times will enable more effective communication during times of crisis.	
Registration of vulnerable people and their needs in pre-disaster time will enhance their safe evacuation and support improved response efforts.	All clusters
Building capacity of NEMO at the national level, Town Officers at District level and Village Emergency Response Committee at communities to adopt will enhance disaster preparedness.	Coordination and Logistic Cluster
Improve mobilisation of cluster members. Regular or pre-season interactions among clusters to define their roles and measure of responsivities, risk and resources mapping and training	All clusters
Strengthening village level emergency management committees.	All clusters
To assist in obtaining funds for recovery, it is recommended that Ministry of Finance and National Planning and Economic Division to be responsible for disaster recovery and reconstruction co-ordination. Ideally, medium-long term recovery/reconstruction priorities will be submersed into Tonga's developmental agenda and be part of the routine fiscal Budget priorities.	MoFNP Reconstruction Cluster
Communication	
Development of a communication plan for inter- and intra-cluster communications. Establish an emergency communication strategy with technology that is available for clusters' response.	All Clusters
Standard guide for all terminology. Using common terminology helps to define organisational functions; provide clear descriptions for resources, roles and responsibilities.	All Clusters
Maintaining relationships during business-as-usual / non-crisis times.	All Cluster
Need for better investment into emergency ICT and redundancy in telecommunications.	Communications Cluster
Finance	
Better understanding of financing mechanisms available for fast tracking of finances during an emergency. Proper application of the Emergency Fund Act and how to process and access the fund. MOFNP could provide guidance and training to other clusters.	All clusters MoFNP
Every disasters represent series of lessons learned. Understanding weakness, strength and opportunities for all clusters for past historical disaster events would assist better preparedness for future event and understanding overall disaster risk reduction strategies.	All clusters
Improve the prompt availability of funds for fast reconstruction/repair of schools and critical essential infrastructures.	Education Cluster
Simplify procurement procedures during an emergency, within the context and awareness of emergency fund mechanisms, so that requests can be updated as new information emerges.	All clusters
More efficient livelihood programs e.g. from loss of stock/agriculture by way of timely restocking and replanting activities.	Food Security & Livelihoods cluster

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Recommendations	Cluster
Development of contingency plans for finance and other major sectors.	All clusters
Logistics	
Undertake a stocktake of pre-positioned stock for quick mobilisation of resources. Pre-positioning locally procured relief items in areas vulnerable to natural disaster can save lives. Buying and storing supplies locally brings economic benefits to communities, builds resilience, and means emergency assistance can be delivered at maximum speed and minimum cost.	Shelter and Non-Food Item Cluster Essential Services Cluster Communications Cluster
Identify suitable preselected vendors for emergency supplies with a fixed price through a memorandum of understanding.	Economic and Social Recovery Cluster Reconstruction cluster
Improve availability of backup generators and fuel supply for cluster and agency offices.	Education Cluster Essential Services Cluster
Needs Assessment	
Implement a standardised and multi-sectoral needs assessment to be universally adopted.	All clusters
Regular update integrated disaster loss and damage assessment system and database (i.e. PDaLo database is available).	All clusters
Update baseline information and upgrading the housing of basic statistics at the Bureau of Statistics to allow it to map the cyclone/disaster impact region and overlay the affected population from the census data.	Coordination and Logistics (Bureau of Statistics)
Policy and Planning	
Achieve a better planned, coordinated and documented transition from response to recovery by establishing a timeframe for response and recovery based on disaster situation to avoid uncertainty.	Coordination and Logistics Cluster
Improve SOP and TOR to provide a better level of detail for all agencies within the clusters and align all SOPs and TORs to minimise gaps and overlaps.	All clusters
Inclusion of clusters in the National Emergency Management Plan (NEMP) (2009) and the Emergency Management Act (2007) which is currently under revision.	All clusters and government
Develop and approve recovery-housing policy.	Reconstruction cluster
Resourcing	
Provide training for all staff that may be called upon for emergency response on their specific roles, responsibilities and/or technical knowledge.	All clusters
Better resourcing (in terms of both manpower and physical resources needed) of humanitarian response teams. Develop risk and resource mapping and undertake a stocktake of pre-positioned stock for quick mobilisation of resources.	Emergency Shelter and Non-Food Items cluster
Provide training and adequate resourcing for Town Officers so they fully understand their role and expectations.	All clusters mainly coordination and logistics
Community Capacity building	
Ensure that hazard information warnings disseminated from Tonga Met Services (TMS) are appropriate in terms of their language	All clusters

