Timor-Leste Data Readiness Assessment: A Platform for an Effective, Timely, Targeted Humanitarian Response

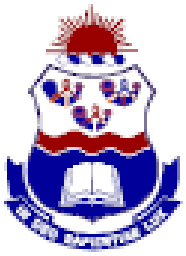
By

TINAGO CHIKOTO

In partial fulfilment of the requirements for the degree of

MASTERS IN DISASTER MANAGEMENT

at



UNIVERSITY OF THE FREE STATE

Department of Agricultural Economics

Centre for Disaster Risk Management Education and Training

DiMTEC

SUPERVISOR: DR CHARLES BARKER

2008

DECLARATION

I hereby declare that the work which is submitted here is the result of my own independent investigation and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references. I further declare that the work is submitted for the first time at this university/faculty towards Magister degree in Disaster Risk Management and that it has never been submitted to any other university/faculty for the purpose of obtaining a degree.

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DEDICATION

To Whom who is continuously doing immeasurably more than I can ever ask for or imagine and to my family who keep on teaching me that one needs not do great things but small things with great love.

ACKNOWLEDGEMENTS

Many thanks to the humanitarian colleagues in Timor-Leste, especially those who were involved in Geographic Information Systems and data collection and analysis to support the humanitarian cause in the country during my tenure there, for the support and guidance.

Special thanks to my wife who has been by side since the very beginning and made sure I saw this project through and to my mother who encouraged me to start the programme in the first place.

ABSTRACT

Disasters have increased in number and severity around the world. Funds, ear-marked for long term developmental work, is being diverted to disaster response and relief efforts. Timor-Leste has not been spared. After a disaster, the impact needs to be known as early as possible so as to effect a timely targeted response. This entails the collection and analysis of data. This can be time consuming if not anticipated or planned properly. Knowledge of the data required after a disaster and putting systems in place that will enable its collection and analysis will save on time and hence concentrate efforts on the response and alleviation of suffering. To get to this stage, an assessment of the existing systems and data needs to be done, only then can corrective measures be put in place to ensure that a country is data ready.

The aim of the research was to determine Timor-Leste's emergency data readiness status - what data is available versus the data that is required after a disaster? To find out whether available data can be easily accessed and used after a disaster and not compromise the effectiveness and timeliness of the response and if mechanisms are in place to quickly gather and analyse data after a disaster.

Firstly disaster assessment tools, used by leading humanitarian organizations internationally and government ministries mandated to respond to disasters in Timor-Leste, were analyzed. The data was broken down into sectors and for each sector critical base data required for an effective response was listed. The list was further broken down into data that can be collected before a disaster and that which can only be collected after the disaster. Secondly, through a combination of semi-structured interviews and questionnaire administration, an assessment of available critical data in Timor-Leste and information systems and coordination mechanisms used to respond to a disaster was done. The list of data that can be collected before an emergency based on the first assessment was matched against the available data in Timor-Leste and existing mechanisms to collect data after a disaster were also analysed and a final rating of whether Timor-Leste is data ready done.

Timor-Leste is data ready. 71% percent of the critical data that is required after an emergency which can be collected before an emergency is readily available. Coordination systems are in places that enable the successful assessment and response to an emergency,

led by the government and supported by national and international humanitarian organizations.

There is room, however, for improvement in Timor-Lestes' data readiness. Gaps in the data can be filled through simple collection from the organizations mandated to keep the data or in some cases national assessments. In cases where data exists, but difficult to access, systems need to be put in place that will enable the easy access to the data. If the data is deemed sensitive and not for a wide audience, procedures need to be put in place to enable those who are allowed to access it to do so in a timely manner.

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LIST OF ACRONYMS

ADF	Australian Defense Forces
ADPC	Asian Disaster Preparedness Center
ALGIS	Agricultural and Land-use Geographic Information System
CARE	Cooperative for Assistance and Relief Everywhere
CIA	Central Intelligence Agency
CRS	Catholic Relief Services
DA	District Administrator
DevInfo	Development Information
DOC	Disaster Operation Centre
DNSAS	*Diracção Nacional Serviço Água e Saneamento* (National Water & Sanitation Authority)
DoLP	Department of Land and Property
EDTL	*Electricidade de Timor-Leste* (National Electricity Authority)
EMIS	Education Management Information System
FALANTIL	Armed Forces for the National Liberation of East Timor
FAO	Food and Agricultural Organisation
FRETILIN	Revolutionary Front for an Independent East Timor
GDP	Gross Domestic Product
GiG	Geographic Information Geographic
GIS	Geographic Information Systems
HIC	Humanitarian Information Centre
HMIS	Health Management Information System
IASC	Inter-Agency Standing Committee
ICVA	International Council of Voluntary Agencies
IDP	Internally Displaced Person
IFRC	International Federation of Red Cross and Red Crescent Societies
ILO	International Labour Organisation
INGO	International non Governmental Organisation
INTERFET	International Force for East Timor
IO	International Organisation
IOM	International Organization for Migration
MoE	Ministry of Education

MoH	Ministry of Health
MoPW	Ministry of Public Works
MSA	Ministry of State Administration
MSS	Ministry of Social Solidarity
NDMD	National Disaster Management Directorate
NGO	Non Governmental Organisation
NSD	National Statistics Directorate
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OCHA ROAP	United Nations Office for the Coordination of Humanitarian Affairs Regional Office for Asia Pacific
REDLAC	Risk, Emergencies and Disasters for the Interagency Standing Committee for the American and Caribbean region
RTTL	*Radio and Televi'sao Timor Lorosae* (Radio and Television Authority of Timor-Leste)
TVTL	Timor-Leste National Television TVTL (*Televisão Timor-Leste*)
UDT	Democratic Union Party
UN	United Nations
UNAMET	United Nations Assistance Mission for East Timor
UNDAC	United Nations Disaster Assessment and Coordination
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNGIWG	United Nations Geographic Information Working Group
UNICEF	United Nations Children Fund
UNMISET	United Nations Mission of Support in East Timor
UNMIT	United Nations Integrated Mission in Timor-Leste
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNTAET	United Nations Transitional Administration in Timor-Leste
VOICE	Voluntary Organisations in Co-operation in Europe
WASH	Water Sanitation and Hygiene
WatSan	Water and Sanitation
WFP	World Food Programme
WHO	World Health Organisation
WWW	Who is doing What Where

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GLOSSARY

Assessment

The process of determining; the impact which a hazard has had on a society; the needs and priorities for immediate emergency measures to save and sustain the lives of survivors; the resources available / coping mechanisms of the society and the possibilities for facilitating and expediting longer-term recovery and development (UNDP: Overview of Disaster Management: 1992

Data Preparedness/Readiness

Actions taken to limit the impact of natural phenomena by structuring response and establishing a mechanism for effecting a quick and orderly reaction by ensuring that data needed to achieve this is readily available and accessible. This includes making sure that data that can be collected before a disaster is collected and put in a format that it can easily be used and accessed and that coordination and data collection analysis, dissemination mechanisms are put in place for the data that can only be collected after a disaster.

Disaster

A serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community/society to cope using its own resources (International Strategy for Disaster Reduction 2002:24).

Disaster Management

The body of policy, administrative decisions and operational activities required to prepare for, mitigate, respond to, and repair the effects of natural or man-made disasters (UNDP Disaster Management Training Program, 1992)

Disaster Response

Involves measures taken immediately prior to and following the disaster impact. Response measures are directed towards saving life and protecting property. They deal with the immediate disruption caused by the disaster. They include search and rescue, and the provision of emergency food, shelter, medical assistance. The effectiveness of responding to disasters largely depends on the level of preparedness. (FAO, 2003)

Preparedness:

To ensure in times of disaster appropriate systems, procedures and resources are in place to assist those affected by the disaster and enable them to help themselves. (UNDP: Overview of Disaster Management: 1992)

CHAPTER 1

1.0 Introduction

This chapter gives an overview of the project stating the research problem and justification. It outlines the main objective and sub-objectives of the research and its delimitations.

1.1 Background

A disaster is a serious disruption of the functioning of a community or society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community/society to cope using its own resources (International Strategy for Disaster Reduction 2002:24). To provoke the necessary response, be it by the affected community or from external help, there needs to be an understanding of the severity and extent of the disaster.

Since the aim of the response is for the community to get back to its normal way of life as quickly as possible, it is necessary that there is an understanding of the status quo of the community before the disaster; to know to what extent the community has been affected so that a list of needs can be identified and a response plan drawn and implemented. This entails having data and information about the community.

The early days of a crisis present emergency workers with a vexing problem. At a time when obtaining accurate information on needs is most critical, the availability of such information is at its lowest ebb. Conflict and disasters can, in the blink of an eye, invalidate huge amounts of information as populations move, social infrastructure is destroyed and new needs emerge. If steps are not taken immediately to establish an environment in which accurate information can be obtained and made widely available, the effective delivery of assistance can be significantly undermined. (UNOCHA - ROAP)

The data collection environment can be broken into two; before and after the disaster. It is before the disaster that all the base data required and data coordination mechanisms to carry out an effective response can be set up and established. It is also during this time that data mechanisms to function after the disaster can be established and emergency relief workers made aware of.

1.2 Problem Statement

Figure .1.1 Map of Timor-Leste

Timor-Leste (Figure 1) is a country prone to a host of natural hazards. It is currently in a complex emergency with a number of organisations working in the country (International Organisations, International NGOs, National NGOs, and United Nations) implementing emergency, developmental rehabilitation, early recovery, short- and long-term projects. The data needs are very diverse; unfortunately, there is no mechanism in place that details what data is available. There is a danger of duplication of surveys and data gathering initiatives. At the same time, if a catastrophic disaster strikes, there is a danger that essential data required to implement a targeted effective response, might be missing or not readily available. There are no systems in place to guarantee that when disaster strikes critical base data will be readily available.

To have an understanding of what data is available and hence a mapping of the data gaps to effect a well targeted response for an emergency in Timor-Leste, a data preparedness survey is required. This will ensure that the data and information management needs of any possible response can be met in a timely and operationally useful manner, hence saving lives and alleviating suffering.

1.3 Objectives of the Study

1.3.1 Main objective

To determine Timor-Leste's emergency data readiness as a first step in the data preparedness process.

1.3.2 Sub-Objectives

- **Sub-Objective 1:** To determine the kind of data required during an emergency to enable an effective response.
- **Sub-Objective 2:** To determine what kind of emergency base data and information systems are available in Timor-Leste and their availability during an emergency.
- **Sub-Objective 3:** To determine the gaps in the coordination and availability of critical data that is essential during an emergency.

1.4 Importance of the Study

This is an important study as a first step in the data preparedness process for Timor-Leste. It will determine the gaps in critical emergency and to a lesser extent developmental data and hence set a platform for a coordinated data collection exercise. It will also act as a guide to first time respondents in Timor-Leste, in the event of a disaster and allow respondents to save time looking for data. They will be able to concentrate on the response and minimize the suffering of the affected community. A mapping of existing mechanisms will allow for coordination in the data collection and minimize duplications saving on resources in the long run

1.5 Delimitations

The study will be limited to programming data for humanitarian work in Timor-Leste. It will do a data inventory of the country and come up with a directory of where critical data can be accessed. It serves as a first step of getting hazard-prone Timor-Leste to be data prepared for emergencies. It will also look at ways or systems of easily disseminating the information so that it is readily available when needed most.

1.6 Research Methodology

A qualitative research design was used to answer the research questions. Information used to qualify the research was based on the emergency data and information needs of humanitarian organizations in Timor-Leste. It will help them execute a more targeted

response in emergency situations posed by the different hazards that befall the country. The emergency base data requirements were collected from two fronts: the first, organizations that are in the forefront in disaster management and response worldwide. This was done so as to get a global picture of the requirements based on different emergencies around the world: the second was from the different organizations working in Timor-Leste. This included representation from the Government, UN agencies, International Organizations, International NGOs, National NGOs and the Donor Community. A data working group (Geographic Information Group) was established by the researcher, which among other things sought to have a common understanding of the data needs in the country to set a platform to address the needs in a holistic manner with all key stakeholders taking part.

From the surveys a list of emergency data/information requirements was drawn up. From that a survey was conducted of the different organizations working in Timor-Leste that have available data. The type of data was then compared to the list of data required in an emergency. From that, gaps in the data and data coordination mechanisms were identified. Recommendations on filling the gaps were made as a first step to gather preparedness data for emergencies and ultimately development, as the disaster cycle moves from relief to early recovery and rehabilitation.

1.7 Structure and Content

The dissertation has been organized into six chapters. Chapter one gives an overview of the project stating the research problem and justification. It outlines the main objective and sub-objectives of the research and its delimitations.

Chapter two puts the research into perspective by giving a background of Timor-Leste, its geography, government, climate, history, population, telecommunications and administrative structure. This puts the research against a backdrop of the prevailing institutional and infrastructural structures in place, and helps to explain some of the prevailing data/information issues.

Chapter three outlines the activities undertaken to get a list of the base data by sector as would be required in an emergency. It looks at requirements in Timor-Leste and also internationally. Rapid assessment tools used in Timor-Leste are analysed alongside tools used and recognized internationally by leading humanitarian organizations. A

comprehensive list of data that can be collected before an emergency and that which is required after an emergency is drawn up.

Chapter four outlines the research process used to collect the available emergency data and it lists the available data in Timor-Leste. It compares the results with the list generated in chapter three. In so doing the data gaps are identified to determine whether Timor-Leste is data ready or not. The activities undertaken to answer the research questions are explained in detail and the choice of research tools justified and assumptions clarified.

In chapter five, the analysis of the results of the assessments carried out in chapter 3 and chapter 4 is done. It outlines the data sets that are available during an emergency in Timor-Leste and also identifies data sets that should be available, but are not. It delineates the gaps between the data available and critical base data required in an emergency as identified in chapter three. It sets the basis for conclusions and recommendations of the research.

Chapter six concludes the research by summarizing the findings and giving recommendations to address the gaps and shortfalls identified by the research.

CHAPTER 2

2.0 Timor-Leste Overview

Chapter two gives an overview of Timor-Leste including its history. It aims to give the reader a general understanding of the country so as to help them appreciate the need for the research. Institutional and infrastructural structures are explained as they have a bearing on the management of information before and after a disaster.

2.1 Geography, climate and people

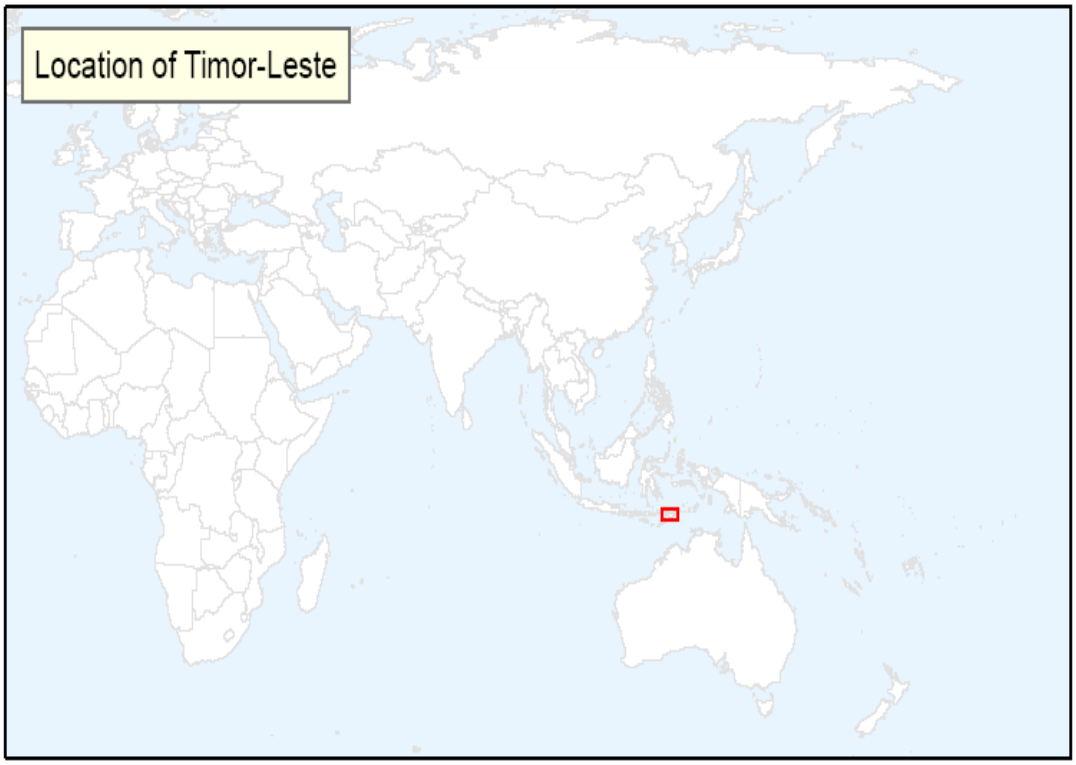

Figure 2.1 Map Showing Location of Timor-Leste in the Asia Pacific Region

Timor-Leste is located in Southeast Asia (Fig. 2.1). In the East is the Indonesian archipelago and Australia is in the North-West. It is known in English as East Timor, which is a direct translation from Portuguese. The nation comprises the eastern half of Timor Island, along with the enclave of Oecusse in Indonesian West Timor, the island of Ataúro directly facing Dili, and the islet of Jaco at the Eastern tip of the island. It has a total land area slightly less than 15,000 square kilometres. It is very rugged with

several plateaus (Fig 2.2). Mount Ramelau, the highest mountain in Timor-Leste, peaks at 3000 metres.

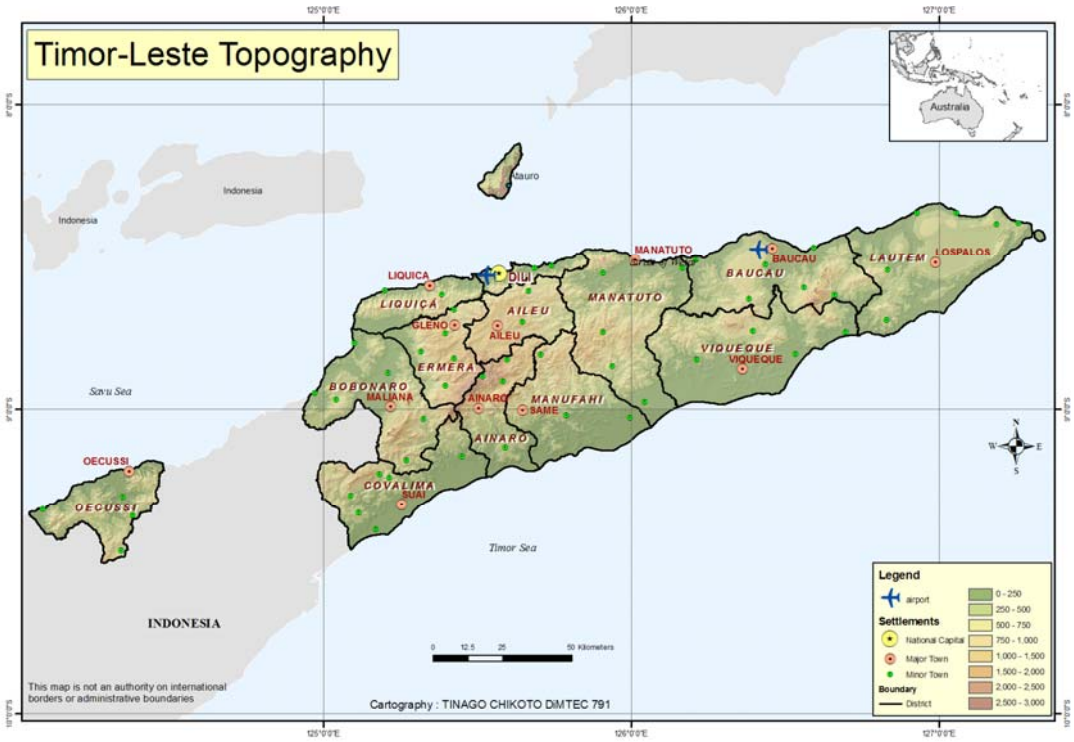

Figure .2.2 Timor-Leste Topography Map

The local climate is tropical and generally hot and humid, characterised by distinct rainy and dry seasons. The vegetation varies from tropical to semi-arid, characterising the Island land cover.

