Preparedness of South African non-governmental organization relief teams for international earthquake response: A case study of the 2010 Haiti earthquake response.

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Declaration of originality

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.

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Abstract

Background

Earthquakes are the most frequently occurring natural disaster around the world and it is associated with a large outpouring of humanitarian assistance from the world. Existing models for humanitarian non-governmental organizations (NGO) focus on a variety of preparation and response decisions for aid distribution, but tend not to discuss medical rescue teams responding to international disasters and where they would fit into.

Aim

The aim of this study was to explore the preparedness of South African Non-Governmental Organisation relief teams for international earthquake response. The ultimate aim was to develop a framework for SA NGO teams responding to international earthquake disasters.

Methods

This qualitative study made use of a range of data collection tools including documentary sources and interviews, so that it could illuminate the study from all sides and to ensure all relevant data from people and organisations that span the globe could be collected.

Conclusion and recommendations

The result of the study was a conceptual map of the study recommendations which can be used in the development of a framework for improving South African NGO relief teams' response efficiency and effectiveness to international earthquake disasters. The research concludes with a series of recommendations which include: assigning the teams under a leading international academic and operational body and to identify qualified, well prepared and professional personnel on a database for rapid deployment.

Dedication

This study is dedicated to my incredible Fiancé for his loving support and encouragement throughout my dissertation. He has been a source of inspiration and motivation. Without his endless support and understanding, it would not have been possible for me to complete this study.

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Glossary of Terms

Advanced Life Support: A level of medical care provided by pre-hospital emergency medical services. Advanced life support involves invasive life-saving procedures including the placement of advanced airway adjuncts, intravenous infusions, manual defibrillation, 12 lead electrocardiogram interpretations and other advanced skills.

Basic Life Support: A level of medical care provided by pre-hospital emergency medical services. Basic life support involves critical non-invasive life-saving procedures including Cardio-pulmonary Resuscitation, bleeding control, splinting broken bones, artificial ventilation, and basic airway management.

Building codes: ordinances and regulations controlling the design, construction, materials, alteration and occupancy of any structure, for the protection of public health, safety, and welfare. Building codes include technical standards for electrical, heating, plumbing and sanitary work.

Capabilities: competencies or human abilities of a personal, institutional, managerial or empirical nature that can reduce a designated population, structures, or a physical environment to severe loss or damage from the effects of a hazards or combination of hazards.

Disaster: A sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources.

Disaster management: The aggregate of all measures taken to reduce the likelihood of damage that is related to a disaster such as an earthquake. It is also in place to minimize the damage once an earthquake, flood or tsunami is occurring or has occurred and to direct recovery from the damage. Disaster management is also a body of policy and administrative decisions and operational activities that pertain to the various stages of a disaster at all levels.

Disaster preparedness: The aggregate of all measures and policies taken by humans before the event for reduction of the damage that otherwise would have resulted from the event, and coping with the damage sustained. In the context of this study, it relates to the on-going preparation needed to maintain team capability.

Guidelines: principle or criterion guiding action; a general rule, principle, or piece of advice. A statement or other indication of policy or procedure by which to determine a course of action.

INSARAG (**International Search and Rescue Advisory Group):** A group of functional Urban Search and Rescue (USAR) specialists formed for the purpose of advising the United Nation on the development of standards and guidelines that should be adopted and used by all international USAR Teams.

Mitigation: aims to reduce the risk through preventive actions such as research and development and inter agency relationship building. In the context of a relief team response within this research, it is the research and development phase which is linked to the preparedness phase of a disaster cycle.

NGO (Non-governmental organisation): A group not funded by governments and may include private sector sponsorships.

OCHA (Office for the Coordination of Humanitarian Affairs): Is the focal point in the UN system for disaster relief coordination.

OSOCC (On-Site Operations Coordination Centre): Coordinating group set up near a disaster and composed of staff from affected country, local officials, personnel from assisting country, and OCHA. It provides coordination of international resources in cooperation with the LEMA of the affected country.

Planning: the process used to develop contingencies in preparation for an event that is likely to occur at some time. Planning includes warning systems, evacuation, relocation of dwellings (e.g., for floods), stores of food and water, temporary shelter, energy, management strategies, disaster drills and exercises. Contingency plans and responses are included in the preparedness in the Interventions, Effects, Outcomes, Benefits, and Costs sense used in this document.

Preparedness: the aggregate of all measures and policies taken by humans before the event; to be prepared for the event. It is a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response.

Recovery: This means that a country or persons return to the state they had been before they were temporarily reduced. For disasters this means bringing all of the societal components back to their pre-event functional status (level of function). For relief teams this means returning back to normal daily life as it was before response.

Relief: Responders efforts directed towards people who were suffering to alleviate pain, distress or suffering.

Response: answer to a defined need or a request for assistance.

Responders: Medical rescue personnel that mobilise to a disaster situation.

Shore/Shoring: is normally the temporary support of structures during construction, demolition, reconstruction, etc. in order to provide the stability that will protect property as well as workers and the public.

Vulnerability: the susceptibility of the population and environment to the nature of an event; the susceptibility of an individual or population to injury or contagion; the degree of possible/potential loss to a given element at risk resulting from a given hazard at a given intensity.

UN (United Nations): International organisation formed to promote international peace, security and cooperation under the terms of the UN Charter.

UNDAC (United Nations Disaster Assessment and Coordination Team): An OCHA team designed for rapid assessment and onsite coordination missions following a sudden onset disaster.

Urban Search and Rescue (USAR): involves the location, extrication, and initial medical stabilization of victims trapped in confined spaces due to natural disasters, structural collapse, transportation accidents, mines and collapsed trenches.

Abbreviations

ALS	: Advanced Life Support
BLS	: Basic Life Support
BoO	: Base of Operations
DMAT	: Disaster Medical Assistance Teams
FEMA	: Federal Emergency Management Agency
GA	: General Assembly
IDRL	: International Disaster Response Law
IEC INSARAG	: International External Classification Guidelines
IFRC	: International Federation of the Red Cross and Red Crescent Societies
INGO	: International Non-Governmental Organisation
INSARAG	: International Search and Rescue Advisory Group
LEMA	: Local Emergency Management Authority
NFPA	: National Fire Protection Association
NGO	: Non-Governmental Organisation
NIMS	: National Incident Management System
NRF	: National Response Framework
OCHA	: Office for the Coordination of Humanitarian Affairs
OSOCC	: On-Site Operational Coordination Centre
PTSD	: Post-traumatic stress disorder/s
PPE	: Personal Protective Equipment
RDC	: Reception Departure Centre
SOP	: Standard Operating Procedure
UN	: United Nations
UNDAC	: United Nations Disaster Assessment and Coordination
UNOCHA	: United Nations Office for the Coordination of Humanitarian Affairs
USAR	: Urban Search and Rescue

CHAPTER ONE

CONTEXTUALIZING THE STUDY

1.1 Introduction and background to the study

This chapter serves to equip the reader with the necessary information for understanding the context within which this research study is set. This chapter focuses on an overview of the research problem within the pre-hospital context resulting in the formulation of the research question. The research questions are followed by the rationale for the study. This chapter concludes with clarification of the assumptions and limitations of the study.

This first chapter discusses the emerging consensus among disaster responders with multi- and inter-disciplinary approaches to disasters and emergency management. It explains why this study is necessary and highlights the benefits of moving beyond explanations originating from single or separate fields of study.

To respond to major disasters, relief teams must be able to gather information and resources from various and unexpected sources. Information is a prime necessity in disaster situations, as it is the essential first step to the process of making decisions about emergency response. Ironically, disasters are characterised by concurrent information overload and shortage (Auf der Heide, 1989). The information that is important and that must be known, such as what has happened, where, when and with what degree of seriousness, is often vague and obscure in the early stages of a disaster. Instead, it is usual to receive a mass of conflicting, inaccurate and contradictory information that must be painstakingly verified and classified (Auf der Heide, 1989).

Over the days and weeks following a disaster event, disaster responders must be able to efficiently use the information and resources in the disaster response effort. Neither of these processes is easy, especially in the chaos of a disaster. Valid information is critical to aid decision making and resource prioritising within the disaster situation. Information is acknowledged as needing a wider more open distribution in a disaster situation (REDLAC, 2006). Communication issues, both technical and organisational, are important considerations in coordinating an international response (Auf der Heide, 1989). The situation for international relief responders in the initial phase of an earthquake is stressful and is generated by fragmented and poor information as well as limited available time to provide effective rescue .

Earthquakes are not a new phenomenon and are different from other environmental disasters as they always have unique problems with unknown components and consequences (Noji et al, 2006). The knowledge of what problems can occur after an earthquake is comprehensive, although there still could be controversial reports. Most experienced responders know that information in the initial phase is often insufficient and incorrect and that most lives can be saved within the first few days after the disaster. They also know what secondary problems usually appear after a serious earthquake, for example lack of clean water, lack of electricity and communication problems.

Earthquakes are the most frequently occurring natural disaster around the world and are associated with a large outpouring of humanitarian assistance from the world (Noji et al., 2006). Existing models for humanitarian non-governmental organizations (NGOs) focus on a variety of preparation and response guidelines, but tend not to discuss medical rescue teams responding to international emergencies to perform search and rescue duties.

Data from the International Federation of Red Cross and Red Crescent Societies (IFRC) and the Centre for Research on the Epidemiology of Disasters (CRED), show a significant increase in frequency of recorded disasters over the last 50 years, with almost two billion people affected by disasters in the past 10 years (Campbell, 2005). During the last two decades, several humanitarian emergencies have occurred, with earthquakes being the most frequently occurring natural disaster around the world. It has also been noted that earthquakes are the largest cause of natural disaster mortality accounting for 29% of natural disaster related death in the last 30 years and 58% of fatalities in the last decade (Centre for Research on the Epidemiology of Disasters, 2010). Structural collapse is most often the cause of victims being trapped. It is considered a "multi-hazard" discipline, as it may be needed for a variety of emergencies or disasters, including earthquakes, hurricanes, typhoons, storms and tornadoes, floods, dam failures, technological accidents, terrorist activities, and hazardous materials incidents (FEMA, 2010).

Depending on what the relief team capability is and when they respond in the time-line of an earthquake disaster, will verify what qualifications are needed. In the first phase of response, USAR teams are required for the structural collapse and extrication of victims; therefore, a structural collapse technician course certificate is required. If you are responding in the follow-up phases, a more medical qualification is needed. These medical qualifications can start from a first responder qualification right up to sending medical specialists and nurses.

This highlights the importance of effective relief efforts by relief teams, especially in the light of many previous disaster responses having been inefficient and ineffective (McCoy, 2008). Humanitarian agencies sending over relief teams to international disasters typically play a key role in disaster response (e.g. procuring and distributing relief items to an affected population, assisting with evacuation, providing healthcare, assisting in the

development of field hospitals and most recently, providing Urban Search and Rescue teams). Their efficiency is critical for a successful disaster response.

1.1.1 Context of this study

On the 14th of January 2010, a South African (SA) NGO decided to send four relief teams to earthquake affected Haiti to provide assistance as part of an international relief effort. The teams varied in capabilities and were deployed in a staged response, arriving two days apart with a two day overlap before departure. The first team was a dedicated USAR team, the second team had rescue and medical personnel, and the third and fourth teams were mainly medical personnel. The healthcare component included professional nurses, medical practitioners, specialist emergency physicians and an assortment of other specialists and registrars.

The researcher was part of the second rescue team that went to Haiti to perform USAR. The data was collected through focus group interviews on return into the country after the disaster.

The results of the study revealed that all travel arrangements for the response were co-ordinated by the NGO, putting the first team on the ground at 96 hours and the second team on the ground at 220 hours after the initial earthquake. This is in complete contrast to INSARAG's (2011a) recommendation that recommended that International medium USAR teams travelling to an affected country should be operational in the affected country within 32 hours.

1.2 Problem Statement

Although disaster and emergency response guidelines are well established by the International Search and Rescue Advisory Group (INSARAG, 2011a) and the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), there are no clear guidelines for NGO medical rescue teams responding to disasters like earthquakes. Nevertheless, there are several NGOs in South Africa that participate in international relief work. Very little or no research has been done to examine problems and challenges that previous SA NGO teams faced when responding to international disasters. Understanding and acting on the lessons learned are essential to optimize all working guidelines and frameworks, and as such, develop a common frame of reference for framework development and implementation. Hence, the case study approach was selected as the most appropriate approach for a study aimed at developing a conceptual framework for preparation for SA NGO teams responding to international earthquakes.

SA NGO teams fall short on systematic processes which would guide them in the preparedness and response to an international earthquake disaster. This leads to problems and challenges for these teams as there is no structured system to ensure they are adequately prepared. Without structured and objective evaluations of the responses and measures taken to prevent or mitigate the effects of events in disasters, it is not possible to learn from experiences (Noji, 2005). Understanding and acting on the lessons learned are essential to optimize all working guidelines and frameworks. But, in general, successful, efficient, effective, and beneficial indicators or measures have not been codified and applied to subsequent responses. Important information is lost, errors and inefficiencies are perpetuated, and, in many settings, vulnerability in international relief responses continues to increase (Noji, 2005).

Opportunities to enhance the logistics of humanitarian response include the adaptation of models developed for general disaster response by the United Nations (UN) and INSARAG. The use of existing models, techniques, and insights from the literature will aid in finding implementable, realistic frameworks that support the logistics of humanitarian relief teams in an International Earthquake disaster. According to McCoy (2008) this will improve the preparation for, and the response to, disasters, which in turn will save lives (McCoy, 2008).

Case study research strategy, with multiple case study designs, was used in this study. Multiple cases were identified so as to obtain data from different sources of evidence. Yin (2009) argues that using multiple sources of evidence strengthens case study findings, as findings become more convincing and accurate if based on several different sources of information.

1.3 Aim of this study

The aim of this study was to explore the preparedness of South African Non-Governmental Organisation relief teams for international earthquake response. The ultimate aim was to develop a framework for SA NGO teams responding to international earthquake disasters.

1.4 Research Questions

1.4.1 Primary Research question

How can SA NGO relief teams improve their response to an international earthquake disaster?

1.4.2 Research sub-questions

To answer the primary question, the following secondary research questions will be asked:

1. Are South African NGO teams adequately prepared for a rapid response to an international earthquake disaster?
2. Do South African NGO teams have the human and logistical capabilities to be effective in an international earthquake response?
3. Are South African NGOs compliant with International Search and Rescue Advisory Group guidelines?

1.5 Significance of this study

Existing models for humanitarian NGOs analyse a variety of preparation and response decisions but do not discuss medical rescue teams responding to international disasters to perform rescue duties. NGOs such as Catholic Relief Services (CRS) and International Red Cross (IRC) have their own organization guidelines for preparedness and response but follow the holistic guidelines from The Sphere Project Handbook (The Sphere Project, 2011). This project contributes significantly to humanitarian relief work by setting standards for response and preparedness. Humanitarian relief teams concentrate on relief efforts such as supply distribution, shelter, water, food relief and general well-being of communities affected by disasters.

International disaster and emergency response guidelines were established in 1991, as a result of initiatives started by some of the international USAR teams who operated at the 1988 Armenian earthquake that killed twenty five thousand people (INSARAG, 2011a). These guidelines have been collectively prepared by USAR responders around the world and they aim to guide international USAR teams. These guidelines are, however, not an authoritative instruction for international USAR operations for countries aiming to establish USAR capacity unless they are a registered United Nations (UN) team. These guidelines have been instrumental in ensuring that

international UN registered teams are adequately prepared and are self-sufficient so as not to become a burden on the affected country (INSARAG, 2011a).

Until recently, little attempt has been made to map and analyse the compatibility and application of the many international disaster management laws and rules in different organizations during earthquake disaster operations. Making sense of the various rules applicable to different parties and organizations poses a great challenge (Bannon, 2008).

There is a need for a clear framework for preparing to respond to international earthquake disasters. Crucial time is lost when disaster response teams, such as the SA NGO teams, are not activated within hours. Therefore, all teams responding to international disasters need to have a response structure and strategy in place that can be activated immediately to ensure efficient and safe response to a disaster.

A clear framework of understanding can be used as a tool to improve response preparedness, identify strengths and weaknesses, and establish goals to improve the status of emergency preparedness within South African NGO teams and to ensure a rapid, well prepared dispatch to the earthquake affected country within the first forty eight hours.

1.6 Limitations

The interviews were conducted using open-ended questions, facilitating in-depth conversations about the study participants' experiences. The group panel interviews lasted approximately one to one and a half hours each. Besides the invaluable information that personal interviews provide, there are some obvious shortcomings that must be addressed. Firstly, the issue of time, some interviews were conducted 9 months after the earthquake occurred. People tend to forget things over time and to (consciously or

unconsciously) alter their descriptions. Yet, an agreement among the different study participants removes the uncertainty about the accuracy of such claims. It should be noted, however, that narrative material is, but one of the many sources used in Chapter Four. As discussed, study participants' names have been protected since emphasis is on the institutional structures and practices, and not primarily on single individuals, the researcher did not see this as a major obstacle to the reliability or validity of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents and provides the background literature related to the context for this research on USAR assistance, preparedness and coordination. In this chapter, the literature pertinent to this study is reviewed to provide a conceptual framework that has to be taken into account when addressing disaster response preparedness. These frameworks will be used to analyse the case study in Chapter Four.

These frameworks also establish the link between this research and the current state of knowledge on USAR and other related topics (Blaikie, 2000). The literature review is based on a selection of publications which include UN guidance documents, government publications, fire services publications and scientific journal articles.

As in a qualitative research paradigm, this literature review does not represent a detailed account of every publication considered for this study (Holloway and Wheeler, 1996). Additional literature that has not been discussed here will be presented in other chapters of this dissertation in order to facilitate understanding of the research findings. The aim of this literature review is to provide the reader with an outline of topics related to this research study and provide some background knowledge on what has been studied and previously observed in these areas in the past.

2.2 Literature sources

International emergency disaster response requires research of many types and areas of research disciplines as the nature of international USAR assistance means that it does not fit into one specific detailed literature source. It is, in fact, considered by a host of different fields, each focusing on how international USAR aid is viewed from their specific point of interest. Due to this reason, the literature review for this study has been much more challenging, but has provided an opportunity to discover different perspectives on the discipline. These different literature sources traditionally come from the following realms:

- fire and emergency services
- general disaster management
- foreign and humanitarian affairs
- United Nations documents
- medical care/emergency medicine
- seismology
- engineering
- business management
- sociology

The literature search was a constant process that was carried out continuously to keep up with new developments in the research area. A review of the literature was conducted, using the e-library at the Durban University of Technology, where key categories were searched. An extensive internet search was performed using defined criteria to locate studies and reports that directly related to the research area. The researcher started with the main key subject area and then broadened the search to explore other perspectives and fields. The process was challenging as there was very little literature on the key research aspects of response guidelines for the use by an NGO rescue team.

The literature review was gradually expanded by using the reference lists of the articles found using the keyword search. In addition to conducting the search of journals, a general internet search was conducted with the same search terms used in the journal search. This search provided an interesting broadening of the area, as we found articles and information from several governmental agencies and relief organizations as well as other institutes and organizations that have taken an interest in the field for a long time.

The search involved the use of the Google Scholar® search engine and the following databases; Science Direct®, Proquest® and Pubmed®. According to Shojania and Olmstead (2002), searches that incorporate medical subject heading (MeSH) terms consistently yield more articles than searches by title or text words. The following MeSH terms were used during the searches; disaster management, disaster response, humanitarian disaster response, lessons learnt in disaster response, policies and programmes for disaster management. These terms provided very extensive results that included disaster preparedness and response by NGOs, government teams and UN teams. The literature search was gradually expanded by using the reference lists of the articles found using the MeSH search. In addition to conducting the search of journals, a general internet search was conducted with the same search terms used in the journal search. This search provided an interesting broadening of the area, as articles and information was found from several governmental agencies and relief organizations as well as other institutes and organizations that have taken an interest in the field for a long time.

There were very limited sources of literature on NGO rescue teams and guidelines for them specifically. Apart from the direct searches, the researcher also followed up on references listed in previous dissertations of a similar nature to ensure significant literature was not missed. While doing numerous literature searches into the field of disaster management and response, the researcher identified expert authors in the field and then proceeded to locate all these authors' publications.

2.3 Literature Topics

The centre for Research on the Epidemiology of Disasters (CRED) defines a disaster as a "situation or event, which overwhelms local capacity, necessitating a request to national or international level for external assistance"(www.cred.be). The definition in the Emergency Events Database (EM-DAT) states that it is an unforeseen and often sudden event that causes great damage, destruction and human suffering. For a disaster to be put into EM-DAT or be considered a disaster it has to fill the following criteria: 10 or more people killed, 100 people affected, declaration of a state emergency and call for international assistance (http://www.emdat.be/ExplanatoryNotes/glossary.html).

Disasters are excessive events. They are excessive according to several points of view. The International Federation of Red Cross and Red Crescent Societies defines a disaster as "a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins." (http://www.ifrc.org/what/disasters/about/index.asp).

Fundamentally, disasters can be extreme in many ways. Firstly, they exceed our capacity of coping; they are events with which we cannot cope both materially, psychologically and socially. They are unthinkable events which can exceed human rationality and normal life. This is the profound reason why disasters challenge ethics and law (Ashton, 2008).

Burkle (2001) discusses how disasters are complex emergencies that are associated with a large outpouring of humanitarian assistance. The world is moved by the Good Samaritan response to the affected country's misfortune and the global outpouring of aid is normal and natural (Pan American Health

Organization/World Health Organization, 1999). These disasters impact large populations every year, and hundreds of NGOs, thousands of aid workers and billions of dollars are sent in response. Yet, there have been recurring problems with coordination, both at team levels and at higher government levels, which contribute to wasted efforts and funds (Bremer, 2003).

Methodologies for quality management have been slowly developing, but there is still a need for agencies and governments to agree to benchmarks, standards and codes of practice for health disaster preparedness and response.

2.4 Relative occurrences of disasters

The risk of disasters is increasing, and no civilization in history is safe from being affected. During the last decade alone, numbers of disasters have dramatically increased (International federation of the Red Cross, 2007), rendering clear disaster response policies more relevant than ever before. There are many factors, such as rapid human population increases and urbanisation, which influence these statistics and are reasons for this noted increase in disasters. Kizer (2000) points out that because of population growth and urbanisation, mortality and morbidity from both natural and man-made disasters can be expected to increase simply because of the greater population density. Data from the International Federation of Red Cross and Red Crescent Societies (IFRC) and the Centre for Research on Epidemiology of Disasters (CRED) show a significant increase in frequency of recorded disasters over the last 50 years, with almost 2 billion people affected by disasters in the past 10 years (Campbell, 2005). Western, an assistant director for international research for Pan American Health Organization, commented that ‘disasters could only become more frequent as population density increases’.

According to Vasterman, Yzermans and Dirkzwager (2005) disasters occur more often now than in the past. They believe this is due to overcrowding, air traffic becoming busier, and the world is much more dependent on complex, but susceptible technological systems. In the database of the Center for Research on the Epidemiology of Disasters, an increase was found in the number of disasters worldwide. During the decade 1970–1979, 1,230 disasters were registered; in the 1980s, this figure was 2,856; and, in the 1990s, 4,790 disasters were listed. For the years 2000–2003, more than 3,000 disasters were reported (Centre for Research on the Epidemiology of Disasters-CRED, 2006). This increase in numbers over the years confirms that disasters are becoming more frequent (See Figure 1).

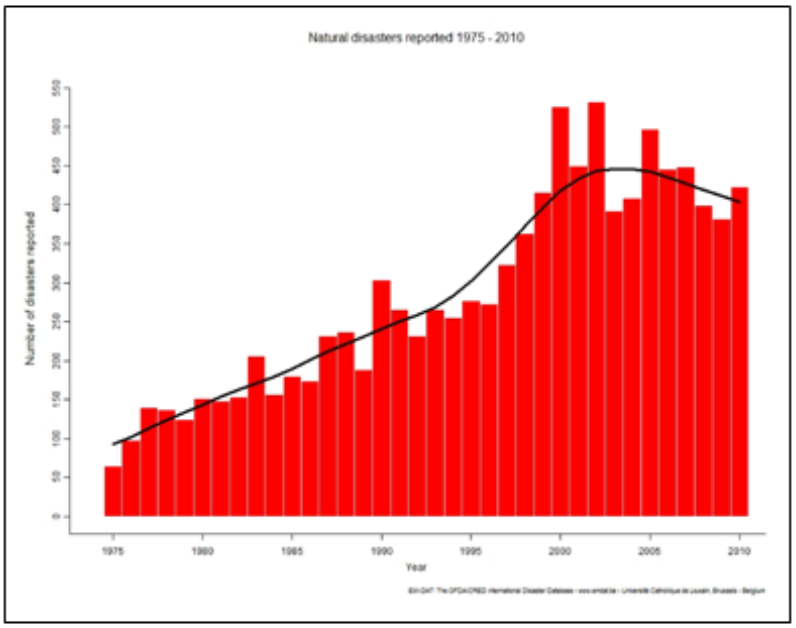


Figure 1: Natural Disasters reported 1975-2010 (Centre for Research on the Epidemiology of Disasters- CRED, 2010)

Kizer (2000) and Noji (2005) have described several reasons for this noted increase in disasters. Firstly, the improved data collection methods over the years may have played a role in being able to collect the information on recent disasters. Secondly, global warming and environmental change is playing a role in increasing the numbers of disasters that are being experienced. Thirdly, as previously mentioned by Vasterman et al. (2005), rapid human population increases and urbanisation and the rise of terrorism are also factors to be considered.