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Recommendations	Cluster
approach (style and tone) so that warnings garner interest among the community and result in proper action being taken.	
Provide disaster response/preparedness training for town and district officers with a focus on transferring immediately necessary practicalities/skills, such as how to use 72-hour kits, how to set up tents and the like.	All clusters
Community education for management of green waste during emergency.	HNWASH cluster

5.1 Urgent Actions

Table 5-2 outlines the dedicated actions each cluster developed for the upcoming season within the second workshop. These actions will provide the first step forward in incorporating the lessons learned from TC Gita and increase Tonga's resilience in the future. NEMO in consultation with NEMC will be responsible for following up with all cluster members to ensure recommendations are carried out before the end of the 2018/2019 TC season. Clusters will carry out implementation, however NEMO will be assisting with the monitoring and evaluation of ongoing implementation of lessons learnt.

Table 5-2: Action points for clusters

Cluster/Ministry	Action
All Clusters	• Review TORs and SOPs in collaboration with all clustres in order to minimise/eliminate overlaps and gaps. Identify cluster lead roles and responsibilities and dedicated coordinator. • Develop a memorandum of understanding with local/private companies for the procurement and supply or resources (e.g. agreeing on a set price for the procurement of supplies during an emergency)
Communications Cluster	• Develop a back-up plan and simulation exercise for all operators
Coordination and Logistics Cluster	• Create an information management officer role • Development of stronger coordination mechanisms • Develop priorities for future funding for response activities • Develop a documented process for the handover of response to recovery
Ministry of Finance and National	• Better education and training for all clusters around procurement procedures and mobilisation of funds to obtain funding in a crisis time. • Establishment of an Emergency Unit within the Ministry of Finance to assist with Monitoring and Evaluation of procurement, assist in fast tracking finances, coordination with Economic and Social Recovery Cluster and must report to the NERC
Education Cluster	• Improvement in contingency plans and rapid assessments, implementation of Rapid Pro tool for data collection
Emergency Services and Non-Food Items Cluster	• Carry out stock takes for all clusters and NGO agencies to determine what pre-positioned stock is available
Essential Services Cluster	• Integrate public enterprise response plans with other agencies and ministries • Application and strong use of the building code for reconstruction activities. • Ongoing monitoring and evaluation of response activities • Need to obtain better information on the beneficiaries for reconstruction to better address vulnerabilities

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Cluster/Ministry	Action
Food Security and Livelihood Cluster	• Research and develop advice for farmers on types of farming systems and raising local livestock to increase available food • Need to obtain better information on the beneficiaries for reconstruction to better address vulnerabilities • Application and strong use of the building code for reconstruction activities. • Ongoing monitoring and evaluation of response activities
HNWASH Cluster	• Develop plans and resources for the implementation of Emergency Medical Teams for response
Reconstruction Cluster	• Application and strong use of the building code for reconstruction activities. • Ongoing monitoring and evaluation of response activities • Need to obtain better information on the beneficiaries for reconstruction to better address vulnerabilities
Safety and Protection Cluster	• Develop a database of where vulnerable people are situated • Upgrade evacuation centres for better access for most vulnerable people

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7 Applicability

This report has been prepared for the exclusive use of our client NEMO Tonga & UNDP, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor International Ltd

Report prepared by: Authorised for Tonkin & Taylor International Ltd by:

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Dr Bapon Fakhruddin   Richard Reinen-Hamill
Team Leader   Sector Director- Natural Hazard Resilience

Rebekah Robertson
Natural Hazard Specialist

REPE
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Appendix A: After Action Review Template