The Timorese culture is influenced by Malay and Pacific Islander cultures. A strong Portuguese influence resulted in the majority of the population being Roman Catholic. In some areas, the Catholic religion has been fused with local culture creating a mixed form of religion which is still identified as Catholic. There is a distinction between the Catholic Religion and the contemporary Christian fellowship. Based on the 2004 Census, about 13.5% of the population speak Portuguese. This is generally the older generation that was under Portuguese rule. The younger generation prefer English as they believe it has a better international appeal. International NGOs and the United Nations, major employers, use English as the official mode of communication. This could contribute to the younger generation appreciating English more.

Straight after the Portuguese rule, the Indonesian occupied Timor-Leste. They influenced the education system, which is still in place to this day which explains why 43.3% of the population speak Bahasa Indonesia. Only 5.8% of the population speaks English. There are a number of local languages spoken by different groupings of people. The mostly spoken language is Tetum, spoken by 91% of the population. Mambae, Kemak and Fataluku are also widely spoken. The language diversity in the country has seen the constitution designating Portuguese and Tetum as the official languages and English and Bahasa Indonesia as the working languages.

2.2 History

Dutch and Portuguese traders and missionaries first came to Timor-Leste in the early sixteenth century. Gradually the Portuguese consolidated their control over the territory, exploiting natural resources such as sandalwood. In the mid-nineteenth century Portugal and the Netherlands began to negotiate the division of the island between them. A final territorial delineation concluded at the turn of the twentieth century saw the Portuguese controlling the Eastern end of the island and the enclave of Oecusse, while the Dutch controlled West Timor along with much of the remainder of the archipelago.

The Netherlands relinquished West Timor to the newly formed Republic of Indonesia in 1949 but the Portuguese only left East Timor in 1974. In the power vacuum that followed, a brief and bloody civil war broke out in August of 1975 between the Revolutionary Front for an Independent East Timor (FRETILIN) and the Timorese Democratic Union Party (UDT), with FRETILIN asserting its dominance over the territory in the following months and declaring East Timor an Independent State. The Indonesian military launched a full scale invasion in an attempt to force the integration of the territory into the Republic of Indonesia.

The Indonesian government did not heed calls from the international community and the UN for their withdrawal from Timor-Leste. Resistance continued to oppose the attempts to forcibly integrate Timor-Leste, into Indonesia. The Armed Forces for the National Liberation of East Timor (FALANTIL), mounted an enduring guerrilla war, using the mountainous terrain as the base for its activities.

With massive political upheaval in Indonesia across the late 1990s the long-serving President Suharto resigned in June 1998. The new President, B.J. Habibie, announced in January 1999 that a referendum would be held for the East Timorese people to decide between autonomy within Indonesia or full independence. Subsequently the United Nations Assistance Mission for East Timor (UNAMET) was established to oversee the referendum process. Despite the ongoing intimidation by pro-Indonesia militias on 4 September 1999, 78% voted for independence.

The vote for independence triggered a campaign of massacre and destruction by the Indonesian military and their supporting militias. During this period approximately 1 300 East Timorese were killed and 300 000 were forced to flee as refugees, especially to West Timor. Much of East Timor's infrastructure was looted and destroyed, with nearly three quarters of all buildings in the territory, including homes, schools, public buildings and markets, either severely damaged or totally wrecked.

On 20 September a United Nations-mandated Australian-led peacekeeping force entered Dili as the International Force for East Timor (INTERFET). On 25 October 1999, the United Nations Transitional Administration in Timor-Leste (UNTAET) was created to take responsibility for the transition of the territory into independence.

Elections were held on 30 August 2001 to select representatives to determine the Nation's Constitution. In effect, this Constitutive Assembly turned itself into East Timor's first Parliament to serve a five-year term, assuming power on 20 May 2002. That day the full and formal independence was celebrated. The FRETILIN party formed the government. UNTAET was succeeded by the United Nations Mission of Support in East Timor (UNMISET).

2.3 Government

Timor-Leste, one of the world’s youngest nations, became a fully independent republic with a parliamentary form of government on 20 May, 2002 following approximately two and a half years under the authority of the UN Transitional Administration in East Timor (UNTAET).

The presidency is a mostly ceremonial position, and executive power is concentrated in the Prime Minister. The majority party in parliament normally determines the next Prime Minister. At the end of the first five year tenure in May 2007, parliamentary elections were held on 30 June, 2007. FRETILIN won the most seats in parliament, but no single party won a majority, and the various parties did not agree to form a national unity government. On 6 August, 2007 President Ramos-Horta asked Xanana Gusmao, the leader of a coalition with a majority of the seats in the parliament (the Alliance for a Parliamentary Majority), to form a government. Gusmao was sworn in as Prime Minister along with most of the other ministers in the new government on 8 August, 2007.

The president is the head of the state while the Prime Minister heads the government and cabinet. The Judicial system is headed by the Supreme Court aided by supporting hierarchy. However, the Supreme Court is yet to be established, hence the Court of Appeal functions as such on an interim basis.

2.4 Administrative Structure

Timor-Leste's administrative structure is broken down into five levels. Regions are the highest level, but they do not have a distinct administrative role. There are no administrators for the regions, but they are recognised and used for planning purposes. The structure is not broken down into rural and urban, hence all administrators have the same role and they wield the same power. The table summarise the structure and the number of units under each level.

Table 1 Timor-Leste's Administrative Structure

Administrative Level	Name	Total Administrative Units
1	Region	5
2	District	13
3	Subdistrict	65
4	Suco	442
5	Aldeia	2228

The existing administrative structure has been in place during the Indonesian occupation. However, plans are underway to change it and introduce municipalities. One of the arguments is that there are too many administrators (district and sub-district) putting a strain on government resources. The administrative areas might seem small on paper, but accessibility and mobility is a huge factor due to the mountainous terrain. According to UNICEF in Timor-Leste there are cases where children have to walk very long distances to go to school, going round mountains and through valleys, yet as the crow flies the distance from where they live to school is very short.

The map in (Fig. 5) shows that the Viqueque district covers the most land area on the eastern part of the island while Dili, the country's economic and national capital only as little as 2%.

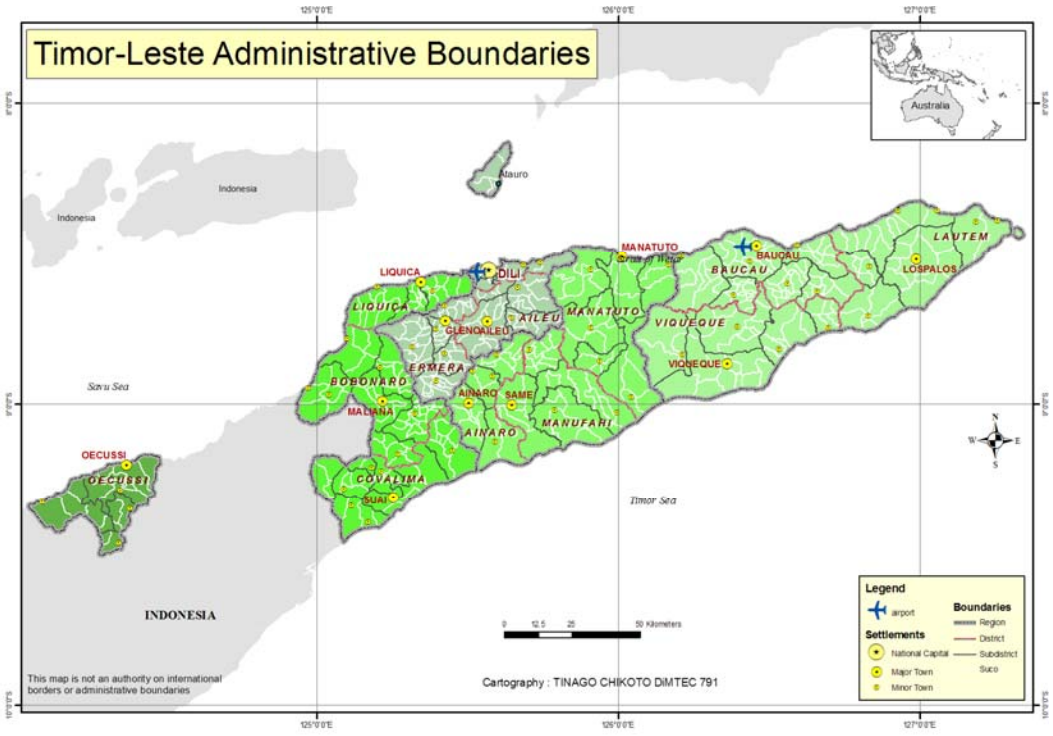

Figure .2.3 Timor-Leste Administrative Boundaries Map

In Figure 2.4 the pie chart gives an idea of the sizes of the individual districts with respect to the total land area. Oecusse is a region on its own, largely because of its location as an enclave.

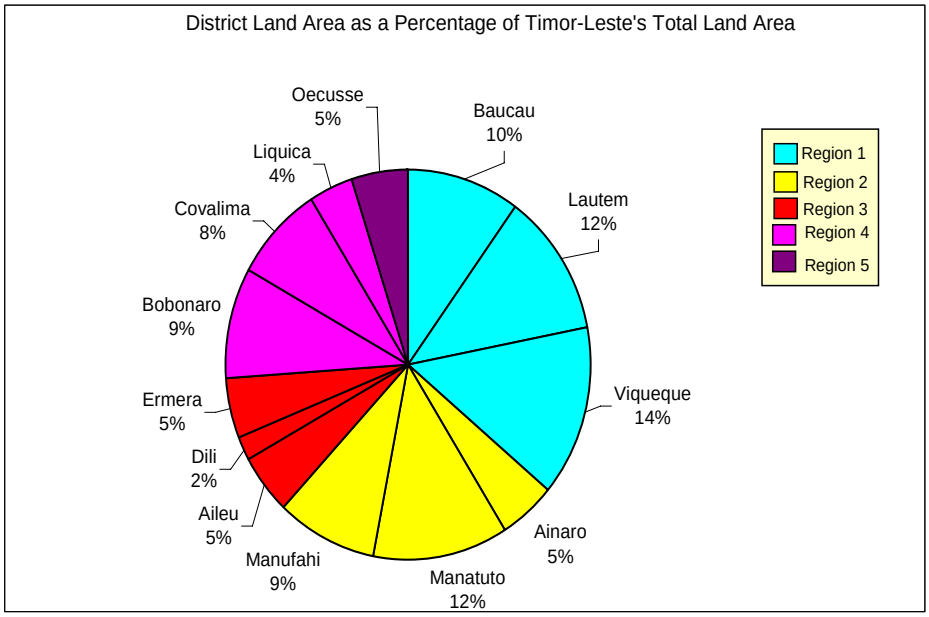

Figure 2.4 Timor-Leste's District Land Area as a Percentage of Total Land Area

2.4.1 Region

Region one to region four have three districts each, while region five covers the Oecusse enclave and hence only one district. Region one on the eastern part of Timor-Leste is the largest of the regions, covering 36% of the total land area. The land cover of region one is mostly lowland forest with most of it sparsely distributed, but there is also a big proportion of single and mixed species. The diverse land cover is found throughout the regions, characterised by different forest types, however, the forests are being strained by the demand for firewood especially in places where there is a dense population of people like Dili.

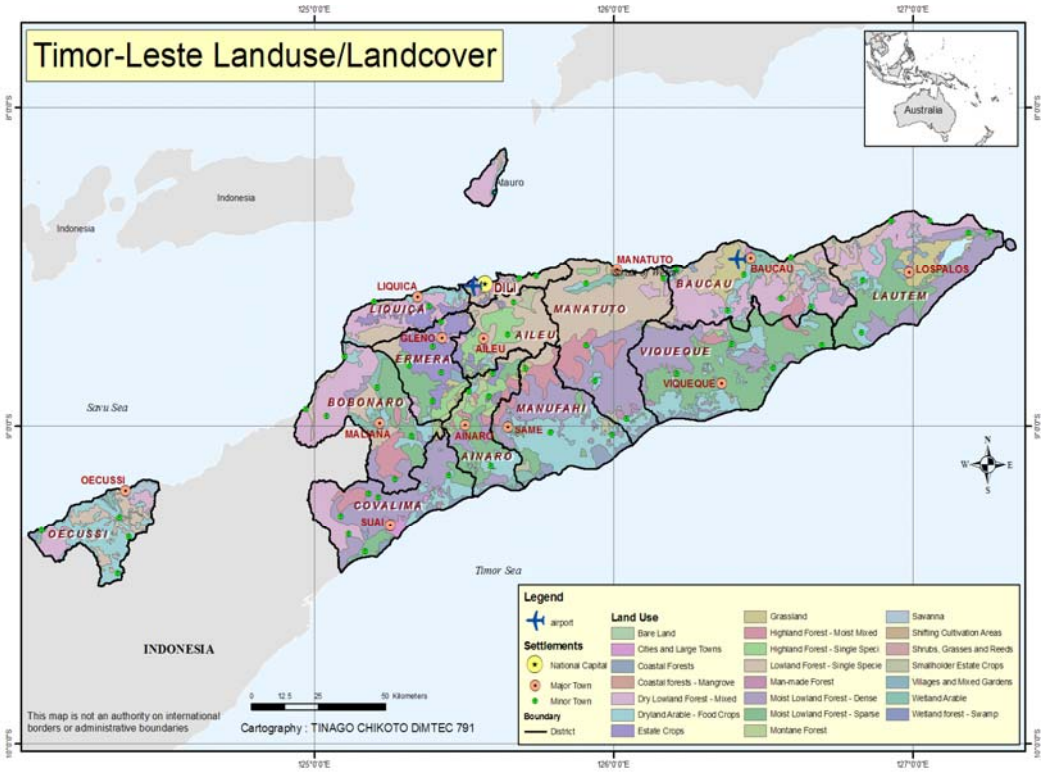

Figure .2.5 Timor-Leste Land use/Land cover Map

2.4.2 District

The country has a total of 13 districts. Dili, the smallest district in terms of total land area houses the capital city. About 20% of the nation's total population lives in Dili . District Administrators (DA) appointed by the government run the districts and report at national level to the Minister of State Administration. Besides taking care of the day to day administrative duties of the district, the DAs chair the district disaster management committees and are tasked with emergency preparedness and disaster risk reduction activities in the districts. They also lead all disaster response activities in their districts, reporting directly to the national disaster body, the National Disaster Management Directorate. The district disaster management committee is made up of government, NGOs, the Red Cross Movement and civil society.

2.4.3 Sub-district

Sixty-five sub-districts make up the country, averaging five sub-districts per district. They are run by government appointed sub-district administrators, who report directly to the DAs.

2.4.4 Suco

The sub-districts are further broken down into sucos, led by a government recognised and supported Suco chief (chefe de Suco). The Suco chiefs are voted into power by the community they represent. Timor-Leste has 442 Sucos, giving an average of seven sucos per sub-district.

2.4.5 Aldeia

A group of villages form an Aldeia led by an Aldeia Chief (Chefe Aldeia). Timor-Leste's 2 228 Aldeias are recognised administrative territories that report directly to the Chefe Suco. Appointed by the community on a limited term basis, the Aldeia chief, as with the suco chief, traditionally settle small disputes within the community. This is particularly helpful since the countries' legal structures are still being set up and the courts for the time being are restricted to Dili.

2.5 Population and Demography

Table 2 Timor-Leste National Indicators

Timor-Leste National Indicators		
Description	**Value**	**Source**
Demography		
Population 2008	1,080,742	Census 2004 Projection
Annual Population Growth Rate (2001 -2004)	5.3%	Census 2004
Sex Ratio (males/100 females)	104	Census 2004
Life Expectancy at Birth (years)	55.5	Census 2004
Median Age (years)	18.3	Census 2004
Total Fertility (children per woman)	7	Census 2004
Health and Nutrition		
Under Five Mortality (per 1000 live births)	136	Cencus 2004
Infant Mortality (per 1000 live births)	90	Cencus 2004
Prevalence of Stunting Children under-five years of age	49.9%	TLSLS 2007
Prevalence of Underweight Children under-five years of age	50%	TLSLS 2007
Prevalence of Wasting Children under-five years of age	18.8%	TLSLS 2007
Births Attended by Health Personnel	27.2%	AHSR 2006
Children Immunised Against Measles	63%	MoH 2007
Medical Doctor per 1000 Population	1	DHS 2003

Table 2 continued

Education		
Literacy Rate of 15-24 year-olds	73%	Census 2004
Net Enrolment Ratio in Primary Education	69%	EMIS 2005
Percent High School Graduates (persons 18+)	15%	Census 2004
Livelihoods		
Percent in Labour Force	60.2%	Census 2004
Percent in Paid Labour Force	13.4%	Census 2004
Unemployment Rate	7.2%	Census 2004
Water and Sanitation		
Percent of Households with Access to an Improved Water Source	64.7%	TLSLS 2007
Percent of Households with Access to an Improved Sanitation	48.5%	TLSLS 2007
Food Security		
Food Insecure	20%	CFSVA 2006
Highly Vulnerable to Food Insecurity	23%	CFSVA 2006
Percentage of Ordinary Farmers	20%	CFSVA 2006

The population of Timor-Leste is slightly over one million. While the largest concentration of the population is found in the capital, Dili, the majority of the population live either in regional centres or rural communities across the nation's 13 districts.

2.6Economy

Timor-Leste GDP for 2007 was $471.7million (CIA Fact book, 2008), while its GDP per capita was estimated at $2,000. Its industry is heavily dependent on its rich oil fields which are yet to be fully exploited. For now it relies on coffee production and natural gases with major markets in Australia, Europe, Japan and the United States. Timor-Leste is among the poorest countries in Asia and as such, faces a number of economic challenges. Revenue from offshore oil and gas reserves offers great hope for the country. However, effective use of those resources will require a major transformation of the country's current human and institutional infrastructure.

Basic developmental and humanitarian indicators (Figure 8) are among the lowest in Asia. Food security poses a big threat to the small nation and the recent lean seasons have not helped much in that regard. The majority of the population remains subsistence farmers, with coffee as one of the most important agricultural exports.

2.7 Telecommunications

Following Indonesian withdrawal from East Timor in 1999, the telecommunications infrastructure was destroyed in the ensuing violence, and Telkom Indonesia stopped providing services. Portugal Telecom signed a 15-year contract in 2002 to invest US$ 29 million to rebuild and operate the phone system. The contract could be extended by ten more years, totalling 25 years of monopoly. According to Timor Telecom, the total number of fixed phones as of the end of 2006 were 2 500 and mobile cellular lines for the same period stood at 49 100 (2006). The coverage is limited to administrative towns as shown on the map below.