2.5 Legal and Ethical considerations in disasters

Disaster response and assistance is vital for people living in disaster stricken areas to receive aid and resources to help them return to normal as quickly as possible. This need for response has raised an integral tension between disasters, ethics and law (Ashton, 2008). Consequently, a body of International Disaster Response Law (IDRL) has developed from a combination of mandatory and non-binding instruments with varying purpose, scope and content. IDRL has therefore, become a minefield of legal barriers and non-existent regulations. Of the many gaps left in IDRL, coordination complications are a universal problem for the humanitarian aid system. Inadequate coordination is probably one of the most discussed issues among both international disaster responders and disaster affected states and countries. Uncoordinated responses lead to duplication, confusion, increased expenses, inefficient use of resources, inappropriate aid and sometimes, fatally results in disaster affected persons not receiving 'the right aid at the right time, delivered in the right way.'(Reinecke, 2010).

Organising a co-ordinated disaster response is extremely difficult without clear regulations in place. David Fisher, a senior legal research officer at the International Federation of Red Cross and Red Crescent Societies, points out that "legal barriers can be as obstructive to effective international disaster relief operations as high winds or washed-out roads" (Fisher, 2007).

Therefore in a disaster situation, every delay, due to obstructions, providing aid to disaster affected countries can prove fatal to large numbers of people and hence the importance of clear and effective laws in this area is vital. Katoch (2006) verifies that under international humanitarian law, national governments maintain the duty to respond and the right to determine how response is organized. Unfortunately many national governments may not have the organizational or logistical capacity to do so and as mentioned already, most natural disasters occur in developing countries. Despite significant progress by countries such as China, Iran, Cuba and India in developing disaster management systems, many disaster prone countries do not have adequate capacity to manage disasters effectively. This creates inherent limits on the effective deployment and coordination of the multitude of international responders who arrive at the disaster site. Such restrictions are unavoidable as there is no indication that governments will relinquish their control to outside entities even in the aftermath of a natural disaster (Katoch, 2006).

A Right to Health is one of the basic human rights. In disaster situations many people are likely to be in need of medical aid at the same time Ashton, 2008). From a medical perspective, disasters are characterized by an acute and unexpected imbalance between the capacity and resources of the medical care system of an affected country and the needs of survivors who are injured (57th World Medical Association General Assembly, 2006). Rescue workers and medical care professionals are confronted with an exceptional situation in which their normal professional ethics must be brought to the situation to ensure that the treatment of disaster survivors conforms to basic ethical principles and is not influenced by other motivations. Ethical rules defined and taught beforehand should complement the individual ethics of medical care. Inadequate and disrupted medical resources on-site and the large number of people injured in a short time present ethical challenges. The World Medical Association (2006) therefore recommends following ethical principles and procedures strictly with regard

to the medical care during a disaster (57th World Medical Association General Assembly, 2006).

According to Bradt and Drummond (2007), clinical medicine, public health, and disaster incident management are core disciplines and are fundamental in disaster medicine. Future practitioners in disaster medicine will see strengthened efforts to define competency benchmarks across fundamental core disciplines as well as key field performance indicators.

Figure 2: Field hospital in Port-au-Prince, Haiti. (Medical Ethics) (Photo by Shannon du Randt, 2010)

2.6 Background to international disasters

First world countries such as the United States (U.S.) have well-funded, well-staffed federal agencies mandated to deal with all aspects of disasters. The Federal Emergency Management Agency (FEMA) has more than 3,700 full time employees. FEMA also has nearly 4,000 standby disaster assistance employees who are available for deployment after disasters. FEMA also works in partnership with other organizations that are part of the nation's emergency management system (FEMA, 2010).

Most developed countries generally have good emergency management systems in place. They are able to institute systems for implementing building codes that are earthquake resistant. Developing countries, however, are often not so well organised or resourced and often have great difficulty coping in the aftermath of disasters such as earthquakes. Large numbers of people are suddenly without shelter, food, water and waste disposal facilities. The developing country may take years even decades before it returns to the state that it was before the disaster (United Nations, 2010). Poverty is perpetuated and the population remains vulnerable to further disasters, such as famine, malnutrition and disease (Noji, et al., 2006). The World Bank has reported that Haiti remains the poorest country in the Western Hemisphere as it is plagued by chronic political instability and frequent natural disasters.
Noji et al (2006) discusses ways of reducing the effects of earthquakes by establishing urban centres away from earthquake-prone areas, but this is much easier said than done. Some of the world's great cities: Tokyo, Yokohama, Jakarta, Los Angeles, Mexico City and Santiago, to name only a few, are vulnerable to earthquakes of these, who are the developed/ developing countries (Noji, et al., 2006).

Huge reductions in the effects of earthquakes are still possible in such cities, if they are prepared for the worst. Improved building standards help enormously. The main reason for the high death tolls in the recent earthquakes in Iran and Pakistan was the failure of buildings. In Bam, located about 1,000 kilometres southeast of Tehran in Iran, most of the houses in the city were built with mud bricks: when these collapsed, thousands of people suffocated to death. In the Kashmiri-Pakistan disaster, an estimated 60 percent of buildings in urban areas were made of un-reinforced solid concrete block masonry and more than 60 per cent of these collapsed, crushing and burying their inhabitants (Noji et al., 2006).

Alexander (2006) discusses the massive growth of worldwide travel and telecommunications which has created a perception of reduced barriers of distance between continents and has brought what were once essentially regional and local problems onto the world stage. Most people are able to watch disasters unfold on television and over the internet. This results in tremendous media and public attention and, therefore, results in governments that are not immediately affected to try and help the affected country to be seen as good Samaritans. Recent world events such as the 2010 Haiti earthquake, September 11th, hurricane Katrina and the Asian tsunami, have ensured that world media attention is placed on disasters and how they are managed.

According to Katoch (2003), international humanitarian law states that national governments have the primary responsibility for responding to natural disasters. Any bilateral or multilateral disaster assistance can only be provided at the request of the affected state and must be coordinated through it. This means, under international humanitarian law national governments retain the duty to respond and the right to determine how response is organized, many national governments may not have the organizational or logistical capacity to do so, and therefore, may request international assistance.

2.7 Disaster management in developed versus undeveloped countries

In many countries the process of development has a positive and negative impact on disaster risk and recovery. It shows how countries that face similar patterns of natural hazards from floods to droughts often experience widely differing impacts when disasters occur. The impact depends on the kind of development choices the country has made previously. As countries become more prosperous, for example, they are often better able to afford the investments needed to build houses that are up to standard building codes and so would be more likely to withstand earthquakes. At the same time, the rush for growth can trigger haphazard urban development that increases risks of large-scale fatalities during such a disaster (Pelling, Maskrey, Ruiz and Hall, 2004).

Not only do most natural disasters occur in developing countries, but they also affect them disproportionately. In 2004, for example, all ten countries with the largest number of people affected by disasters were developing countries. In 2010, CRED reported that 373 natural disasters were recorded in the EM-DAT database. Over 296,800 people were killed and 207 million were affected. They reported that the January 12 Haiti earthquake killed over 222,500 people which made 2010 one of the deadliest years in at least two decades (Centre for Research on the Epidemiology of Disasters, 2011).

Natural disasters are a fact of life for every country, but they are especially dangerous for people in countries where people struggle to survive. It is in these poorer, third world countries that a major natural disaster can kill thousands and threaten the livelihoods of those who survive the disaster. The damage from natural disasters in third world countries is exacerbated by mistakes made by people. Growth of cities in the past decade has been largely unplanned, which means that many people now live in areas that are

under an increased threat from disasters, such as hillsides that are prone to mudslides or on flood plains (ALNAP, 2010).

Factors affecting underdeveloped countries, with specific focus on earthquakes, include location of large density populations in seismic areas, inadequate building practice and regulation, dense population of buildings with high occupancy and the absence of warning systems and public awareness on earthquake risks (PAHO/WHO, 1999). This, coupled with poorly staffed and ill-equipped medical response infrastructure will adversely affect mortality. Disasters and development have said to be linked, so therefore, any response to disasters should also include mitigation for the next disaster as part of a wider development strategy. There is a need for collaborative efforts in improving preparedness, especially for developing nations (Noji et al., 2006).

On January 12, 2010 the largest earthquake ever recorded in Haiti destroyed parts of the country, including the capital. The earthquake was centred about 15 miles southwest of Port-au-Prince, and had a magnitude of 7.0. A succession of strong aftershocks followed and the damage was severe and catastrophic. Communication services were cut off by the earthquake which made detailed information difficult to come by in the early phases. Initial media reports indicated that thousands of buildings had collapsed, leaving unknown numbers of people trapped, and hundreds of thousands of people homeless in the streets. Early estimates of casualties were constantly being updated, but already reached into the hundreds of thousands. According to the Secretary-General of the United Nations, Mr. Ban Ki-moon, of Haiti's 9 million people, initial reports suggested that almost three million may have been affected by the disaster (Margesson and Taft-Morales, 2010). According to a report by OCHA, one year later, 222,650 people were killed and 310,930 were injured (Office for the Coordination of Humanitarian Affairs, 2011).

It was reported that among the missing and dead were Haitian government officials and international aid personnel, including many UN personnel. This made recovery efforts extremely difficult due to the loss of personnel who would have organised the infrastructure that would have been part of a recovery effort. Housing, hospitals, schools, and many government buildings collapsed. Basic services such as electricity and water were almost completely disrupted. There were massive efforts for humanitarian relief operations but they were hampered by a number of significant challenges and extremely limited communications systems. Major roads were blocked off in many parts of Port-au-Prince by damage, debris, bodies, and people seeking open space to keep away from buildings (United Nations Secretary-General, 2010).

The Port-au-Prince airport control tower was destroyed but the airport continued to function, however, the air traffic control authority was quickly transferred to U.S. personnel with portable radar. The main port suffered heavy damage so the U.S. troops set up alternate port facilities. The use of airfields and ports in the Dominican Republic eased the burden on Haitian facilities. All of this damage was sustained in a country that the United Nations had already designated as one of the 50 “least developed countries” in the world, because of widespread poverty and, therefore, needing the highest degree of responsiveness from the international community to help during this time of crises (Margesson and Taft-Morales, 2010).

According to the United Nations they established Disaster Assessment and Coordination (UNDAC) and UN Office for the Coordination of Humanitarian Affairs (OCHA) teams. The UNDAC team coordinated the On-site Operations and Coordination Centre (OSOCC). Two sub-OSOCCs were established in Jacmel and Leogane to assist local authorities. OCHA helped to coordinate the search and rescue teams and continued to coordinate the assistance effort while focusing on other humanitarian priorities. In addition to working closely with the Government of Haiti, OCHA was the lead agency working

with responders on the ground, coordinating with the military and enlisting donor support (United Nations, 2010).

Due to modern communications, word of tragedies reach the international community within minutes, and in some cases, relief is mobilized in a matter of hours. This outpouring of assistance can greatly help a disaster-stricken country if it meets real needs (PAHO/WHO, 1999). However, it can just as quickly become a burden when the assistance has not been requested or donor institutions or individuals have misconceptions of what the needs are. This convergence of resources and personnel at a disaster site can become chaotic if not coordinated properly.

The recognition of natural disaster exposure and its impact is an important component of long term development planning for vulnerable countries. Recently, the World Bank has expressed the need for disaster planning to be incorporated at the country assistance strategy level, as part of the benefit/cost analysis (Benson and Clay, 2004).

2.8 Earthquakes as one of the most frequent disasters

During the past two decades, several humanitarian emergencies have occurred (Centre for Research on Epidemiology of Disasters, 2010), with earthquakes being the most frequently occurring disaster around the world. It has also been noted that earthquakes are the largest cause of natural disaster mortality accounting for 29% of natural disaster related death in the last 30 years and 58% of fatalities in the last decade (Centre for Research on Epidemiology of Disasters, 2010).

Earthquakes, as such, are potentially catastrophic disasters occurring worldwide and regularly result in the structural collapse of buildings (Cone, 2000). These collapses may result in entrapment of the occupants of these buildings. Certain factors can aggravate the amount of destruction and mortality that may occur after the earthquake. Man-made factors that increase vulnerability include: location of settlements in seismic areas; inadequate building practices and regulations; dense concentration of building with high occupancy; the absence of warning systems and lack of public awareness on earthquake risks.

Urban Search and Rescue is the specialised process of locating, extricating and providing immediate medical treatment to victims entrapped in such collapsed structures (Cone, 2000; Hogan and Burstein, 2002). A USAR team usually consists of several tens of persons all with specific roles. The need for such a large team is due in part to the labour intensive nature of USAR work as well as the requirement for many different technical specialities within the team (INSARAG, 2011a). The search phase can involve different techniques such as standard surface search systems whereby the rubble pile is systematically and thoroughly searched by visual inspection. This type of very basic search is however, normally performed by other survivors or the local rescue capacity long before the arrival of a specialised teams. Canine search is a technique using search dogs; this consists of the search dogs and their human handlers. They play an essential role in USAR due to their ability to rapidly detect victims buried beneath the rubble following a structural collapse by following scent trails (INSARAG, 2011a). The other techniques involve electronic search which is normally used after the initial results of canine search. There are two types of electronic search equipment routinely used. The first is specialised acoustic listening devices which are highly sensitive machines that assess the structure for any sounds of life. The second are specialised cameras that can be positioned into voids through narrow openings in order to be able to see if there are survivors inside (INSARAG, 2011a).

Figure 3: SA Rescue team bringing patient in to Cathedral hospital from a building collapse (Photo by Shannon du Randt, 2010)

Figure 4: Haiti, Port-au-Prince, building collapses (Shannon du Randt, 2010)

Different disasters produce different types of injury patterns; an understanding of disaster epidemiology is necessary to help estimate likely injury patterns, needs and timelines of response (Milsten 2000; Noji, 2005). Schultz, Koenig and Noji (1996) discuss the need for the timeline of response to be 24 to 48 hours after a massive earthquake that has large numbers of casualties, as this is when there is the greatest demand for patient care. They indicate that 85 to 95 percent of the victims who survived being trapped in damaged buildings were extricated within 24 hours.

Figure 5: Haiti, Port-au-Prince, damage by earthquake (Photo by Shannon du Randt, 2010)

Figure 6: Haiti, Port-au-Prince, damage done to buildings (Photo by Shannon du Randt, 2010)

2.9 International assistance

The United Nations is an international organization founded in 1945 after the Second World War by 51 countries that committed to maintaining international peace and security. They developed relations among nations, promoting social progress, better living standards and human rights. Due to its unique international character, and the powers vested in its founding Charter, the Organization can take action on a wide range of issues, and provide a forum for its 193 Member States to express their views, through the General Assembly, the Security Council, the Economic and Social Council and other bodies and committees (United Nations, 2011).

The work of the United Nations is well known. They are best known for peacekeeping, peace-building, conflict prevention and humanitarian assistance. The Organization works on a broad range of fundamental issues, from sustainable development, disaster relief, counter terrorism, to promoting democracy, human rights, gender equality (United Nations, 2011).

In a United Nations General Assembly session 57/150, discusses the importance of timely, coordinated and technically sound international assistance. This assistance must be provided in close coordination with the receiving state/country, especially in the field of urban search and rescue following earthquakes and other events resulting in structural collapse (United Nations General Assembly Resolutions 57/150, 2002). (Reinecke, 2010) discusses the arrival of relief teams in disaster affected areas with or without resources, many without appropriate experience in working in disaster situations. The coordination and management of these well-meaning individuals and organizations places further stress on local and national authorities. There is also a sudden influx of international agencies, NGOs and, increasingly, private companies into a disaster site. Currently there are no systems which international responders are required to meet specified operational standards.

Katoch (2006) discusses his amazement, with the fact that, the humanitarian field is one of the few fields where one needs no qualifications to establish and operate a relief organization, even though, the lives of ordinary people all over the globe are at stake. This lack of accountability should be addressed under a system of verifiable operational standards imposed on all those who respond to disasters. In the Bam earthquake, approximately 40 teams from 34 countries arrived in the city by the fourth day after the earthquake (Emami, Tavakoli, Alemzadeh, Abdinejad, Shahcheraghi, Erfani, Mozafarian, Solooki, Rezazadeh, Ensafdaran, Nouraie, Jaberi and Sharifian, 2005). No local government or administration, can cope with that kind of influx during a disaster, without well-trained coordination support (Katoch, 2006). The

coordination necessary to save lives and ensure that critical needs are met becomes extremely difficult when there is no way of knowing what resources and organisations are entering a disaster site, from where and when.

The existing international humanitarian coordination system operates in three networks which have limited kinks between them. They are the UN system, the IFRC and NGOs. These systems are however understood to be driven by the UN (Reinecke, 2010). The UN General Assembly Resolution 46/182 deliberated on the UN, a 'central and unique' role in providing leadership and coordinating the efforts of the international community to support disaster-affected communities. It was expected to play an important role in coping with the exponential rise in diverse human and material losses caused by disasters. Certainly, the UN system has a comparative advantage over other networks as its leadership is based on worldwide membership and global political acceptance of guiding principles contained in this particular Resolution (United Nations General Assembly Resolution 46/182, 1991).

2.10 South African humanitarian organizations

Rescue South Africa

This NGO is an official South African disaster response team made up of volunteer emergency response specialists from the South African public and private sector emergency and auxiliary services. They are part of the UN as an INSARAG registered team. The NGO is sponsored by the private sector and partly by the government. They are also formally recognised in terms of the South African Disaster Management Act, 2002, and are the official Urban Search and Rescue (USAR) Taskforce to Gauteng Provincial Local Government (Rescue South Africa, 2011) .

Figure 7: Rescue South Africa Base Camp at Port-au-Prince Airport, Haiti 2010 (Shannon du Randt, 2010)

Gift of the Givers

The Gift of the Givers Foundation is the largest disaster relief organisation in South Africa and Africa. They have delivered over R500 million in aid to 32 countries around the world, including South Africa. They have also designed and developed the world's first and largest containerised mobile hospital, which was deployed in Bosnia. It was equivalent to the best hospitals in Europe and remains unmatched to this day.

Besides disaster relief activities, they run 24 projects around South Africa and Africa that cover areas such as health, education, agricultural sustainability, life skills, job creation, and entrepreneurship, feeding schemes, sports and culture (Gift of the Givers Foundation, 2011).

Figure 8: Gift of the Givers personnel, South African NGO (Shannon du Randt, 2010)

2.11 Emergency management – Disaster cycle

Due to the increase in complex disasters over the last two decades, literature on disaster management has started to flood the disaster relief field. A model, frequently referred to in the literature, is that of comprehensive emergency management (CEM). It is an important instrument for explaining disaster management and its approaches. The cycle is based on the statement that ‘disasters are repetitive events’ (Alexander, 2002). The cycle shows various sequential phases that are connected. In this model, an

emergency is described to consist of four overlapping phases: mitigation, preparedness, response and recovery.

The Federal Emergency Management Agency (FEMA) is a department of the United States Homeland Security (FEMA, 2010). FEMA developed a National Response Framework (NRF) which presents guidance documents that form the basis to provide a unified national response to disasters and emergencies by public and private organizations. NIMS uses a systematic approach to integrate the best existing processes and methods into a unified national framework for incident management. Incident management refers to how incidents are managed across all homeland security activities, including prevention, protection, mitigation, response and recovery (Department of Homeland Security, 2008). It establishes a comprehensive, national, all-hazards approach to domestic incident response. Within the NRF it builds upon the National Incident Management System (NIMS), which provides a consistent template for managing incidents. NIMS is flexible because the system components can be utilized to develop plans, processes, procedures, agreements, and roles for all types of incidents and disasters. It provides an organized set of standardized operational structures, which allows contrasting organizations and agencies to work together in a predictable and coordinated manner.

The first phase of this model: mitigation- aims to reduce the risk through preventive actions such as research and development and inter-agency relationship building. These should be carried out during recovery from a past emergency and during the preparedness for a potential future emergency.

The second phase: preparedness- aims to create a comprehensive emergency management capability before an emergency occurs. This phase can be used for emergency planning, training and doing exercises to ensure increased effectiveness. Mileti (1999) states “the purpose of preparedness is to anticipate problems in disasters so that ways can be devised to address

the problems effectively and so that the resources needed for an effective response are in place beforehand". Improvisation is also said to be a significant feature of every disaster, and Tierney (2002) has argued that, if an event doesn't require improvisation, it is probably not a disaster. Kendra and Wachtendorf (2006) discuss how improvisation has had something of a varied history in the emergency management field since its appearance in a disaster response can suggest a failure to plan for a particular incident. Organizational improvisation in a disaster can be defined as organizing "during an event," while preparedness is organizing "before an event." Literature has stressed that preparedness and improvisation are the "foundations" of emergency management, yet preparedness and planning are the preferred element. Drabek (2001) emphasizes the need for planning to reduce the incidence of improvisation even though it occupies a somewhat disputed place in the realm of emergency management. He argued that "the capacity to improvise is greatest when the pre-disaster response network has been nurtured and integrated." Therefore, there should be detailed planning so that the need for improvisation is decreased.

Mitigation and preparedness phase within the disaster cycle are sometimes combined with one another as they are interlinked in practice. Definitions in resource documents revised for this study demonstrate this conceptual vagueness. For example, the National Fire Protection Association (NFPA) defines preparedness as: activities, programs, and systems developed and implemented prior to a disaster that are used to support and enhance mitigation of, response to, and recovery from disaster/emergencies (National Fire Protection Association, 2010). FEMA defines preparedness as: the leadership, training, readiness and exercise support, and technical and financial assistance to strengthen citizens, communities, state, local, and tribal governments, and professional emergency workers as they prepare for disasters, mitigate the effects of disasters, respond to community needs after a disaster, and launch effective recovery efforts (Federal Emergency Management Agency, 2010).

Perry and Lindell (2003) discuss that the preparedness process can be viewed as comprising of three critical components: planning, training and writing plans. The concept “planning” is thus used in the literature both as a description of the specific analysis process and of the entire preparedness process. Noji et al. (2006) acknowledge the need for improved training although, currently, training is generally insufficient. The challenges include retention and application of knowledge and skills a long time after instruction, and the ability to apply this in the field, as well as training involving teams and emerging issues such as security. There has been a recent growth in the number of courses available, but there is still a lack of standards available to accredit either courses or their graduates (Noji et al., 2006).

The National Incident Management System (NIMS) defines preparedness as ‘a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response’. This preparedness cycle is one of the elements of a comprehensive emergency management system (FEMA, 2010).

Figure 9: Preparedness Cycle (FEMA, 2010)

The third phase: response- aims at minimising injury and damage during an emergency but also immediately before and directly after the emergency. This phase is where the emergency plan is put into action for the teams. According to the UNDAC handbook a need assessment can be performed by a member of a disaster response team or by a member of the sponsoring organisation who is adequately trained. The need assessor, therefore, should report on coordination mechanisms and potential methods of meeting them most effectively as well as significant political, cultural, and logistical constraints. Recommendations can be made which define and set priorities on the actions and resources needed for immediate response and to highlight special concerns regarding the development of the situation (United Nations Disaster Assessment and Coordination, 2006).

Kendra and Wachtendorf (2006) discuss the need for structure as well as adaptability and improvisation with regards to responding to a disaster. Linking that with the need to build a high functioning team quickly to coordinate and manage efforts as they develop to implement a disciplined, interactive set of response plans. This allows the team to move forward a coordinated, disciplined response that is effective and efficient and enables them to adapt to new information and changing circumstances along the way (Kendra and Wachtendorf, 2006).

The fourth phase begins immediately following an emergency and is called recovery. This phase aims at restoring and returning a disaster area to “normal life”. This model for disaster management can and has been adapted for response teams as part of their organisational planning. Figure 10 shows that preparedness is the connecting link between mitigation and response. It, therefore, might be seen as an important phase as it closes the gaps between the measures in place and by structuring and coordinating the possibilities for response using tools such as planning. It is the link between the pre-disaster and post-disaster phase and influences the mitigation and

preparedness phases in their efficiency (Cova, 1999; Catholic Relief Services, 2002).

Figure 10: Comprehensive Emergency management cycle (adapted from Cova, 1999).

Opportunities to enhance the logistical and operational structures of international humanitarian response and incident management guidelines can include the adaptation of NIMS as a national into an international model. Adapting this model into an international guideline would assist preparedness and response effectiveness in an International disaster (Department of Homeland Security, 2008).