1 **What did you plan?** • What were your objectives as cluster? • Why did you take this action? What were you trying to achieve? • What were the key assignments first 48-72 hrs? • What were the key assignments from 3 days to 7 or more days?	
2 **What happened actually?** • Get multiple perspectives: There is no single best story about what happened. • Focus on "facts" (e.g., costs, number of people involved, figures, etc) and "opinions" (e.g. what worked and why, what happened). • No blaming! Focus on TC cyclone event only and what events preceded or followed, not why someone did something or what you thought about it. • Allow very specific comments as well as abstract and conceptual ones	
3 **What can we learn from the TC Gita?** • What are some plausible explanations for why, when, and where events happened? • A key question is, "what did we do well that we need to discuss or else it will be forgotten?" • Don't look for blame; look for lessons, including lessons about 'mistakes'. • Be honest about what questions you still have about what happened and why in TC Gita.	
4 **What should we do next time when Cyclone or other natural hazards hits Tonga?** • What worked that may not work again? What worked that you want to repeat? What do you want to do differently? • Spend sometimes of the discussion here to keep from falling into bad habits and failing to start good new ones.	
5 **What should we do now for future response?** • How will you share these lessons? • Don't just wait until next time if you can make a difference now. • Be clear about assignments and responsibilities: who will do what by when?	

Appendix B: Tongatapu Damage Assessment Post TC Gita

Appendix C: Indicator Assessments Example

Coordination Cluster				
Lead Agency: NEMO	**1 - Poor/none exist**	**2 - needs improvement**	**3 - satisfactory**	**4 - very good**
Indicators				
Communication				
Dissemination of information to vulnerable groups	Vulnerable groups not identified therefore no information is disseminated	Some vulnerable groups identified but inefficient mechanisms for dissemination of information	Vulnerable groups identified but inefficient mechanisms for dissemination of information	Vulnerable groups identified and effective dissemination of information
Sharing of information with internal and external stakeholders (international and national)	No willingness to share information	Some willingness to share information internally/nationally	Willingness to share information but uncoordinated and ineffective platforms exist to share	Coordinated and effective sharing of information across all clusters and platforms
Ability to directly communicate with all clusters	No direct face to face communication is easily accessible	Regular meetings are held to aid in communicating with all clusters however they are not all present and working within the same building	Representatives from all clusters are able to communicate directly with each other as they are all placed within the same building	Representatives of all clusters are able to communicate directly through one another by being present within the same room
Extent of links with stakeholders and communities	Virtually non-existent	Limited	Partially developed; many links exist	Fully developed links with full range of stakeholders and frequent dialogue
Coordination				
Overall Coordination	Poorly done - little to no coordination or oversight	Moderate coordination, but lacking coordinated planning and execution	Coordinated response	Well-coordinated response
Building capacity of DRM agencies and communities to adopt best practice	DRM is not a priority in building capacity of communities	Best practice is identified but little adoption and capacity building is available for communities	Capacity building is limited and best practice is adopted where capacity building has occurred	Building capacity of communities to adopt DRM best practices is top priority and extensive across the country
Ability to mobilise cluster member efficiently	Members are unaware of activation procedures and cluster is not established efficiently	Some key members are aware and able to establish cluster but is under resourced	All members are aware of their initial roles and responsibilities but some are uncontactable to establish cluster	Cluster members are contactable and aware of their immediate roles to mobilise and establish cluster

Identified the needs of vulnerable populations	Vulnerable groups not identified therefore no needs are identified	Some vulnerable groups identified but inefficient mechanisms for needs assessment	Vulnerable groups identified but inefficient mechanisms for needs assessment	Vulnerable groups identified and effective mechanisms for needs assessment
Strengthening and supporting of locally lead initiatives	All response and recovery initiatives are government led and top down	Some locally led initiatives are supported but mostly top down	Locally led initiatives are supported but are limited to certain areas	Locally led initiatives are extensive across the impacted area and have full support from government
Coordination Environment	Coordination system exists, but not regularly exercised or prepared	Coordination system exists, but not regularly exercised. Coordination overlap and duplication	Coordination system is in place	Roles and responsibilities of each institution involved in response is written down, well understood, and used (exercised)
Response - Government - All levels	Basic, no lead from government and no consistency	Intermediate level with lead from government and partly consistent	Higher level with lead from government and higher levels of consistency	Advanced with lead from government with low levels of inconsistency
Performance targets set and monitored	Non-existent	Interest is evident; only partially developed; monitoring not fully systematic or fully reported	More clearly developed but performance targets not necessarily published; evidence of improvements and target raising is patchy; as is reporting	Full set of performance targets published annually; year on year raising of performance and targets evident; full-scale monitoring systematically reported
Response culture within organisations	No evidence of a disaster response culture (i.e. organisations internalising disaster response arrangements)	Evidence of disaster response culture in a minority of organisations; competition between organisations	A disaster response culture exists in many organisations; with evidence of collaborative arrangements; competition between organisations	A well-developed disaster response culture exists among most internal organisations; internal preparedness plans are widespread; evidence of widespread collaborative and contractual agreements and disaster mitigation
Community response	No response or very poor response	Community responds in some capacity but severely lacking or not timely	Community responds appropriately	Community response is appropriate and well-coordinated