Figure .2.6 Timor-Telecom Coverage Map (Source: Timor Telecom 2007)

There is no national radio coverage in Timor-Leste. The main station, Radio Timor-Leste, broadcasts in Tetum, Portuguese and Indonesia in the Capital Dili and most district capitals. Community radio station broadcasts around the country in regional languages.

The Timor-Leste national television TVTL (*Televisão Timor-Leste*) broadcasts three hours a day, with mostly delayed programmes on current affairs. Coverage is limited to Dili with taped broadcasts available in Bauca, the nation's second largest town.

CHAPTER 3

3.0 Data Required After a Disaster

3.1 Introduction

This chapter focuses on the research methodology used to get a list of base data required in an emergency. Information was gathered on the international and national front. This chapter addresses the concerns of sub-objective one (1) and hence builds a platform for analysis for chapter four which looks at the information systems and emergency data available in Timor-Leste.

3.2 Background

A hazard only causes a disaster if there is some form of disruption to man's environment and way of life. A hazard occurring in a desert or game park remains a natural phenomenon, but that same hazard, at the same scale occurring in a densely populated area disrupting man's status quo, becomes a natural disaster. Hence a disaster's severity is a factor of geography (location), magnitude and type of hazard. For the impact of a disaster to be measured, there needs to be a comparison between the situation before the disaster and after the damage or disruption has occurred. For a quick, targeted response that eases off into early recovery without having negative effects on the community, there needs to be an understanding of the way of life of the affected community among other parameters. That way the response works at making sure the way of life is quickly returned to, notwithstanding the fact that this also brings an opportunity for the way of life of the community to be improved.

To get an understanding of the situation of any community, there needs to be a structured way of collecting information about that particular community. Bearing in mind that communities make up countries, a national structured approach is usually employed at community level. This enables the comparison of data collected. Most of the base demographic data in any country is collected through a national census. The same principle is used when collecting data in emergencies, in the form of assessments.

3.3 Assessments

Assessments are essentially a systematic way of gathering specific information that is required for a specific task or purpose. To make sure the intended information serves the purpose it is meant to address, the data required is generally written down in a manner that the person carrying out the assessment can easily follow. Once the different forms from different areas have been filled in, the data is collated so as to get a holistic picture of the area that was assessed. As can be expected there are different kinds of assessments. This research will focus on disaster assessments.

3.3.1 Objectives of Disaster Assessments

According to the UNDP Disaster management training manual (2004), disaster assessment is the process of determining the impact which a hazard has had on a society; the needs and priorities for immediate emergency measures to save and sustain the lives of survivors; the resources available; coping mechanisms of the society, and the possibilities for facilitating and expediting longer-term recovery and development. Although there are different types of disaster assessments, the overall objectives are the same. Not all objectives mentioned above are met by the same assessment; rather, different assessments have different specific objectives and are employed to meet prevailing specific objectives.

3.3.2 Types of Assessments

There are generally two types of disaster assessments according to the UNDAC (2007) field handbook; situation (damage) assessment that describes what has happened and needs assessment that outline what needs to be done. The needs assessment is further broken down into two, initial/rapid assessment and an in-depth sectoral assessment. Initial assessments are conducted in the early critical stages of a disaster to determine the type of relief needed for immediate response so as to stop further loss of life and also to get a rough idea of the impact of the disaster on the society and its infrastructure. In-depth sectoral assessments start after the initial assessments and cover critical areas that need to be addressed for medium and longer term relief as well as rehabilitation and reconstruction assistance (UNDAC).

This research looked at both assessments types as the basis for analysis, since both assessments directly affect the humanitarian response. The main difference between them is the time after the disaster that they are carried out. The initial assessment's primary aim is to gather information in the shortest space of time. This helps in building a picture of the severity of the disaster and affected population so that immediate action/response can be taken to stop the loss of lives and cut short the suffering of the community, by giving them the basic necessities needed for survival. This typically, should be done within 72 hours of the disaster striking. The damage assessment in most cases is carried out at the same time as the initial assessments to enable the government and humanitarian actors to quickly have an idea of the extent of the damage, as this impacts heavily on planning, especially in terms of trying to restore the basic infrastructure and utilities if there were damaged or destroyed. Once that is achieved, the in-depth sectoral assessments are carried out and these can take up to a week to complete as they also look at longer term recovery and developmental issues.

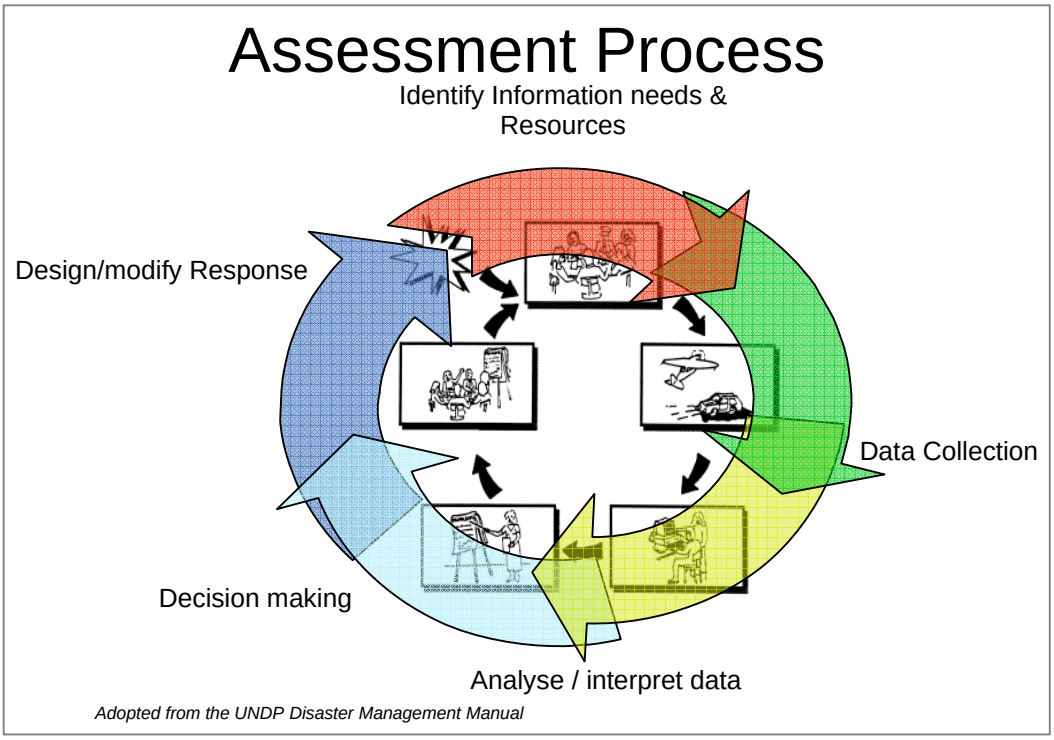

Figure. 3.1 Disaster Assessment Process

3.3.3 Assessment Process

Assessments generally follow a cycle which is often triggered when an emergency or the need for an assessment arises. The first point of call is the identification of information needs and available resources. Information needs identification is a crucial stage as it starts the response to the disaster. This stage for a life-threatening emergency for instance has to be very fast so that a response can be quickly carried out.

This research seeks to quicken the process by identifying information that is required after an emergency, categorising it into information that can be collected before the emergency, and information or data that can only be collected after the emergency. The categorisation will help in finding out how much information/data is readily available in Timor-Leste that can be collected before an emergency thus determining the data readiness of Timor-Leste. It will further identify information that will need to be sought for after a response, hence giving an idea of what the Government and humanitarian community need to look for after a disaster has struck and the coordination mechanisms that can assist in making this happen.

By having knowledge of the community before the disaster, the humanitarian community can make a clear distinction between the effects of the disaster and the chronic needs of the affected community. The chronic needs are not the priority after a disaster and hence will not be the focus. A humanitarian response seeks to prevent further loss of life and suffering of the affected population. Its aim is for the community is to get back on its feet, to the situation as it was before the disaster. A response can also provide a platform to improve the way of life of the affected community, making them less vulnerable to disasters.

3.4 Methodology

Disasters have been around for a long time. Their severity and impact seems to be increasing with time judging from media reports where there seems to be a disaster ever so often. The latest being a 7.8 earthquake in China where preliminary data indicated about 10 000 people dead according to the BBC (May 2008) and Cyclone Nargis in Myanmar where state media feared over 30 000 dead (as of 13 May 2008).

One can argue that population growth has led man to dwell in the path of disasters. This has led many countries to take a proactive approach towards disasters. Instead of waiting for a catastrophe to happen, governments have set up departments that are tasked in making sure that their countries are better prepared to cope with them and where possible mitigating the effects. Preparedness is a key objective of these offices in general. This includes being prepared and ready to assess a disaster and then to quickly respond to it.

Instead of identifying informational needs when a disaster strikes, these offices have leant to identify them before and after the disaster strikes. The information gaps are filled in straight after the disaster through assessments. Through experience, the information on the assessment forms is refined until a standard assessment form and assessment process is adopted. This is particularly true for international humanitarian organisations and disaster management offices. This cuts down the time between the occurrence of the disaster and the response.

In order to get the information required during an emergency to effect a well-targeted response anywhere in the world, the researcher relied on already existing standardised assessment forms from leading organisations in the humanitarian sector worldwide, namely:

- Office for the Coordination of Humanitarian Affairs (OCHA)
- United Nations Disaster Assessment and Coordination (UNDAC)
- United Nations Development Programme (UNDP)
- International Federation of Red Cross and Red Crescent Societies (IFRC)
- United Nations Children Fund (UNICEF)
- Asian Disaster Preparedness Centre (ADPC)
- World Health Organisation (WHO)
- Risk, Emergencies and Disasters for the Interagency Standing Committee for the American and Caribbean region (REDLAC)
- OXFAM

To make sure that the information requirements were relevant to the research area, Timor-Leste, national authorities' assessment forms mandated to respond to disasters,

as of December 2007 were looked at from the National Disaster Management Directorate (NDMD) and the Department of Water and Sanitation (DNSAS).

After the information has been identified, it is broken down into information that can be collected before a disaster and information that can only be collected once the disaster occurred. A list was generated of the base information required based on the international and national organisations and departments that had experience working with disasters.

3.5 Sector Based Approach in Humanitarian Response

International humanitarian or developmental work is generally broken down into sectors. This is done among other things to promote accountability and to enable organisations to specialise in particular areas and hence dedicate resources to that area or sector.

As part of the humanitarian reform agenda, the United Nations in 2005 introduced the cluster approach to enable coordination between UN and non-UN humanitarian organisations. The aim of the cluster approach is to enhance humanitarian response capacity, predictability, accountability and partnership. At a global level, the aim is to strengthen preparedness and capacity to respond to humanitarian emergencies by ensuring leadership and accountability in all main sectors. At country level, the aim is to ensure a more coherent and effective response by mobilising groups of agencies, organisations and NGOs to coordinate, share information and respond in a strategic manner. **(**Generic Reform Presentation, 2006; Humanitarian Support Unit, OCHA, 2006**)**

Specifically, the cluster lead organisation is expected:

- to facilitate the coordination between the cluster members
- to encourage joint working
- to ensure that responses are in line with existing guidelines and standards
- to collate and share information
- to identify gaps in the response

- to stand in as the 'provider of last resort' when there are no other options.
- to communicate, share information and work together with the cluster lead
- to ensure that all needs are met and to prevent overlaps. (OCHA, 2006)

As noted by the Initial Rapid Assessment Guidance Notes for Country level drafted by the IASC for the health, nutrition and WASH sector in 2007, the cluster system is a platform for launching a global effort to improve assessment and information management for humanitarian action. It further notes that the capacity to quickly mobilize field teams to collect key data in core sectors (e.g., shelter, food and nutrition, health, water, sanitation and hygiene promotion) will be strengthened by the use of a shared framework, tool(s) and guidance, as well as processes and expectations for institutional collaboration and coordination. At the core of this is the availability of data soon after the disaster to effect timely life saving decisions.

To quicken the process of data collection and to spend the least possible time in the field, all data that can be collected before the disaster should be collected and made readily available to the humanitarian community. A distinction between data that can be collected before and after the disaster needs to be clearly made. Data that can be collected before should then be made readily available while systems are put in place to collate and analyse data collected soon after the disaster. Once analysed, the information should be made readily accessible to the decision makers in a format that can be used or manipulated to make timely decisions.

Since the UN cluster system is currently being implemented the world over, the researcher used it as the basis for the humanitarian sectors of this research. This will assist in making the research relevant not only to Timor-Leste, but internationally, setting a platform for future research.

3.5.1 Sectors used in the research

The UN Clusters are broken down into three categories;

- ✓ Technical Areas
  - Shelter

- Water sanitation and hygiene
- Nutrition
- Health

✓ Cross Cutting Areas
- Camp coordination and camp management
- Early recovery
- Protection

✓ Common Service Areas
- Emergency telecommunications
- Logistics

Food Aid and the Education cluster were added to the list. They are not on the original UN Cluster list because the lead agency in these two clusters; WFP and UNICEF have already made progress in putting systems in place and standardising their response strategies worldwide.

The camp coordination sector is typically initiated straight after an emergency and IDP camps are set up for the displaced population. There is not much to do before the emergency except identify possible sites that can be used as camps. There is no guarantee that those sites would be used, as in most cases the camps are set up spontaneously. As a result the camp coordination cluster was removed from the final list.

3.5.2 Mapping Files

Humanitarian and developmental work is a factor of location, and as such some of the problems can be better resolved if viewed or analysed in a spatial manner. Leading humanitarian organisations like OCHA have seen the need and importance to add a spatial component to help in humanitarian response. The OCHA humanitarian information centre (HIC) for instance is a team set up within hours of a big disaster occurring, which has a huge component of Geographic Information Systems (GIS). One of it aims being that of providing timely and operationally useful information in the form of information products, specifically maps. To solve spatial problems like disaster risk mapping and food security, leading organisations have resorted to GIS.

As such the researcher saw it as an important component of Timor-Leste being data ready, since it is used internationally by many organisations to aid in decision making before and after a disaster.

There are a number of GIS used internationally by different organisations in the forefront of developmental, humanitarian and recovery work. One common component of the systems is the base mapping files. Having these files in place and making sure that they are standard for the country will render Timor-Leste data ready. Since the focus of this research is humanitarian, the researcher will focus on humanitarian base mapping files that can be used to satisfy the mapping needs in the identified sectors. International efforts on the minimum map datasets requirements from the OCHA Regional Office for Asia Pacific and the OCHA Advocacy and Information Management Brach in New York in charge of all information management practises in OCHA offices worldwide and also involved in international GIS standardisation efforts through the United Nations Geographic Information Working Group (UNGIWG), a 32-member UN-wide coordination body, were reviewed and collated with base map requirements that came up within the individual clusters. A comprehensive minimum base map file was compiled. For the purposes of this research, mapping files were considered as a sector. See Annexure H for a full sector list used for this research.

3.5.3 Sector Priorities after a Disaster

Each sector has the overall objective of saving lives and minimise the suffering of the affected. The main priorities after a disaster can be broken down broadly into three:

- ✓ The first of which is to provide basic life support needs: drinking water and sanitation, adequate food, appropriate medical assistance, shelter (through housing and clothing) and fuel (for cooking and heating). These are mostly known as the humanitarian life saving sectors as they address life and death issues.
- ✓ The second is to protect disaster victims from physical violence and aggression, particularly in disasters involving refugees and internally displaced persons. This will not only prolong the suffering of the affected, but the affected community will lose trust in the organisations mandated to help them, making it difficult to reach out to them. The impact of a disaster

on a community can be broken down into two; the physical, tangible loss of property and the psychological intangible impact.

- ✓ The third priority is the psychological and social stress caused by the disaster and need to be addressed as a matter of priority. The victims need to be provided with psychological and social support. If left unaddressed, it will have dire effects and in the long run affect the community. This information is gathered by sector before or after a disaster, through assessments.

3.6 Assessment Forms Used for Data Collection

3.6.1 Introduction

Assessment forms from organisations in the forefront of humanitarian assessment and response internationally and nationally were used to come up with a list of information required before and after a disaster. Instead of just looking at forms developed by individual organisations, the researcher sought assessment forms that were developed by groups of organisations working in the same sector, where possible. Below is a summary of the organisations or group of organisations whose assessment forms were used. It outlines the main roles and mandates with respect to the humanitarian sector. The forms were broken down based on whether the organisation(s) that designed them were national or international.

3.6.2 International Forms

- **United Nations Disaster Assessment and Coordination (UNDAC)**
  Under the UN Office for the Coordination of Humanitarian Affairs, UNDAC is the leading UN agency in assessing disasters within hours of occurrence. The aim of UNDAC assessments is to assist the government of an affected country and the humanitarian community in identifying needs for international disaster relief assistance and to facilitate a timely, appropriate response by the international community. In particular, the UNDAC team assists in an on-site assessment of the nature of the disaster; damage including secondary threats; effects on the population; ongoing relief activities and local response capacity; needs for international assistance; means of delivering international assistance and expected developments. (UNDAC handbook, 2007)

- **World Health Organisation (WHO)**

  WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends. In the 21st Century, health is a shared responsibility, involving equitable access to essential care and collective defence against trans-national threats (WHO website, 2008).

- **Risk, Emergencies and Disasters for the Interagency Standing Committee for the American and Caribbean region (REDLAC)**

  REDLAC was formed with the aim of creating a platform for the, exchange of information, reflection and actions that optimize preparedness and response actions for preventing and mitigating suffering of populations vulnerable to natural disasters in Latin America and the Caribbean. The group focuses its interventions during the response and preparedness stages and coordinates tasks of prevention and mitigation with other actors. In December of 2006, the group developed a Methodology and Tools for a Rapid Assessment for Humanitarian Assistance which facilitates joint and integrated disaster response projects, maximizing the use of existing resources and focusing assistance on the humanitarian conditions of affected populations. With it came standards and key information that needed to be collected during and after a disaster.

- **International Federation of Red Cross and Red Crescent Societies (IFRC)**

  The IFRC's vision is to strive through voluntary action, for a world of empowered communities, better able to address human suffering and crises with hope, respect for dignity and a concern for equity. Their mission is to improve the lives of vulnerable people by mobilizing the power of humanity. (IFRC website, 2008)

The Federation carries out relief operations to assist victims of disasters, and combines this with development work to strengthen the capacities of its member national societies. The Federation's work focuses on four core areas; promoting humanitarian values, disaster response, disaster preparedness, and health and community care. They have developed a number of standard assessment forms to reach this goal.

- **Asian Disaster Preparedness Centre (ADPC)**

  The ADPC is a non-profit organization supporting the advancement of safer communities and sustainable development, through implementing programmes and projects that reduce the impact of disasters upon countries and communities in Asia and the Pacific. They achieve this by developing and enhancing sustainable institutional disaster risk management capacities, frameworks and mechanisms, and supporting the development and implementation of government policies; facilitating the dissemination and exchange of disaster risk management expertise, experience and information; and raising awareness and enhancing disaster risk management knowledge and skills. ADPC is governed and guided by a Board of Trustees (21 members representing 15 countries) and advised by a Regional Consultative Committee (32 members from 26 countries) and Advisory Council (55 members from a wide range of agencies).