Katoch (2006) highlights that in a natural disaster; the immediate response actually consists of three overlapping phases, which are not present in other emergencies. Before these phases even begin, the government must call for international assistance which often takes more time than it should. The first is the time critical search and rescue phase. Search and rescue phase usually involve specialized units within a developed country. In developing countries, specialized units can be available locally or sent in by other countries to assist. Although in many cases it is the local population that act immediately and search for victims and bring them to safety. This stage of an emergency response is immediate and usually includes life-saving and life-sustaining response of search and rescue and medical teams. This phase usually lasts one to two weeks in sudden-onset disasters such as earthquakes, but may be longer in slower disasters, such as floods.

The second phase is the relief phase; it is the next on-going phase to search and rescue and consists of humanitarian action or emergency relief. This phase varies in duration depending on the state of the affected country. A developed country may only require short-term emergency relief for its disaster affected population before moving quickly to the next stage of rehabilitation and reconstruction. Some countries may be very hard hit by a disaster event and require emergency relief over a long period of time. Finally, the third phase, the rehabilitation and reconstruction phase includes the commencement of activities related to recovery and infrastructure reconstruction as well as disaster mitigation programmes. These corresponding phases can lead to difficult situations in which different kinds of responders with different agendas must work together at the same time, within the same areas (Katoch, 2006). Figure 11, shows the comprehensive disaster management cycle with the response phases added to where they occur in the cycle. Figure 12, shows the three phases within the response phase that overlap.

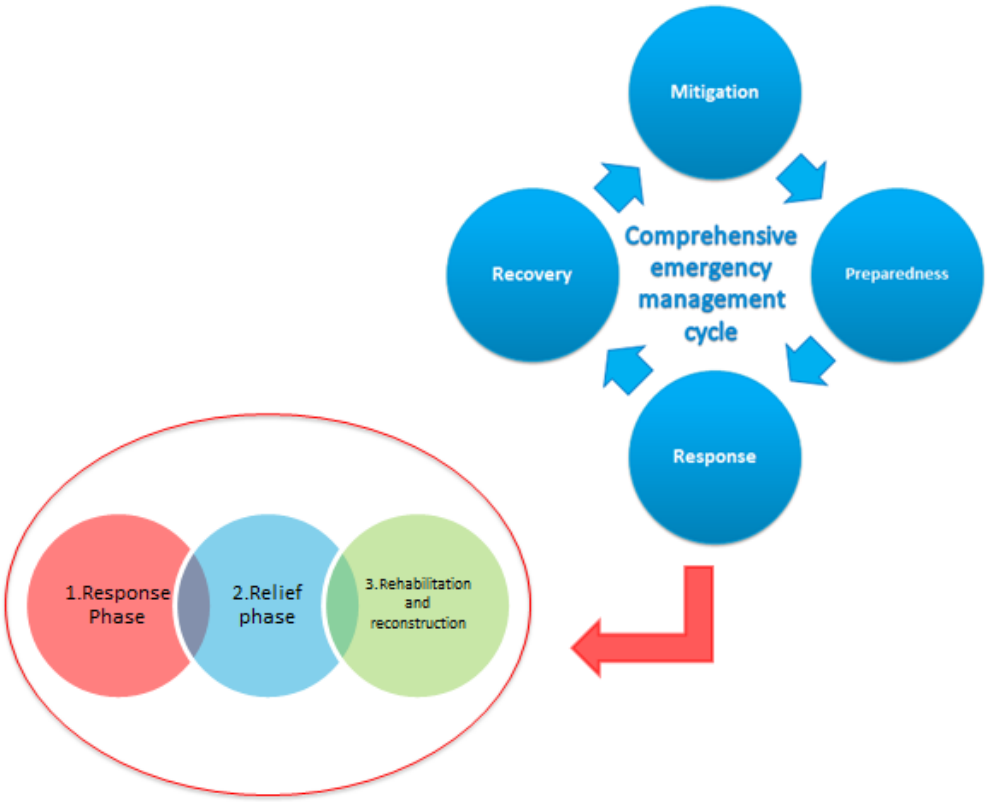


Figure 11: Comprehensive Emergency Management Cycle

Figure 12: Three overlapping phases within the Response Phase

2.12 Humanitarian Relief

The humanitarian relief field aim to alleviate suffering of the survivors of natural disasters and others affected by disasters. These organizations supply the affected people with food, shelter, and healthcare by sending personnel to work with pre-planned organizations already on the ground in the affected areas. While my focus in this study is on the preparedness to immediately respond to provide emergency search and rescue and medical care, humanitarian aid agencies attempt to take a holistic approach of care. The same approach also includes what happens prior to a disaster, a form of mitigation and preparedness. Governments continue to hold the highest position in terms of money given to support humanitarian relief, so the number of agencies functioning in the relief sector grows every year. During the past 20 years, an increasing number of NGOs have entered the humanitarian scene. Among them, one can find international organizations, national and transnational NGOs, grassroots organizations and individuals.

Alexander (2010) discusses a concept called ‘convergence reaction’ in which people flock to a disaster affected area. The influx may include large numbers of people and organisations who wish to assist with the relief effort. During the tsunami relief efforts, governments from around the world pledged monetary support as well as personnel into Indonesia and Sri Lanka. In addition, the UN, the European Union, and other multi-lateral organizations provided services of various kinds. On top of this, literally hundreds of NGOs, some newly formed after the disaster, inundated villages, where relief operations turned chaotic (Kemp, 2007). Therefore, procedures need to be regulated to increase the efficiency of coordination for these organizations. Although most agree that more effective coordination of efforts will lead to improved outcomes there is still a strong debate as to the best means to achieve such an endeavour (Reinicke, 2010).

2.13 Types of Humanitarian organisations

The types of donors to humanitarian assistance organisations range from governments to International Non-Governmental Organisations (INGO's) to individuals. Governments give money for humanitarian aid but are often controlled through government agencies established for this purpose, as with the United States Agency for International Aid (USAID) in the U.S. or the Department for International Development (DFID) in the United Kingdom (Oliver, 2008). The number and variety of INGOs and other agencies working in emergency relief has exploded in the last decade due to the increase in disasters. The United Nations Development Programme (UNDP), the United Nations High Commissioner for Refugees (UNHCR), the World Food Programme (WFP) and the International Red Cross (IRC) collaborate with INGOs to provide coordination and direction to large-scale relief efforts.

In the late 90's, there were eight INGOs vying for and receiving over half the total relief money available: the Cooperative for Assistance and Relief Everywhere (CARE), Save the Children, World Vision International, the Oxford Committee for Famine Relief (Oxfam), Medecins Sans Frontieres (Doctors Without Borders), European Solidarity Towards Equal Participation of People (Eurostep), Cooporation International pour le Developement et le Solidarite (CIDSE), and Association of Protestant Development Organization (APDOVE) (Simmons, 1998).

These organizations are receiving relief money from the same sources, and so are receiving similar pressure to hold themselves accountable for their decisions and actions. Simmons (1998) likens the competition among INGOs vying for funds and media attention to a market system. This image of humanitarian aid agencies as corporations in a market suggests the potential for competition between organisations and highlights the importance of transparency of organisations holding themselves accountable for their actions. INGOs compete amongst each other both for funds and for share of

the relief spotlight in the media. This criticism further emphasizes the importance of accountability and evaluation for INGOs. INGOs have received criticism for a long time for not making accountability a priority. Within the literature, it has become clear that the reason for developing standards and procedures is not only for the benefit of on-site operations for coordination purposes but for organisations to show accountability as well.

Within the International relief framework, no single organization or entity is operationally in charge of what is a complex multi-level inter-organizational network of implementers. The national government of the U.S. and the UN find themselves in a similar situation where neither possess operating control over its implementing partners but instead must devise other means and methods to secure their cooperation and coordination. Participating organizations must find ways and means to coordinate their activities at the operating scale since none can assure strategic coordination. Ultimately, all organisations involved may aim to defer to the authority of the country whose populations require aid. This fact implies a situation in which the effectiveness of participating organizations will be strongly shaped by the capacities of the national government they are seeking to assist. When these are corrupt or incompetent, it is difficult for international responders to overcome that fact.

Since participating institutions are only loosely coupled and no participant is authoritative-accountability across the relief system is diffuse and uncertain and transparency extremely difficult to attain. OCHA, like FEMA in the United States, faces two real limits as it confronts its responsibilities: it must do so without operating capacity and with no authoritative control over those organizations whose cooperation and assistance it is seeking to elicit. Furthermore, neither the international nor the United States relief system may fairly be described as possessing an operationally authoritative head organization or lead agency that can issue directives and assume that these will be followed. Instead, each relief organizational structure is best viewed

as a purposive management network, but one whose participants cannot assume strategic hierarchic coordination (Stephenson, 2007).

2.14 Humanitarian Disaster-specific Relief Standards

The technologically advanced twenty-first century has seen changes in cultural trends, political situations, and globalization unconceivable one hundred years ago. In this short amount of time, humanitarian response to natural disasters and other emergencies has increased rapidly. Disasters have been occurring for thousands of years but never has media exposure through technology made more individuals and donors aware of the extent of devastation in disasters than in this century. This, has in turn, added awareness to worldwide communities of people some of whom donate generously to the affected country. This is a welcome development but brings more challenges, such as being accountable for use of donor funds, standards for training of relief respondents, timing of assistance, communications and security. Among the most critical challenges for a humanitarian aid agency, such as an INGO, is the dilemma of how to measure its impact on a disaster scene (Oliver, 2008). This problem becomes even more complex when aid agencies look to use evaluation findings to improve their efforts for responding to the next disaster. This study aimed to evaluate NGO teams responding to an earthquake disaster.

2.15 The Red Cross Code of Conduct

In 1994, the IFRC sought the assistance of recognized INGO networks to draw up a Code of Conduct for those agencies working in emergency relief. The Code of Conduct is designed to assist organizations to respond effectively and responsibly to emergencies. The code of conduct is not intended as an instrument through which to sanction those who agree to it, but fail to comply with it, but rather as a professional guideline. Eight of the

largest disaster relief agencies signed on to the Code of Conduct at its inception in 1994, and many more have since (IFRC, 1994; IFRC, 2011).

The SPHERE Handbook

SPHERE was initiated in 1997 and is a collaborative effort on the part of several international NGOs and the IFRC. The project is established on the notion of the human right to dignity. This translates to a right to assistance for those whom a disaster affects. Its main products are a humanitarian charter, a framework for quality and accountability in humanitarian assistance, and a handbook of tools for assuring quality in four areas of response: water sanitation and hygiene, nutrition and food aid, shelter and health (The Sphere Project, 2011; www.sphereproject.org).

Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP)

ALNAP is similar to SPHERE which is an inter-agency collaborative effort (Kemp, 2007). Not only do they attempt to facilitate learning and improved accountability they also serve as a repository for evaluative reports of the relief efforts of various groups. These reports are intended as a resource for further learning. It publishes an annual Review of Humanitarian Action in which it compiles evaluation learning from member agencies. It also provides them with an evaluation guide as quality of information exchange will lead to better tools for future decision-making. ALNAP is particularly focused on sharing of knowledge between organizations. It emphasizes improved quality as a continual goal (Kemp, 2007).

Humanitarian Accountability Partnership International (HAP)

HAP was established in 2003 and is a regulatory entity for international humanitarian assistance efforts. Its ultimate mission is to respect the rights of the intended beneficiaries of humanitarian aid through holding aid agencies accountable to those beneficiaries. Consultation and research on the part of HAP has led to its development of seven core principles of accountability. In

accordance with its seven core principles of accountability, HAP has developed accountability standards against which its members can measure their own accountability practice and identify their strengths and weaknesses. The accountability and quality management standards are not meant to duplicate the HAP core principles but rather provide an instrument for verifying whether a given agency advocates a minimum level of accountability to its beneficiaries. HAP has an eventual goal of creating a certification system through which humanitarian aid agencies can strive to officially be named as being in compliance with the core principles of accountability. This is HAPs main distinction from SPHERE and the IFRC Code of Conduct as it endeavours to be measurable and to measure accountability. Both practitioners and academic researchers use these sets of codes and standards not only for planning relief efforts, but for evaluating them (Kemp, 2007).

2.16 INSARAG

For many years, teams from various countries have routinely provided USAR assistance in the event of major earthquakes (United Nations Disaster Assessment and Coordination, 2006). With international USAR assistance, there also comes the need for effective coordination of such efforts. Effective coordination aims to ensure that the most appropriate USAR aid is used in the most appropriate location at the most appropriate time (INSARAG, 2011a). The International Search and Rescue Advisory Group (INSARAG) was established in 1991 as a result of initiatives started by some of the international USAR teams who operated at the 1988 Armenian earthquake that killed twenty five thousand people (Noji et al., 1997). It is the standard by which international USAR teams are approved and deployed by the United Nations in response to disasters. These guidelines serve as a point of reference for the operational capabilities, roles and responsibilities of a responding team including, but not limited to, minimum technical

requirements, response times, logistical and communications support and team member fitness for the required mission. The INSARAG guidelines also refer to all processes involved from the call of assistance from the affected country to the de-mobilization process (INSARAG, 2011a).

It must also be noted that the IFRC have identified international law relating to disaster response for a report that was submitted to the states and local Red Cross and Red Crescent Societies at the International Conference of the Red Cross and Red Crescent in December 2003. It emphasises the need for inter-governmental oversight of the INSARAG process, particularly with regard to its principles, scope and objectives. In this regard the guidelines developed by INSARAG have been recognised by the Red Cross as a flexible and helpful reference tool for disaster preparedness and response efforts (INSARAG, 2011a).

The use of the term USAR is not internationally regulated and consequently, it is applied to a diverse array of team compositions, capabilities and competencies (Morris, 2007). During a disaster the affected country may be overwhelmed by the volume of international assistance, including USAR teams, deployed during earthquakes. Therefore, the primary purpose of the IEC is to provide stakeholders with a database of independently verified INSARAG Medium or Heavy USAR teams that are able to perform the following tasks:

- Mobilise rapidly
- Be self-sufficient
- Work professionally and safely
- Coordinate its efforts with other national and international rescue responders

- Assist the UN with Reception Departure Centre (RDC) and On Site Operations Coordination Centre (OSOCC) functionality (INSARAG, 2011a; INSARAG, 2011b).

2.17 What do the INSARAG guidelines recommend?

Much has been achieved in the area of preparedness of responding UN teams to ensure they will be able to provide USAR assistance effectively without becoming a burden on the affected country (INSARAG, 2011a). The INSARAG guidelines aim to provide a methodology for the country affected by a sudden onset disaster causing large-scale structural collapse as well as international USAR teams responding to the affected country. They also outline the role of the UN assisting affected countries in on-site coordination. These guidelines are intended as a reference guide for international USAR operations for countries aiming to establish USAR capacity, as well as for established USAR teams. Furthermore, the guidelines are not an authoritive instruction but rather detailed recommendations based on an accumulation of institutional memory and experience related to international USAR response as seen in the scope of the INSARAG mandate (INSARAG, 2011a).

INSARAG has now established an independent, verifiable, voluntary, process to establish operational capability of USAR teams. Each international USAR team can now request the UN's INSARAG Secretariat (FCSS/OCHA) for an external team of USAR experts to classify its operational capability. This external classification has already been requested by governments and completed for Hungary (2005), UK and US Fairfax County USAR teams (2006) and the U.S. Los Angeles County USAR team in 2007. INSARAG has, thereby, created a system of verifiable global operational standards of international urban search and rescue teams. Within INSARAG there are a number of international USAR response entities. These include United Nations Office for the Coordination of Humanitarian Affairs (INSARAG, 2011b).

Based on INSARAG guidelines and a review of the reflective diary and packing inventory, the NGO teams from South Africa responded as a medium USAR team. According to INSARAG (2011a; 2011b), medium USAR teams have the operational capability for technical search and rescue operations in structural collapse incidents. Medium USAR teams are capable of breaking, breaching and cutting concrete, typically found in suburban areas (United Nations Disaster Assessment and Coordination, 2006; INSARAG, 2011a; INSARAG 2011b).

However, due to logistical difficulties the required equipment and resources did not reach ground zero until after the Durban University of Technology team had left the affected country thereby mitigating the ability of the team to perform any Medium USAR operations and effectively relegated the team to a light USAR team. According to INSARAG (2011a; 2011b), light USAR teams have the operational capability to assist with surface search and rescue in the immediate aftermath of the disaster. Light USAR teams should come from the affected country and neighbouring countries. It is not recommended by INSARAG that light USAR teams deploy internationally to earthquake disasters (United Nations Disaster Assessment and Coordination, 2006; INSARAG, 2011a; INSARAG, 2011b). Heavy USAR teams have the operational capability for complex technical search and rescue operations in collapsed or failed structures, particularly those involving structures reinforced and/or built with structural steel (INSARAG, 2011a; INSARAG 2011b).

2.18 International USAR response entities

United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA)

UNOCHA serves as the INSARAG Secretariat of the INSARAG Steering Committee and is mandated to coordinate international assistance in disasters and humanitarian crises exceeding the capacity of the affected

country. UNOCHA works with all participants and responds to disasters to assist the government of the affected country in an effort to ensure the most effective use of international resources (INSARAG, 2011a; United Nations Disaster Assessment and Coordination, 2006).

Local Emergency Management Authority (LEMA)

LEMA is the term used to describe the local emergency management authority. They are the ultimate responsible authority for the overall command, coordination and management of the response operation. LEMA can refer to national, regional or local authorities, or combinations thereof, which are collectively responsible for the disaster response operation (INSARAG, 2011a; United Nations Disaster Assessment and Coordination, 2006).

United Nations Disaster Assessment and Coordination (UNDAC)

The UNDAC Team is available to UNOCHA for deployment to sudden-onset emergencies. UNOCHA will dispatch an UNDAC team when requested to do so by the affected Government or the UN Resident Coordinator in the affected country. UNDAC team personnel are available around the clock and are able to respond at very short notice. The UNDAC team is provided free of charge to the affected country. These team members are trained emergency managers from countries, international organisations and UNOCHA (INSARAG, 2011a; United Nations Disaster Assessment and Coordination, 2006).

Reception Departure Centre (RDC)

The RDC is an extension of the On-Site Operations Coordination Centre (OSOCC) and should be established at points of entry into the affected country (e.g. airports) for international response. The RDC is set up by the UNDAC team or by the first arriving USAR teams. Their primary responsibility is to facilitate the arrival and then later, the departure of international response teams. The RDC works in close cooperation with immigration,

customs and other local authorities. If the RDC has been set up by a USAR team, it will be handed over to the UNDAC team when they arrive (INSARAG, 2011a; United Nations Disaster Assessment and Coordination, 2006).

On-Site Operations Coordination Centre (OSOCC)

The OSOCC is established close to the Local Emergency Management Agency (LEMA) and as close to the disaster site as is safely possible. It provides a platform for the coordination of international responders and LEMA. The OSOCC is established by the UNDAC team or by the first arriving international USAR team who will then hand over the OSOCC to the UNDAC team when they arrive. The main purpose of the OSOCC is to assist LEMA with the coordination of international and national USAR teams as well as other responders (e.g. health, water/sanitation, shelter). They are the link between international responders and the Government of the affected country. It provides a system for coordinating and facilitating the activities of international relief efforts at a disaster site, notably following an earthquake, where the coordination of many international USAR teams is critical to ensure optimum rescue efforts. They provide a platform for cooperation, coordination and information management among international humanitarian agencies. It is very important that all teams responding and administering any relief efforts need to register with the RDC at the OSOCC (INSARAG, 2011a; United Nations Disaster Assessment and Coordination, 2006).

In disasters where the devastation covers huge areas and there is a need for international coordination at remote disaster sites, the UNDAC team or first arriving USAR teams in these areas will make use of a sub OSOCC concept. When this situation arises, the main OSOCC will generally be established in a major national coordination centre with one or more sub OSOCC being established at various disaster sites as required. Their role is to be a link between international responders and the government of the affected country. They should provide a system for coordinating and facilitating the

activities of international relief efforts at a disaster site, notably following an earthquake, where the coordination of many international USAR teams is critical to ensure optimal rescue efforts. They provide a platform for cooperation, coordination and information management among international humanitarian agencies (INSARAG, 2011a; United Nations Disaster Assessment and Coordination, 2006).

Virtual On-Site Operations Coordination Centre (The Virtual OSOCC)

The Virtual OSOCC is a web-based information management tool. The Virtual OSOCC is an information portal to facilitate information exchange between responders and the affected country after sudden-onset disasters. Access to the Virtual OSOCC is restricted, requiring a password, to disaster managers from governments and disaster response organisations. The Virtual OSOCC is managed by FCSS and UNOCHA (INSARAG, 2011a; United Nations Disaster Assessment and Coordination, 2006).

2.19 Conclusion

International disaster assistance is complicated and is a very wide area of study. It is technical and academic in nature and requires resources and understanding to ensure effectiveness during operations. In recent history, much has been achieved in ensuring that teams providing international USAR and medical assistance are doing so within a framework of the developed guidelines. Although a significant amount of research exists in the field of disaster response, the researcher was unable to find focused research dealing directly or indirectly with the primary research question of this study. This leads the researcher to believe that the field of USAR from an NGO perspective is an unexplored area which can be significantly improved. Opportunities for the use of existing models, techniques, and insights from the related literature in this chapter will aid in finding implementable, realistic frameworks that support the logistical, operational and human resource

requirements of NGO based USAR teams in an international earthquake disaster.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes and explains the methodology deployed in this study and the research methods which informed the choice of methods. This was a single case study, which consisted of two phases, using a different methodology for each phase. The first phase of the study explored the preparedness of SA NGO relief teams for international earthquake response using the Haiti earthquake response as a case study as a means of understanding a conceptual framework to improve planning and preparedness for such events. The second phase focused on recommendations towards developing a framework for responding to an international earthquake.

3.2 Research design

A research design is “an action plan for getting from here to there, where ‘here’ is the initial set of questions and ‘there’ are the set of answers” (Yin, 2009). In this study, the underlying research question sought to assess the preparedness of SA NGO relief teams for international earthquake response. The multi-case study method was deemed the most appropriate method to facilitate a valid response to the proposed research question.

The choice of method should be based on the purpose of the study as well as the research questions. The method will determine the way in which the data is collected and analysed. A case study is preferable when studying phenomena that have not been examined in depth before, an exploratory

study. This is also discussed by George and Bennett (2005) who discuss that case studies are useful for identifying new variables and hypotheses.

For clarity, a case study can be described as the investigation of a contemporary phenomenon within a real-life context (Yin, 2009), while in-depth case studies are often the vehicle for explanatory investigations. Justification for the suitability of the chosen research instrument is founded on Hill and McGowan's (1999) work which suggests that small company research may be best done using a qualitative approach that includes participant observation, case studies, in-depth interviewing and the use of documentation. Considering learning is not a single event, but rather a phenomenon to be studied in past, present and future terms, observational evidence offered the most appropriate means of assessing the level of regulation in this context (Eisenhardt, 1989).

Phase one: Preparedness of South African NGO relief teams

A case study, using a qualitative approach was conducted in order explore the preparedness of SA NGO relief teams responding to international earthquake disasters. It was crucial that the method chosen was one that is most likely to yield a preparedness framework within the South African health and rescue systems context. Case study methodology can be used when examining complex phenomena and according to Yin (2009) it is preferred when studying "...contemporary events, but when the relevant behaviours cannot be manipulated". A benefit when using case studies is the possibility to use many different sources of evidence, for example interviews, documents and observations. Case studies are used by researchers in order to explore thoroughly: - a programme, an event, an activity, a process or one or more individuals. Families, groups, institutions and other social units may also be the focus of a case study (Cresswell, 2009; Polit and Beck, 2010).

4.3.1 Collection of data

Stake (1995) describes case studies as ‘the study of a particularity and the complexity of a single case, coming to understand its activity within important circumstances’. Case studies allow the researcher to infer patterns and themes within the boundaries of one or more carefully analysed situations. Case studies have shown to be very useful in health and social sciences and are used when exploring the ‘how’ and ‘why’ of a situation when variables cannot be controlled. Similarly Gerring (2004) claims that case studies are essentially the ‘intensive study of a single unit with an aim to generalize across a larger set of units”. Therefore, researchers obtain a wealth of descriptive information during data collection and issues are discovered, analysed, developed, and provisionally verified through systematic data collection and thematic analysis pertaining to that phenomenon. Therefore, data collection, analysis and theory exist in a reciprocal relationship with each other. Data collection for case studies can involve a number of different techniques and sources which include interviews, surveys, participant-observation, and archive and document collection.

There are three basic categories of case studies: exploratory, explanatory and descriptive. Case studies aim to answer specific research questions such as ‘what’, ‘why’, ‘who’, ‘how’ and ‘where’. Case studies that aim to answer the questions of ‘what’ and ‘how’ should be considered to be exploratory in nature, which is the foundation for the first phase of this research. In the first phase of this study, the main question in the interview was, ‘How did you get involved in the Haiti relief effort?

The existence of members of the SA NGO medical rescue teams, humanitarian NGO relief-organizing members and other related activities at the 2010 Haiti Earthquake were explored. After data analysis in phase one, the findings that emerged were used in the next phase of the study, which was aimed at developing a conceptual framework for preparation for SA NGO teams responding to international earthquakes.