Level of community participation in decision making	No community engagement in decision making exists	Low level of community engagement in decision making exists	Medium level of community engagement in decision making exists	High level of community engagement in decision making exists
Support of UNOCHA in major events	Little effective or targeted support	Some support but not targeted to the current event	Targeted support but poorly coordinated	Coordinated, efficient and effective support available from UNOCHA in major events
Supporting to produce concise and accurate situation reports	Information for situation reports is not produced	Some inaccurate or not up to date information is produced	Accurate information is produced but is confusing and not concise	Accurate and concise information is disseminated to NEMO
Finance				
Ability to fast track finances to purchase stock for humanitarian response	No ability to fast track finances for humanitarian response recourses	Ad hoc and prioritised fast tracking of finances	Some predetermined fast tracking and prioritisation of finances	Legislated ability to fast track finances for the purchasing of humanitarian response stock
Efficient financial tracking system for overseeing financial commitments and donations	No finance tracking system	Limited finance tracking system, ad hoc distribution of donations	Some finance tracking abilities with moderately planned distribution of donor finances	Coordinated finance tracking system to oversee financial commitments and for the distribution of donor finances
Logistics and transport				
Generator availability and fuel to power	No backup generators to support cluster	Backup generator available but no back up fuel	Backup generator and limited fuel available	Backup generators and fuel are available for ongoing support of cluster
Efficiency of cluster activation	Too slow which severely inhibits response and recovery activities	?	?	As efficiently as possible which allows for response activities to begin
Efficiency of airport and port becoming operational	Airports and ports are not operational within a sufficient time span to receive essential humanitarian aid	Airports and ports are operational within a moderately sufficient time scale with no coordination of inbound humanitarian aid	Airports and ports become operational within an appropriate time however coordination is ad hoc	Airports and port are operational efficiently and can receive humanitarian aid as so as its sent

Establishment of an effective civilian-military unit in complex events	No ability to establish civilian-military units	Ad hoc establishment of civilian-military unit and under resourced	Some coordination of civilian-military unit but under resourced	Coordinated and pre planned ability to establish effective civilian-military unit and fully resourced
Reinstating land transport routes efficiently	Reinstating transport routes takes too long and significantly limits response efforts	Reinstating some main transport routes with ad hoc coordination of land transported resources	Reinstating main transport routes with coordination of resources efficient from beginning of response	Reinstating land routes begins immediately after an event and allows for response efforts to begin immediately
Ensuring adequate fuel supplies for humanitarian response	No planning for distribution of fuel supplied	Limited fuel supply with ad hoc distribution	Prioritised fuel distribution but limited fuel supply	Plan in place for the storage and distribution of fuel supplies prior to an event
Needs Assessment			
Post Disaster Needs Assessment for continuous improvement	No coordinated process for evaluating response after an event	Process for evaluating response in place, but slow and irregular	A coordinated process is in place for evaluating response actions	A coordinated process is in place for evaluating response actions and an action report was completed
Standard Rapid Assessment form	No standard or coordinated method for rapid needs assessment	Some coordination but no standard method for rapid needs assessment	Some coordination and some standard methods across individual clusters for rapid needs assessment	A coordinated and standardised method exists for rapid needs assessment across all clusters
Rapid impact assessment	No rapid impacts assessments within the first 24 hours	Rapid impact assessment to main populated areas only	Rapid impact assessment on main island only	Rapid impact assessment available across entire impacted area
Policy and Planning			
Monitoring and evaluation of DRM activities and outcomes	No monitoring and evaluation of DRM activities	Some monitoring and evaluation but little to no adoption of lessons learned	Some monitoring and evaluation will some uptake of lessons learned	Efficient monitoring and evaluation with wide uptake of lessons learned
Recovery/reconstruction policies and coordination mechanisms	No recovery/reconstruction policies or coordination mechanisms in place	Some recovery/reconstruction mechanisms are outlined in policy but coordination is ad hoc	Recovery/reconstruction and coordination mechanisms are outlined but not efficient or extensive	Recovery/reconstruction policies and coordination mechanisms are extensive and efficient to follow to ensure an effective recovery/reconstruction