- **SPHERE**

  The Sphere Project is a programme of the Steering Committee for Humanitarian Response (SCHR) and interaction with VOICE and ICVA. The project was launched in 1997 to develop a set of universal minimum standards in core areas of humanitarian assistance. The aim of the project is to improve the quality of assistance provided to people affected by disasters, and to enhance the accountability of the humanitarian system in disaster response. After consulting many people and organisations with vast humanitarian experience, the project also came up with the Humanitarian Charter and Minimum Standards in Disaster Response. These are now widely used internationally.

- **Inter-Agency Standing Committee (IASC)**

  The IASC is a forum for coordination, policy development and decision making involving the key UN and non-UN humanitarian partners. Under the leadership of the Emergency Relief Coordinator, the IASC develops humanitarian policies, agrees on a clear division of responsibility for the various aspects of humanitarian assistance, identifies and addresses gaps in response, and advocates for effective application of humanitarian principles.

- **World Food Programme (WFP)**

  WFP is the directing and coordinating authority for food aid within the United Nations system. The core policies and strategies that govern WFP activities are to provide food aid to save lives in refugee and other emergency situations; to improve the nutrition and quality of life of the most vulnerable people at critical times in their lives; and to help build assets and promote the self-reliance of poor people and communities, particularly through labour-intensive works programmes. Its primary objectives are:

  – to develop and agree on system-wide humanitarian policies.
  – to allocate responsibilities to agencies in humanitarian programmes.
  – to develop and agree on a common ethical framework for all humanitarian activities.
  – to advocate common humanitarian principles to parties outside the IASC.
  – to identify areas where gaps in mandates or lack of operational capacity exist.
  – to resolve disputes or disagreement about and between humanitarian agencies on system-wide humanitarian issues.

3.6.3 National Forms

- **National Disaster Management Directorate (NDMD)**

  A department under the Ministry of Social Solidarity, the NDMD is tasked with the coordination of disaster responses in Timor-Leste and to advise the government on any disaster-related issues. Through consultation with national and international humanitarian organizations in Timor-Leste, the NDMD

developed a multi-sectoral assessment form that is used to assess disasters in the country.

- **United Nations Children's Fund (UNICEF) Timor-Leste**

  UNICEF is mandated by the United Nations General Assembly to advocate for the protection of children's rights, to help meet their basic needs and to expand their opportunities to reach their full potential. They are involved in humanitarian response to make sure that this is the case.

- **DNSAS Diracção Nacional Serviço Água e Saneamento (National WatSan Services)**

  Under the Ministry of Infrastructure, DNSAS is the department in charge of all water and sanitation activities in the country. They are also tasked with responding to disasters and making sure that the affected community has adequate water and sanitation facilities for survival. DNSAS with the assistance of its international partners has designed a rapid assessment questionnaire to be used straight after an emergency.

3.7 Summary of Assessment Forms Used

The assessment forms were analysed individually by sector and information that could be collected before an emergency and information required to carry out a successful well targeted response was extracted. Table 2 gives a summary of the different organisations assessment forms that were used for the research.

Table 3 Organisation Assessment Forms Used to Come up with List of Data Required After a Disaster

Organisation/Group	General Population	Shelter	Water Sanitation & Hygiene	Nutrition	Health	Early Recovery	Protection	Emergency Telecommunications	Access/Logistics	Food Aid	Education
INTERNATIONAL											
ADPC	☐	☒	☒	☐	☐	☐	☒	☐	☐	☒	☐
IASC	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☒
IFRC	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
REDLAC	☒	☒	☒	☒	☒	☒	☒	☐	☐	☒	☐
SPHERE	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒
UNDAC	☒	☒	☒	☒	☒	☐	☐	☒	☒	☒	☐
WHO	☒	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐
NATIONAL											
DNSAS	☒	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐
NDMD	☒	☒	☒	☒	☒	☐	☒	☒	☒	☒	☒
UNICEF	☒	☐	☒	☒	☒	☐	☒	☐	☒	☐	☒

3.8 Results

The information was collated in sector sheets. Each sector sheet outlined the objective of the sector and differentiated between information that could be collected before an emergency in the preparedness phase and data that could only be collected after the disaster. The next section will look at the different sector sheets individually.

Table 4 General Information Required Before and After an Emergency

Sector	General Information
Objective	To determine the number of people affected; their geographical location; their relationship with the overall population prior to the disaster; and also to establish general indicators of the affected population. This information helps the humanitarian community to look at the disaster in relation to the country where it occurred. Hence helping to determine the impact of the disaster and differentiating between the disaster effects and chronic problems in the community
Information that can be Collected BEFORE an Emergency	1. Average household size and structure – e.g., polygamous 2. Gender roles as related to economic activities and access to services 3. Key people to consult or contact in the community 4. The vulnerable people in the population 5. What communication channels are available to the affected community. If the community radio is operating, how many hours does it operate a day? 6. Ethnic and cultural groups and special languages 7. Population structure, demography pre-crisis: Broken down to the lowest administrative level; proportion of population by gender, proportion of handicapped or disabled people, total population, under 5, primary school going age 6-11 year, secondary school going age 12-17 year , women 15-49, above 60, disabled 8. Relations between communities in the country 9. Special security risks for women and girls 10. State of administrative structures 11. Spread and influence of traditional and religious leaders in the country
Information Required AFTER an Emergency	1. Location of affected population up to the lowest administrative level, Latitude, Longitude 2. Type of emergency 3. Segregated by male and female; total population, under 5, primary school going age 6-11 year, secondary school going age 12-17 year , women 15-49, above 60, pregnant woman, lactating, disabled 4. Displaced Population IDPs - Origin of IDPs, date of arrival at IDP centre. Are people still coming, destruction at origin, when plan to return 5. Any people that need immediate assistance 6. List of number of people displaced in the affected areas: 7. The IDPs likely movements. What are the security factors for the people affected and for potential relief responses? 8. Special security risks exist for women and girls? 9. Do administrative structures still function in the affected areas?

Table 5 Shelter Information Required Before and After an Emergency

Sector	Shelter
Objective	To determine the types and characteristics of shelters before and after the emergency, and the need for shelters
Information that can be Collected BEFORE an Emergency	1. Committees, credit unions, government agencies, or co-ops that can mobilize forces to help implement a shelter programme. 2. Any problems related to land use, such as grazing, cultivating, sanitation and land tenure issues. 3. Types of shelter used in the country segregated by location
Information Required AFTER an Emergency	1. Housing; number of IDPS in each shelter, type of shelter in use, are there sufficient places to accommodate the IDPs, capacity of shelters and current occupancy, accessibility of shelters 2. Immediate Need; is the need for temporary shelter (a few weeks), or is the displaced population requiring shelter for an indeterminate time – obstacles that prevent victims from meeting their own needs, both for temporary and permanent shelter 3. How are people grouped, by family, separate sleeping areas for women /children and men 4. Construction; availability of materials for building shelter: tools for shelter construction: suitable material substitutes locally or externally that would meet the cultural and disaster resistance requirements, type and quantity of building materials that the victims can provide for themselves for temporary or permanent shelter, suitability (that is, infrastructure support) of available sites for both temporary and permanent shelters including mass sheltering. 5. Damage; number of damaged dwellings that are habitable without immediate repair, that are habitable only after repair, and that are not habitable and must be destroyed. 6. Potential hazard and security vulnerabilities of available sites for both temporary and permanent shelters. 7. Environmental conditions that would impose constraints on temporary shelters or camps, such as all-season accessibility, proximity to sources of essential supplies (shelter materials, cooking fuel, water, etc.), soil, topography, drainage, and vegetation. 8. Availability of a distribution mechanism (local, regional, national, international) to distribute shelter materials (temporary or permanent) to the victims. 9. Risk conditions of the shelter

Table 6 Water and Sanitation and Hygiene Information Required Before and After an Emergency

Sector	**Water, Sanitation and Hygiene**
Objective	To establish the level of operation of water and sanitation systems, waste disposals, treatment of vectors and contamination levels
Information that can be Collected BEFORE an Emergency	1. Traditional hygiene, excrete and solid waste disposal practices and menstruation practices 2. Is there a garbage disposal system in place in the affected areas? 3. % HH with access to safe drinking water 4. % HH with access to improved drinking water 5. What are the current beliefs and traditions concerning excreta disposal especially regarding women's habits and attitude towards children etc.? What material/water is used for anal cleansing? Is it available? 6. What are the common health related practices among the affected population and how have these been affected by the emergency? 7. What are the breast feeding practices? 8. What health promotion media are available / accessible to the affected population? (Radio, posters / leaflets, local folk media and other) ***Table 6 continued***

Information Required AFTER an Emergency	1. Water supply a. What are the current water sources and quality? b. How far is the water source; walking time? c. When can water be accessed? d. How is the water transported; type of water storage? e. Is the water supply reliable? f. Do affected population have adequate containers to safely store and transport water? g. How long has the daily amount been available? h. How long do users wait for water? i. Is there safe access to water for vulnerable groups? j. Are there problems with wells? Repair/rehabilitation.· k. Determine the availability of additional sources of safe water if required Solid waste disposal practices and services l. Determine the amount of water available per person per day. 2. Availability of bathing/washing facilities 3. Determine the existence of a drainage system in the affected areas 4. Determine the evidence of water-related diseases. 5. How many people have be en deprived of a functional water supply. 6. Determine the placement, number, and cleanliness of latrines. 7. Determine if there is a sanitation plan if the population increases. 8. Determine if there is safe access to latrines for women and girls. 9. Determine the evidence of water-related diseases. 10. Determine the proximity of latrines and refuse areas to water sources, storage areas, and distribution points. 11. Determine the placement and plan for the disposal of corpses. 12. Are the current defecation practices a threat to health? If so, how? 13. What local materials are available for constructing toilets? 14. Are there any stagnant pools of standing water 15. Is there enough slope/drainage for disposal of storm water. 16. How have the common health related practices among the affected population been affected by the emergency? 17. What are the current practices on key hygiene issues a. Washing hands after defecation. b. Method of disposal of children's faeces. c. Practices for storage and handling of water. d. Practices of storage and handling of food.

Table 7 Nutrition Information Required Before and After an Emergency

Sector	Nutrition
Objective	To determine the loss of sources of food; the effect on the consumption of food; existing facilities for the preparation of food; food reserves in the affected population; and the existence of possible food aid in the zone.
Information that can be Collected BEFORE an Emergency	1. Nutrition surveys conducted 2. Nutritional status of the country segregated to third administrative level. 3. Data from mother and child health clinics. 4. Data from existing supplementary or therapeutic feeding centres. 5. Information on the nutritional situation of the affected population prior to the current crisis. 6. The risk of malnutrition related to poor public health. 7. The risk of disease outbreaks which may affect nutritional status, such as measles. 8. Estimated measles vaccination coverage of the affected population. 9. Estimated Vitamin A supplement coverage? Determine if a high prevalence of HIV/AIDS, and are people already vulnerable to malnutrition due to poverty or ill health? 10. Normal infant feeding practices? 11. Nutrition intervention or community-based support already in place before the current disaster, organised by local communities, individuals, NGOs, government , UN agencies, religious organisations, etc.? What are the organisations capacity
Information Required AFTER an Emergency	1. Availability of nutrition programme supplies 2. Any estimates on mortality rates (either crude or under five) 3. Is there, or will there be, a significant decline in ambient temperature likely to affect the prevalence of acute respiratory infection or the energy requirements of the affected population? **4.** Have people been in water or wet clothes for long periods of time? 5. What is the risk of malnutrition related to inadequate care and reduced food access? 6. Has the normal care environment been disrupted (e.g. through displacement), affecting access to secondary carers, etc.? 7. What is available in the food pipeline? 8. Availability of; water, kitchens, fuel and kitchen utensils for preparing food 9. Effect on reserves, capacity for obtaining reserves and the estimated time of inaccessibility 10. Prevalence of micro nutrient deficiencies in the population less than 5 years of age (for example, scurvy, anaemia, pellagra). 11. Determine the percentage of children under 5 years of age with: a) Either moderate or severe acute malnutrition. b) Determine the average daily ration (food basket and calories/person/day) and method and intervals of distribution (for example, wet/dry on a daily/weekly/monthly basis). 12. Determine rate of weight gain or loss of children registered in Mother -Child Health (MCH) clinics. 13. Determine oral rehydration salt (ORS) needs and distribution system.

Table 8 Health Information Required Before and After an Emergency

Sector	**Health**
Objective	To determine the impact on health services and the demand for medicines and supplies.
Information that can be Collected BEFORE an Emergency	1. Determine the number and locations of health facilities that existed prior to the disaster and their resources and capacity. 2. Determine the number of indigenous health personnel who is available. 3. Determine the amount and type of medical supplies and drugs that are available on site or in country. 4. What types of health problems in the affected areas? Major outbreaks in last 2 years (e.g., cholera, measles, meningitis, bird flue) and number affected. 5. Where do people most often seek treatment for illness? 6. Number of primary health care facilities per 10 000 population. 7. Percentage of households with access to primary health services. 8. Number of secondary health care facilities per 30,000 and number of tertiary facilities per 150,000 population 9. Number of health centres providing post rape care 10. Number of doctors per capita (% male/female) and # nurses per capita (% male/female) 11. Number of births attended by skilled birth attendant 12. Prevalence of HIV (15-49 year olds) 13. Status of National Health Information System, percentage timeliness and percentage completeness 14. What diseases are reported every month (e.g., watery diarrhoea, bloody diarrhoea, measles, polio, meningitis, malaria, yellow fever, ARI, TB) 15. Identify pre-existing health problems and priorities in the different parts of the country. ***Table 8 continued***

Information Required AFTER an Emergency	1. Main health problems in home area of IDPs. 2. Previous sources of health care (for example, traditional healers). 3. Important health beliefs and traditions (e.g., food taboos during pregnancy). 4. Strength and coverage of public health programmes in home area (immunization, reproductive health, etc.). 5. Determine the crude mortality rates. 6. Determine the age- (under and over age 5) and sex- specific incidence rates of diseases that have public health importance. 7. The need for immunization programmes or the effectiveness and coverage. 8. Determine or estimate the number of major injuries and the rate for each type of injury. Specify traumatic injuries requiring surgery or hospitalization 9. Determine additional amounts and types of medical supplies and drugs needed immediately from sources outside the stricken area. 10. Determine what additional medical equipment is needed and can be readily obtained to deal with major injuries. 11. Determine if a health information system is in place to monitor the affected population and provide surveillance and intermittent population-based sample surveys that should: 12. Have there been disruptions in the following medical supplies, medicines, medical equipment, cold chain 13. Last date of drug supplies received by Health Facility 14. Is supplementary feeding available to the vulnerable group in the affected areas? 15. Are households able to prepare food? 16. Are there barriers to access health facilities?

Table 9 Early Recovery/Livelihoods Information Required Before and After an Emergency

Sector	Early Recovery/Livelihoods
Objective	To determine the impact on livelihoods, the situation on the market with regards to availability of goods and price increases and effect on dwellings.
Information that can be Collected BEFORE an Emergency	1. Availability and ownership of land for dwellings. 2. Economic activity in the country, predominantly male and female sectors and number of families. 3. How do different livelihood groups acquire food or income? For an average year in the recent past, what were the sources of food and income? 4. How do different sources of food and income vary between seasons in a normal year? 5. Over the past 5 or 10 years, how has food security varied from year to year? 6. What kind of assets, savings or other reserves is owned by the different livelihood groups? 7. Over a period of a week or a month, what do household expenditures include, and what proportion is spent on each item? 8. Who is responsible for management of cash in the household, and on what is cash spent? 9. What is the availability and price of essential goods, including food? 10. What are the average terms of trade between essential sources of income and food, e.g. wages to food, livestock to food, etc.?
Information Required AFTER an Emergency	1. Increase in prices of food, basic goods, land and construction material; how has it affected the usual seasonal patterns of food security for the different groups? 2. Length of terms of recovery strategies and their effect on reducing vulnerability. 3. How has the disaster affected the different sources of food and income for each of the livelihood groups identified? 4. How has it affected access to markets, market availability and prices of essential goods? 5. For different livelihood groups, what are the different coping strategies and what proportion of people are engaged in them? 6. How have coping mechanisms changed as compared with the pre-disaster situation? 7. Which group or population is most affected? 8. What are the short- and medium-term effects of coping strategies on people's financial and other assets? 9. For all livelihood groups, and all vulnerable groups, what are the effects of coping strategies on their health, general well-being and dignity? Are there risks associated with coping strategies? 10. Affected areas with greater vulnerability 11. Are there groups in the community who share the same livelihood strategies? How can these be categorised according to their main sources of food or income?

Table 10 Protection and Vulnerable Populations Information Required Before and After an Emergency

Sector	Protection
Objective	To determine the situation of the vulnerable groups with regards to mistreatment and rape and sexual abuse and any signs of discrimination.
Information that can be Collected BEFORE an Emergency	1. Orphans in families as percentage of child population. 2. Status of national laws protecting particularly vulnerable groups of children. 3. Pre-existing patterns of gross systematic violations of child rights – children killed/targeted; recruited as child soldiers; victims of sexual violence; abuse and exploitation; landmines. 4. Pre-existing patterns of sexual gender based violence.
Information Required AFTER an Emergency	1. Number of children in institutions (e.g., orphanages, boarding schools, prisons) and number and location of those institutions. 2. Number of street children. 3. Number of separated and unaccompanied refugee children by camp location. 4. Where are cases of rape and sexual abuse reported? 5. Where can victims of violations access necessary care? 6. Have children been involved in violence? 7. What are the reported numbers of missing and injured persons? Specify: a. Number of persons who died b. Number of missing persons c. Number of missing children under five d. Number of missing children 5-17 years e. Number of unaccompanied/separated children (0-17 yrs f. Number of persons injured g. Number of children under five injured h. Number of children 5-17 years injured 8. How did people die - accident or attack 9. How did people get injured - accident, attack 10. How did people go missing, arrested, separated, stayed behind 11. What are the major protection issues for children – e.g child labour, separation, gender based violence, injury, trafficking, 12. What led the population to flee? (reasons for the displacement) 13. Are there any religious buildings destroyed or damaged? 14. Were any sacred houses destroyed or damaged? 15. What was the response of the authorities to the incidents in the area of origin? 16. What are the reported numbers of missing and injured persons? 17. What are the major protection threats for children? 18. Are the threats different for girls and boys? 19. How many reported cases of rape and sexual abuse? 20. Are there reports or evidence of traumatized children? 21. Are there indications of stigma against any particular group of children? 22. Main barriers to the compliance of basic principles and actions of protection

Table 11 Emergency Telecommunications Information Required Before and After an Emergency

Sector	Emergency Telecommunications
Objective	To determine existing telecommunication structures that can be used for communication and establish damage to the telecommunication systems.
Information that can be Collected BEFORE an Emergency	1. Location of communication system's facilities 2. Determine the broadcast/reception area or zone of influence. Obtain technical information, such as: broadcast power, operating frequencies, call signs, relay/transmission points, hours of operation, standby power sources, mobile capability, Repair/maintenance facilities, including capabilities of manufacturer's local agent, language of transmission. 3. Identify the organization/firm that is responsible for operation and maintenance of the system(s). 4. Identify key personnel (owners, management, operations and maintenance). 5. Determine the degree of integration of military and civilian communications networks. 6. Determine what communications facilities exist that are operable or easily repaired and could be used to pass on assessment information and assist in coordination of life -saving responses. 7. Identify the type of system assessed: Radio, private ownership, commercial, broadcast, 2-way, amateur, citizens band, public systems, police, armed forces, Government agencies (which ministries have communications facilities?), telephone, cable and wireless, television, newspaper, other. 8. Identify local/regional suppliers of communications equipment and materials available for repair. Check cost and availability. 9. Determine the local/regional availability of technical services available for repair. 10. Describe specific reasons why a system is not operating. Unavailability of: personnel, power, fuel, access to facilities e.t.c
Information Required AFTER an Emergency	1. Damage to system (s): i. Broadcast/transmission equipment ii. Antennae iii. Buildings iv. Transmission lines v. Relay facilities vi. Power source vii. Other 2. Outline options for restoring minimum essential services.