3.2.2 Case protocol

This section of the study outlines the case protocol which was used to guide the first phase of the study. According to Yin (2009), the case protocol has to include (a) an overview of the case project, (b) project objectives, (c) data collection procedures, and (d) guide for the report. The presence of the case study protocol is another way to increase the reliability of the case study and is a requirement in the multiple case study design. This case study protocol was used to guide the study and is based on the first phase of the study. The protocol was designed as follows:

Part 1: Overview of this case study project
Part 2: Project objectives
Part 3: Data collection procedures and access to sites.

3.3 An overview of the case study project

3.3.1 Unit of analysis

The unit of analysis is a critical factor in the case study (Tellis, 1997). The case has to be defined in terms of units of analysis. The case in this study was the Haiti earthquake response. There were multiple cases with several units of analysis embedded in each: These included:

First unit of observation: Members of the SA NGO medical rescue teams that responded to the 2010 Haiti Earthquake.

Second unit of observation: Humanitarian NGO relief-organizing member.

3.3.2 Sampling of cases

George and Bennett (2005) discuss two types of case studies: the within-case analysis of a single case and the cross-case comparison of a number of cases. They mention that it is preferable to use a combination of the two. According to Yin (2009) it is also preferable to base the case study on multiple cases, but when the interest is in extreme or unique cases as in emergency studies, single cases are usable. Yin (2009) argues that case studies do not need to have a minimum number of cases but that researchers need to be called upon to work through the case that presents itself.

In order to involve as many study participants as possible and to acquire as much data as possible about the preparedness of SA NGO relief teams for international earthquake response, the researcher utilized multiple sites and different study participants within these sites. Different sampling techniques were used.

3.4 Background of selected teams for the study

The data collection included two out of the four SA NGO teams that responded to the Haiti earthquake in January 2010. The choice of these two particular teams was made due to the timeline of response. They were sent first within days after the earthquake to fulfil USAR duties whereas; the last two teams were purely medical care teams.

3.4.1 Team One- North West Province - EMRS College

This team consisted of ten members, all from North West Province. These members were qualified Emergency Medical Practitioners who were also trained in Urban Search and Rescue.

3.4.2 Team Two - Kwa-Zulu Natal - University of Technology

There were ten members within this team. Four members were Medical Doctors who had no USAR training. The other six members were qualified emergency medical practitioners with USAR training.

3.4.3 Humanitarian NGO relief-organizing member

The NGO's organizer for all resources, travel arrangements and logistics for the responses to Haiti.

The data collection took place after the disaster in Haiti, in two provinces in South Africa, namely Kwa-Zulu Natal and North West Province. There were four teams deployed by the SA NGO to respond to Haiti at different intervals according to resources needed immediately after the initial earthquake took place. The first two teams that were sent were trained in USAR as well as had emergency medical care qualifications. These teams had to be USAR trained due to structural collapse that took place after the Earthquake. The last two teams were sent after the initial phase of USAR was over. They consisted of medical doctors, nurses and surgeons to initiate definitive medical care, post disaster.

3.5 Data collection

Polit and Beck (2006) emphasize that case study research is not simply anecdotal descriptions of a particular incident or patient, but is a disciplined process that typically requires systematic data collection. Holloway and Wheeler (1996) states that case studies use a number of sources for data collection like observation, documentary sources and interviews, so that these studies can be analysed from all directions. Therefore, it was essential to consider what form of empirical material was needed to answer the research questions. Yin (2009) discusses six different sources of evidence: documentation, archival records, interviews, direct observations, participant observations and physical artefacts. In this case study the researcher chose to use mainly focus group interviews and narrative data.

A unique aspect of a qualitative study is the ability of the researcher to let the data emerge as the research and writing is progressing. As noted by Janesick (2002), “the qualitative researcher uses analysis of narrative, which means that categories, themes, and patterns come from the data. The categories that emerge come from memory work, documents and interviews prior to data collection”.

3.5.1 Interviews

Interviews can be structured in different ways from standardised questions chosen beforehand to letting the content mainly be decided by the study participant, in which case the questions are a result of the study participants’ answers. The interviews in this study were unstructured and study participants were left to discuss information they thought was relevant to the research question. The researcher used this technique as she had no preconceived view of the content or the flow of information to be gathered.

The aim of this technique is to reveal participant's perceptions of the topic without imposing the researchers own views (Polit and Beck, 2006).

Focus group interviews were used for the two rescue teams because it was more likely to elicit thicker narrative data due to generating a lot of dialogue (Polit and Beck, 2010).

3.5.2 Documentation

In connection with the interviews and observations, different types of written documentation were gathered such as evaluations of other cases of emergency response, preparation materials (i.e. emergency plans, risk and vulnerability analyses), as well as documented lessons learnt meetings.

The research questions were answered from the case study as well as narrative data from the following sources:

1. Focus group interviews with each of two teams (Annexure B).
   Team 1: North West Province – EMRS College

   Team 2: Kwa-Zulu Natal- University of Technology

2. One-on-one interview with Relief organizing member of the NGO (Annexure D) funding Haiti rescue teams

3.6 Data analysis

The data collection process occurred simultaneously with data analysis. As soon as data was obtained from the first case in Phase One, data analysis commenced. Data from each case was analysed separately and the researcher moved to the next case until all data was analysed.

Qualitative research results in large amounts of contextually laden, subjective, and richly detailed data. The data in this study originates from interview transcripts and observation notes and were pared down to represent major themes and categories that describe the phenomenon being studied. Data reduction was used to facilitate communicating findings simply and efficiently. This paring and sieving of data is termed thematic analysis. Qualitative data analysis consists of identifying, coding, and categorizing patterns found in the data. The clarity and applicability of the findings, however, depend on the researcher and this can be the greatest strength or the greatest weakness of a qualitative research study. It is incumbent on the researcher to report and document her analytic processes and procedures fully and truthfully so others may evaluate the credibility of the researcher and her findings (Polit and Beck, 2010).

Buetow (2010), states that thematic analysis is a common method for qualitative analysis of transcripts. It is suitable in all approaches of qualitative methodology. In general, thematic analysis has three “levels”, which are analysed in succession. Themes are groups of codes that recur through being similar or connected to each other in a patterned way. It attempts in general to reveal core consistencies and meanings in a text by identifying and analysing themes, which are large, abstract categories of meaningful data segments (Morse and Field, 1995). Thematic analysis disregards codes that do not recur, yet may nonetheless be important. Codes of high importance are ones that advance understanding and are useful in addressing real world problems (Buetow, 2010).

Yin (2009) discusses recurrence of codes that can take place across or within cases, such as persons, groups, events or processes. Contrary to some claims, however, the mere recurrence of codes is not necessarily a sufficient criterion of their importance. Cohen and Crabtree (2008) argue that

reliability is also a contested criterion for establishing the truth of qualitative accounts or interpretations. Different researchers may offer different, subjectively real accounts, each of which has some ‘validity’.

The literature was reviewed for definitions of experience, particularly as they related to their response experience. Literature from the disciplines of disaster medicine revealed common problems with the need for guidelines and preparedness. The literature was revisited between interviews to gain a better understanding of new data. Clear conceptualizations assisted in taking definitions into the study, and combined with the other sources of data, comprised the mass of data available to study the phenomenon of interest. Creating simplistic models and thematic maps were essential activities in data management. All sources of narrative data were analysed until data saturation was achieved. Triangulation of data (See Annexure A) was undertaken to culminate into a conceptual framework.

Mapping the data from multiple data sources is an important task. In this study, principal data was derived from three lengthy interviews lasting from one and half hours to two hours. All literature, along with the transcripts of the study participant interviews, has been subjected to thematic analysis which entailed descriptive coding to highlight key themes. These themes were further analysed and broken down into categories and subcategories using literature in the researcher’s triangulation of data (Polit and Beck, 2006). After checking for investigator bias, the data was compared and evaluated within the context of the research questions. These themes, categories and subcategories, therefore, have been used to develop a framework that can be used for future preparedness training and consultation projects.

Phase two: Recommendations towards developing a conceptual framework

Phase two will use the study findings and recommendations to help guide the development of a framework for this study.

3.7 Trustworthiness

In Polit and Beck (2010) there are four criteria for the establishment of trustworthiness of qualitative data:

- credibility
- dependability
- confirmability and
- transferability

The manner in which these have been addressed is explained hereafter.

3.7.1 Credibility

For qualitative data, the researcher used focus group interviews. The questions in the interview were open ended. This ensured trustworthiness and credibility of data obtained. The researcher kept a journal of the events that took place to ensure credibility of the process and to prevent “memory decay”.

The concepts of prolonged involvement and prolonged observation (Polit and Beck, 2006) have both been seen in this research study and have significantly helped in ensuring credible data was extracted. The researcher's involvement in the environment of the study, as well as her day to day interactions with many of the study participants’ in her capacity, has enabled the researcher to achieve an in-depth understanding of the culture, language and views of the groups.

In this study, it was important to ensure that the research findings were found trustworthy. This was done by employing the criteria of trustworthiness, rigour and honesty. The researcher is very aware of personal biases in dealing with this study and that it may make an impact in the final selection of the information used in the narrative. The researcher has made every attempt to remain fair and honest as possible in the selection of the information.

Triangulation can be used to enhance credibility (Polit and Beck, 2006). Qualitative research findings can be strengthened in this way by combining participant observation with interviews and documentary sources (Hammersley and Atkinson, 1983).

Researcher bias has been addressed through peer debriefing and member checks. Credibility has been further strengthened by the direct observation by the researcher who was part of a team that responded to the Haiti 2010 Earthquake disaster. Direct observation data was not collected or used but enhanced the researchers perspective of the data collected from other sources.

Member checking (i.e., checking facts and interpretations with other persons in the setting) will be used as a form of reflective analysis in this study. Confidentiality was of importance so participant coding's were already in place before member checks were done.

Summarised findings were presented to the study participants who participated in the interviews for their feedback or to confirm their ideas, thoughts and words were written down correctly. Their comments have been taken into consideration for the final report of the findings.

3.7.2 Dependability and confirmability

In relation to the dependability and confirmability of the data, a process of inquiry audit has been embraced (Polit and Beck, 2006). All raw data, data reduction and analysis products, process notes, materials relating to intentions and depositions, instrument development information and data reconstruction products have been shared with the research supervisors as the research project has evolved. The audit trail has been further strengthened by the keeping of reflective notes on the decision making processes taken by the researcher.

3.7.3 Transferability

Transferability refers to the extent that the findings of the study can be transferred to other settings or groups (Polit and Beck, 2006). A thick description refers to a rich and thorough description of the research setting. In this study a thick description of the research situation and context (Chapter 3 and Chapter 4) should provide sufficient detail and precision, to allow judgment. An accurate account of the research process including an argument for the choice of methods is also provided to ensure transferability.

3.8 Ethical considerations

Due to the sensitivity of this research subject matter, there are a few ethical issues that need to be addressed. The ethical principles for the conduct of research, namely beneficence, respect of human dignity and justice as outlined in the Belmont Report (1979) were observed during the planning and implementation of the study.

3.8.1 Confidentiality

The maintenance of confidentiality was essential to protect the study participants from harm as a result of them sharing their opinions and respecting their privacy (principle of justice). Two important means of methods for ensuring confidentiality were as follows:

3.8.1.1 Study Participant Codes

Study participants were assigned reference numbers which were used instead of their names when collecting the data and producing the final results. This strict protocol of codes for referencing the interviews has been used throughout collection and analysis of the primary data. This has ensured that no study participants will be named or known to anyone except the researcher.

3.8.1.2 Quotation Test

Care has also been taken in the selection of direct quotes from the transcribed interviews. Some individuals may not want to be judged regarding opinions or experiences; therefore, it is possible that just being part of the research process may raise concerns for some individuals. In order to address this, other measures besides participant codes has been done. It was clearly indicated at the start of the interviews that the study participants were free to terminate the interview at any point if they felt they no longer wished to proceed.

A test was also devised to ensure that it would not be possible for study participants to be recognised by their quoted comments. This test consisted of questions that needed to be completed before a direct quote from the transcribed interviews was included in the final report. In order for a section of text from the transcribed interviews to be eligible for inclusion none of the

following questions should elicit a positive response. The questions were as follows:-

1) Is there any reference to persons by name or function that may be identifiable of a certain participant?

2) Is there any reference to time and or place that may be identifiable of a certain participant?

3.8.2 Informed Consent

Study participants that were approached to be involved in the study were given a full explanation of the study so that they could give informed consent. They were also not obliged in any way to participate in the study and were given every chance to choose not to take part. Further to this, it was explained in detail that no reason had to be given for not wanting to participate in the interviews.

3.9 Limitations

The methodology selected for a study controls and even limits the study. However, according to Richardson (1994), “although we are free to present our text in a variety of forms to diverse audiences, we have different constraints arising from self-consciousness about claims to authorship, authority, truth, validity and reliability”. This study, which focuses on the experiences the SA NGO relief teams, is a small-scale qualitative study. It cannot be generalised to all NGO teams in South Africa. This research is limited to the observations and interpretations of shared encounters and interactions with the team members of the SA NGO teams. Qualitative research has a number of conventions that could pose a problem. According to Denscombe (2007), other perceived weaknesses of the approach are the

possibility of presenting biased information and the difficulty in cross-checking, which may lead to doubtful reliability. However, the in-depth nature of a case study gives unique perspective on a situation that may be lost in larger scale research projects such as surveys. The trustworthiness of the results would play a role in determining whether my findings were transferable to other similar contexts.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF THE FINDINGS

4.1 Introduction

The purpose of this chapter is to answer the primary and secondary research question's posed in Chapter One and Chapter Three by using thematic analysis. This chapter presents and discusses the results of the data obtained from focus group interviews that were conducted with team members that responded to the Haiti Earthquake disaster in 2010. The discussion is based on the study objectives in Chapters One and Chapters Three of the study. New literature, which was not presented as part of the literature review in Chapter Two, will be used in this chapter to discuss categories that emerged during data collection and analysis, namely, need for preparation, response phase, risk management, defining capabilities (mitigation phase), base of operations, poor communication and information, and the understanding international guidelines.

Within the literature that is used in this chapter, snapshots of the checklist used for the INSARAG External Classification (IEC) /Reclassification document is presented *(the numbering/bulleting of these snapshots are not to be confused with the numbering system in this dissertation)*. This particular INSARAG guideline was started in 2005 and aims to aid USAR teams and NGOs in classifying their teams according to INSARAG standards. This guideline is actually intended for INSARAG registered USAR teams or USAR teams looking to be registered with INSARAG officially. The IEC guidelines objective is to establish verifiable operational standards to teams responding to earthquake disasters. The IEC is a unique process that USAR teams prepare for and are examined on by an INSARAG classifier. They highly recommend that all teams that are currently registered and want to be

registered as an INSARAG USAR teams go through the reclassification as it adds to on-site coordination.

The transcripts from the interviews were coded into broad themes based on the research objectives. Each broad theme was then subjected to a more detailed analysis by the researcher, which led to the formation of more specific categories within each theme. A closer look at the categories of these broad themes highlights interesting relationships between them.

4.2 Intention of the chapter

The intention of this chapter is to provide an overview of the broad themes that were found with during the data analysis. The researcher's analysis does not seek to make profound claims concerning the state of this area of study. Throughout this study, it has been a concern to identify issues in the areas of study rather than drawing conclusions about certain views. The aim is to use the research findings to both influence training in this area as well as stimulate discussion and debate about the quality and effectiveness of relief team responses of NGO teams in South Africa.

The participants in the research are referred to as 'study participants' throughout the text. Any quotes are *"written in italics surrounded by double quotation marks"* to indicate that this is not the researchers wording but the words of the study participants. For the purpose of this study, participants will remain anonymous and will be referred to with codes that the researcher has allocated.

4.3 Chapter layout

This chapter will answer the primary and secondary research questions posed in Chapter One. The findings from the case study will be integrated into a set of categories, the core category will be identified and a discussion of the categories will be presented. Finally, the development of the conceptual model will be described.

4.4 Re-visiting the primary research question

How can South African NGO relief teams improve their response to an international earthquake disaster?

To answer the primary question, the following research sub-question were asked:

1. Are South African NGO teams adequately prepared for a rapid response to an international earthquake disaster?
2. Do South African NGO teams have the human and logistical capabilities to be effective in an international earthquake response?
3. Are South African NGOs compliant with International Search and Rescue Advisory Group guidelines?

4.5 Categories emerging from the interviews

In answer to the primary research question, six categories were identified as a result of the extensive thematic analysis of the interviews. The final categories were decided upon by identifying commonalities amongst the group panel interviews with the addition of unique categories from each team. At the end of this chapter, Table 2 depicts the categories that emerged during the study. For the purposes of this chapter, the categories will be listed and explained in the order that the secondary research questions were presented in Chapter One.

The following major categories resulted from the analysis of all interview transcripts:

- Need for preparation
- Response phase
- Risk management
- Defining capabilities (Mitigation Phase)
- Base of operations
- Poor communication and information
- Understanding international guidelines.

4.6 Re-visiting the first research sub-question

The question was:

Are South African NGO teams adequately prepared for a rapid response to an international earthquake disaster?

4.6.1 Formulating the answer to the first research sub-question

This question will be answered by reviewing comments made by the group panel interviews and applying the categories that emerged into the research sub-questions to enable the primary question to be answered.

4.6.1.1 Preparation phase

The preparedness phase of the disaster cycle is very important. It is during preparedness planning that responsible agencies and responding teams gain an understanding of the hazards in the environment of disasters and where they have the opportunity to reduce any potential risks or problems. It is also the ideal time when they can most advantageously meet their fellow disaster responders in other agencies and form effective working relationships, or

social networks. A pre-existing relationship builds trust as meeting at the height of a disaster is not conducive to building rapport and cooperative behaviour (Folb, 2010).

According to Quarantelli (1985) planning and management personnel look to the past as a basis for planning for future disasters. Disaster research and its application can be too oriented to past disasters and is not ideal for planning and managing. Quarantelli (1985) asserts that rescue personnel need to be future oriented in both disaster research and its use because it has been indicated that some countries will face both more and worse disasters (Quarantelli, 1985). Carley and Harrald (1997) state that the problems within plans are that most of them are out of date before they are published and that they are often unknown by the people who are supposed to use them. Too often, planning and management look to the past, but it is really the future disasters we need to consider. Perry and Lindell (2003) support the belief that while planning is an on-going process, the physical plans can be seen as a 'snapshot' of the process at a specific point of time. To create a living document and a more useful plan, it must be changed and revised as the need arises. Weick and Sutcliffe (2001) argue that problems with plans can do just the opposite of what is intended, creating mindlessness instead of mindful anticipation of the unexpected.

4.6.1.2 Need for planning and preparedness

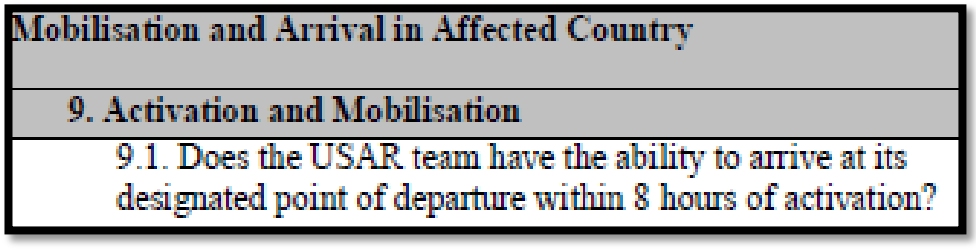


Figure 13: Mobilisation (INSARAG, 2011b)

Figure 13 INSARAG considers activation within 8 hours of notification of a disaster response vital. All personnel should be ready to mobilise with all logistical requirements within that time. Mileti (1999) asserts that preparedness is not a static condition and it is essential to continuously uphold and maintain it. There are many different forms of activities that may contribute to the creation of an organisation's capacity to respond to international disasters. For example, experience from previous disasters as well as different types of analyses, exercises and training may all contribute to creating a prepared organisation (Mileti, 1999).

The study participants were aware of the need for being well prepared to respond to international earthquake disasters. They felt that the relief teams that respond to these international earthquake disasters do have a time-line to respond and that any preparation for departure should be done quickly in order to respond and mobilize as soon as possible. Teams responding to earthquake disasters must be able to rapidly deploy within the shortest possible timeframe to maximise their impact on the affected community (INSARAG, 2011a).

"I think what we need to do is have a team on permanent standby. That's what our rescue team should be now. Passports and immunizations must be up to date. That should be how the NGO team should be ready to go, so if we get called tomorrow, within a very short period of time you should be ready to go. This will also improve our response times" (P3)

The study participants discussed the need for formal agreements that need to be pursued as part of disaster preparedness planning.

"I think what is desperately needed is a balance between the two or some sort of formal agreement between NGO's and Nato (UN) based teams where we can work together for the better of the people." (P2)

“Any NGO should have some sort of agreement with the UN.” (P1)

“Everything revolves around the UN. Because I mean they are the International Police basically. So if you don’t have some kind of legal standing with them. So we need some sort of arrangement or agreement where we either fall into their team or we’re a specialised wing of the UN team, if you like.” (P2)

A huge difference in terms of, I wouldn’t call it preparedness but contacts, cause the more contacts you have in terms of International response, the faster you get there.” (P2)

According to Quarantelli (2003) organizations that undertake preparedness planning often focus on written disaster plans. He discusses that good planning should focus on such processes as: undertaking educational activities; establishing formal and informal links between key groups; assessing, monitoring and communicating information about disaster management; holding disaster training, rehearsals and simulations; developing techniques for training, knowledge transfer and assessments; convening meetings to share information; obtaining the involvement of relevant non-local groups in the planning process; and updating strategies, resources and laws as necessary. The production of a document or a written plan, while sometimes legally necessary, is never as important as the planning/mitigation process (Quarantelli, 2003). Given all this, it is not surprising that studies have consistently shown that disaster planning should primarily be, first of all, generic or general and that there should be only one major organization responsible for coordinating the overall planning for all kinds of disasters.

The following excerpt from the study participants discusses am important point in terms of preparedness.

But, we're really looking at something that is completely different from a specific NGO team. So, if you're going to have a completely different function, you've got to look at preparedness from a completely different perspective." (P2)

Quarantelli (1997) states that in the overall planning there can and might be special provisions for the distinctive aspects of certain kinds of disasters such as, earthquakes, floods and hurricanes as well as for certain types of team compositions but primary emphasis should be on generic or general disaster planning.

While better preparedness will help address some issues, there will never be a perfect disaster plan for when disasters occur. Disasters such as floods and earthquakes are unpredictable and require emergency personnel to invent and develop their response as the situation progresses. This is the reason improving the effectiveness of ad-hoc disaster response has become a significant area of research. In a disaster, new and different demands will take place and there will also be a need to cooperate with new, unfamiliar responders (Perry and Lindell, 2003; Quarantelli, 1997).

a) Need for training

The study participants' felt that that there was a need for training and actively partaking in exercises between responses. They thought it would be beneficial in terms of being prepared to rapidly respond to a disaster as it adds to their knowledge of disaster management.

"So that was also a thing in your preparation phase as well. I think if people are involved with an NGO or a government organisation, and that they will want to probably send over teams, or make them active. I think the big thing is teams need to be active. Actively participating in exercises and participating with other organisations in the country. It's not a sole thing that you say we are the sole team that can respond because our NGO owns this and this and this company. You get a lot of information and knowledge through these things." (P7)

The following excerpt reveals that there is an understanding that certain steps need to be taken in order to improve their response to these types of disasters.

"This is the first time I sent a Search and Rescue team. But the point has to come somewhere along the line, the different teams need to make unity in South Africa, to have an understanding of each other. To say that before we leave we do a proper pre-brief and inventory for forty-eight hours before we leave"

FEMA advises and encourages NGOs and private-sector entities that decide to take direct roles in response operations to participate in NIMS training and exercises. The reason is, disasters frequently demand exceptional skills from medical responders. They will work most efficiently and effectively, within the roles and hierarchical structures with which they are familiar. Therefore, the goal of disaster response is to assign personnel to roles that they are familiar with to ensure them they are able to function well under extraordinary circumstances. FEMA offers standardized training courses which are specifically focused on the NIMS structure and operational coordination processes and systems. They also encourage teams to complete courses focused on discipline-specific and agency-specific skills and expertise. The reason they advise this training is to help ensure that emergency management and response personnel can function together effectively during

a disaster. Training and exercises should be specifically tailored to the responsibilities of the personnel involved in the response. FEMA and INSARAG highly recommend mentoring opportunities to allow less experienced personnel to observe those with more experience during an actual disaster as this enhances training and exercising (FEMA, 2010; INSARAG, 2011a).

The INSARAG guidelines discuss step by step how training should be conducted for registered USAR teams, which ensures teams are maintaining their level of competence (INSARAG, 2011b). It is important to ensure there is a continuous learning process including different activities such as experience, analysis and training exercises (Mileti, 1999). Relief teams should be training together to build and maintain a full response capability and to create preparedness to respond to an earthquake disaster.