Response policies and coordination mechanisms	No response policies or coordination mechanisms in place	Some response mechanisms are outlined in policy but coordination is ad hoc	Response and coordination mechanisms are outlined but not efficient or extensive	Response policies and coordination mechanisms are extensive and efficient to follow to ensure an effective response
Political environment	Political commitment, but limited action or obvious support	Strong political commitment and some, but insufficient action	Strong political commitment with engagement and support for needed actions	Strong political commitment with routine engagement and obvious support for needed actions
TORs for clusters	No TORs available	TORs available but unclear roles and responsibilities	TORs available but uncomprehensive or understood	Full and comprehensive TORs available
SOPs for clusters	No SOPs available	SOPs available but unclear roles and responsibilities	SOPs available but uncomprehensive or understood	Full and comprehensive SOPs available
Resourcing				
Resourcing and briefing of humanitarian response teams	Not sufficiently equipped with resources such as maps, satellite phones, GSP etc. or briefed	Some resources but limited briefing to understand what resources may be needed of missing	All anticipated resources are available but limited briefing to selected what resources need to be taken	Sufficiently resourced with the appropriate equipment based on detailed brief of visit
Ability to establish and resource World Food Programme Mobile Storage Units	No resourcing to establish MSUs	Limited resourcing for main MSUs only	Resourcing sufficient for main MSUs only	Fully resourced and established units in all four locations at Fua'amotu, Nuku'alofa, Ha'apai and Vava'u

Appendix D: People Consulted in First Workshop

Name	Organisation	Title	Classification
Sela Fusi	MoH	EMT Coordinator	Government
Eva Tu'uholoaki	Ministry of Internal Affairs	DCEO	Government
Sione Ulakai	HMAF	ACDS Ops	Defence
Na'a Taiala	TCDT	Program Manager	NGO
Sophie Pupungata	TF4H	Manager	NGO
Keith Moala	MEIDECC	Chief Engineer	Government
Dennis Fuapau	Digicel	Operations	Communications
Lionel Tuinukuafe	Digicel	Operations	Communications
Kosilio Patelisio	TCC	Head of Sector	NGO
Iki Tausinga	TCC	Senior Engineer	Other
Fuka Kitekeiaho	WASH/TGS	Coordinator of TGS	Private Sector
Seina Kara	WASH/TGS	Assistant Hydrogeologist	Government
Yumi Nafe	MLNR	Assistant Geologist	Government
Chantelle Boland	DFAT/AHC	Second Secretary	Donor
Randy Lau	NVM	SPP - Director	Observer
Ponepate Taunisila	MET Office	DEP. CEO	Government
Fe'ofa'aki Leka	D.PO	Project Office	NGO
Steven H.	MAFF	Forestry Officer	Government
Suinipa Isiolo	NATA	Advocate	NGO
Tatafu Moeaki	ADB - WBG	SCCO	DP
Lavinia Taumoepeau-Latu	MIA	Safety and Protection Cluster	Government
Moana Kioa	NEMO	Senior Associate Secretary	Government
Maata Mafi	National Planning	Senior Economist	Government
Verna Tukuafu	LDS	Self-Reliance Manager	NGO
Silongo Samani	LDS Charities	Country Welfare Manager	NGO
Elisaia Ika	FSLC/MAFF	FSLC Coordinator	Government
Mausa Halahala	TNYC	Humanitarian Coordinator	NGO
Anaseini Iotebatu	Tongan Red Cross Society	Disaster Management Coordinator	NGO
Lesila L. Toia	WCCC	Staff Team Leader	NGO
Rennie Vaimounga	NRD	Senior Geologist	Government
Olivia Fukofuka	NZHC	Senior DPC	Donor
Tupou Ika	MLNR/HNWASH Cluster	Senior Geologist	Government