Table 12 Access/Logistics Information Required Before and After an Emergency

Sector	Access/Logistics
Objective	To establish existing services/infrastructure that can be used to carry out relief/response operations.
Information that can be Collected BEFORE an Emergency	1. Identify agencies, military, and/or civilian forces that are available to make repairs. Do they have equipment, spare parts and maintenance support? 2. Can local or expatriate construction companies loan equipment and/or expertise? 3. Regional sources of equipment and/or expertise that is available for repair. 4. Describe the road networks in the affected area by type. What is the load capacity of the bridges? 5. Identify the responsible ministries for road maintenance and repair and district offices and constraints on their operations. 6. Physical and ecological characteristics of the country that can affect operations. 7. Availability, location and state of port facilities. 8. Availability, location and capacity of secure warehouse facilities 9. Local Transport routes and trends
Information Required AFTER an Emergency	1. Approximate Spread of IDPs (km) 2. Possible Central Distribution Points 3. Distance from IDPs to possible distribution points 4. Is there year-round access to the affected population? If no, what factors may prevent access to the affected population? 5. Describe any damage to the road network: – Determine which segments are undamaged, which can be travelled on with delays, and which are impassable. – Describe any damage by type: i. Blockage by landslides, fallen trees, etc. ii. Embankments iii. Drainage structures iv. Bridges/tunnels v. Road surfaces. – Identify alternate crossings and/or routes. 6. Evaluate the importance of the road network to the relief effort and rehabilitation. 7. Outline the options for restoring minimum essential service. 8. Describe the need for traffic control (police, military, other) on damaged or one-way segments. 9. Determine how long the emergency repairs can accommodate relief traffic (size, weight, volume?). Will emergency maintenance and fuel points be needed in remote areas?

Table 13 Food Aid and Food Security Information Required Before and After an Emergency

Sector	Food Aid & Security
Objective	To determine the loss of crops, animals, productive goods and the effect on the sources of income and food; the effect on the consumption of food, existing facilities for the preparation of food, food reserves in the affected population and the existence of possible food aid in the zone.
Information that can be Collected BEFORE an Emergency	1. Legal impediments to importation of certain foods. 2. Organisations that provide assistance food aid and food security, distributed products, available inventory. 3. Livelihood and agro-ecological zones, land use, production, major economic activities and response strategies. 4. Income/capita, poverty mapping,% population below poverty line. 5. Seasonal and agricultural calendar.
Information Required AFTER an Emergency	1. How much can family afford to buy on the market at the moment? 2. How long will the present food supply last? 3. Has the number of meals eaten per day changed? 4. What is the Livelihood of displaced population? 5. Calculate loss crops and animals in proportion to the next harvest. 6. Number of plots seeded that are partially or totally lost. 7. Availability water, fuel and kitchen utensils for preparing food. 8. Effect on sources of food and food reserves; capacity for obtaining reserves and the estimated time of inaccessibility. 9. Food access strategies by livelihood group. 10. Describe the normal consumption pattern (food basket) of the affected population, any taboos, and acceptable substitutes. 11. Indicate food aid programmes, if any, exist and describe them. 12. Outline the indigenous food processing capacity. 13. Check market indicators of food shortages, such as: 14. Absence/ shortage of staple grains and other foods on the market. 15. Price differential. 16. Change in supplies on the market 17. Change in wholesale grain availability. 18. Black market price changes or increase in black market activities. 19. Commercial import changes or proposed changes. 20. Sale of land, tools, draft animals, etc. 21. Check nutritional indicators of food shortages by sex, such as: 22. Signs of kwashiorkor or other signs of malnutrition. 23. Increased illness among children. 24. Change in diet (that is, quantity, quality, type). 25. Check social indicators of food shortages, such as: 26. Increased begging/fighting/prostitution. 27. Migration from rural to urban areas. 28. Determine how much food can be expected from future and/or specially planted, quick-maturing crops. 29. Where, production cycle of affected area when disaster struck? 30. Estimate the local government stocks on hand and those scheduled to arrive. Is borrowing of stocks on hand a possibility? 31. Estimate local stocks on hand and scheduled to arrive. 32. Estimate the local PVO/NGO/IO stocks on hand and scheduled to arrive. And regional availabilities. Is borrowing a possibility? 33. How much food aid required during a specific time periods. 34. Decide whether food aid would free cash and labour for other aspects of relief, or divert labour and create a dependent attitude.

Table 14 Education Information Required Before and After an Emergency

Sector	Education
Objective	Determine the damages in infrastructure, furniture and teaching material.
Information that can be Collected BEFORE an Emergency	1. School enrolment 2. Teacher statistics by type of school; primary, secondary, advanced. Alternative facilities where children can learn.
Information required AFTER an Emergency	1. How many children going to school – Primary , Secondary, Senior high 2. What type and number of teachers in the affected population – Pre-school, primary school, secondary school, senior high? 3. Are school facilities functioning? 4. Are they damaged or destroyed? 5. Are there alternative places for children to learn – camp site, community centre, church, government building, other? 6. How many children going to school in the affected areas – 6-11years and 12-17years? 7. Are there facilities and community structures for care of preschool-age children? 8. Are there teachers in the affected areas? If yes, how many teachers are for pre-school, primary school and secondary school? 9. What is the extent of damage to school facilities 10. What alternative places for children to learn exist? What are the factors affecting school attendance? 11. Are there functioning toilets available in the schools for boys and girls 12. What is the type of drinking water sources for the school 13. How many minutes to fetch drinking water? 14. Affectation of schools 15. Number of students 16. Proportion of losses of furnishings and didactic material

Table 15 Mapping Files Required Before and After an Emergency

Sector	Mapping Files
Objective	To map information collected on the disaster to enable spatial analysis of the emergency and also mapping of infrastructure/services/demography to aid in the response operation
Information that can be Collected BEFORE an Emergency	1. Political/ Administrative boundaries to at least the forth administrative level 2. Settlements (with attributes including: latitude/longitude, alternative names, population figures, classification) a) Cities b) Small towns c) Villages 3. Type of shelters used across the country 4. Possible sites for emergency evacuations caused by disasters 5. Drainage network 6. Hydrology a) Water bodies b) Major and minor river network 7. Elevation 8. Health Facilities a) Hospitals b) Clinics 9. Land-use and Land-cover 10. Livelihood zones 11. Location of broadcast systems and their broadcast receptions areas/zones 12. Road network a) Primary road b) Secondary c) Tertiary 13. Bridges 14. Airfields (airports, airstrips, helicopter landing sites) 15. Seaports 16. Electricity Coverage 17. Education Facilities a) Primary School b) Secondary c) High School d) Tertiary and higher education
Information Required AFTER an Emergency	Attribute data from the different sectors on the disaster that can be linked to the mapping files and mapped.

3.9 Conclusion

This chapter outlined the process used to get a list of base data required after an emergency to effect a targeted response. The information was based on national authorities mandated in Timor-Leste to respond to disasters and the international

organisations on the forefront of humanitarian response. This was divided into two categories; information that can be collected before a disaster and information that can only be collected after a disaster. The data was grouped by sectors based on the UN cluster system that is currently used worldwide and listed in the form of sector sheets. The data listed in the sector sheets is the base data that Timor-Leste should have if there were to be emergency data ready. It will be the list that will be compared to the results of chapter four that will provide the data/information readily available in Timor-Leste.

CHAPTER 4

4.0 Data Available in Timor-Leste

4.1 Introduction

This chapter focuses on the research methodology used to obtain information on the type of data and information systems available in Timor-Leste that can be used before and after an emergency as a platform for an effective, timely and targeted response. The preceding chapter looked at the base data required in an emergency based on national and international standards and thus addressed the concerns of sub-objective one. This chapter takes stock of the data available in Timor-Leste with the aim of matching it against the required base data in an emergency, as concluded in chapter three, hence addresses sub-objective two, It aims to determine the kind and type of emergency base data and information systems available in Timor-Leste and their availability during an emergency. Furthermore possible institutional gaps are identified with a focus on coordination, effectively addressing sub-objective three. The chapter concludes by outlining the data and information systems available in Timor-Leste and the data coordination mechanisms in place.

4.2 Methodology

People are the focus of any disaster and hence demography plays a key role in analysing community's pre and post crisis. Location (geography), puts a disaster into context, hence spatial analysis plays a major role. The strong link of disasters with geography and demography prompted the researcher to target geographic information practitioners and demographers. With semi-structured interviews available base data that they use could be determined. The argument being that they mostly use information that is location based to enable their mapping or analysis. The researcher acknowledges the fact that not all information can be found in a quantitative format. Information on livelihoods for instance can be in the form of assessments or studies carried out by numerous research bodies or humanitarian workers in Timor-Leste in a qualitative format. As a result, a survey of existing assessments, studies or researches

that would help in the better programming of a humanitarian response was done. It was envisaged that such a survey, besides fostering collaborations would help the humanitarian and developmental community to build on existing studies and also to identify essential assessment gaps.

The main research tool for this part of the research was semi-structured interviews formulated from the specific objectives. Based on the results of these interviews, research tools were designed to best answer the questions and ultimately address the main objective. The need to have a focused group discussion with a core set of data and GIS people came up after the semi-structured interviews. A group was formed and there was consensus among the stakeholders that it should not be a one-off group and that it should meet regularly. The researcher took heed of the recommendations and set up a group known as the Geographic Information Group (GiG) which now meets once every month, chaired by the researcher. It is composed of representations from Government departments and Ministries, UN (Agencies and secretariat), international NGOs and National NGOs. Instead of only ending at the data collection, issues of accessing the data came up during the GiG meetings. This prompted the researcher to look at data and information dissemination of the collected data before, during and after an emergency. Instead of just listing data, the research also took up a component of physical data collection, cleaning, presentation and ultimately dissemination. Focus group discussions, through the GiG became the main research tool used. The modification of the research was done so as to make sure that the research did not lose its relevancy.

4.2.1 Semi- structured interviews

A list of the different organizations and government departments that had allocated GIS or data practitioners to the country, or that were involved in primary data collection for the data bank, was compiled. This was done by making phone calls to known government departments and UN agencies that work with such data. Consultations were held with:

- The National Directorate of Statistics
- United Nations Integrated Mission in Timor-Leste
- United Nations World Food Programme
- Ministry of Social Solidarity

- The Humanitarian Information Centre
- CARE International
- International Organization for Migration (IOM)
- United Nations Office for the Coordination of Humanitarian Affairs

The results of the consultations, with an overview of the key organizations in Timor-Leste that have GIS/data capacity, are outlined below.

4.2.2 Key data/geographic information systems stakeholders in Timor-Leste

- **World Health Organization (WHO)**

  WHO has a dedicated GIS person who focuses on data collection and mapping of health-related information. They partner with the Ministry of Health to collect and maintain the database on the health facilities in the country. The first major survey was done in 2002 and they now maintain it.

- **United Nations Integrated Mission in Timor-Leste (UNMIT)**

  UNMIT is primarily in Timor-Leste to support the mapping needs of the UN Department for Peace Keeping Operations mission. They rely on data from different government departments and UN agencies in Timor-Leste, but also do primary data collection where available data is out of date. Currently they are updating access data for instance roads and bridges. They partner with other UN agencies in the country.

- **United Nations Development Programme (UNDP)**

  The operations are broken down into projects and each project caters for its own information/data needs. The organization is a primary data collector in different fronts, but only for the duration of the project and hence there is an issue of updating out-dated data/information.

- **Office for the Coordination of Humanitarian Affairs (OCHA)**

  They are a short term office that was set up to fill in the gap of coordination for humanitarian assistance with regards to the Internally Displaced People.

They have a dedicated information management unit that has GIS and database capabilities and focuses on maps that support and compliment the efforts of the humanitarian community. They are not primary data collectors in any front, but rely on a host of organizations for their base data requirements. The office is scheduled to close in December 2008.

- **World Food Programme (WFP**)

  Primarily focus on the short term food-aid needs of the people displaced by the March 2006 disturbances. They have a dedicated Vulnerability and Assessment Monitoring unit that has GIS and statistical capacity. WFP conducts a number of assessments in the country and as such are primary data sources for the food security sector. They have strong support from their regional office which helps in some of the assessments. (see survey of surveys – Annex B)

- **United Nations Population Fund (UNFPA)**

  Supported the first National Population Census in 2004 and continues to do data analysis and producing information products/reports on the census. UNFPA supports the NSD GIS section, which focuses on demographic mapping and has produced a demographic atlas.

- **United Nations Children Fund (UNICEF)**

  Supports the Census department in rolling out DevInfo, a user friendly database of indicators that is used to monitor Millennium Development Goals and presents indicator data in the form of maps, graphs and tables. UNICEF has a dedicated Monitoring and Evaluation section that monitors UNICEF and partners' programmes with a key focus on:

  - Health, nutrition, water and sanitation
  - Basic education and community capacity building
  - Child protection
  - Advocacy and communication for child rights
  - HIV/AIDS

- **CARE**

  CARE does not have a dedicated GIS section. They focus more on information systems. To that effect, CARE has designed a number of information systems in use by their partners, who are mostly NGOs and the Government. There are also involved in primary data collection through surveys

- **Catholic Relief Services (CRS)**

  CRS caters for the management/coordination needs of 16 camps in Timor-Leste (as of February 2008). They do not have a dedicated GIS section, but dedicated data entry clerks for management of camp information.

- **International Organization for Migration (IOM)**

  They are in charge of most of the IDP camps in Dili. They collect a lot of IDP related data. They do not have a GIS section, but have data collection and analysis capabilities. Most of the IDP information they collect is not for wide distribution because of its sensitivity.

- **Ministry of Social Solidarity (MSS)**

  This is the line ministry in charge of humanitarian assistance in Timor-Leste. They are tasked with implementing the sustainable return and reintegration of the displaced persons of the March 2006 disturbances. As such they maintain a number of databases that track movement of the displaced and the implementation of the return and reintegration policies. They have a dedicated humanitarian information centre and assessment team that collect and disseminate information related to the return and reintegration.

- **National Statistics Directorate (NSD)**

  Their main role is carrying out the national census. The NSD has a dedicated GIS / data section that maps demographical data. They produce a number of demographic products ranging from atlases to brochures. They are primary data collectors for most of the government's ministries/departments and they work in partnership with a number of international organizations. The

GIS/data section is funded and staffed by UNFPA. The NSD is in charge of updating and rolling out DevInfo in partnership with UNICEF.

- **Agricultural and Land-use Geographical Information System (ALGIS)**
  Under the Ministry of Agriculture, ALGIS focuses on agricultural mapping and is the government's lead in land –use and land-cover mapping.

- **Ministry of Health (MoH)**
  They work closely with the WHO for their GIS and mapping needs. They partner with a number of international organizations and the UN in a number of data collection exercises. As such they have a dedicated data section that mostly has data clerks that manage the data from the different surveys done. They maintain a Health Management Information System which monitors key health indicators.

- **Ministry of Education (MoE)**
  Works closely with UNICEF for their data/information needs. They have an Education Information Management System that tracks key education indicators per school. They have dedicated staff who manage the system and come up with reports on a regular basis.

- **Ministry of Public Works (MoPW)**
  The ministry works closely with the MSS in the return and reintegration programme and is also part of the assessment process. They have GIS and database capacity and where necessary use their staff for construction related assessments, but they do not have a standalone assessment section.

- **National Disaster Management Directorate (NDMD)**
  A department under the Ministry of Social Solidarity, the NDMD is tasked with the coordination of disaster responses in Timor-Leste and with advising the government on any disaster related issues, from the response to mitigation and preparedness. They currently share resources with the information centre, but plans are underway to establish a national disaster operation centre that

they will run. They have a range of disaster-related information that they disseminate through the information centre.

4.3 Format of Semi-Structured Interviews

From the first consultations, a number of organizations and government ministries were chosen by the researcher to take part in the semi-structured interviews. The semi-structured interviews were based on an open-ended questionnaire which the researcher used as the basis of the interviews. Five key questions broken down into two sections made up the questionnaire. The first two questions sought to address sub-objective two and the remaining three addressed sub-objective three. The questionnaire was not handed out to the participant, but rather the researcher used it to guide the interview. Organizations that took part in the interviews were: WHO, UNICEF, DNE, UNFPA, UNMIT, MSS, CARE, WFP and UNDP.

4.4 Results of Semi-Structured Interviews

4.4.1 Sub-objective two

This was to determine what kind of emergency base data and information systems were available in Timor-Leste and their availability during an emergency**.** The guiding question was which part of the disaster continuum the interviewed organization focused on.

Most respondents were not aware of the disaster continuum, hence a brief description and illustration was part of the introduction to the interview session. To avoid inconsistent responses on the part of the continuum an organizations focuses on, the respondent would explain to the researcher their organization's main focus and based on that the researcher would decide.

Most organizations have programmes that cover rehabilitation and developmental work. A few also focus on early recovery. Government ministries argued that they had to work on every part of the continuum and that their focus was heavily dependent on the prevailing government's priorities. Departments like the National Statistics Directorate, however, generated base data that was used on every part of the disaster

continuum although they themselves were not directly involved in response initiatives.

Organizations who were not necessarily involved in disaster management were called upon now and again to help in the response phase. These organizations reiterated that even though their programmes did not focus on disaster response, they were forced by circumstances to help in response initiatives and hence they had to take a more proactive role in making sure that they were better prepared.

To the question what the source of their data was and how easily accessible it was the following responses were received:

- Most of the base demographic data is from the NSD. The NSD has packaged it into a database that has a user friendly interface which enables the user to generate reports, graphs, tables and maps easily. The database, known as the Timor-Leste DevInfo, is free and is updated regularly
- The Timor-Leste GIS Portal is the main source of mapping files (shapefiles). It was developed by a Portuguese University for the Department of Land and Property in 2004**.** Funding for the project has run out and there is no one looking after the content of the portal, hence, it has outdated information.
- Sector specific information is obtained from the lead organizations/government departments in the particular sector, for instance the main source of health information is the Ministry of Health and the World Health Organization, while the Ministry of Education is the main source of education-related information.
- Qualitative information is difficult to come by because people rely on institutional memory. There is no one-stop place where one can find the surveys/assessments/researches done in Timor-Leste and their areas of focus.
- The MSS Information Centre for current humanitarian trends/information.
- Disaster operation Centre for Information on Natural Disasters and monitoring and response of ongoing disasters.

All organizations require an official request in writing for one to access their data. Relationships with the data practitioners play an important role in this instance as this can assist in making the information/data be made available without the necessary paperwork. Fortunately the GIS portal is public domain; anything there can be downloaded easily.

4.4.2 Recommendations

- A list of organization's data and procedures on how it can be accessed and the contact person.
- Lists of surveys/assessments/researches done in Timor-Leste, when they were done and who did them.
- Updating data on the GIS portal.

4.5 Sub-objective 3

This objective is to determine the gaps in the coordination and availability of critical data that is essential during an emergency. The guiding question was whether the respondent's organization followed any international data standards in storing and naming their data.