Figure 14, a snapshot of part of the INSARAG IEC checklist ensures that the USAR teams have a training programme and that the training programme is effective.

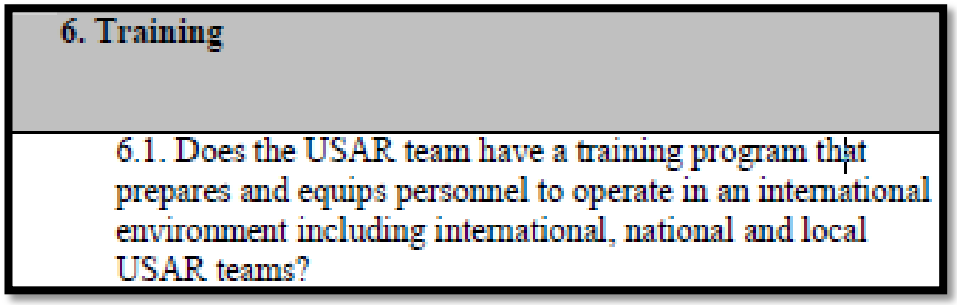


Figure 14: Training (INSARAG, 2011b)

b) Need for medical screening

The health of each team member is critical to ensure a successful response. Pre-deployment prophylactic medications such as vaccinations were discussed by participants of the study, however, it was highlighted that they received vague information with regards to receiving vaccinations prior to deployment. This indicates that little attention was given to ensuring that members were up to date with vaccinations and taking malaria prophylaxis or personal medications.

"So what we were told was that we would get vaccinations at the airport and they were organizing but they never did. It's something that needs to be looked at more carefully from an NGO perspective, or at least, if they not going to do it, at least advise rescuers that they need to go do it before you get there again, there's always the issue of time, you don't always have enough time to do things. So we actually went in there exposing ourselves to potential risk, you know what happens when there is an earthquake you're going to get sewerage, waste, exposed bodies, there's bacteria and stuff that you going to get exposed to. So that was a concern, fortunately we never encountered any problems in terms of health" (P2)

"I think coming back to preparedness, people that have been placed on teams should understand the responsibilities of what we should be doing. Like vaccinations, the team should be vaccinated before we left. Was there enough of this and this."(P7)

Uncertainty about what the NGO supplied was highlighted in the following question:

***"**Did we have Malaria tablets?"(P8)*

This indicates that responders to disaster were unaware of basic medical supplies that are vital to their good health and prevent them contracting a serious and life-threatening illness.

The Centers for Disease Control and Prevention (CDC) (2011) recommend before travelling internationally, preventive medical actions should be taken. The UNDAC handbook states the preventative medical actions should include appropriate vaccinations, measures to prevent insect bites, sunscreen and malaria prophylaxis if needed. The handbook also highlights the need for adequate stocks of personal medical equipment, and access to other medical supplies; such as antibiotics. The handbook stipulates that teams should have medical care and evacuation plans if needed when deploying to a disaster affected country in the event of serious injury to a team member (United Nations Disaster Assessment and Coordination, 2006).

Disaster responders and members of any humanitarian organisations that travel should have their vaccinations up to date and their 'yellow card' with them at all times (Centers for Disease Control and Prevention, 2011). It is not advised and unlikely that there will be time to arrange for vaccinations before departure. In accordance with international health regulations, vaccinations such as yellow fever are required for entry by some countries, depending on the traveller's point of departure and itinerary. Yellow fever was not a disease risk in Haiti so fortunately vaccination was not necessary (Centers for Disease Control and Prevention, 2011).

Vaccinations that are recommended by the Centers for Disease Control and Prevention (2011) for Haiti:

- Tetanus
- Polio
- Hepatitis A

- Hepatitis B
- Typhoid
- Meningitis
- Rabies

Another important point was brought forward by a study participant in regards to medical health of team members.

"Do any of the people on the team use medication or what type of things did we know about it, all those type of things. I think we did create a lesson out of that". (P7)

This indicates that there was no medical examination or notification of any chronic medical conditions among them before departure. Even so the personnel may have been medically unfit to work in the demanding conditions that were required from the disaster stricken areas in Haiti. It was taken in good faith that all participants were medically and physically fit and this assumption could have caused potential hazards in the affected country.

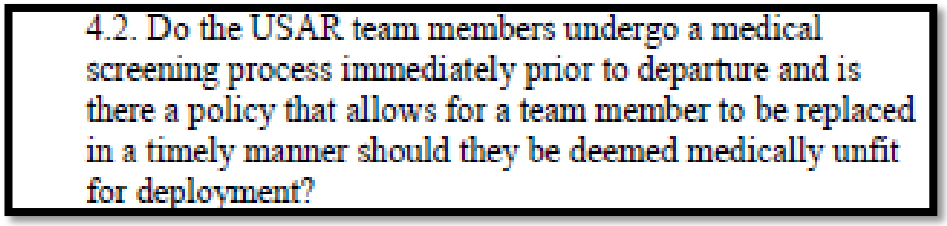


Figure 15: Medical screening (INSARAG, 2011b)

Burke, Murphy, Coovert and Riddle (2004) discuss the amount of work hours required by USAR team members and the strain they are put under as USAR operations are physically and mentally fatiguing. Every member who works on a USAR disaster site must be able to physically negotiate rubble piles, work in confined spaces, climb ladders, work at heights, and quickly exit void spaces to avoid secondary collapses.

According to the CDC, the primary goal for pre-deployment medical screening programs is to evaluate a responder's fitness to perform possibly hazardous or stressful work safely, which involves the assessment of minimal physical and emotional requirements to perform work duties (Centers for Disease Control and Prevention, 2010). The purpose of the medical screening process prior to deployment is to identify any medical issues that may jeopardise an individual's ability to perform in the field and hence place the team at risk either of being a staff member down which may cause further problems for the rest of the team (INSARAG, 2011a). Therefore, all USAR team members should be required to undergo pre-deployment medical screening which should be supervised by the USAR medical manager. The USAR medical manager is the individual tasked with the responsibility of managing the deployed USAR medical component working in close conjunction with the USAR team leader. The USAR medical manager should coordinate with the USAR team leader on any matters arising during the screening process that may adversely affect an individual's ability to deploy with the USAR team. This process is entirely objective and the pre-deployment medical screening should be conducted by suitably authorised medical personnel who will not be deployed on the mission. INSARAG also advises that there be medical care available to team members on-site while deployed (Figure 16) (INSARAG, 2011b).

16.1. Does the team have the ability to provide emergency medical care in collapsed structures including confined spaces from the time of access, during extrication to time of hand over?
16.2. Is medical care available to USAR team members?
16.2.1. Primary Care
16.2.2. Emergency Medical care
16.2.3. Health Monitoring

Figure 16: Medical Care on-site (INSARAG, 2011b)

During the disaster, relief team members must be closely monitored for signs of physical exhaustion or stress, particularly traumatic incident stress syndrome. These signs include anxiety, guilt, intense anger, fatigue, withdrawal and disorientation (National Institute for Occupational Safety and Health, 2001). Burke et al. (2004) discuss that it is normal that rescue personnel will get less than 3 hours of continuous sleep during the first 48 hours of an incident as both shifts can be setting up operations, a base of operations and working in the field during the first 24 hours regardless of the fact they should work in 12 hour shifts (INSARAG, 2011a), this is not always a possibility. This could result in personnel becoming fatigued and sleep deprived which makes them medically unfit to work in the demanding conditions in Haiti (The National Response Team, 2009).

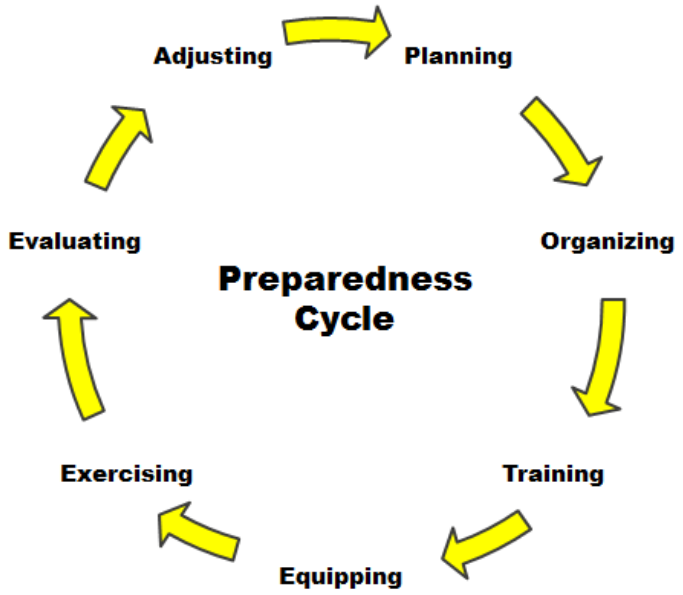


Figure 17: Preparedness Cycle (Adapted from FEMA, 2010)

4.6.2 Response Phase

The response phase is the third phase of a disaster management cycle. This phase aims at minimising injury and damage during a disaster but also immediately before and directly after it. This phase is where the emergency plan is put into action for the disaster relief teams (Cova, 1999).

Discussion found in the interviews amongst the study participants was that there were multiple factors that should have been considered before responding to the disaster.

"I mean, does it really make sense for us to go all the way across the world. I mean, surely they had lots of other aid from lots of other countries around them. But I think one of the main reasons that it took us forever to get there was just that. The fact that we're so far away. I mean our real responsibility is theoretically, Africa." (P2)

INSARAG (2011a) recommends that light USAR teams do not deploy internationally to emergencies and should come from neighbouring countries of the affected country. Medium USAR teams travelling internationally to an affected country should be operational in the country within 32 hours of the disaster and should be adequately staffed to allow for 24 hour operations at 1 site for up to 7 days. According to the literature, it was not advisable for the SA teams to respond to this disaster due to their location to the disaster and their capacity.

4.6.2.1 Mobilization to site

The study participants indicated that there was a problem with mobilization to the disaster site due to having to visas needing to be issued and having to fly commercially. This would not have been an issue if the rescuers were flying without large equipment inventories, but in their case, they did require large amounts of equipment that needed to be transported.

The following excerpts present the study participants' experiences:

I think in mobilizing, it can be easy, but to set up certain things up, it depends on what type of team you want to set up. A light, medium or heavy team, that's the thing that I saw there. Travelling commercial, I would say a light, light team. Maybe send a team over as a technical search team not doing the Search and Rescue, just going over to do the search and not a heavy rescue team and not the actual rescue of it (P7)

"Getting there was the biggest problem. So the issue was getting there, moving all the equipment" (P1)

"The moment you are at the mercy of a public airline a whole lot of problems unfold, like (P1) mentioned you can't take the kitchen sink with you. You're allowed 35kg per package and it's very limited to what you can actually take. Also, the availability of flights, you can't go when you want to go, you can only go when they "NGO's" can get you a ticket .So I think in terms of the speed of response it was frustrating, because now you have to wait for tickets to be organized, you then have to go and fly out with a commercial airliner. So we had to go around about way instead of directly." (P4)

"Most of these disasters you can't really plan for and you have to have a sort of "shotgun" approach and prepare for everything or anything that may come. Having said that, there are logistic problems also as you can't take everything and the kitchen sink with you every time you going somewhere. Besides the rescue equipment, there are other things to worry about like transportation." (P1)

Discussion found in the interviews amongst the study participants was that there were multiple factors that played a part in effective preparation for mobilization to the disaster site. Such as limitations in finances, this in turn effected how teams travelled to the disaster affected country. Teams had to

fly commercially, which impacted equipment inventory lists considerably due to weight restrictions. The teams had to decrease the amount and type of equipment. This, in turn, had a knock on effect to team capabilities and, therefore, team effectiveness. Another delay that was noted was the issuing of visas for the responders.

The following study participants' quotes highlight the frustration felt on the matter of delayed time for visas.

"We can't just be treated as just another organisation. I mean look at how many hours a day we spent waiting for transport to come and fetch us, before we could work. Man hours being lost, lives being lost essentially. So we should have some kind of authority to get our way there, within reason, but we need more authority than just a visitor's visa in their country because, essentially that is what we went on." (P3)

Reinike (2010) confirms that there is no global regime controlling how relief personnel can temporarily cross borders. Relief personnel are left to the mercy of national visa regulations that vary between states and differ based on their nationality, the international status of their organization and their country of origin. Visa processing can be laborious and take up to several weeks, preventing access of personnel until after their presence is most vitally required (Reinike, 2010). Foreign personnel must obtain permission to enter and work in an affected country, and transit through surrounding countries. Nations rarely have specific laws relating to visa procedures for international relief personnel. Otherwise, relief personnel must resort to utilising tourist provisions allowing for visa-free short-term stays. However, problems then arise once time-limits for visa free travel lapse (Reinike, 2010).

Noji et al. (2006) supports the noted difficulties in the response phase. The authors mention the difficulties teams have with transport to the affected area and that it is often difficult, and compounded by the number of team members and large amounts of equipment. Government or military affiliation may improve access to transport vehicles, as may pre-arranged agreements with civil carriers. Bureaucracy also needs to be considered with cargo manifests and documentation pre-arranged in an effort to simplify customs transit. The UN is also attempting to simplify customs procedures for international humanitarian assistance.

"Most of these disasters you can't really plan for and you have to have a sort of "shotgun" approach and prepare for everything or anything that may come." (P1)

The results of the study revealed that all travel arrangements for the response were co-ordinated by the NGO, putting the team on the ground 220 hours after the initial earthquake. This is in complete contrast to INSARAG's (2011a) recommendation that recommended that International medium USAR teams travelling to an affected country should be operational in the affected country within 32 hours.

4.6.2.2 Need assessment

The study participants found that there was a link between information and the response preparation. Without the information from the disaster site they were unable to make judgement calls using facts and had to rely on experience to lead the preparation. An objective evaluation of the needs of the affected country was not done and instead the response was based on media reports. That, coupled with the logistical setbacks, forced the NGO teams into a role which they were ill prepared for.

The following quotes seem to capture the link between information and response preparedness:

"It's difficult to decide what to take if you really don't know what's happening on the other side. So, ideally you'd like some point of contact to wherever you're going, to make sure that "this is what's happening", "this is what we need". Even if it means flying somebody over initially to make sure that when we do come over we have brought the right stuff. Or do an initial scene size up if you like. Check out what's happening there on the other side. "This is what needs to be brought over", obviously this would have to happen quickly." (P3)

This is in contrast to Bremer (2003), assertion that a response to a disaster site will be successful if the responders receive accurate and relevant information of the area. He believes that if policies and agreements are developed as part of disaster preparedness, on international, bilateral, and national levels, disaster relief may be more relevant, less chaotic, and easier to estimate, thus, bringing improved relief to the disaster victims (Bremer, 2003).

"Most of these disasters you can't really plan for and you have to have a sort of "shotgun" approach and prepare for everything or anything that may come. Having said that, there are logistic problems also as you can't take everything and the kitchen sink with you every time you go somewhere. Besides the rescue equipment, there are other things to worry about like transportation." "The main frustration is trying to prepare for something but you don't know what you preparing for" (P1)

Noji et al., discusses many existing studies focused on the response phase, and how information flow is distorted or destroyed because of human behaviour such as media reports and sensationalism. These well-documented problems are influenced by what goes on in the preparedness

phase of the disaster cycle unless a systematic needs assessment is carried out by the organisations own personnel. Media reports may not be accurate and teams are advised to access their own reliable information (Noji et al., 2006).

The study participants felt that it was important to get information directly from the disaster site.

"That's difficult for those countries to get that communication. But if you can, then you can tailor-make your response, because you could find out from the ground itself what is actually needed. And if you know what is needed, then you can decide, 'look we're going to take more medical equipment than rescue for example'." (P4)

UNDAC's handbook makes recommendations for need assessments to be done before deploying to a disaster site. The handbook states that a rapid initial need assessment should commence in the early, critical stage of a disaster and is intended to determine the type of immediate relief response needed. The assessment provides information about the affected country's needs, possible intervention strategies and resource requirements and aims to identify the impact a disaster has had on a society and its infrastructure. It should determine the most vulnerable segments of the population that need to be targeted for assistance immediately. Most importantly a need assessment should identify the level of response by the affected country, its internal capacity to cope with the situation and the level of response required from the international community (United Nations Disaster Assessment and Coordination, 2006).

4.6.2.3 Self-sufficiency

When attending an earthquake disaster in a developing country, the main concern is to ensure that teams are self-sufficient as to not become a burden on the affected country. This became very apparent to participants that responded to the disaster as some teams were self-sufficient and others not. The teams that were not self-sufficient however, were teams that were promised goods and supplies which never materialised when they were required. This showed poor communication between teams and the NGO. Other members of the teams found that certain supplies could not be incorporated with personal luggage on the commercial flights and so went into cargo, which was very delayed due to amount of cargo being loaded for the relief effort.

The following quotes express the study participants' views:

And I would think that regardless of what people tell you, that 'this will be provided', 'that will be provided', I think that we should be taking some basic survival gear with us. Regardless of where we're going, because anything could happen. I think once you got your basic survival gear, nothing else can go wrong, as long as your passport is with you." (P1)

"But I think that we should, every team should be able to survive on their own. In other words, take your basic things like; your stoves, water, basic food rations, your vaccinations instead of relying on other people." (P1)

"But if you go commercial flight, whatever you want to take along must go with you. Even if that means that you take less stuff. Because frankly, you guys were there you did your search and you did your rescue without that equipment." (P9)

"I mean we had literally, a food shortage. I mean we were dependent on snack bars pretty much most of the time although you had money; you couldn't really do much because you know there are no shops firstly. There's no organisation. We took our own food to last us over the days. But the other people were also promised food, the other groups that came, but that didn't happen. So we ended up sharing." (P3)

"Just my one thing is the food and water was a big issue for me. We nearly came seriously short as far as I am concerned. Because we arrived there at the airport, we said to the NGO 'where's the food'? We didn't have water, fortunately, the food didn't get from Joberg to Santo Domingo. So we went out before we left, we had to go buy food and then we bought water. Because if we hadn't have lost our food, we would never of had water when we arrived in Haiti. Fortunately for Caritas they were actually quite organised in the compound and we could access water. But the water ration initially was less and I didn't pee for 2 days." (P8)

The IEC checklist (Figure 18), asks the very important question about self-sufficiency. This advice should be taken by all relief teams responding to a disaster to avoid what the study participants had to endure.

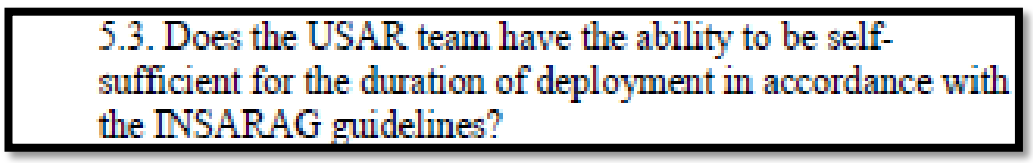

5.3. Does the USAR team have the ability to be self-sufficient for the duration of deployment in accordance with the INSARAG guidelines?

Figure 18: Self-sufficiency (INSARAG, 2011b)

Noji et al., (2006) and INSARAG (2011b) discuss the importance of relief teams' need to be self-sufficient in all aspects of deployment for a minimum of 72 hours, and preferably the full period of their deployments. If teams are not, this will increase the burden on the affected community. This is a major logistical exercise as self-sufficiency should include not just food, water and

shelter for the team members, but also medical and communications equipment, and possibly transport and any other materials needed for patient care.

International guidelines for daily calorie requirements were not adhered to (Scientific Advisory Committee on Nutrition, 2010). Lack of energy not only dampens teams' spirits but, in addition, externally provided food sources in disaster situations are usually limited and are potentially unsafe, in addition to putting unnecessary demands on an already overstretched local supply chain. Appropriate clothing for the local conditions was not adequately considered, leaving team members at risk of dehydration and heat stroke.

4.6.2.4 Formal team documentation

The study participants showed their concern for the lack of formal paperwork and documentation that they had when arriving in the affected country. They did not have any formal team identification to ensure they were allowed entrance as a relief team, but this did not pose a problem. However, they did find that they were delayed because of not having formalised plans or documentation. Although they were not refused entry anywhere, this is an issue that needs to be further investigated.

"Clarification is needed of when an NGO goes over, as to what our legal status in that country is. I think that must also be formalised in a protocol or something like an SOP because authorities like the army, have to recognise why you are there, give you that liberty to move, obviously within reason. But, we can't just be treated as just another organisation. Look at how many hours a day we spent waiting for transport to come and fetch us, before we could work. Man hours being lost, lives being lost essentially. So we should have some kind of club, some kind of authority to get our way there. But we need more authority than just a visitor's visa in their country. Because essentially, that is what we went on."(P3)

8. Documentation
8.1. Is there a system in place to ensure all USAR team members have the following personal travel documentation:
8.1.1. Passport with a minimum of 6 months validity and 2 blank pages
8.1.2. Visa(did the team check if one is needed)
8.1.3. Passport photos x 6
8.1.4. Photocopies of Passport x 4
8.1.5. Record of inoculations/vaccinations required for international travel
8.1.6. Copies of valid documentation to support right to clinical practice in home country of medical personnel in the team

Figure 19: Documentation (INSARAG, 2011b)

Figure 19, notes the formal documentation that is needed when responding internationally as a relief team to an earthquake disaster.

8.3. Does the USAR team have standard procedures covering the following:
8.3.1. Communications
8.3.2. Emergency evacuation
8.3.3. Emergency medical evacuation & repatriation
8.3.4. Operations
8.3.5. Safety and security
8.3.6. Logistics
8.3.7. Transportation

Figure 20: Standard Operating Procedures (SOP) (INSARAG, 2011b)

The following excerpt from a study participant shows that the team felt that SOP were required.

"I'll agree with you (to P3), it's just like you have the INSARAG guidelines, we need specific SOP's for NGO Response." (P2)

"So that's a sort of concern. The poorer countries are in a worse situation compared to the well developed countries, not just because of the infrastructure but because of many other things, so that's why I said earlier about having some sort of arrangement or SOP for when this happens. These are the specific teams that need to be engaged for those sort of issues. You have your rescue teams, but you need a rescue team slash medical team." (P2)

Figure 20 notes the need for Standard Operating Procedures (SOP) as part of the team's formal documentation. The definition of SOP according to the National Fire Protection Association (NFPA) is "an organizational directive that establishes a standard course of action." Therefore, SOP are written guidelines that explain what is expected and required of service personnel in performing their job tasks. A comprehensive set of SOP defines in significant detail how a team or department intends to operate in all aspects their job. SOP's are prepared by service organisations to perform functions which can include administration and emergency response operations. The procedures can be structured and presented in a variety of ways, depending on the department's requirements and preferences (FEMA, 1999).

4.7.3 Need for risk management

Kaplan and Garrick (1981) define risk as the complete set of the answers to the following three questions: What can happen, how likely is that it will happen and if it does happen, what are the consequences? Dynes, Quarantelli and Kreps (1981) claim that planning should be based on the most probable scenarios and not the worst cases as in risk management. However, Kaplan and Garrick (1981) argue that since emergencies are commonly improbable scenarios, worst case thinking is necessary in some form, but Dynes et al., claims that this does not exclude the usefulness of methods such as risk analysis.

4.7.3.1 Safety and Security

The study participants revealed that they were concerned with safety and security while responding and while operational in the earthquake affected country. They expressed their concern that they had no formal evacuation plans that. They were not confident that an evacuation plan could be negotiated even with the NGOs resources.

The following excerpts express the study participants' views:

"What if one of us gets injured here, forget the earthquake? Driving in the back of the open van, you know what the traffic was like and if that van capsized or something and we got seriously injured, how are we going to get back to definitive care? I was sort of confident in the sense that, I know the NGO decision maker has a lot of resources, but not even the NGO with millions of Rands can help, it doesn't matter, how are you going to get from that scene to a fancy hospital?" (P1)

"Those military choppers wanted to charge to fly us across to Haiti. Like $7000 or something, just to fly us across. It's the same thing, if we were injured, would they be prepared to fly us out of there? You can only do so much treatment up to a certain stage" (P7)

"Let's say for instance one of our crew members did get seriously hurt in Haiti. What would our next step be? Other people have control over the airport, at that stage it was the UN. So would you want to knock on their door and say 'listen, we are not members of the UN or registered with them, but we've got a member injured" (P7)

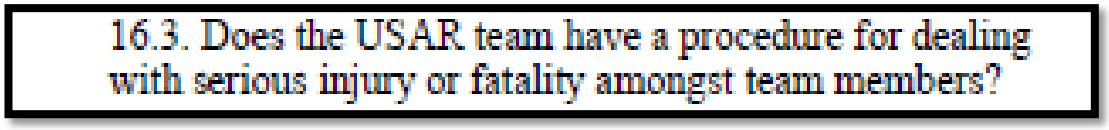


Figure 21: Evacuation (INSARAG, 2011)

The INSARAG IEC guidelines discuss the importance of having evacuation plans formally discussed and noted prior to deployment. Disaster response tasks such as evacuation and other self-protective measures, search and rescue, emergency medical care, emergency transportation, response coordination, security and credentialing have specific resource and logistical requirements that must be taken into account during the planning process and carried out when required (INSARAG, 2011). However, concerns raised by the study participants indicated that this was not the case.