Manu Akauola	Ministry of Education	Finance	Government
Yutaro Setoya	WHO	Technical Officer	UN
Aisea Fungavai	NEMO	AS	Government
Kepu Ioane	MPE	DCEO	NGO
Ikenasio Taulangovaka	MORDI	COO	NGO
Tim Hill	Nevada Guard	Emergency Manager	Observer
Carrie Vaea	NEMO	Assistant Sec- Cluster Coordination	Government
Noel Puno	ADB	TA	Donor
Malakai Vakasiuola	ITS	Observer	Private Sector

Appendix E: People Consulted Second Workshop

Name	Organisation	Title
Keith Moala	MEIDECC	Communications Engineer
Dennis Fuapau	Digicel	Operations
Iki Tausinga	TCC	Engineer
Siov L. Mapakaitolo	HMAF	Operations
Sau Niulala	Customs	
Alfred Vaka	JICA	Program Officer
Yasushi Hayashi	JICA	Project Formulation
Hitomi Obata	Japan Embassy	First Secretary
Michael Arunga Obare	UNOCHA	Information Management Officer
Leon Fajardo	UNICEF	Emergency Specialist
Jo Hall	UNICEF	Emergency
Silongo Samani	LDS	Country Welfare Manager
Rosamond Bing	Ministry of Land and Natural Resource	CEO
Eva Tu'uholoaki	Ministry of Internal Affairs	DCEO
Samuela Halahala	TNYC	PR
Sione Angianga	TNYC	V/DRR
Tatafu Moeaki	ADB	SCCO
Isikeli Oko	MET	DCEO
'Ana Lemani	MOFNP	DCEO
Luisa Hui	MPE	A/C
Lampeti Hamei	MAFF	Agriculture Officer
Elisaia Ika	FSLC/MAFF	FSLC Coordinator
Samuela Pohiva	MIA	Sec. Local Government
Mafua Maka	NEMO MEIDECC	PAS
Sione Taumoefolau	Tongan Red Cross	S.G
Yutoro Setoya	WHO	TO
Waqairapoa Tikoisuva	UNICEF	HNWASH
Sela Fusi	MOH/WHO	National Emergency Medical Team Coordinator
Madeleine Scott	Australian High Commission	Second Secretary
Lavinia Taumoepeau -Latu	MIA	Safety and Protection Cluster Coordinator
Owen Pauu	NZ High Commission	Development
Elena Procute	NZHC	DHOM
Viliami Maua	MAFF	CEO
Moleni Tu'uholoaki	MET Office	Chief MET Officer
Milika Tuita	UNOP	UNCD
Siunipa Isitou	ATA	Coordinator
Fe'ofa'aki Leka	DPO	Project Officer

Appendix F: Individual Interviewees

Name	Cluster/Agency
Elisaia Ika	Food Security and Livelihoods Cluster – MAFF
Lavenia Taumoepeau -Latu	Safety and Protection Cluster
Vea Aniseko	Coordination and Logistics Cluster – NEMO Logistics Coordinator
Keith Moala	Communications Cluster
Kepu Ioane	Essential Services Cluster – Ministry of Public Enterprises
Claude Tupou, Isikeli Oko	Ministry of Education
Filimone Lapao'o	Waste Sub Cluster
Moleni Tu'uholoaki	Met Office
Leveni Aho	Coordination and Logistics Cluster/Emergency Shelter Cluster – NEMO
Emma	Coordination and Logistics Cluster – NEMO
Carrie Vaea	Coordination and Logistics Cluster/Emergency Shelter – NEMO
Fotu Veikune	Reconstruction Cluster – Ministry of Infrastructure
Madeleine Scott	Australian High Commission
Elena Procute, Olivia Fukofuka, Tiffany Babington	New Zealand High Commission
Yutaro Setyoa	WHO
Waqairapoa Tikoisuva	UNICEF
Hlekiwe Kachali	WFP Pacific Office
Anne Colquhoun	UNOCHA
Sela Ki Folau Fusi	MOH/ HMWAS Coordinator
Tatafu Moeaki	ADB-WBG
'Ana Lemani	MOFNP
Leon Fajardo	UNICEF
Jo Hall	UNICEF

Appendix G: Individual Cluster AAR Recommendations

Information in the table below has been taken directly from the cluster AAR reports.