4.5.1 General responses

- For mapping files, the standards and formats used on the Timor-Leste GIS portal are generally adopted by most users.
- Created own naming conventions.
- Follow Timor-Leste DevInfo standards which are in line with international database standards as the database structure is used by UN country offices worldwide.
- NSD mapping section created codes based on the Ministry of State Administration coding system which is the recognized coding system in the country.

- For place codes and names they used the list generated by OCHA based on the official place name and codes gazetted by the Ministry of State Administration.
- For internal data, most organizations do not employ any data naming or storage standards.
- The issue of standards is most felt when it comes to the names of places and villages. There are different names in use and there are cases where one name is used for different locations. It makes reporting difficult especially in cases where a number of organizations are involved and data needs to be collated.

4.5.2 Recommendations

- Standards for new data collection so that data collected from different sources can be collated/merged easily.
- A place code / gazetteer list for Timor-Leste that is used nationally by mapping/data practitioners so that people use unique codes for a place as opposed to names that have proven not to be unique.

4.6 Improvement of Type and Quality of Data

To the question what could be done to improve the type and quality of data available on Timor-Leste the general responses were as follows:

- Most mapping layers are out of date and there is a need to update them. Most of the topographical maps are based on those done by the Indonesian government in the 1970s**.** A lot of development has happened since then and there has not been an updating exercise of key data.
- A number of organizations/departments collect their own data. There needs to be a mechanism in place to gather all this data and update it accordingly in a manner that will eliminate duplications of data collection and promote collaboration. Thus:

- Standards need to be put in place so that data collected can be merged and quality maintained.
- Users should have easy access to the good quality data and mechanisms should be put in place to update the data with new information.
- Humanitarian community needs to know what is available, what they can access and where.

4.6.1 Recommendations

Data-type recommendations received were the following:

- Mechanisms or systems for data collection collaborations should be put in place. An organization involved in primary data collection needs to know what counterparts also involved in data collection are doing or planning on doing; project monitoring matrix.
- Encourage the government to update their data through the different departments in a systematic manner that will enable data from individual departments to be collated.
- Accompanying data that is shared/collected should have metadata.
- Dissemination of good quality data, so that people do not resort to poor quality data. This also encourages people/organizations to add to the data and improve on its quality.
- Standards on data collection.

4.7 Addressing Data Gaps

To the question on how to address data gaps if there were any the general response received were the following:

- Look around to find out if any organization has it. The first point of call, if it is sector based data, is the lead organization(s) working in the specific sector. For instance, if it is information on education, the first link in the UN will be UNICEF and the MoE in government.

- In the information was not documented and is dependent on institutional memory, the person looking for the information conducts interviews with the relevant organizations.
- There are cases where organizations looked for the information in the wrong areas with a survey or fact finding mission only to find out that the same survey had been done or was currently underway.

4.7.1 Recommendations

- A list of the surveys/ researches/ assessments done and where they can be accessed.
- A technical working group that specifically looks at the overall data / GIS needs of the Timor-Leste community and allows for sharing of ideas and data collection or survey collaborations. It should also look at sharing of resources where possible

4.8 Research Findings

After the interviews, the next step was to analyze the recommendations and come up with conclusions that would aid in getting a picture of the data and information systems available in Timor-Leste, setting a platform that would allow analysis of whether Timor-Leste was data ready. A matrix was used to achieve this goal. All the recommendations from the semi-structured interview were put on a table. The relevant activity required to achieve the recommendation was outlined and the research tool identified, as shown in Table 15. The activity and research tools identified shaped the next stage of the research.

Table 16 Semi-Structured Interview Findings and Action Required

	Recommendation	**Action Required**	**Research Tool**
1	A list of organizations data and procedures on how the data can be accessed and the contact person	Design of matrix that lists down the data that different organizations have and the contact person for any further information regarding the data specifically accessing it. The matrix will be circulated through email and follow-up done by telephone so as to cut on time and travel costs.	Questionnaire
2	A list of surveys / assessments /researches done in Timor-Leste, when they were done,	First find out if such a survey has been done, if not, design and administer a questionnaire through email.	Questionnaire

	Recommendation	Action Required	Research Tool
	who did them and the details on how they could be accessed		
3	Updating data on the GIS portal	Find out the webmaster of the GIS portal and find out the uploading procedures. Advocate for systems that will enable data to be regularly updated. If the webmaster agrees, implement systems where possible	Advocacy - Follow Up Meeting – dissemination ***Table 15 continued***
4	Standards for new data collection so that data collected from different sources can be collated/merged easily	Advocate for international data standards or even localized standards to be followed by the organizations or government departments that embark on data collections.	Advocacy/coordination
5	A place code / gazetteer list for Timor-Leste that is used nationally by mapping/data practitioners so that people use unique codes for a place as opposed to names.	Advocate and implement a national place code list for the country. The coding system should be in line with the prevailing codes used by government departments.	Advocacy through coordination
6	Data collection collaborations - need to know what organizations are doing or planning on doing.	Design and administer a questionnaire that collects information on the different data gathering and GIS activities that organizations and Government are doing. Systems should also be put in place to continuously update the information.	Questionnaire
7	Encourage government to update their data through the different departments in a systematic manner.	Identify the key government ministries/departments that are tasked with updating base data and recommend a system of updating data.	Focus Group
8	Accompanying data that is shared/collected should have metadata.	Advocate for the people who are tasked with data collection in different government departments/ ministries and the international community to follow a set of agreed standards.	Advocacy through coordination
9	Dissemination of good quality data so that people do not resort to poor quality data, this also encourages people/organizations to add to the data and hence improve on its quality.	Advocate for dissemination of information and setup data dissemination systems where possible, or recommend sustainable dissemination mechanisms	Advocacy through coordination
10	Standards on data collection	Promote data collection standards among the technical departments in government and the international community mandated to do so.	Focus Group

	Recommendation	Action Required	Research Tool
11	List of surveys/ researches/ assessments done and where they can be accessed.	Design and administer a questionnaire of data/GIS practitioners in the country.	Questionnaire
12	A technical working group that specifically looks at the overall data / GIS needs of the Timor-Leste community and allows for sharing of ideas and data collection or survey collaborations. It should also look at sharing of resources where possible.	Formation of a group of technical data people in Timor-Leste from Government, INGOs, NGOs, UN.	Focus Group

The main areas that required follow-up (research tools) were broken into three broad areas:

- Coordination, which included advocacy and focus groups
- Questionnaire design and administration
- Information/data dissemination

4.8.1 Coordination

Many of the issues raised by the different organizations evolved around a core group of GIS/data practitioners in the country. Instead of contacting the organizations individually on an *ad-hoc* basis, the researcher saw the need to set up a working group comprised of this core group. The idea was to set up a platform to address any data/information on issues arising. Having the organizations in one forum was also seen as a way of fostering relationships between organizations that in the long run would help in data sharing and also problem solving. The aim of the formation of a focus group: to address research finding 4, 5, 7, 8, 10 and 12

The formation of the Geographic Information Group (GiG) became a necessity. Based on the organizations' activities brief above, an email list of organizations/departments working with GIS and data issues was made and invitations sent out with proposed agenda and draft terms of reference. Follow-up emails were sent just before the meeting day. The proposal of the GiG group was put forth and the group agreed that there was a need of having a group of technical people who work with data on a day

to day basis. The terms of reference were discussed and it was agreed that they be circulated to a wider audience in order to consider most stakeholders' views.

A regular meeting was necessary and the meeting was fixed to once every month chaired by the researcher under an OCHA hat. The composition of the group included government departments/ministries, International NGOs, Local NGOs and UN agencies. The forum was used by the researcher to address the presiding recommendations from the focus group discussions regarding questionnaire design and administration.

4.8.2 Questionnaire design and administration

The aim of the questionnaires was to address research findings 1, 2, 6 and 11. A number of structured questions were raised during the semi-structured interviews that needed to be addressed in a structured manner. Four different questionnaires were used to address the questions. The design and administration of the questionnaires were the same as outlined below; the only difference was the audience the questionnaire addressed and the questions themselves:

a. Questionnaire design process

Based on the recommendations from the semi-structured interviews, draft questionnaires were designed. To make sure that they answered the concerns raised by the respondents of the semi-structured interviews, they were circulated for feedback/inputs from stakeholders and they were also discussed in the GiG group.

Comments and concerns from the stakeholders were incorporated to come up with a second draft of the questionnaire which was circulated to the same group for a final approval and check.

b. Questionnaire administration

The questionnaire was circulated among GiG mailing list to be completed by individual organizations. The researcher was on standby to address any concerns or issues that arose from filling in the questionnaire, through email or face to face meetings.

The questionnaire was sent back to the researcher electronically and it was collated into one matrix.

The collated matrix was circulated back to the stakeholders for their use and also to check if the information they provided was properly reflected

c. Establishment of systems to update data

Any updates on the information provided was sent to the researcher who in turn updated the matrix and circulated it.

The GIS Portal was used as the dissemination tool for all matrices or information of concern to the GiG.

d. Questionnaires administered

- **Survey of surveys (Annex B)**

  This was the main questionnaire as it pointed the researcher to sources of information/data which enabled the extraction of data available in Timor-Leste. Issues of duplication and collaboration were addressed in this questionnaire as well. It sought to find out the type of research/assessments and surveys done in Timor-Leste. From these data collection tools, analysis of data available in an emergency was done. These were used as the basis of comparison with the base list of data required after an emergency generated in the previous chapter. The assessment also looked at existing information systems that can be used to effect a successful humanitarian response. Besides making the available information accessible, it also set a platform to enable new assessments to build on existing assessments.

- **Mapping file inventory (Annex A)**

  This questionnaire sought to map the base mapping files available in Timor-Leste that can be used before and after a disaster. It also identified the contact person for the data if one wanted access to it. In order to make it easier for the GIS community, data that could be freely distributed was collected by the researcher and kept in the OCHA humanitarian information centre for distribution for anyone

who wanted the data in Timor-Leste. It was also posted on the GIS portal, hosted in Portugal, as a backup incase systems in Timor-Leste broke down during a major catastrophe hence allowing access to the data. A third backup was the humanitarian geo-network, a repository of mapping/statistical data for countries around the world that is accessed by the international humanitarian community. This was used because it is a known platform and it used by many humanitarian organizations. It is a first point of call during a disaster for many international organizations.

- **Project monitoring matrix (Annex E)**

  To avoid duplication and foster collaborations between organizations in Timor-Leste, a mapping of what key organizations working with data/GIS were doing was done. The aim was to make known when some data gaps will be filled or when certain data will be updated, with a view of creating the spirit of collaborations. This would also assist in organizations pulling resources together and hence achieve more in less time at the same time using available resources efficiently.

- **Organizations GIS data capacity mapping (Annex F)**

  The aim of this questionnaire was to know what can be done in Timor-Leste in terms of GIS and data products. In emergencies, there are certain tasks or products that are required to effect a targeted response. For instance during the relief phase of an earthquake emergency, it will be useful to know if the country can produce adequate topographical maps for navigation based on the latest released satellite imagery. If that cannot be done, the humanitarian community might be forced to look for expertise outside the country. Knowing the capacity beforehand will help the humanitarian community to make contacts with expertise outside the country before the disaster. Once the country knows its limitations, the different organizations can link up with their regional offices and make them aware of the kind of assistance they would require in the event of an emergency.

4.8.3 Information/Data dissemination

Information or data is useless unless it is made available as and when it is required. When a disaster strikes, humanitarian organizations need to be able to access available data in a timely manner. Putting data in a repository and making it available to a wide audience creates a culture of data sharing and it also makes it easier to update it. This will promote the circulation of good quality data, which will in turn help in improving the quality of data through updates and refinements. The aim of data/information dissemination mechanisms: to address research finding 3 and 9.

Since the Timor-Leste GIS portal already existed, the researcher thought it wise to use it as a platform to distribute data. The existing data on the portal was out dated so the first point of call was to get in touch with the webmasters to reach an agreement on data uploads. An agreement was reached where the researcher was given administrative rights to the portal to enable changes and uploads. The second step was to put systems and procedures in place to enable the upload of data and to make sure that only good quality data saw its way to the portal. Data upload procedures were put in place through the assistance of the GiG.

To enable communication between members of the GiG outside the monthly meeting, a mailing list with contact details of the members was created and updated by the researcher. This was circulated widely and made available to the humanitarian and developmental community in Timor-Leste through the GIS portal for easy contact. The mailing list was also used as a medium of dissemination.

4.9 Research Findings Summary

The results of the assessments were broken down into two categories to address the specific objectives effectively - data available and existing data coordination mechanisms. One important aspect of the research was to ensure that available data is made easily accessible to the humanitarian community. To make this possible, a component of information/data dissemination was incorporated in the research. As a result the researcher received administrative rights from the webmasters of the Timor-Leste GIS Portal established in 2002. The portal became the main dissemination tool for this research. Data and results from assessments relevant to this research were uploaded on the portal.

4.9.1 Data and information systems

This category was broken down further into two mapping files (shapefiles) and the survey of surveys which outlined the data and information systems available in Timor-Leste:

- Mapping files. A list of the mapping files available in Timor-Leste was compiled. The contact persons for the data were identified and their details circulated among the humanitarian community (Appendix A).
- Survey of Surveys. A list of surveys/researches relevant to humanitarian and to a certain extent developmental work was done.

These were used as a basis for looking for data that is required after an emergency. For instance, the health-related surveys or assessments were used to look for data that is required before and after an emergency. Four information systems were identified, the Education Management Information System, Health Management Information Sytem, Timor-Leste DevInfo and the National Database of Community Development and Humanitarian Projects. Appendix B contains the list of surveys/researches/assessments identified.

4.9.2 Coordination

To understand the coordination of data in an emergency, the researcher took the time to look at existing disaster response coordination mechanisms since these are the channels that the data will flow during an emergency. The diagram in Appendix C shows the existing disaster coordination mechanisms in Timor-Leste. The government leads the process with the support from international humanitarian organizations.

The coordination of base data before a crisis was examined. This aspect of the research looked at systems in place that specifically worked for the coordination of data. A gap was identified and the GiG was formed to fill this gap. Appendix D is the terms of reference for the group.

Sector working groups in Timor-Leste provide the technical expertise in a disaster response. The sector groups meet on a regular basis to coordinate their work. This includes the collection and dissemination of data.

The chapter took stock of the data and information systems available in Timor-Leste and the existing coordination mechanisms to manage the data. The data was collected through a series of assessments which sought to address specific issues that would address sub-objectives two and three. Dissemination channels were established and information distributed through them.

CHAPTER 5

5.0 Findings and Analysis of Results

This chapter analyses the results of the assessments and outlines the gaps. It looks at the results of chapter three and compares them against the results of chapter four. By so doing it outlines the datasets that are available during an emergency in Timor-Leste and also identifies datasets that should be available, but are not. It further outlines coordination gaps with regards to emergency base data.

5.1 Methodology

Chapter three successfully identified critical data sets that are required before and after a disaster. Nothing much in terms of data gathering can be done in terms of information required after an emergency, but information required before can be collected and made ready in anticipation of a disaster. In order to find out if Timor-Leste is prepared for an emergency in terms of data, the information required before an emergency was compared with available information in Timor-Leste. Available information was defined as data that is already in a form that can be used in an emergency without any further processing or refining. The availability of the data is based on the datasets that the researcher went through. The researcher went through all the major data sources in the country and also looked at the aspect of data availability. A dataset that is available for an emergency means that it is public domain and it does not need anything more than the normal official request to get it.

5.2 Results

The data readiness was broken down into three: data, coordination and information systems. The data might be available, but if coordination systems are not in place to make sure that data from different data sources is collated and put in a usable format, it will be difficult to access the most up to date data when needed most. Coordination also helps to know who has what type and kind of data. Information systems are very useful in cases where a large amount of data that changes often is used. However, if the systems are not up to date and if they are not accessible to the people who need it the most, then the systems are not working at full capacity.

5.2.1 Data Assessments

Table 17 Summary of Assessments

Sector	Available	Source	Possible Source
GENERAL INFORMATION			
1. Average household size and structure – e.g., polygamous.	YES	Census 2004	
2. Gender roles as related to economic activities and access to services.	NO		ILO
3. Key people to consult or contact in the community.			MoSA
4. The vulnerable people in the population.	YES	WFP	
5. What communication channels are available to the affected community, if the community radio is operating? How many hours does it operate a day?	YES	UNMIT, UNICEF	
6. Ethnic and cultural groups and special languages.	YES	Census 2004	
7. Population structure, demography pre- crisis: broken down to the lowest administrative level; proportion of population by gender, proportion of handicapped or disabled people, total population, under 5, primary school going age 6-11 year, secondary school going age 12-17 year , women 15-49, above 60, disabled.	YES	NSD (Census 2004)	
8. Relations between communities in the country.	NO		
9. Special security risks for women and girls.	NO		UNICEF
10. State of administrative structures.	YES	MoSA	
11. Spread and influence of traditional and religious leaders in the country.			
SHELTER			
1. Committees, credit unions, government agencies, or co-ops that can mobilize forces to help implement a shelter programme.	YES	WWW National Database	
2. Any problems related to land use, such as grazing, cultivating, sanitation and land tenure issues.	YES	DoLP, ALGIS	
3. Types of shelter used in the country segregated by location.	NO		NSD, MoPW
WATER AND SANITATION			
1. Traditional hygiene, excrete and solid waste disposal practices and menstruation practices.	YES	DNSAS	
2. Is there a garbage disposal system in place in the affected areas?	YES	DNSAS	
3. Percentage households with access to safe drinking water.	YES	NSD, WFP (VAM)	UNICEF *Table 17 continued*

Sector	Available	Source	Possible Source
4. Percentage households with access to improved drinking water	YES	NSD, WFP	UNICEF
5. What are the current beliefs and traditions concerning excreta disposal especially regarding women's habits and attitude towards children etc.? What material/water is used for anal cleansing? Is it available?	NO		UNICEF, DNSAS
6. What are the breast feeding practices?	YES	UNICEF	
7. What health promotion media are available / accessible to the affected population? (Radio, posters / leaflets, local folk media and other).	YES	WHO, UNCEF	
NUTRITION			
1. Nutrition surveys conducted.	YES	UNICEF, WHO, OXFAM	
2. Nutritional status of the country segregated to third administrative level.	YES	MoH	
3. Data from mother and child health clinics.	YES	MoH, WHO	
4. Data from existing supplementary or therapeutic feeding centres.	YES	WWW National Database	
5. Information on the nutritional situation of the affected population prior to the current crisis.	YES	MoH	
6. The risk of malnutrition related to poor public health.	NO		MoH, WHO, OXFAM
7. Disease outbreaks which may affect nutritional status, such as measles over the past few years. Is there a risk that these outbreaks will occur?	YES	MoH (HMIS)	
8. Estimated measles vaccination coverage of the affected population.	YES	MoH	
9. What is the estimated Vitamin A supplement coverage? Is there a high prevalence of HIV/AIDS, and are people already vulnerable to malnutrition due to poverty or ill health?	NO		MoH
10. Normal infant feeding practices.	YES	MoH, UNICEF	
11. Nutrition intervention or community-based support already in place before the current disaster, organised by local communities, individuals, NGOs, government , UN agencies, religious organisations. What are the organisations' capacity?	YES	WWW National Database	