4.7.3.2 Well-being

Members of a rescue team are the responsibility of a medical professional or medical manager within the team. The responsibility of this medical manager includes prophylactic immunizations (if not received prior to departure) and any medical treatment indicated by the setting of the disaster. Search and rescue personnel should be monitored for adequate rest, hydration, caloric in-take, and signs of excessive stress (National Institute for Occupational Safety and Health, 2001). Any ailments such as blisters, abrasions, or other minor problems that may incapacitate the team workers must be treated as this will negatively impact on teamwork.

The following excerpt represents how the study participants felt about their well-being.

"Those are associated risks that we know. I mean, whenever we go to a disaster it's going to happen. I mean just as how much we care about the patient, we should be caring about the rescuers and there should be some plan, if this happens; you know there's a fall back option that you have and I think that's very important. I mean the more people talk about post-traumatic stress and things like that. But, I didn't really have that, but I was reflecting a lot on what we did there and everything. It kept coming up in my mind you know at that point you don't even think about it. Then when you come home, you realise that there's lots of people that depend on you, but you're an important link in other people's chain. You know? And it doesn't just affect you; I mean the first thing you think of is the people that are trapped under the rubble." (P1)

As discussed earlier in this chapter, during or after involvement in a disaster, personnel may be at risk of traumatic incident stress disorder, which can lead to developing post-traumatic stress disorder (PTSD). Smith and Roberts (2003) discuss the prevalence of PTSD among emergency personnel to be 20%. Formal trauma debrief sessions with qualified counsellors were not held to aid the integration of the study participants back into society, which is highly advised after any traumatic incident (Smith and Roberts, 2003). This should be the first priority on the teams return into their country according to Bisson and Deahl (1994). The integration back into society can be seen as part of the 'recovery' phase of a disaster cycle. The relief teams were exposed to large-scale destruction and death and are at high risk of developing post-traumatic stress disorders. Bisson and Deahl (1994) state that critical incident stress debriefing (CISD) is "a structured intervention designed to promote the emotional processing of traumatic events through the ventilation and normalisation of reactions and preparation for possible future experiences."

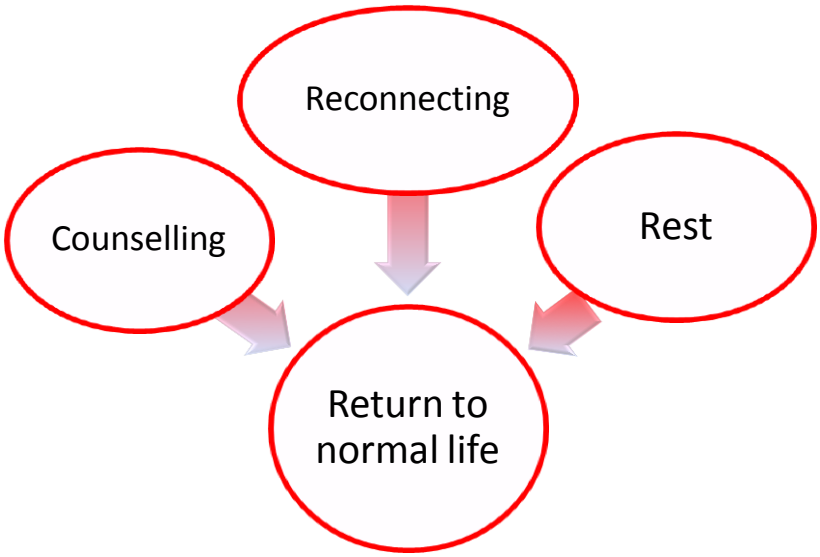


Figure 22: Returning to normal life (Well-being) (Young, Ford and Watson, 2007)

4.8 Re-visiting the second research sub-question

The question was:

Do South African NGO teams have the human and logistical capabilities to be effective in an international earthquake response?

4.8.1 Formulating the answer to the second research sub-question

This question will be answered by reviewing comments made by the group panel interviews and applying the categories that emerged into the research sub-questions to enable the primary question to be answered.

4.8.2 Defining team capabilities

The participants of the study discussed the need to debrief after their experience and collectively decide on their needs as an internationally responding relief team.

"And I would seriously think that, that is why we need a debrief, especially with the other team that went with us, to decide what do we really need." (P1)

"And as far as the rescue equipment, we need to put our heads together and come to some consensus." (P1)

"I think what's coming out here is what are we prepared for? What is our function? That's what needs to be asked first. Because if you just preparing for a disaster or earthquake disaster, first you've got to ask what is your function, before you can ask if you're prepared for that function." (P2)

"You have a technical rescue team which preparedness is pretty much INSARAG guidelines. But, we're really looking at something that is completely different from a specific NGO team. So, if you're going to have a completely different function, you've got to look at preparedness from a completely different perspective." (P2)

INSARAG (2011b) state the need for teams to classify themselves for their capabilities. As discussed in Chapter Two, teams can classify themselves into light, medium and heavy USAR teams according to their team qualifications, equipment inventory and their ability to mobilise in the allotted time frames.

The study participants bring a valid discussion point to light which could be investigated further in another study as it falls outside the research area of this study. They discuss the best type of team they should be to best suit the needs of the affected country as a SA NGO team. This would relate to South Africa's location to a disaster and the time frame in which the team would realistically arrive at the disaster site.

4.8.2.1 Finance

The types of donors to humanitarian assistance organizations range from governments to international NGO's to individuals. Management activities and preparedness agreements are of little use unless resources are available to support response activities. The goal of resource management is to identify and establish internal and external resources necessary for disaster response and recovery. Identifying resource needs, acquiring resources, storing and distributing resources are thus key preparedness dimensions. The resource management dimension of preparedness is closely tied to the planning dimension in that plans commonly involve strategies for resource sharing, such as mutual aid agreements.

"One of the practical ways of implementing is that obviously with NGO's, cost is a factor you know, to fly somebody over just to do that and immediately we have a whole lot of information, and then we pack the most appropriate stuff and we go off." (P3)

"In fact the money spent on all our airline tickets could have been better spent, actually chartering a plane itself and loading everything, the kitchen sink, all the teams, all the medical staff into one plane and sending one plane, I think logistically it would have been much better" (P4)

In our case we pay for the plane so it becomes very expensive and sometimes the response becomes very costly, it would be much cheaper to come on a commercial aircraft. Now do you take the balance off an expensive hired plane that will cost R4 million just because you want to take the rescue dog or do you take something that will cost you R400 000 for tickets but you can't take the rescue dog. So now because the dog was already there, then just take the expertise but use somebody else's dog. In an event when you can go with your own dog and your own plane then fine that's a bonus. (P10)

4.8.2.2 Team Selection

To perform USAR duties efficiently, there is a need for specially trained personnel with the right qualifications. In order for the USAR teams to perform their duties effectively, they require equipment that is technical and often expensive (Morris, 2002). These teams can be very easily overwhelmed if they do not have the right equipment or enough manpower. For example, a team of approximately 60 rescuers using a cache of equipment costing hundreds of thousands of US Dollars, could easily be exhausted on the USAR activities required in one multiple story collapsed concrete structure (Morris, 2007).

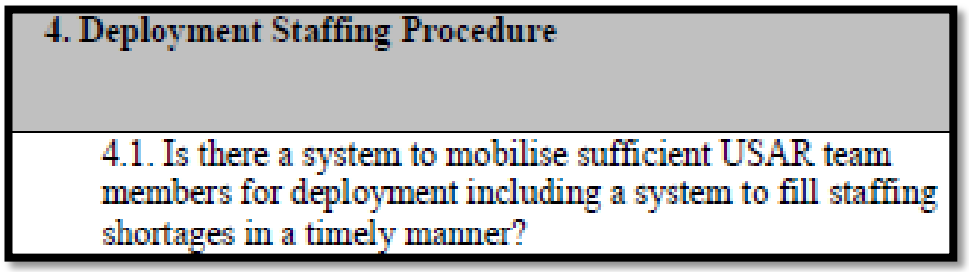


Figure 23: Deployment of staff (INSARAG, 2011b)

According to the study participants, the team's composition was an important part of responding to international disasters. They believed that it played an integral part in dealing with the challenges that they faced. Having members of the team, who have been to previous international disasters and had hands-on experience greatly aided the teams in their response.

"I think comparatively our team's previous experience to the Algerian earthquake; we have our frame of reference there." (P2)

"I think what made it better was the team dynamics. Going with people that were very experienced and that took away a lot of apprehension. I think that's an important thing is the team dynamics in terms of these NGO's groupings, is that it's not just put together a team for the field with experience and then let's hope because someone is giving us the money to go, you know, the experienced people have to be in the team and that kind of stuff but they're not the main people there they don't really get taken seriously for their expertise." (P3)

The results of the study made it clear that there was no review of qualifications and previous experience in the selection decision of team members by the sponsoring NGO. The data indicated that team members were chosen on the basis of personal referral; trust in those referrals and a first come first serve basis. It must be noted that there is no point of reference for required individual capabilities by the NGO.

"No, everybody needs to be upfront. They said I want to go….
It's difficult; you can't say you going to interview and screen everybody. It's not possible. You assume and you have to trust in South Africans that whoever is a medical practitioner or paramedic or whatever, is a skilled guy that comes from a recognised University and a recognised Institution. If they sending you somebody and the guys are from a decent hospital like UCT (University of Cape Town) or from King Edward hospital, you assume he is the reliable type. His personality traits, that's another issue. If he's skilled, it's not going to be a problem, we are on that basis of first come, first serve." (P10)

It was apparent that there were no set selection criteria for the members of the teams that were sent to Haiti and no set amount of staff required to be sent. In this instance the use of an unofficial selection process was beneficial, due to team members being familiar with one another, this went for both

teams interviewed, but should this unofficial process be duplicated in a future response, and the results may not be as successful.

The following excerpt illustrates the team selection process:

"He says "who wants to go to Haiti?", so a lot of us put up our hands. "Ok who has valid passports?", then half the people put their hands down" (P8)

"Go on your list and make a general call to the media to say what? I want these people and who wants to go? But in every team I need to have two or three people who have been on several missions before because if this is the first time it is difficult." (P10)

"One of the main questions that came up from my side was well how many people would the NGO be willing to take over to Haiti? And just a random amount was thumb sucked and said well, we can do 10. We can try and get 10 people together from our Province, and then it was a very big mission just to find 10 people." (P9)

"Highlighted from INSARAG, is that when you go over you shouldn't be sending over a team of 10. We should be sending over a team of 30, 10 are going to be doing search and rescue, 10 are going to be doing humanitarian, and the other 10 are going to set up the field hospital to take the patients that you find and rescue" (P8)

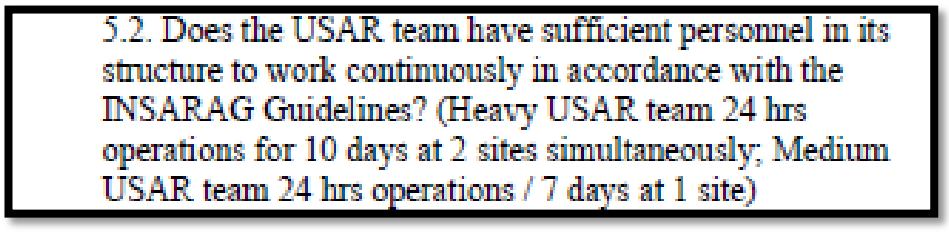

5.2. Does the USAR team have sufficient personnel in its structure to work continuously in accordance with the INSARAG Guidelines? (Heavy USAR team 24 hrs operations for 10 days at 2 sites simultaneously; Medium USAR team 24 hrs operations / 7 days at 1 site)

Figure 24: Personnel requirements needed for disaster site (INSARAG, 2011b)

Currently, there is no formal definition for USAR that exists (as in fact internationally there is not even consensus on whether the acronym should be US&R or USAR), it has been described as the location, physical reaching, medical treatment and safe extrication of casualties entrapped by a collapsed structure (Cone, 2000; Hogan and Burstein, 2002). A USAR team usually consists of enough personnel to ensure they are able to function 24 hours a day for at least ten days in this time critical period as the nature of USAR work is labour intensive. Furthermore, there is a requirement for many different technical specialities within the team. Most USAR teams, irrespective of their capacity, comprise of the following components as defined by the INSARAG (INSARAG, 2011a). These components are:

- Management
- Logistics
- Search
- Rescue and
- Medical.

a) Qualifications

The study participants all felt that the teams that were sent over to Haiti were all highly qualified for the tasks that were required for the response to the earthquake.

"The people we had in this team, I mean P4, has been to numerous earthquakes already and we as a team have been to one other earthquake too, Algeria, and besides just the physical experiences, the intellectual capacity and strategic planning involved within the group." (P2)

"The expertise in the group was great, so it should by no means be that a team that is put together by an NGO should be taken for granted" (P2)

"All our team were Advanced Life Support paramedics and all of us are Technical Rescue Specialists, so we could do anything" (P4)

"When the time came that we were no longer needed for rescue we could just seamlessly switch over and carry on with medical and make a real impact, far more impact than, to those people, than a UN registered team, because despite the 40 staff and huge rules and everything that goes with it, we got down and actually really helped the people." (P4)

Depending on what the relief team capability is and when they respond in the time-line of an earthquake disaster, will verify what qualifications are needed. In the first phase of response, USAR teams are required for the structural collapse and extrication of victims; therefore, a structural collapse technician course certificate is required (FEMA, 2010). If you are responding in the follow-up phases of an earthquake, a medical qualification is needed for patient care. Patient care will include trauma injuries such as traumatic amputations, fractures and crush injuries. These medical qualifications can start from a first aid responder right up to sending medical specialists such as orthopaedic surgeons and trauma nurses. Noji et al., (2006) discusses the need for team members to have a broad range of expertise and experience to increase their value and ability to work in a variety of situations in a disaster response. Enthusiastic but inexperienced workers are often of limited benefit and may actually have a negative impact. Currently there are no regulations on qualifications for disaster response according to Noji et al., (2006).

b) Experience

In general, research suggests that prior disaster experience is a major predictor of higher levels of preparedness, understanding and, therefore, a more effective response. This leads to greater awareness of the

consequences of disasters and the demands that disasters generate (Mileti, 1999).

Team member experience was discussed by the study participants and this was perceived as a positive aspect for the teams that were responding. The experienced team members were able to make up for the lack of information and preparation and so were able to make better informed decisions and guide the less experienced responder reflecting on their past experiences. This suggests that there is a relationship between experience and understanding (Morris, 2007). Direct experiences are gained through being involved in a real international response to major earthquake event. Unfortunately, direct experience is not always easy to gain, and so preparing for disasters is a way of getting indirect experience. Indirect experience can include training, exercises and learning from the past. This can also provide opportunities for gaining experience and, therefore, a better understanding (Mileti, 1999; Morris, 2007).

"I was the only one where this was my first involvement in a disaster response. Going with people that were very experienced and that took away a lot of apprehension. The experienced people have to be in the team." (P3)

"I think comparatively our team's previous experience to the Algerian earthquake; we had our frame of reference there." (P1)

"a lot of people were unprepared. I think one of the most, biggest thing was, people were unsure of what to expect". (P7)

"But in every team I need to have two or three people who have been on several missions before because if this is the first time it is difficult." (P10)

It is assumed that no single country will ever generate all the real USAR experience required to ensure that there is an on-going existence of experience. Morris (2007) speaks of direct and indirect experience. Direct experience being actual earthquake response and indirect experience will be training, exercises and lessons learnt meetings which are learning events from others past experiences. Katoch (2006) speaks of a lack of experience within organisations with the responsibility of responding to major disasters. In general, research suggests that prior disaster experience is a major predictor of higher levels of preparedness and more effective response for organizations, largely because it leads to greater awareness of the consequences of disasters and the demands that disasters generate (Mileti, 1999). Morris (2007) believes that the reason things improve with experience is due to the development of understanding over that time, and then one could further conclude that if understanding were in place before the event in regards to preparedness, then things would be even better from the start.

Experience on the other hand is “knowledge or practical wisdom gained from what one has observed, encountered, or undergone”. Perhaps experience and preplanning are better referred to as underlying competencies or knowledge base. The two most important fundamental competencies or knowledge bases needed in successfully responding to disasters are experience and pre-planning. Experience as described in this context is having participated in a disaster response in the past and/or having participated in an adequate number of drills and exercises where personnel have confidence in their abilities to perform their functions. Previous experiences of emergencies and disasters build up an awareness that often creates a higher level of willingness to prepare for future situations.

According to Eriksson (2008), experience creates an inclination to prepare for future emergencies as it offers disaster responders situations to learn from. The importance of learning from an experience is widely mentioned in High Reliability Organisation (HRO) theory. By reporting errors and learning from mistakes, they claim that organisations become better at managing the unexpected (Weick and Sutcliffe, 2001). But the opportunity to learn from previous experiences is often not used as the experiences are not formally reported. This prevents or restricts the full potential of learning from the experience.

The question is if the full potential of an evaluation of a disaster is used and can it enhance the efforts for the next response. Sometimes there is a tendency to plan for a past situation or disaster and so teams can be eased into a false sense of security when planning. Lagadec (2006) asserts that to be able to manage the future, it is important to "...not prepare to fight the last war".

4.8.3 Need for a base of operations

Noji et al, (2006) discusses the need for teams to be self-sufficient, this includes all equipment required to ensure they had an adequate base of operations. According to Noji et al., (2006), a base camp needs to be promptly set up, have generators, lighting and cooking facilities, water supplies or filtration unit, sanitation and hygiene systems and general equipment such as tarpaulins, tools and spares. INSARAG (2011b) presents what a base of operations should consist of and what the standards should be in Figure 25.

10.2. Does the USAR team's BoO provide for the following components:
10.2.1. BoO management
10.2.2. Shelter for personnel and equipment
10.2.3. Safety and security
10.2.4. Communications
10.2.5. Medical station providing for personnel and search dog requirements
10.2.6. Food and water
10.2.7. Sanitation and hygiene
10.2.8. Search dog area
10.2.9. Equipment maintenance and repair area
10.2.10. Waste management

Figure 25: Base of operations (INSARAG, 2011b)

4.8.3.1 Team manager

The need for on-site team managers emerged as another area of concern for the study participants'. They felt that they needed 'behind the scenes' management support as they had to fulfil rescue and medical commitments on site and had no time to perform duties additionally.

"In terms of finance, in terms of organizing, we pretty much were left to do what we wanted to do."(P2)

"It gets frustrating and the last thing you want when you're out there is to have the teams forming little camps and breaking up. The team dynamics is the most important thing. The logistics is just as important and that's the team leader's job. But, to have this added pressure and sometimes actually having to word things in such a way that brings them false hope. Because you don't know yourself, you just waiting and a lot of these things you need patience, especially in a third world country. You need patience, you know you going to sit for 6, 10, 12 hours, not knowing anything." (P1)

8.2. Does the USAR team management have the following team documentation:
8.2.1. USAR team Personnel Manifest (if traveling by airplane)
8.2.2. USAR team Fact Sheet
8.2.3. Emergency contacts details of USAR team members
8.2.4. Equipment Manifest including communications equipment
8.2.5. Shippers Declarations of Hazardous Goods
8.2.6. Manifest of Controlled Substances (e.g. medications)

Figure 26: Team documentation required by team management (INSARAG, 2011b)

Team managers are an important resource to have when responding to disasters as there are many factors such as resource allocation and logistics to organise. Team managers will also carry the necessary documents that are required for international travel as well as fact sheets, situation report sheets and inventory lists that need to be taken into consideration. The study participants talked about having other duties that they needed to perform, which is highlighted in the following quote.

"The rescue team leader should be just doing his job. He should not be sitting on the phone and trying to get through all the politics, and the money and all that. The logistics as far as getting us there and getting us out and getting equipment in and out, somebody else should have come with us that has the contacts, and has done this kind of thing before. That's not our function."(P1)

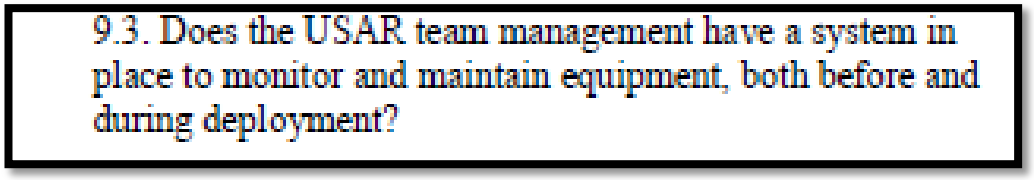


Figure 27: Equipment maintenance (INSARAG, 2011b)

4.8.3.2 Support staff

Due to the large amount of rescue equipment and medical supplies arriving with the teams, the study participants felt they required additional support staff to assist them in loading, offloading and preparing supplies and equipment.

They showed their concerns in the following quotes:

"The only shortfall that was wrong in this was we should have sent initial people in to be support staff" (P10)

"The only thing different I would do is send in more teams at the same time. Sending the backup guys to look after the tents, the tent managers" (P10)

4.8.4 Poor communication

The importance of communication is its ability to get people to work together on a common task or toward a common goal-to coordinate. It is the process by which each person understands how his individual efforts interlink with those of others. Frequently, what are perceived as communications problems are actually coordination problems in disguiseEffective communication is essential for information exchange and will ensure a coordinated, effective and safe disaster response and relief effort. Poor communication and lack of information sharing emerged throughout the interviews with the study participants. They felt that if there was improved communication with the NGO from the initial phase of preparation through to on-site operations, it

may have led to a more efficient and positive outcome in the overall response. They referred to communication as the dissemination of information on a number of levels at various stages of the team response. Specific areas that were identified include; primary communications between the responding team, sponsoring NGO, local NGOs and the United Nations.

According to the results from this study, participants felt that overall, communication; in this disaster experience was poor. A consistent challenge for all disaster responses is normally communication and information management. An effective response requires a constant flow of up-to-date information which can be in the form of situation reports. These are real-time information reports which are issued to assess needs and available resources that can change suddenly and unexpectedly. A critical ‘‘sequential interdependence’’ exists in regards to accurate information from the field about the incident, casualties, medical needs, triage, and treatment needs. These reports can greatly aid in effective response of international assistance.

Another aspect of communication that should be further investigated is language barriers. Communication is an essential and important part of medicine, and the most common problem identified in the reviews of most disasters, as well as the basis for most complaints in standard clinical medicine (Arnold et al., 2004; Chan et al., 2004; McEntire 1998). Being able to communicate well is important and teams must be able to communicate with the local population (Russbach, 1990). Language barriers are common in international deployment both with the local population and other international disaster teams (Noji et al., 2006). The language barrier is a cause of stress for responders with the provision of translators alleviating that stress (Bar-Dayan, Rami, Issac, Ofer, Shvarts, Guy, Levi andGoldberg, 2005).

4.8.4.1 Lack of Information

The study participants felt that intelligence gathered about the disaster in the pre-deployment phase of their response was very limited. They found it difficult to prepare themselves, the team and the equipment inventories needed for the rescue efforts. They relied on information from media reports to guide them as opposed to more formal situation reports that should have been gathered by the people in charge (Auf der Heide, 1989). The study participants found that the prevalent problem was an absence of communication than inaccurate or incomplete reports. Valid information is critical to enable decision making and resource management especially at the pre-deployment phase of the response.

The following excerpts express the study participants' views:

"not getting proper information, without intelligence you can't really prepare" (P1)

"When I've gone out for these international disasters even national disasters, it's a case of not getting proper information and if you don't have proper information you don't know how to plan effectively." (P1)

"You can't really prepare when you don't know what you're in for because the information we get is very scanty and that is common throughout all the other experiences I've had" (P1)

"But although the NGO was very well resourced in terms of funding, it's just, communication was a big problem." (P2)

"But if you can get the communication, then you can tailor-make your response, because you could find out from the ground itself what is actually needed. And if you know what is needed, then you can decide" (P4)

"You see, it's a communication issue. The thing is with Haiti, and the way that those buildings were structured, the poor workmanship. Those buildings were reduced to rubble. Now it's difficult to use rescue equipment and shoring and all that, you can't shore rubble. I would say that the most rescues that we would have done there was digging with picks and shovels and basically manual labour. So maybe in hindsight it would have got us there quicker, if we took less equipment. But, I think it's difficult to plan this kind of thing. But, I think for me personally, I think that we cannot prepare for every eventuality" (P1)

The results of the study revealed that communication and information was very important to the study participants. They felt that information received during the preparation phase played an important role in logistics for mobilization. The study participants noted that the initial problem, which they felt was crucial for the management of the event, was the lack of comprehensive information.