Cluster	Major Recommendations
Emergency Shelter and Non-Food Items Cluster and Reconstruction Cluster	• Finalise Terms of Reference for the Shelter Cluster – including clarification of roles, roles responsibilities, and transition from NEMO (response) to MoI (recovery) • Finalise/Endorse Build Back Safer (BBS) Information Education Communication (IEC) materials • Shelter Coordination Training for Shelter Coordination Team (NEMO, MOI and key partners) • Standardise Shelter relief package and Non-Food Items (NFIs) • Develop Shelter Cluster Strategy template • Training in the use of Kobo for NEMO and key shelter partners • Develop multi-hazard contingency plan, e.g. Tropical Cyclone, Tsunami, etc. based on most likely scenarios • Develop shelter inputs for a common assessment form • Develop guidelines on vulnerability prioritisation criteria
Safety and Protection	• Have more inclusive membership of Cluster • Hold regular meetings of the Cluster in both emergency (frequent) and non-emergency times (less frequent) • Circulate Cluster minutes to members and, where available, minutes of inter-cluster meetings • Review 2014 Cluster Terms of Reference (TOR) and have approved by Government • Draft Standard Operating Procedures (SOPs) for the Cluster and have approved by Government • Define and communicate Cluster member roles and responsibilities (see TOR and SOPs) • Prepare an action plan for the Cluster and implement • Establish and share a database of sex and age disaggregated data for communities that can be drawn on to inform decisions about assistance during emergencies (include where possible, information on disability, sexual minorities, male and female headed households) • Have assessment questions for diverse groups + collection methods & coordinate with other clusters • Have clear communication paths within the Cluster and with other Clusters
HNWASH Cluster	**1. Lack of coordination and communication (Accountability)** This broad concept of lack of coordination and communication has been referred to between the members of the different stakeholders involved in the response. In other words, it is both top down and bottom up challenge. However, for this particular exercise the discussions were based around the HNWASH Cluster itself. The participants' state that the members of the Clusters has still found their roles and responsibilities not very clear especially during the response phase. Although there is an existing TOR and SOPs specifically for the HNWASH Cluster, it seems that the members has not fully aware of the expected roles that they should do. Therefore, the

recommended solution was to review the TOR and SOPs and then ensure awareness strategies are being followed such as simulation exercises and scenarios during preparedness phase.

On the other hand, it is also recommended that the TOR and SOPs are being more specific about the roles of each of the members and has some clause in it that ensure responsibility throughout the members. For example, a signed TOR that could bind the members to act on its role such as handing in reports on time, attending regular meetings especially during meeting, etc.

2.   Delaying in implementation of activities

The discussion was around procurement processes during emergency especially provision of materials, equipment, supplies, etc. that needed for the response. The current practice needs to be reviewed to ensure quicker procurement processes especially when government is involved in decision-making. There is a need to document this review such as establishing exception criteria to ensure difference between standard procurement procedures and emergency procurement procedure. This needs the government to have more open perception and broader picture of an emergency. This review should also needs to be consulted with all the stakeholders involving in the implementation of response activities. After consultation and final review, it should be made available for all actors for awareness purposes.

3.   Collection of data

Both at national and at Clusters level, there needs to be a consistent procedure for data collection. For example, National Emergency Office or the Clusters should be responsible for the Initial Damage Assessments just after few days from the disaster while the Department of Statistics should responsible for more detail survey at households level after 1 month from the event. This kind of procedure will ensure quickness of response and more structured data collection and reliable information.

Following this procedure a need to ensure consistence template to use by all Clusters that should capture all the required information not only for surveys but also for reports of activities implementing on the ground. These templates should be available well before the disaster and are being reviewed and practiced regularly. This is link to idea discussed in number 1 above the need for a join simulation exercise using the TOR, SOPs and the templates for surveys and reporting of activities. Another discussion followed from this was the type of template used whether it would be in hard copies or digital forms. The answers from among the group were to have them both.