Table 17 continued

Sector	Available	Source	Possible Source
HEALTH			
1. Determine the number and locations of health facilities that existed prior to the disaster and their resources and capacity.	YES	MoH/WHO	
2. Determine the number of indigenous health personnel who are available.	NO		
3. Determine the amount and type of medical supplies and drugs that are available on-site or in-country.	YES	MoH, WHO	
4. What types of health problems in the affected areas? Major outbreaks in last 2 years (e.g., cholera, measles, meningitis, bird flu) and number affected.	YES	MoH	
5. Where do people most often seek treatment for illness?	YES	MoH, WHO	
6. Number of primary health care facilities per 10 000 population.	YES	MoH	
7. Percentage of households with access to primary health services.	YES	MoH	
8. Number of secondary health care facilities per 30 000 and number of tertiary facilities per 150,000 population.	YES	MoH	
9. Number of health centres providing post rape care.	YES	MoH	
10. Number of doctors per capita (% male/female) and number of nurses per capita (% male/female).	YES	MoH	
11. Number of births attended by skilled birth attendants.	YES	MoH	
12. Prevalence of HIV (15-49 year olds).			
13. Status of National Health Information System, percentage timeliness and percentage completeness	YES	MoH	
14. What diseases are reported every month (e.g., watery diarrhoea, bloody diarrhoea, measles, polio, meningitis, malaria, yellow fever, ARI, TB).	YES	MoH	
15. Identify pre-existing health problems and priorities in the different parts of the country.	YES	MoH, WHO, UNICEF	
EARLY RECOVERY			
1. Availability and ownership of land for dwellings.	YES	DoLP	
2. Economic activity in the country, predominantly male and female sectors and number of families.	YES	NSD Census	
3. How do different livelihood groups acquire food or income? For an average year in the recent past, what were the sources of food and income?	YES	NSD Census, WFP	*Table 17 continued*

Sector	Available	Source	Possible Source
4. How do different sources of food and income vary between seasons in a normal year?	YES	NSD Census, WFP	
5. Over the past 5 or 10 years, how has food security varied from year to year?	YES	WFP	
6. What kind of assets, savings or other reserves are owned by the different livelihood groups ?	YES	NSD Census, WFP	
7. Over a period of a week or a month, what do household expenditures include, and what proportion is spent on each item?	NO		WFP, ILO
8. Who is responsible for management of cash in the household, and on what is cash spent?	YES		ILO
9. What is the availability and price of essential goods, including food?	NO		WFP
10. What are the average terms of trade between essential sources of income and food, e.g. wages to food, livestock to food, etc.?	YES	WFP	
PROTECTION			
1. Orphans in families as percentage of child population.	NO		NSD, UNICEF
2. Status of national laws protecting particularly vulnerable groups of children.	NO		UNICEF, MSS
3. Pre-existing patterns of gross systematic violations of child rights – children killed/targeted; recruited as child soldiers; victims of sexual violence; abuse and exploitation; landmines	YES	UNFPA	
4. Pre-existing patterns of sexual gender based violence.	YES	UNFPA, UNICEF	
EMERGENCY TELECOMMUNICATIONS			
1. Location of communication system's facilities.	YES	UNMIT, WFP	
2. Determine the broadcast/reception area or zone of influence. Obtain technical information, such as: broadcast power, operating frequencies, call signs, Relay/transmission points, hours of operation, standby power sources, mobile capability, repair/maintenance facilities, including capabilities of manufacturer's local agent, language of transmission.	NO		UNMIT, RTTL
3. Identify the organization/firm that is responsible for operation and maintenance of the system(s).	YES	UNMIT	
4. Identify key personnel (owners, management, operations, and maintenance).	NO		UNMIT
5. Determine the degree of integration of military and civilian communications networks.	NO		UNMIT

Table 17 continued

Sector	Available	Source	Possible Source
6. Determine what communications facilities exist that are operable or easily repaired and could be used to pass on assessment information and assist in coordination of life - saving responses.	NO		UNMIT
7. Identify the type of system assessed: radio, private ownership, commercial, broadcast, two-way, amateur, citizens band, public systems, police, armed forces, Government agencies (which ministries have communications facilities?), telephone, cable and wireless, television, newspaper, other.	NO		UNMIT
8. Identify local/regional suppliers of communications equipment and materials available for repair. Check cost and availability.	NO		UNMIT, WFP
9. Determine the local/regional availability of technical services available for repair.	NO		UNMIT, WFP
10. Describe specific reasons why a system is not operating. Unavailability of: personnel, power, fuel, access to facilities, etc.	NO		UNMIT, WFP
ACCESS/LOGISTICS			
1. Identify agencies, military, and/or civilian forces that are available to make repairs. Do they have equipment, spare parts, and maintenance support?	YES	OCHA	
2. Can local or expatriate construction companies loan equipment and/or expertise?	NO		WFP
3. Regional sources of equipment and/or expertise that is available for repair.	NO		WFP, OCHA
4. Describe the road networks in the affected area by type. What is the load capacity of the bridges?	YES	UNMIT, ADF	
5. Identify the responsible ministries for road maintenance and repair and district offices and constraints on their operations.	YES	MoPW	
6. Physical and ecological characteristics of the country that can affect operations.	YES	NSD	
7. Availability, location and state of port facilities.	YES	NSD	
8. Availability, location and capacity of secure warehouse facilities.	NO		WFP, MoPW
9. Local Transport routes and trends.	NO		
			Table 17 continued

Sector	Available	Source	Possible Source
FOOD AID & SECURITY			
1. Legal impediments to importation of certain foods.	YES		
2. Organisations that provide assistance food aid and food security, distributed products, available inventory.	YES	OCHA	
3. Livelihood and agro-ecological zones, land use, production, major economic activities and response strategies	YES		
4. Income/capita, poverty mapping and % population below poverty line.	NO		NSD, WFP, ILO
5. Seasonal and agricultural calendar.	YES	ALGIS, FAO	
EDUCATION			
1. School enrolment.	YES	MoE	
2. Teacher statistics by type of school, primary, secondary, advanced.	YES	MoE	
3. Alternative facilities where children learn.	YES	MoE	
SHAPEFILES			
1. Political/ Administrative boundaries to at least the forth administrative level.	YES	NSD	
2. Settlements, cities, small towns, villages .	YES	NSD, UNMIT	
3. Type of shelters used across the country.	NO		NSD, NDMD
4. Possible sites for emergency evacuations caused by disasters for each district.	NO		MSS, MoPW, NDMD
5. Drainage network.	YES	NSD	
6. Hydrology (water bodies, major and minor river network).	YES	NSD	
7. Elevation.	YES	DNE,	
8. Health Facilities (hospitals, clinics).	YES	MoH/WHO	
9. Land-use and land-cover.	YES	ALGIS	
10. Livelihood zones.	YES	WFP	
11. Location of broadcast systems and their broadcast receptions areas/zones.	NO		UNMIT
12. Road network (Primary, Secondary, Tertiary).	YES	NSD	
13. Bridges.	YES	UNMIT	
14. Airfields (airports, airstrips, helicopter landing sites).	YES	NSD	
15. Sea ports	YES	NSD	
16. Electricity Coverage.	YES	EDTL	
17. Education Facilities (Primary School, Secondary, High School, Tertiary and higher education).	YES	NSD	

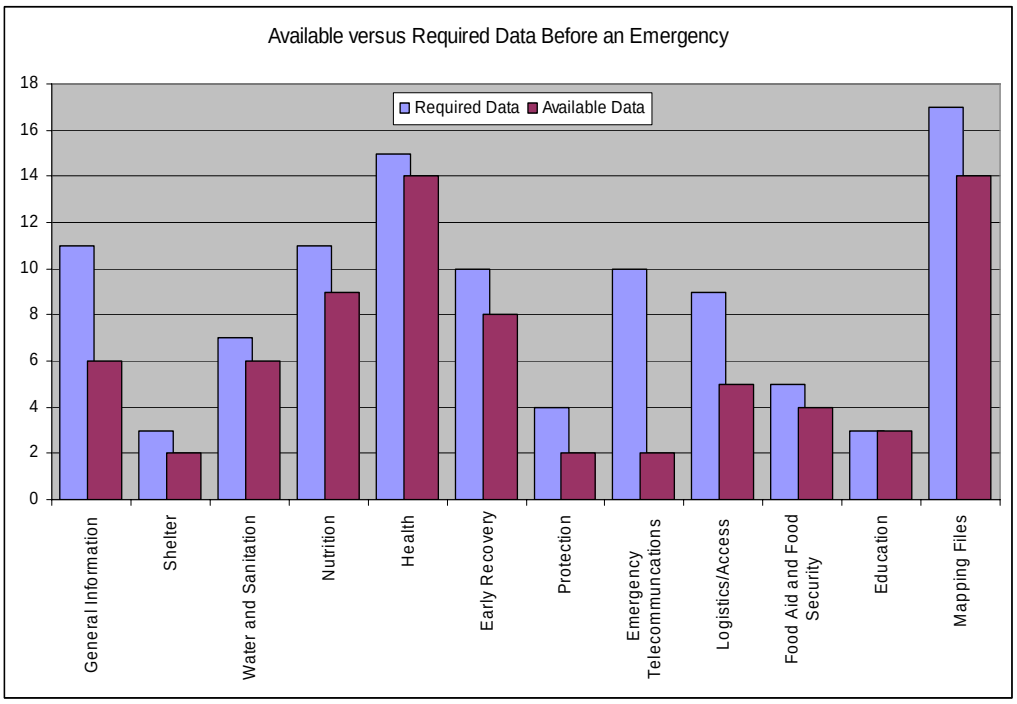

Figure 5.1 Available versus Required Data Before an Emergency

The 12 sectors assessed had a total of 105 datasets that could be collected before a disaster. Of these 71% were readily available and could be used as base data for a disaster. Emergency telecommunications had the least data available with only 20% of the required data readily available. The life saving sectors, however, which were typically humanitarian sectors, that is, shelter, water and sanitation, nutrition, health and food aid had 87% of the required data during an emergency available. This could be attributed to the fact that Timor-Leste has a lot of emergencies happening. the result is that the country has made inroads in making sure the critical humanitarian data is available to help in the planning and response of an emergency.

Base mapping files are often separated and put in their own category in a disaster response situation. The viewing of information in a spatial manner plays an important role that enables the response to be carried out in a timely manner. The base mapping files are 82% complete, are being updated and new data collected through the GiG.

5.3.2 Coordination

The coordination of a response is done in a manner that incorporates all humanitarian organizations in Timor-Leste. The overall guidance and leadership is from the

government through the National Disaster Management Directorate. The international community (NGOs, UN, IOs) is led by UNOCHA, which works closely with the NDMD.

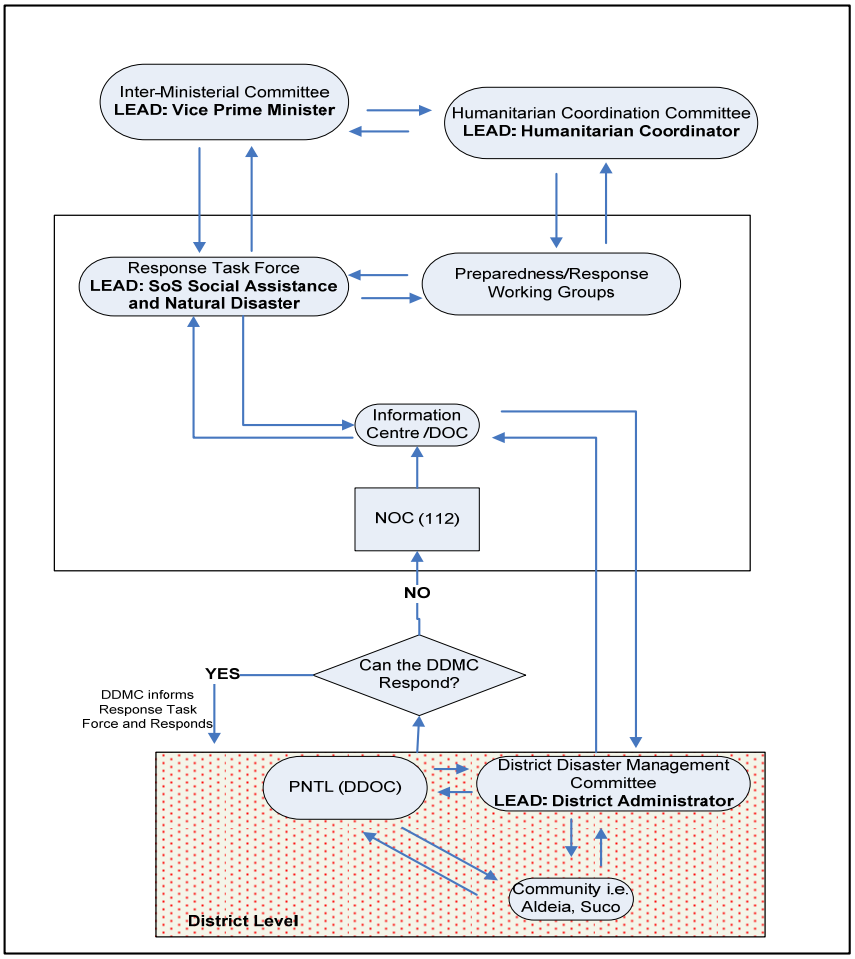

Figure 5.2 Timor-Leste Disaster Response Coordination Mechanisms

The NDMD sees to the day to day affairs of preparedness and mitigation working closely with the relevant ministries. However, much still needs to be done for accountability by the other ministries as they do not seem keen to respond to calls for action by the NDMD. This could partly be blamed on the location of the NDMD. It is a department under the Ministry of Social Solidarity and as such makes it difficult to push other ministries for information or participation as its activities are largely viewed as internal ministerial issues. Once a disaster is classified as a national disaster, the NDMD is elevated to the Vice Prime Minister's office and begins to

report directly to that office. This is good for response work, but work outside the relief and response suffers as the NDMD goes back under the MSS.

The coordination of mapping files is dealt with under the GiG group. Access to the mapping files during an emergency is particularly important and the GiG group has made headway in making sure that the data is accessible through different media. Most of the data does not require any request. It is just a matter of downloading it off the Timor-Leste GIS Portal.

Sector working groups are usually consulted only after an emergency and they focus a lot on humanitarian response. To make them better prepared and equipped, having disaster risk reduction and preparedness incorporated in their programmes, regular meetings with the NDMD could help to ensure that their valuable technical knowledge is used both before and after an emergency.

The work of the NDMD is largely national. The link between the Disaster Operation Centre, operated by the NDMD and authorities in the districts, is not working well. This has a bearing on the data collection. Instead of relying on affected communities to feed information to the system, the burden is put on the national office to send assessors every time there is a problem.

The GiG concentrates heavily on spatial, quantitative information leaving a gap in qualitative data. Taking this on under the GiG might stretch the group, but efforts need to be done to make sure that qualitative information is also considered in a systematic way after a disaster.

5.3.3 Information systems

Four main information systems relevant to emergency information were identified.

- **Health Management Information System (HMIS)**

  This is managed by the Ministry of Health with assistance from organizations in the health sector. One product of the information system which is circulated widely is the Annual Health Statistics report. The information system is updated on a monthly basis from information provided by the health personnel

in the districts. The annual reports data is at district level (second administrative level), which is too sparse. Most emergencies in Timor-Leste are reported at Suco level (fourth administrative level). Access to the information system is not very easy as there are a number of authorizations required, which at times need to come from ministerial level. Not many people know of the information system, making it more of an in-house tool for the Ministry of Health, yet it can be more useful if used by the wider humanitarian community and indeed the developmental community.

- **Education Management Information System (EMIS)**

  Managed and housed by the Ministry of Education, the EMIS has a lot of good data on the education sector dating back 2002 when Timor-Leste gained its independence. EMIS is supported by a number of organisations in the education sector and they have easy access to the data. Access to the information outside the MoE partners is not easy and it requires a number of authorisations. There is a system in place that updates the information. The ministry is underway in modifying the system so that it can generate maps for spatial analysis. Modifications to the system are usually done through consultants who come for a short period of time.

- **Timor-Leste Develop Information (DevInfo)**

  Timor-Leste DevInfo is a platform used by the NSD to disseminate official information on indicators for a wide range of sectors in Timor-Leste. The platform is powered by a MS Access database, making it very easy to distribute and share. Access to the information system is very easy. DevInfo is distributed widely on a CD and anyone can access it through the NSD and UNICEF. It is a very good tool of distributing standardised official indicators making sure that everyone is using the same indicators. Not many people outside the UN who work with data know of the database and its functionalities. A deliberate targeting of such groups would help the humanitarian and developmental community to have access to this resource and can also contribute to its data where possible.

- **National Database of Community Development and Humanitarian Projects**

  The National Database of Community Development and Humanitarian Projects is an information system that details what programmes organisations are doing across the country and where they are doing them. The programmes have been broken down into sectors that were developed through consultation with stakeholders. Some of the sectors are specific to Timor-Leste and in some cases do not conform to any international sector-naming system. This makes it difficult to incorporate the data with other international databases that monitor humanitarian and developmental programmes in countries. The database helps in terms of finding implementing partners or fostering partnerships in a disaster-struck area. The database is maintained by a national NGO and BELUN with assistance from UNOCHA and another local NGO called Alola Foundation. There are no systems in place that enable easy update of the information from the people on the ground. The updates are solely reliant on door to door consultations with implementing partners. This is not sustainable and as soon as the personnel stops asking for information the information ceases to be updated. This could be attributed to the fact that stakeholders have not seen the need to have their information updated. Making regular products, relevant to the stakeholders might change this.

5.3 Conclusion

The results of the assessments were broken into three and analysed, data, coordination and information systems. Of the data required 71% can be collected before an emergency and is readily available in Timor-Leste. This is above 50%, making Timor-Leste data ready. However, the Emergency Telecommunications sector has 20% data readily available making it the only sector below 50%. Other sectors of concern that are just above 50% that need data to be collected and made readily available are General Information, Protection and Logistics access.

Coordination systems that incorporate the government, international and national partners are in place. A disaster management policy has recently been passed by parliament which broadly outlines the ministries responsible for certain aspects of disaster management. This makes it easier for the information and data flow from the

ground to the decision makers. Although the systems are in place, there is still some work that needs to be done to make sure that they work as and when they are required to.

Having key information systems in place and the government taking the lead and ownership of these systems on its own is a big achievement. The systems, however, need to be more accessible to the humanitarian community. This will introduce checks and balances as users validate the information. More products, however, need to come out of the information systems to make them more useful and also as a way of monitoring and evaluating progress on humanitarian programmes.

CHAPTER 6

6.0 Conclusion and Recommendations

6.1 Summary of the Project and its Objectives

The aim of the research was to determine Timor-Leste's emergency data readiness status as a first step in the data preparedness process. Data readiness refers to the availability of critical base data that is required after a disaster, but can be collected before the disaster. The preparedness component looked at the data and emergency coordination and information systems in place that would ensure that after a disaster data would be made easily and readily available to the decision makers and humanitarian community who need it. In so doing, it identified gaps in those areas.

6.2 Summary of Methodology and Results

Semi-structured interviews generated from the specific objectives have been used to collect information that gives a picture of the prevailing data and information management culture in Timor-Leste. International and national organizations assessment forms have been used to draw up a list of critical base data required after an emergency to effect a targeted timely response. The list is broken down into data that can be collected before a disaster and data that only be collected after a disaster. The results of the semi-structured interviews shaped the questionnaire designs that generate a list of the data and information systems available in Timor-Leste that can be used before and after a disaster. The two lists of data that can be collected before and after a disaster have been compared. From that a conclusion has been reached of whether Timor-Leste's is data prepared for an emergency.