9.4. Does the USAR team management have a process to gather information pertaining to the emergency and brief USAR team members on:
9.4.1. Current situation including structural characteristics
9.4.2. Culture
9.4.3. Weather
9.4.4. Safety and security, including potential hazards e.g. Hazmat
9.4.5. Emergency evacuation
9.4.6. Health and welfare issues
9.4.7. Special or unusual considerations

Figure 28: Information gathering (INSARAG, 2011b)

In Figure 28, a team manager is required to gather information regarding the disaster and its surrounding circumstances. Without this important

information the team may not function efficiently and important resources and logistics may not be directed to the incident.

4.3.4.2 Inter-Agency Communication

Auf der Heide (1989) discusses communication difficulties in disasters. He states that it's often difficult to separate communication from coordination complications, and the greatest coordination complications are inter-agency information sharing. Relief teams are often hesitant to communicate with others outside their own organization (Auf der Heide, 1989). This is why it is very important to establish inter-agency contacts during the planning phase of the disaster cycle. Inter-agency radio networks, common mapping systems, and computer networks contribute to effective communication.

Inter-agency communication also refers to the communication and coordination between team members and the sponsoring NGO not only between the team members and other agencies while working on-site. The sheer scale of the Haiti disaster caused unprecedented strain on logistics and resources especially regarding communication. Land communications were not working and there were disruptions in satellite and cell phone coverage. This all added to the initial lack of coordination in the affected country (Margesson and Taft-Morales, 2010).

"The UN wasn't talking to the NGO's; each NGO was doing their own thing. So there wasn't a corroborated effort. I mean you could have people still trapped under a building 2 hours away but nobody knew because they weren't talking to each other. I think that's the biggest thing for me, is poor communication. The UN generally takes charge, and if the NGO's don't have some sort of line or mechanism to communicate with the UN, then the NGO's are on their own" (P2)

"That was the biggest problem, communications on the ground when we arrived. Where do we go? Where do we search? Who do we report to? So basically you just go out there and do your thing. The buildings were being searched 2, 3, 4 times. Why? Because they were easy and convenient and the areas where they really needed to search weren't being searched because there was no command and control." (P4)

"They were linked to the UN, so it was easier to get clearances into the countries." (P2)

"I think what is desperately needed is a balance between the two or some sort of formal agreement between NGO's and UN teams where we can work together for the better of the people. You need to find a balance where you can have your Rescue Specialists, but like P4 said, this team was unique, so it's pointless having a great team but without sort of the right direction, right sort of contacts, the right sort of freedom to really use your skills that you have." (P2)

Rapid and accurate communications are the basis of effective emergency response. If you don't have adequate communications, you are unable to effectively meet emergency-response demands effectively. This means that there must be some means of communication for information transferral as organizations require it internally for meeting their demands and it is central to inter-organizational relationships as individuals and organizations attempt to coordinate a response (Auf der Heide, 1989).

Quarantelli (1985), states that when organizations are involved in responding to a disaster, both their intra and inter-organizational communication becomes problematical especially in the absence of prior planning. Drabek (2002) notes, "the core of emergency management has to do with inter-organizational relationships". Research and evaluation provide good platforms to exchange knowledge. As humanitarian crises become more

complex, with new and varied organizations on the ground, strong partnerships and collaboration between organisations, experts, and disciplines is vital to build capacity (Drabek, 2002). Two common criticisms in the literature are poor coordination between agencies and limited evidence of organisation. Often medical and rescue teams are too insular, and although self-sufficiency is important, it should not be at the expense of exchanging vital information (Noji et al., 2006). Also, there typically is mass convergence of helpers, often by people and groups unfamiliar to one another working in an unfamiliar and confused setting. All of these conditions occurred in response to the earthquake which hindered the integrated use of available resources.

Figure 29, refers to the need for inter-agency communication and it is advised that action is taken to communicate prior to deployment to receive further comprehensive information.

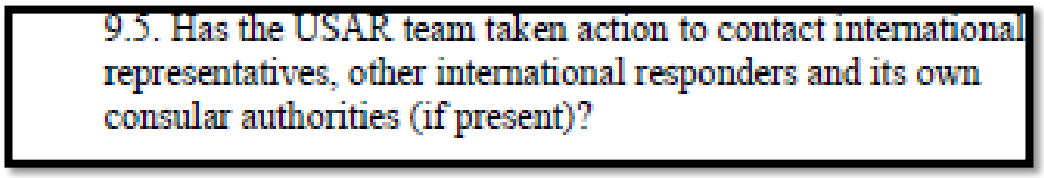


Figure 29: International contact (INSARAG, 2011b)

a) Modes of Communication

When responding to a disaster area, such as an earthquake disaster, it has been well documented that there may be issues with communications. Networks and landlines may have been destroyed or damaged and so responders need to consider alternate devices or systems for communication (Bremer, 2003).

The study participants did seem to experience problems with communication devices and networks and they expressed their concerns as follows:

"Everything was done by SMS mostly and it's like a hit and run. It works sometimes. It doesn't work sometimes. Then sometimes the phones work. Then they don't work. So it was very difficult, sometimes we send an SMS and get a reply two hours later." (P10)

2. Decision Making
2.1. Is there an effective communication system between the USAR team and its sponsor to ensure timely decision making with regards to deployment?
2.2. Is the USAR team management included in the deployment process?

Figure 30: Decision making (INSARAG, 2011b)

"So in the future we are thinking of sending Blackberry's with the teams. Besides satellite phones we send Blackberry's and always on dual networks. I always connect to dual networks, I sign Vodacom and MTN because you don't know, one day, one will work and one doesn't work, so I always send in the guys with two networks and a satellite phone. Next time I will send Blackberry's with the teams."(P10)

7. Communications and Technology
7.1. Does the USAR team have the ability to communicate:
7.1.1. Internally
7.1.2. Externally
7.1.3. Internationally
7.2. Does the USAR team use GPS technology?

Figure 31: Communications and technology (INSARAG, 2011b)

Due to telecommunications issues on site, the study participants felt it was difficult to get into contact with the team's main decision maker. This decision maker was also the link between the other organisations in the disaster area. It was felt that other means of communication could be considered in future planning for future disasters. Communication issues and information technology must be given careful consideration in disaster planning because, without communication, coordination becomes impossible.

Given these heavy informational demands and the chance that existing communications networks may be inadequate or non-functioning after a disaster, response teams should be well-prepared to not rely on the affected countries communications systems. Communication is a frequent and major problem in disaster management. Noji et al., (2006) reiterates the importance that team members need to have the ability to communicate with each other, the local coordinating centre, operational support at 'home', and the 'outside world' and family.

The minimum form of communication suggested is a laptop computer, printer, radios, satellite phones and Globing Positioning System (GPS), with power sources and spare batteries for all equipment. Advances in information technology such as wireless technology offer potential benefits, but for any system to provide meaningful support it needs to be reliable, and easy to use and maintain. As well as technical issues in communication, teams also need to ensure organisation policy ensures clear lines of communication and sharing of information (Noji et al., 2006). Communications resources are critical for all response activities at all levels of analysis, although communications media can vary from low-tech to very high-tech. INSARAG give a few recommended modes of Communication for disaster affected countries:

1. Satellite phone
2. VHF / UHF radio

3. Internet access and
4. Cellular phone (INSARAG, 2011a).

4.9 Re-visiting the third research sub-question

The question was:

Are South African NGO's compliant with International Search and Rescue Advisory Group guidelines?

4.9.1 Formulating the answer to the third research sub-question

This question will be answered by reviewing comments made by the group panel interviews and applying the categories that emerged into the research sub-questions to enable the primary question to be answered.

4.9.2 Understanding of international guidelines

Gaining an understanding of the numerous guidelines, recommendations and standards for teams responding to an earthquake disaster can be difficult because of the numerous rules and regulations that need to be understood and adhered to (Morris, 2007). These international guidelines have all been established to ensure a more efficient and coordinated response to disasters. There is a need for all people involved to understand how the overall international USAR aid response system functions. Morris (2007) discusses the need for all people involved to understand and realise their responsibility in responding to a disaster. He states 'the concern of working towards this common goal is part of working with the greater system rather than against it which requires understanding' of the international guidelines.

Katoch (2006) states ‘the coordination necessary to save lives and ensure that critical needs are met becomes extremely difficult when there is no way of knowing what resources and organisations are entering a disaster site, from whom and when’. He discusses that to deal with such situations as a major disaster, it requires professional, experienced, rapid-deployment teams that work with national and local governments to rapidly establish an organised approach. There are, however, already international tools and mechanisms for this purpose that have been evolving over the years such as INSARAG (INSARAG, 2011a). In addition, a number of new organizations from the corporate sector and civil society have become involved in disaster response. Therefore, the importance of understanding international guidelines in the disaster response environment is essential to working well within the system.

4.9.2.1 Understanding INSARAG

Figure 32 from the INSARAG IEC checklist, requires all teams wanting to be affiliated to the UN to use the INSARAG guidelines.

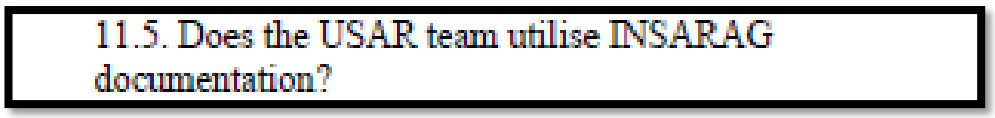


Figure 32: INSARAG documentation (INSARAG, 2011b)

These interviews have revealed that to a degree, most of the team members sent by the sponsoring NGO seemed to understand and have a working knowledge of the INSARAG guidelines evidenced by the following excerpts:

“I think it’s vital to understand INSARAG Guidelines first of all, what you should take and what you shouldn’t take, and what kind of team you are. Also the capabilities and the resources of personnel, that goes with as well.” (P7)

"INSARAG are the golden guidelines, if you just go read through those, I think it's vitally important and that you get a lot of information." (P7)

If you want to be a rescue team then you have to then be certified as an INSARAG team. But then you have to have a certain amount of equipment. You have to have a certain amount of personnel. You have to have a certain amount of expertise is not a problem. It's the equipment and everything else that's supposed to go with you. But you need a lot of equipment as you have to perform certain tasks, search dogs, everything and its quite heavy to become a Technical Rescue Team for INSARAG, to become certified INSARAG team." (P4)

"If you just preparing for a disaster or earthquake disaster, first you've got to ask what is your function, before you can ask if you're prepared for that function. Yes, you have a Technical Rescue Team which the preparedness required is pretty much INSARAG guidelines." (P2)

"I think in mobilizing, it can be easy, but to set up certain things up, it depends on what type of team you want to set up. A light, medium or heavy team, that's the thing that I saw there. Travelling commercial, I would say a light, light team. Maybe send a team over as a technical search team not doing the Search and Rescue, just going over to do the search and not a heavy rescue team and not the actual rescue of it." (P7)

Although the study participants showed understanding of the international guidelines some did not agree with all their recommendations.

"So because the UN says stop Search and Rescue. It means you have got to stop? I don't give a damn. I believe to go on until it really looks over. Not to say 'right ok everyone stop' and we all stop. It shouldn't be that as a couple more people can be found. So if you

have your own teams, then at least three weeks should be enough time" (P10)

An official INSARAG response mandated by the United Nations provides a responding team with distinct advantages in terms of support during a response, such as rapid deployment and dedicated transport resources. Once in the affected country, the INSARAG registered teams are located close to the local emergency management authority (LEMA) and the on-site operations coordination centre (OSOCC). This ensures that the teams are able to receive up to date situation reports and intelligence which ensures teams can function effectively (INSARAG, 2011a).

Study participants' viewed this as a positive aspect of the INSARAG registered teams and a drawback of being in a NGO relief team. As part of an approved INSARAG team, movement, areas of operation and accountability are managed by the United Nations. Once in the operational setting, a team remains accountable to the United Nations and may only work in areas approved and demarcated without deviation from capabilities or mandate. In order to be registered as an INSARAG team capable of responding to international disasters, a stringent set of requirements needs to be met (INSARAG, 2011a).

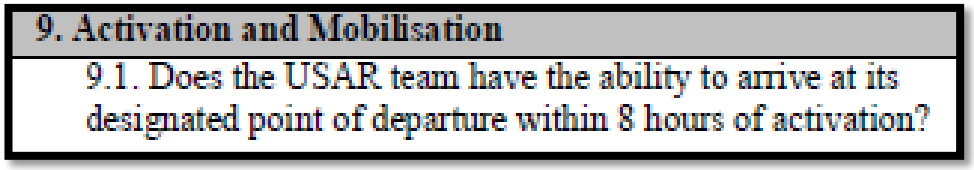


Figure 33: Mobilisation and arrival (INSARAG, 2011b)

"We must take into consideration that there are pros and cons to having a team affiliated to the UN and in many ways we were at an advantage in that we had more leeway and freedom to do certain things. But the fact that we couldn't work to the extent that we would have all liked to work at and make a bigger impact there." (P3)

"I think also if you follow INSARAG guidelines, which is, the UN. It says we have to follow their very strict security protocols and procedures, which means that if you get into the base, you have to be within a certain area which you find that everybody operates within INSARAG. They are all at the airport, why? Because it was the only place they could secure. Now that had some problems, it was far away from any work area. You had to drive 30 minutes just to get to work sites and you were basically stuck in there. At night they lock it down and that's it." (P4)

"Whereas we probably had a little bit more leeway, although we didn't go out at night, we could have if we really wanted to, but it wasn't safe. So we decided out of our own better judgement not to. But we had a lot more leeway. And we were in a work area, so when there were places for us to go and work they were 5 to 10 maybe 15 minute drives and we were there. So they were stuck on one side of town which is very difficult, but that's INSARAG." (P4)

*"UN registered teams, according to INSARAG guidelines, they can't change their mandate. So when Rescue is over, when day 5 comes and they say it's no longer rescue, its body recovery, they say that's it, they pack their bags and they go home, finished." (*P4)

4.9.2.2 Unique Team Classification – The NGO Paradigm

A considerable amount of information on Humanitarian NGO teams responding to disasters was found during this research. However, this information is largely related to humanitarian relief efforts rather than Urban Search and Rescue operations responding to international disasters to perform rescue duties. There are NGO that have working SOP on preparing to respond to disasters, but as humanitarian relief aid teams. Their relief efforts include shelter, water and food relief as well as community development, child care and schooling for the communities that are affected by the disasters. There is little information for NGO rescue teams responding to international disasters and how they will fit in to disaster management in the receiving country. Would they fall under the United Nations Urban Search and Rescue operations or would they fall under the Humanitarian umbrella.

The study participants described the teams that responded as unique in their make-up and with this unique composition were able to be more effective by being able to switch from Rescue operations to medical care operations. They found that there was a need for flexibility in staffing roles and configuration of their teams which had a positive outcome on the relief effort. The study participants, however, did feel that they had an added benefit by working with the countries local NGO. This allowed the team into the inside workings of the local population. The local population trusted the local NGO and relayed important information to them which benefited all involved. Katoch (2006) discusses the advantages of using local NGO to benefit the rescue and relief efforts. Since a natural disaster necessitates extremely quick response times, it is difficult for responders without previous knowledge of the affected area to gain sufficient understanding of local conditions before arriving. This makes local NGOs as well any international NGOs or agencies that have experience working in the area crucial for an effective response.

"When looking at making a difference, the expertise in this sort of team, it is beneficial to those tens of thousands of people that are not trapped." (P2)

"But I think that's where the big difference is here. What we actually proposing is a unique team that can do different things. Because INSARAG, from what I understand, is very focussed on Technical Rescue." (P2)

"The expertise in this sort of team is more beneficial to those tens of thousands of people that are not trapped, but have been involved in the outbreak, and are injured, and need some degree of assistance, either rescue or medical or a minor degree of rescue, and more medical. Then this is the kind of team that would be more useful there." (P2)

"So we have a different set of rules. Or we should have a different set of rules, because we have different expertise, a combination of expertise which is unique, unique to the rest of the world. Not many people have our expertise."(P2)

"One of the reasons why we couldn't do any rescue and redirected our efforts to medicine, to helping the people, was because we weren't there early enough, so we couldn't do rescue. But that doesn't mean you're useless, so you just redirect your efforts, UN registered teams were there just for the rescue, they could do nothing else because they weren't prepared to do anything else. Not only that, it's not in their mandate. That's why I think this type of team is unique and that's why there needs to be proper procedures in place for this to happen."(P2)

"I think one of the benefits of having or being related to an NGO like the International NGO, they used the church or the community to let people know where help was needed. So that's where we ended up going, a 2 hour drive away to a rural hospital. There was no sign of the UN or anyone on that side there. That was one benefit but the communication took a little longer for them. There should be more coordination." (P2)

Morris (2007) briefly touched on issues regarding NGO USAR teams being considered to be substandard by some, while having been considered to have their own strengths by others. He identified the potential rift within the groups of responders that should be addressed before it becomes a major issue.

"That flexibility to do more than just one thing, I mean, you know, you miles away from home, there is a disaster there. The more skills you have and the more widely you can spread, the more impact you can have and I think that's what we are trying to say, that's what our team had."(P3)

"So you can still get your rescue technician who can do the actual Search and Rescue. But now, I think there's an increase, not demand, but a need for people like us, who can stay there after the 4th, 5th, 6th, 7th and 8th day and stay there for the next 2 or 3 weeks" (P1)

"Well, it was interesting that they split their team up into medics and rescue. The rescue guys would go off, and the medics would go to the hospital and help the patients. So, I think they realised very early on that the chances of finding anybody alive underneath the rubble were diminishing every day." (P4)

And I think if you belong to INSARAG you would not have that flexibility to do that" (P4) [split teams into medics and rescue]

Once in the host country, the responding NGO teams were asked to report their movements or any other aspect of their operation to the host country authorities or the UN. This freedom of movement can be a positive and a negative factor as it can allow a team significant mobility and independent practice but can also become a safety and security issue. If a team goes to a disaster site and something happens to them and they do not return to base camp, there are no authorities that would know their location or whereabouts.

It was noted that there were clear disadvantages to having no unified command centre.

"The Cons where we benefited was because you are linked with an organization like the UN, you have to follow their protocol and a whole lot of politics that goes with it. Because they were, from what we can gather by talking to them, they were restricted into what they could do. If they want to go out and rescue they were not allowed because there were rumours that there was violence in certain areas. Us on the other hand we got there through the back door and we functioned autonomously" (P1)

"Although we were linked to an International NGO, we had more autonomy; we basically could choose where we wanted to go within reason. Obviously we couldn't attempt rescue missions at night because of safety, but we were not restricted as the guys who were under the UN banner." (P1)

'The following day we were there at 9.30, we got going and did our thing. They (UN team) arrived at 2 O'clock. Why, first of all the transport that they had arranged didn't arrive in the morning. Then they had to hire trucks to come and fetch them. Once the trucks arrived there they had to wait for their security detail before they could deploy. So they had arrived there at 2 o'clock. So I mean, we've been there since 9.30, being effective." (*P8)*

The results of the study revealed that the study participants' teams consisted of USAR personnel as well as medical personnel. This placed the teams in a unique situation as it is not usually the case in a disaster response situation. These teams had unique capabilities, as they consisted of USAR and Advanced Life Support (ALS) qualifications, which changed their team capabilities. Several sources of literature have suggested time-lines for response by USAR Teams responding to international disasters. These guidelines are based on time critical events and injury distribution in an earthquake disaster situation. The requirement for USAR teams ranges

within 24 – 74 hours based on team capacity (INSARAG, 2011a). Medical teams responding to a disaster, depending on their main specialties, have a longer period of time to arrive at the disaster site and so have more flexibility when it comes to disaster time-lines (Milsten 2000; Noji, 2005).

Barsky, Trainor, Torres and Aguirr (2007) discuss the workings of FEMA USAR teams and how they deal with volunteers on disaster sites. They call the influx of professional and technically trained responders and untrained personnel the “convergence”. With convergence comes many organisations who are affiliated and unaffiliated to them and it becomes difficult to manage. It becomes an issue as many official USAR responders are unaware of the credentials of volunteers and are reluctant or do not know how to use them properly in response situations. As a result, their main priority is to stop volunteers from causing any harm to either themselves or others involved in disaster response as it comes down to liability. It was expressed within this dissertation that individuals without proper training might unintentionally harm themselves and others involved in the disaster response. As a result, although volunteers mean well, they can be more of a hindrance than a help (Barsky et al., 2007). Dyne (1994) discusses the point of view that situational altruism produces a massive response of human and material resources to cope effectively with disaster which in many ways can be very inefficient and uncoordinated.

Battini (2007) states that literature regarding coordination in the humanitarian assistance field, supports the coordination-by-command approach, with the UN assuming the authoritative role. According to defenders of this structure, the UN is in the best position to lead such efforts because it has direct access to both donor governments and governments of the afflicted.

The official discourse of the UN clearly acknowledges the importance and necessity of working hand-in-hand with NGOs. It is aware of the need to take into account non-governmental responders and the UN has been trying to include non-governmental representatives in its coordination mechanism bodies. Despite repeated allegations recognizing the importance of collaborating with NGOs, communication and coordination between the two spheres is still limited and often excludes international and local NGOs from its coordination efforts (Battini, 2007).

4.10 Conclusion

As a result of the problems discussed throughout this study, such as the timeline of response, media pressure, damaged infrastructure and communication networks, casualties amongst local officials and agencies as well as the influx of responders, a disaster affected country can quickly become chaotic with multiple organizations all working in a stressful and demanding environment. The situation is almost always on the brink of complete chaos; therefore, response requires that there is a diverse set of responders that coordinate activities among three simultaneous but distinct response phases, each of which encompasses a variety of sectors requiring different practical specialities across varying levels and settings. This kind of response requires experience, understanding of local conditions and knowledge of disaster response processes.

This chapter presented the main categories and the sub-categories that emerged in the study. The schematic representation of these main categories and sub-categories are outlined in Table 1 below.

Figure 34 is the conceptual map of the study findings that are discussed in this chapter.