6.3 Conclusion

Timor-Leste is data ready. 71% percent of the critical data that is required after an emergency which can be collected before an emergency is readily available. Coordination systems are in place that enable successful assessment and response after an emergency, led by the government and supported by national and international humanitarian organizations. Humanitarian work in the country is

segregated by sectors which have the participation of key government ministries and key organizations with expertise in the particular sectors. This helps in the coordination of assessments and response.

At the same time, there is room to improve the data readiness. Gaps in the data can be filled. In cases where the data is not available, there might be a need to carry out assessments through the existing coordination mechanism i.e. sector working groups, and the disaster management coordination structures. In cases where data exists but difficult to access, systems need to be put in place that will enable the easy access to the data. If the data is deemed sensitive and not for a wide audience, procedures need to be put in place to enable those who are allowed to access it to do so in a timely manner.

6.4 Recommendations

- The gaps in data that were identified need to be filled. A systematic way of doing this using existing coordination structures would ensure that all relevant stakeholders are consulted.
- Coordination structures at district level need to be strengthened to enable data collection before and after. There is a huge reliance on national level to gather information before and after an emergency. The NDMD mandated to do this does not have the resources to carry it out. Decentralizing the DOC, run by the NDMD will take the load off the national DOC, at the same time equipping the communities at district level to do their own assessments and data gathering.
- NDMD should have a data repository of key data that can be collected before an emergency and is needed after an emergency. The data identified in this research is spread among different sources. Some of the data is static while other is dynamic. The static data like the demographic data from the census can be collected and put in a repository under the NDMD, effectively making it easily accessible to stakeholders involved in disaster management. Copies of information systems from the different ministries for instance can be kept in the DOC and updated regularly by the ministries mandated to do so. Where dynamic data is required, official agreements and links should be made

beforehand so that when a disaster strikes, data is released to the NDMD by the custodians of the data.

- Access to data from information systems should be improved. Ministries and government departments in charge of information systems should be enlightened on the importance of sharing their information freely and easily. Relevant and regular products should also be produced by these systems so that stakeholders can benefit fully from the systems and base their decisions on up-to-date data.

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8.0 ANNEXURES

Annex A: Timor-Leste Mapping File Inventory

THEME	LAYER	FILE SOURCE	LAST UPDATE	DISTRIBUTION RESTRICTIONS	CONTACT PERSON
Administrative Boundaries	National	Census Office		NO	Cesar (NSD)
	Region	Census Office		NO	Cesar (NSD)
	District	Census Office		NO	Cesar (NSD)
	Sub-district	Census Office		NO	Cesar (NSD)
	Suco	Census Office		NO	Cesar (NSD)
Settlements	Villages	ADF		NO	
	Census 2002 House Holds	Census Office		NO	Cesar (NSD)
	Major Settlement/Town	Census Office		NO	Cesar (NSD)
	Minor Settlement/Town	Census Office		NO	Cesar (NSD)
	District Capitals	MoSA		NO	Tinago (OCHA)
	Subdistrict Capitals	MoSA		NO	Tinago (OCHA)
Transportation	Dili Road / Streets	Gertil / JICA		NO	Tinago (OCHA)
	Main Roads	Gertil		NO	Tinago (OCHA)
	Minor road	Gertil		NO	Tinago (OCHA)
	Tracks	Gertil		NO	Tinago (OCHA)
	Helicopter Landing Zones	UNMIT GIS		YES	Regis(UNMIT)
	Airports/strips	OCHA		NO	Tinago (OCHA)
	Seaports	OCHA			Tinago (OCHA)
Hydrology	Water Bodies	GIS Portal		NO	Administrator (Tinago)
	Riverbeds (polygons)	GIS Portal		NO	Administrator (Tinago)
	Rivers (arc)	GIS Portal		NO	Administrator (Tinago)
Terrain	100m contours	ADF		NO	Tinago (OCHA)
Landmarks	Dili landmarks	ADF		NO	Tinago (OCHA)
Education	Advanced Education	GIS Portal	2002	NO	Administrator (Tinago)
	Secondary Schools	GIS Portal	2002	NO	Administrator (Tinago)
	Pre-Secondary Schools	GIS Portal	2002	NO	Administrator (Tinago)
	Primary Schools	GIS Portal	2002	NO	Administrator (Tinago)
	Pre-School	GIS Portal	2002	NO	Administrator (Tinago)
Health	Hospital	WHO		NO	John (WHO)
	Community Health Centres	WHO		NO	John (WHO)
	Health Posts	WHO		NO	John (WHO)
	Mobile Clinics	WHO		NO	John (WHO)
Security	UNPol/PNTL HQ	UNMIT GIS		YES	Regis(UNMIT)
	UNPol/PNTL Station	UNMIT GIS		YES	Regis(UNMIT)
	UNPol/PNTL Post	UNMIT GIS		YES	Regis(UNMIT)
IDPs	Dili IDP Camp Locations	OCHA	Oct-07	NO	Tinago (OCHA)
Images	SRTM (90*90)	OCHA		NO	Tinago (OCHA)
	30K Topo sheets			NO	Tinago (OCHA)
	Dili Quickbird Images	ADF		YES	
Utilities	EDTL Electricity Coverage	OCHA	Nov-06	NO	Tinago (OCHA)

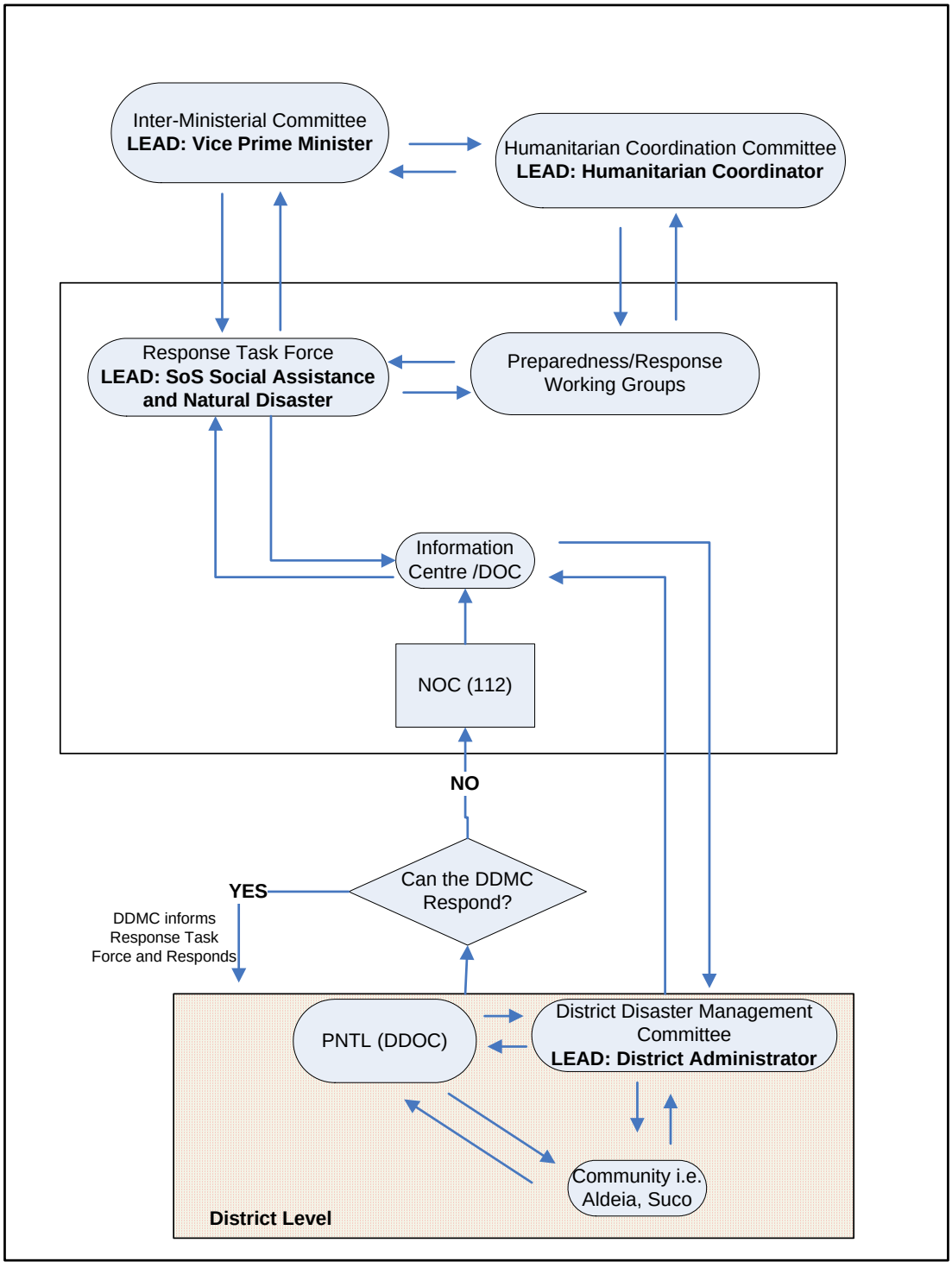
Annex B: Timor-Leste Survey of Surveys

Source	Title	Year	Comments
NSD	Survey of Living Standards	2001	
NSD SSTL / UNDP	Survey of Sucos	2001	
NSD MICS / UNICEF	Multiple Indicator Cluster Survey	2002	
NSD Demographic Health Survey / MoH	Timor Leste Demographic and Health Survey	2003	
MoH/WHO	Health Facilities Survey	2003	
NSD	Timor Leste Census of Population	2004	
NSD	Timor Leste Overseas Trade Statistics	2005	
SSYS/UNICEF	National Youth Survey	2005/06	
WHO/UNICEF	Review of National Immunization Coverage	2006	
NSD	Promoting Balanced Development and Poverty Reduction	2006	
NSD	National Accounts of Timor Leste	2006	
MoH	Health Management Information System	2006	Monthly reporting from grassroots to MoH; MoH releases annual report
MoEC	Education Management Information System	2006	Updated Regularly - Currently Primary Schools
WFP	Comprehensive Food Security and Vulnerability Analysis	2005/2006	
WFP	Emergency Food Security Assessment	2006	
MoEC	Teacher and Student Demography in Dili Camps	2006	
MoEC	Infrastructure Survey	2006	
MoH/UNICEF	Assessment of Malnourished Children in IDP Camps in Dili	2006	
UN/NGOs	Inter Agency Rapid Joint Assessment	2006	
Ministry of Agriculture/Seeds of Life	National Agriculture, Forestry and Fisheries Inventory and Production Survey	June, 2006	
World Vision	Food Security and Malnutrition Assessment	August, 2006	Dili, Aleiu, Baucau, Bobonaro
	Maternity & Child Health Services Survey	July, 2006	excluding Dili and Oecusse
OCHA	Timor-Leste Crisis 2006 Flash Appeal	June,2006	
FAO	Locusts Search Survey	March, 2007	
FAO/WFP	Crop and Food Supply Assessment Mission	2007	
OCHA	Timor-Leste CAP	January, 2007	
OCHA	Timor-Leste CAP Mid-Year Review	2007	
UNDP	Urgent Damage Assesment (of Houses destroyed during the March Crisis)	2006/07	
NSD	Survey of Living Standards	2006/07	Field data collection completed in Nov.07 Preliminary Report out
Water & Sanitation Working Group	Water Sanitation and Drainage Assessment of Dili Camps	October, 2006	
Water & Sanitation Working Group	WatSan Needs Assessment; Recommendations for Prioritising Camp Closure in Dili	April, 2007	
WFP	Emergency Food Security Assessment - Dili	Spetember, 07	
UNICEF/University of Essex	Vulnerable Persons Unit (VPU) Assessment Report	October, 2007	

NSD	National Statistics Directorate
MoH	Ministry of Health
MoEC	Ministry of Education and Culture
SSYS	Secretariat of State for Youth and Sport

Annex C: Timor-Leste Disaster Management Coordination Structures

Disaster Management Coordination Structure



Source: National Disaster Management Directorate, Timor-Leste

Terms of Reference

Geographic Information Group

Information sharing on GIS activities,

- Through regular meetings and shared communications to provide a forum for the exchange of information on upcoming studies, database tools, remote sensing analysis and any activity relevant
- The GIG will encourage agencies to share which data is available, their experience on how data was processed, analyzed and disseminated and exchange their data and/or final products.
- The GIG will provide summary information on which data are being held and by whom. The GIG will not seek to centralize data but would rather be a source of 'information on information', which can help directing interested parties to the agency where specific data are held.

Agreement on spatial data standards,

- The GIG seeks a common understanding on Place Codes, projections, and basic geographic layers such as administrative boundaries and road networks is used in Timor-Leste so as to facilitate easy exchange of data between participating organisations.

Coordination of GIS activities,

- To define clearly the roles and responsibilities in the event of a major disaster, this includes data collection, data sharing, data process and diffusion.
- Collaborations in data/information gathering exercises

Platform of technical support

- Skill exchange in GIS and databases
- Resource sharing
- Training in GIS related activities (GPS, Databases, Remote Sensing etc)

Participants: Organizations/departments from the government, donor, NGO and INGO community running activities related to geographic/ spatial information.

The meeting is chaired by OCHA.

Annex E: GiG Organization Project Monitoring Matrix

Organization	Project			Status		Expected completion date / Remarks	Contact person
	Name	Scale/Area (District/Sub-district)	Planned (P)	Ongoing (O)	Completed (C)		
Office for the Coordination of Humanitarian Affairs (OCHA)	Who is Doing What Where database (3Ws)	National		O	50%	1st Product out mid. March	Tinago (732 2520) Adelina (732 1274)
	District Atlas	National		O	80%	End of February	
	Dili Camp Atlas	Dili		O	50%	End of March	
	Hazard Mapping	National		O		End of March	
National Statistics Directorate (NSD) and UNFPA	NSD & UNFPA Census Atlas				C		Cesar (725 3146) Alipio (723 8368)
	District Priority table map			O			
	Suco table map			O			
	Aldeia table map		P			Pilot End of May	
UNMIT GIS	Administrative Boundaries Mapping				C		Chief GIS Ext 5773, Mobile; 731 3069
	Election Mapping				C		
	UNPOL Locations Maps				C		
	Residential Security Mapping for UN staff			O			
	MSR & SSR	1:300K			100%		
	Zone Warden	Various Scale (Dili)		O		On going up dates	
	Road & Bridges Maps	All Districts			10%	On going, Weather Dependent	
	Town Plans	All Dist Capitals		O	10%	On going, Weather Dependent	
	Road Atlas	Dili	P		0%	End of February	
	1:500K Road Map	East & West Timor		O	50%	End of January	
	Nautical Map	East & West Timor	P		0%	Waiting to purchase Data	
UNWFP	Food Security Atlas	National		O		Dec-08	Flavia (732 0857) Elisinha (726 6819)
World Health Organization (WHO)	Community Health Facilities	Subdistrict			C	Need update	John (723 1092 / 731 4550) joao.whodili@searo.who.int, ariorodack79@gmail.com
	Hospitals	Districts			C		
	Health Posts	Subdistrict		O		08-Apr-08	
	Mobile Clinics	Subdistrict		O		08-Apr-08	
	Clinics	Districts		O		08-Apr-08	
	Apotecs	National	P				
ALGIS/MAF							
USAID/DNTP							
NMD							
BELUN							
CARE							

Annex F: GIS / Database Capacity Mapping – Timor-Leste

Organisation GIS/Database Capacity Mapping

ORGANISATION	**EQUIPMENT** *(Main GIS Equipment i.e. Printers, GPS, Scanners, Laminating Machines)*	**NO**	**SOFTWARE** *(GIS, Database, Cartography)*	**HUMAN RESOURCES** *(No. of People Dedicated to GIS, database)*
Office for the Coordination of Humanitarian Affairs (OCHA)	HP 5550dn Color Laser Printer Garmin Etrex GPS Handheld	1 2	ArcGIS 9.1 ArcView 3.2 Didger 3, Surfer 8 Adobe Photoshop CS Google Earth Pro	1 * International 1 * Local Staff
National Statistics Directorate (NSD) and UNFPA.	1* Hp Colour laser jet 5500nd 1* Plotter design 500 400* GPS Garmin etrex .		ArcGIS 9 (ArgMap version 9.1), ArcView 3.2 and 3.3 Adobe Photoshop cs2, Adobe Illustrator cs, CorelDraw 12, ECW JPEG 2000 compressor 7.0, DNR Garmin	2* Local staff (currently)
UNMIT GIS	GIS Data server HP xw6200 Workstations HP 800 PS 42 Inches Plotter HP 5500 42 Inches Plotter HP 5550 dtn A3 size double sided printer. HP 42 Inches Scanner. 42 Inches Laminator A3 size Laminator Sporack GPS Garmin GPS	1 6 1 1 1 1 1 1 3 1	ArcGIS 9.2, ArcGIS 9.1 ERDAS Imagine 8.7 Adobe Creative Suite ArcPad 7.0.3 Map Info Map Publisher	1 x Chief GIS (P3) 1 x International (FS) 3 x UNVs 2 x Local Staff
UNWFP			ArcGIS 9.2	2* Local Staff
World Health Organization (WHO)	HP Color inkjet printer cp1700 GPS Garmin 12XL handled GPS Garmin Etrex handled Laminating Machine A3 Size		ArcGIS 8.0 ArcGIS 9.1 ArcView 3.2 Adobe Photoshop cs2 & cs3 Illustrator cs InDesign cs DNR Garmin Adobe Acrobat 7.0	1* Local staff (currently)
ALGIS/MAF				
USAID/DNTP				
NMD				
BELUN				
CARE				

Geographic Information Group – Timor-Leste, 19 February 2008

Annex G: Geographic Information Group Contact List

Geographic Information Group Contacts List

NAME	ORGANISATION/ MINISTRY	PHONE
Adelina Maria LOPES	OCHA	732-1274
Alipio MONIZ	UNFPA/DNE	7238368
Cesar MARTINS	UNFPA/DNE	
Domingos SOARES MOOK	GoTL	
Elisinha NUNES	WFP	7266819
Flavia da SILVA	WFP	732-0857
Generoso do Jose Nunes SALSINHA	MSS	729-7597
Iraj de SILVA	CARE	728-1517
Jaime DIA FERNANDES	GoTL	
Joana LIMA	UNDP	734-4950
Joao DA COSTA	UNICEF	
Kevin AUSTIN	UNDP/NDMD	733-6612
Lorenco Cosme XAVIER	NDMD	729-1465
Mariano da Costa CAMOÉS	MSS	729-8848
Regis BOURGAULT	UNMIT	731-3069
Rodrigues MANDONCA	GoTL	
Rogerio DA COSTA FREITAS	GoTL	
Romaldo CAETANO	BELUN	724-3305
Sara RIBEIRO	USAID/Land & Property	724-2708
Shazia NOREEN	UNMIT	734-0773
Siping WANG	UNICEF	723-1098
Tinago CHIKOTO	OCHA	732-2520
Wine LANGERAAR	WFP	7369810

Annex H: List of Sectors Used in Research

Final List of Sectors Used in the Research

1. General Information
2. Shelter
3. Water sanitation and hygiene
4. Nutrition
5. Health
6. Early Recovery
7. Protection
8. Emergency Telecommunications
9. Access & Logistics
10. Education
11. Food Aid & Food Security
12. Mapping files