Table 1: Summary of Themes and their subcategories

Secondary Research Questions	Categories	Subcategories
Are South African NGO teams adequately prepared for a rapid response to an international earthquake disaster?	Preparation Phase	Need for planning and preparedness • Need for training • Need for medical status
	Response Phase	Mobilization to site • Needs assessment • Self-sufficiency • Formal team documentation
	Need for Risk Management	Safety and Security Well-being
Do South African NGO teams have the human and logistical capabilities to be effective in an international earthquake response?	Defining Capabilities Mitigation Phase	Finance/Resources Team Selection • Qualifications • Experience
	Base of Operations	Need for on-site coordinators • Team manager Support staff
	Poor Communication	Lack of Information Inter-agency communication • Modes of communication
Are South African NGO's compliant with International Search and Rescue Advisory Group guidelines?	Understanding International Guidelines	INSARAG Unique team classification – The NGO Paradigm

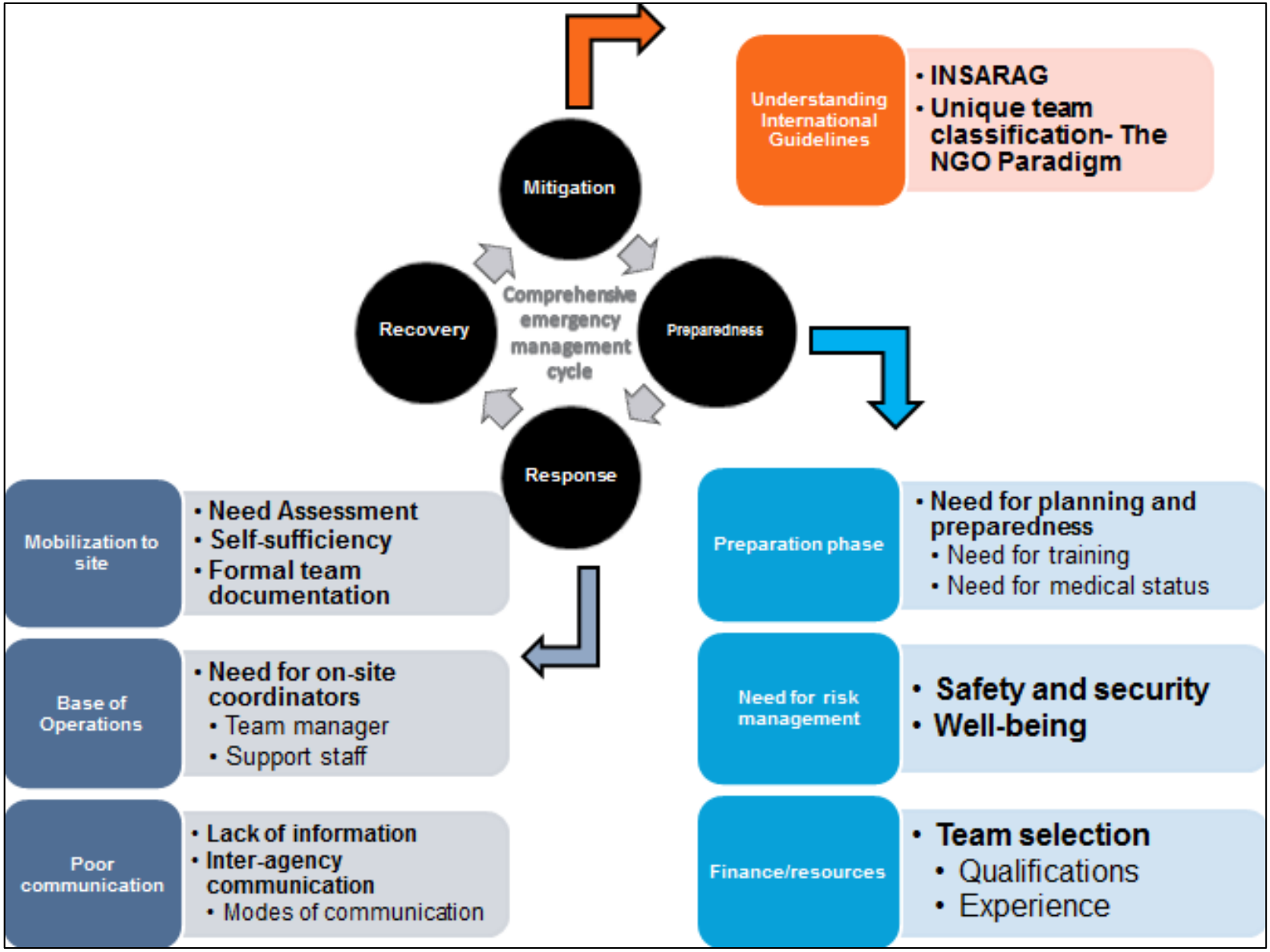


Figure 34: Conceptual Map of the study findings

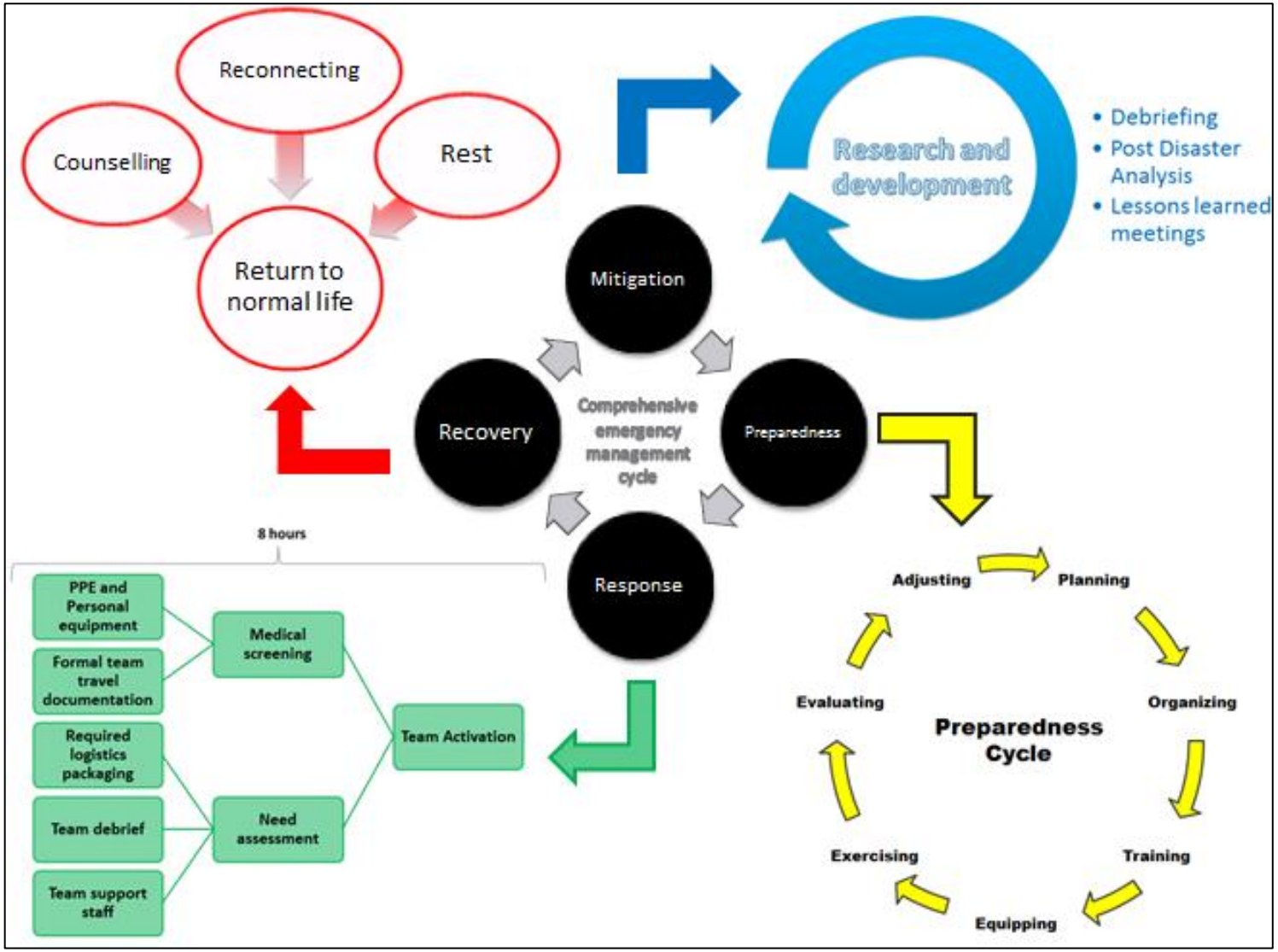


Figure 35: Conceptual Map of the study Recommendations

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter will present the recommendations from the findings of this study. The findings have been made into a conceptual framework which highlights improvements in the disaster management cycle which could possibly improve on the SA NGO teams preparedness to respond to future disaster.

5.2 Conceptual Framework

The Conceptual map of the study recommendations, Figure 35, is the culmination of the findings of this study. It is hoped that this conceptual map of the recommendations will contribute in the development of a framework to ensure improved coordination of future international USAR and medical teams that are funded by NGOs in South Africa.

5.3 Recommendations

The following recommendations are presented to attempt to address gaps that were identified by the study.

- National capacity building
  Governments, NGOs and private sectors, should accelerate investment in capacity building for disaster management. Training Programmes emulating “best practice” in these fields should become a priority.

Preparedness Phase

Organizational planning and preparedness

It is recommended that:

Establish team classification

- Search teams

  Propose a change in their team capacity. Due to logistical and funding difficulties, teams should consider becoming a search team only as it requires less logistical set-backs.

  Or

- Medical teams

  Propose a change in their team capacity. Due to logistical and funding difficulties, teams to consider becoming disaster medical assistance teams only. Delivering only medical care to disaster affected country.

  Or

- Teams to register as an INSARAG USAR team

  Due to difficulties discussed within the study. It is advised that the NGO teams register with the UN as a Medium USAR team. This will require formal paper work and documentation and teams will need to get up to capacity logistically according to all INSARAG requirements. If organizations are going to seriously consider USAR disaster response, it must work within established coordination structures and agree to certain ethical and professional guidelines.

- Funding

  Attempt to gain adequate funding to purchase a private plane or charter a plane to deploy teams, supplies and equipment to the disaster affected country.

- NGO funding

  NGOs should fund response preparedness/planning, response, recovery and mitigation phases between disasters instead of only during a disaster.

- Policies and procedures for analysis and planning systems for management, administration and emergency operations need to be put in place.

- A suitable national policy document and legal framework for disaster response within the NGO itself needs to be established.

- A suitable International policy document and legal framework for disaster response within the NGO itself needs to be agreed upon by relevant stakeholders.

- Personnel database

  A functional structure of personnel in a team database. Personnel assignments with potential roles and responsibilities. Personnel qualifications and medical reports. Changes in normal operating assignments and responsibilities to be updated frequently (family issues, temporary roles, teams, task forces).

- Personnel notification procedures

  Steps to locate and assign personnel both during and after normal work hours when required for assistance e.g., communication methods and information conveyed during contact session.

- On-site coordinators

  Team managers and support staff for the relief teams to be appointed and deployed with the teams when responding to disasters.

- Standard Operating Procedure (SOP) development

  Establish systems of coordination with incoming or locally-based international organisations and responders such as donor teams, the UN, the IFRC and NGOs. This should include creating established standard operating procedures to integrate international responders with the local emergency management authority. Committee organization, schedule, needs assessment process, development process, approval, distribution, implementation and evaluation.

- Risk Management SOP's

  Identification of hazards, vulnerability and risk assessment, risk control techniques, safety systems and risk management monitoring.

- Mutual Aid Agreements

  Requirements for outside aid, resource lists, inter-agency communication and unified command to be established. For international and national response mechanisms to fit together effectively, working relationships of trust and rapport must be established between the international community and governments of disaster-prone countries prior to disasters striking. Overall risk is reduced by assisting governments in enhancing their own disaster response capacities and systems, since this will help them respond faster and more effectively.

- Equipment and Supplies Inventories

  Required inventory list according to team classification, uniforms with clear country and NGO marking, personal protective equipment, small multi-tools, communications equipment and inventory control and maintenance procedures.

- Medical Devices and Equipment

  Selection of types of medical devices and equipment appropriate for disaster site use within the defined scope of practice and treatment protocols.

- Training, Education, and Exercises

  In service training (initial and refresher), live simulation training exercises, training evaluation, certification, requests for training, training records, inter-organizational and international training and exercise programmes must be formalized.

- Information Management

  Incident reporting system and record-keeping systems to be established.

- Risk Reduction

  Ensuring the participation of disaster-prone countries and responding countries in international response networks such as INSARAG, UNDAC and the Environmental Emergencies network. Enhancing national skills and developing national standards in this way reduces overall risk.

- Formal arrangements with the UN (if teams not registered with them)

  To liaise, collaborate and integrate into other USAR teams on the disaster site due to specialist expertise and knowledge.

- Casualty Evacuation

  A formally prepared, well documented and relayed evacuation procedure needs to be set up prior deployment for every disaster (Standard Operating Procedures) with the required authorities of the affected country.

Response Phase

Member health and assistance programmes

Policies and procedures to be considered and established for member health, fitness and performance. This includes assessment, enhancement and application activities.

- Formal Team

  Formal official relief team documentation to be sent with team manager or team leader on deployment. Team personnel to carry recommended documentation for international travel.

- Disaster Management

  Activation of the organization's disaster operations plans and systems, emergency finance and procurement, resource management, personnel and information gathering and management.

- Medical Screening/Health Assessment

  Medical manager or team doctor to perform pre-deployment and annual examinations. Protocols for post-injury or exposure to be formalised. Medical screening, vaccinations and medical record checks to be done pre-deployment.

- Health and Wellness Promotion

  Fitness assessments, fitness conditioning programs and healthy lifestyle recommendations, if required.

- Performance Evaluation Process

  Consider a work performance assessment for disaster response team members.

Safety and security

General procedures outlining safety considerations for agency personnel at various types of emergency incidents.

- Applicable Standards
  Certain authorities need to be recognized by the organization as defining safe work practices in emergency response (e.g., OSHA regulations, INSARAG, NFPA or other professional associations with consensus safety standards).

- Risk Management Guidelines
  Procedures designed to minimize risk, general guidelines for identifying hazards and minimizing risk in emergency response, including qualifications, standard safety guidelines, use of pre-plans, initial evaluation of risk, development of site safety plans, assignment of safety personnel, control of country access with regular re-evaluation of standards.

- Base of Operations
  A comfortable and safe base of operations needs to be arranged with affiliated agencies on deployment for the teams if they are not affiliated with the UN.

- On-site coordinators
  Team managers and support staff for the relief teams to be appointed and deployed with the teams.

- Safety officer or elected safety representative within team
  Authority and responsibilities of the safety officer, incident scene safety management procedures, post-disaster follow-up, reporting and documentation.

- Protective clothing and equipment
  General procedures for selecting, using, maintaining, inspecting, decontaminating and disposing of personal protective clothing and equipment such as mask respiratory and noise protection.

- Patient care
  General procedures addressing patient care delivered in the pre-hospital setting. Treatment protocols, medically approved protocols for pre-hospital and hospital personnel that ensure consistent and appropriate treatment of patients (includes interaction with team medical manager or doctor).

- Biohazard and General Waste Disposal
  Types of hazards and disposal methods of medical waste.

- Personnel accountability system
  Supervisor and team member responsibilities, incident arrival and departure procedures and personnel tracking procedures.

- Accountability of personnel
  Procedures for monitoring disaster operations and personnel to ensure that tasks are completed safely and effectively.

- Medical support

  Systems to provide medical care for injured responders. Medical supplies and medical evaluation and evacuation, treatment and post-incident follow-up.

- Member injuries and fatalities

  Procedures to evaluate and treat team member injuries and to document and report injuries and fatalities that occur during disaster operations.

- Team member exposure control

  Personal hygiene, use of PPE and barrier protection, incident operations, incident recovery (disposal, cleaning, decontamination, storage) and any post-exposure procedures.

- Incident Scene Rehabilitation

  Rehabilitation officer or team doctor to perform the function, monitoring responders' emotional and physical condition, rotation of personnel, requesting relief, rehabilitation area and supplies, food and fluid replenishment.

- Evacuation procedures

  Evacuating responders from dangerous structures or areas: determining dangerous conditions, activation signal, procedures for evacuation, accounting for personnel, return to normal operations.

- Departure from affected country

  Team well-being, operational debriefing, release of information, departure procedure from affected site and country.

Communications

General procedures governing communications during disasters.

- Situation report access
  Procedures in place that provide up to date situation reports

- Communication protocols
  Procedures and protocols for assigning teams to specific sites in the affected country and communication protocols once deployed.

- Emergency Signals
  Initiation of emergency signals, radio signals and other warning signals.

- Alternate Radio Frequencies
  The use of alternate radio frequencies on disaster sites at the affected country.

- Alternate communication technology
  The use of alternate up-to-date communication devices that are available on disaster sites at the affected country.

- Mutual Aid Communication
  Procedures for communicating with teams and personnel from other organizations with mutual aid agreements.

- Situation/Status Reports
  Procedures for completing situation or status reports for disasters.

Recovery Phase

Post-disaster operations

Procedures for activities after returning from a disaster designed to assess and document actions, restore capabilities and ensure team personnel well-being.

- Critical Incident Stress Debriefing (CISM)
  Identifying personnel needing personal CISM and counselling, procedures for debriefing team, conducting a post-incident follow up.

- Injury and exposure reporting and investigation
  Accident and injury reports, exposure reports, death reports, maintenance of the health data base system, identification of injury or exposure developments and problems, confidentiality of personal health records, exposure or injury follow-up.

Mitigation Phase

Research and development

- Post-disaster analysis
  Identify lessons learned and potential corrective actions following a response to a disaster. Incident reports to be analysed by team managers and team personnel. Develop guidelines for gathering information and for conducting analyses on standardized plans and develop a mechanism for reporting results.

- Post-incident recovery

  Activities designed to restore the department's response capability after a disaster response, including consideration of staffing assignments, addressing any problems, equipment replacement, and cost recovery.

- Incident record keeping and reporting

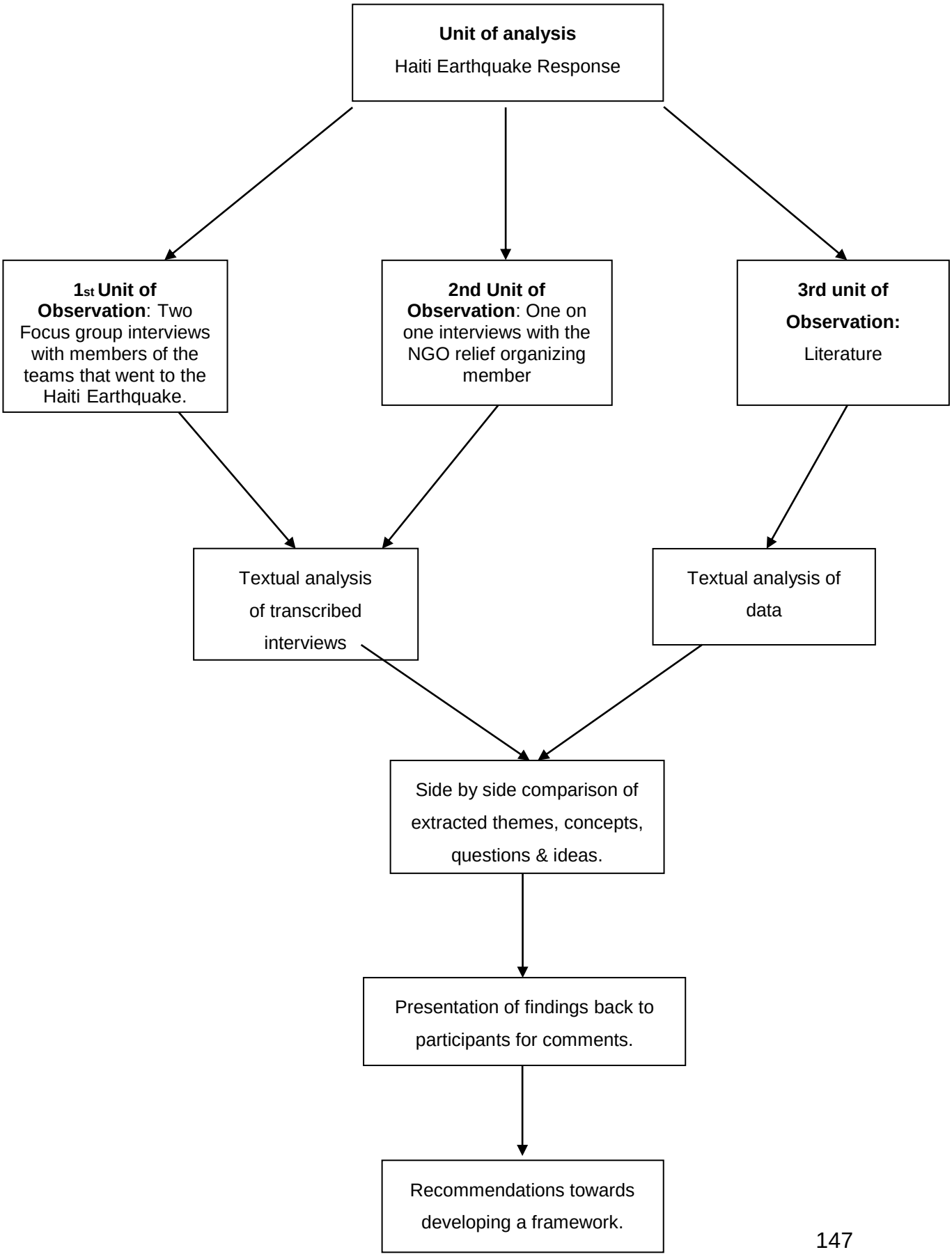
  Development and completion of standard operating procedure documentation, submission of special incident reports, incident review processes and incident follow-up procedures.

5.4 Conclusion

Although the responses to the 2010 Haiti Earthquake were done with good intentions and benevolence, more must be done to improve responses to future disasters. Coordination and control during future disasters will require the performance of multiple tasks including the development of standards for best practice, education and training, a comprehensive emergency management system, enhanced preparedness, and improved integration of the government and United Nations sectors. The provision of the appropriate resources is required in order to improve future disaster response coordination and mitigation efforts. It is important that the necessary time, effort and money, be invested in the response preparedness of SA NGOs'. NGOs must allocate sufficient funds between disasters for activities such as, training and mitigation processes. Only then will the SA NGO teams be able to respond reliably and efficiently to the needs of victims of disasters regardless of when and where they occur. The challenges that lie ahead of SA NGOs' wishing to become respected and appreciated for their specialist skills within the disaster response community are clear.

Will SA NGO teams accept and implement policies that will meet the broad range of realities that lie ahead? Specifically, will we do more to prepare to successfully respond to disasters in order to make a bigger impact on other people's lives? Logic, empirical evidence and the recommendations of the most respectable scholars and practitioners in the field dictate that we should recognize both the opportunities and limitations of what can be achieved in the disaster management profession. In spite of these facts, there should be an aggressive push for change and not be content with the responsive approaches of the past. Disaster mitigation should be made at least as much a priority in planning and application as emergency preparedness, response and recovery, so to promote a proactive rather than a reactive stance to disasters.

Annexure A: Triangulation of the data



Annexure B: Study participant information sheet

Participant Information Sheet – Interviews with Relief Team Members

Dear Participant
Thank you for making yourself available to participate in my study titled:

"Preparedness of South African non-governmental organization relief items for international earthquake response: A case study of the 2010 Haiti earthquake response"

Name of Supervisor: Mr Yugan Pillay (yuganp@dut.ac.za)
Name of Co-Supervisor: Dr. M.N. Sibiya (nokuthulas@dut.ac.za)
Name of Student: Shannon Du Randt (shannond@dut.ac.za)
Name of Institution: Durban University of Technology
Dept. of Emergency Medical Care & Rescue

Purpose of the study:
The purpose of this study is to develop a preparedness framework for SA NGO teams responding to international earthquake disasters. This framework hopes to contribute to improved coordination of future international urban search and rescue (USAR) and Disaster Medical Assistance Teams (DMAT) that are privately funded by NGO's in South Africa.

There is a need for a clear framework for preparing to respond to international earthquake disasters as a South African NGO relief team since there is a need to respond quickly once activated to an international disaster, with deployments required within hours rather than days.

Your role as a study participant:
I will be contacting you at your convenience in order to set up a time where we can either meet or speak telephonically as is your wish.

I will be interviewing you on a one-to-one basis to gain in-depth knowledge and understanding about your experience and challenges encountered during your relief efforts for the Haiti earthquake.

The interview will not exceed 1hour in length and you may terminate your involvement in the study at any point in time. You will also be required to be involved in a group discussion with your relief team members so the researcher can gain an understanding of the team challenges during the earthquake response.

Risks:
There are no risks to you as all information divulged in the interviews will be kept strictly confidential. Your name will be given an alias during the publication of the findings of this study.

Incentives:
There are no financial incentives for you to participate in this study; however it may contribute to better preparedness for future earthquake disaster responses.

Should you have any questions/concerns about any aspect of this study please feel free to contact me or my supervisors directly (contact details above).

Thank you once again for your time and your potential decision to participate in this study.

Kind Regards,

Shannon du Randt (M Tech: Emergency Medical Care – Final year student)

Participant Information Sheet – Interviews with NGO relief-organizing member

Dear Participant
Thank you for making yourself available to participate in my study titled:

"Preparedness of South African non-governmental organization relief items for international earthquake response: A case study of the 2010 Haiti earthquake response"

Name of Supervisor:	Mr Yugan Pillay (yuganp@dut.ac.za)
Name of Co-Supervisor:	Dr. M.N. Sibiya (nokuthulas@dut.ac.za)
Name of Student:	Shannon Du Randt (shannond@dut.ac.za)
Name of Institution:	Durban University of Technology Dept. of Emergency Medical Care & Rescue

Purpose of the study:
The purpose of this study is to develop a preparedness framework for SA NGO teams responding to international earthquake disasters. This framework hopes to contribute to improved coordination of future international urban search and rescue (USAR) and Disaster Medical Assistance Teams (DMAT) that are privately funded by NGO's in South Africa.

There is a need for a clear framework for preparing to respond to international earthquake disasters as a South African NGO relief team since there is a need to respond quickly once activated to an international disaster, with deployments required within hours rather than days.

Your role as a study participant:
I will be contacting you at your convenience in order to set up a time where we can either meet or speak telephonically as is your wish.

I will be interviewing you on a one-to-one basis to gain in-depth knowledge and understanding about your experience and challenges encountered during the organisation of relief efforts for the Haiti earthquake.

The interview will not exceed 1hour in length and you may terminate your involvement in the study at any point in time.

Risks:
There are no risks to you or your organization as all information divulged in the interviews will be kept strictly confidential. Your name and organisation will be given an alias during the publication of the findings of this study, unless you request them to be published.

Incentives:
There are no financial incentives for you to participate in this study; however it may contribute to better preparedness for future earthquake and potentially other types of disaster responses.

Should you have any questions/concerns about any aspect of this study please feel free to contact me or my supervisors directly (contact details above).

Thank you once again for your time and your potential decision to participate in this study.

Kind Regards,

Shannon du Randt (M: Tech. Emergency Medical Care – Final year student)

Annexure C: Study participant consent forms

Informed Consent Form – All Interview Participants

Date : _____/_____/_____

The title of the research project is: **"Preparedness of South African non-governmental organization relief items for international earthquake response: A case study of the 2010 Haiti earthquake response"**

Name of Supervisor: Mr Yugan Pillay (yuganp@dut.ac.za)
Name of Co-Supervisor: Dr. M.N. Sibiya (nokuthulas@dut.ac.za)
Name of Research Student: Shannon Du Randt (shannond@dut.ac.za)
Name of Institution: Durban University of Technology
Dept. of Emergency Medical Care & Rescue

Purpose of the Study
The purpose of this study is to develop a preparedness framework for SA NGO teams responding to international earthquake disasters. This framework hopes to contribute to improved coordination of future international urban search and rescue (USAR) and Disaster Medical Assistance Teams (DMAT) that are privately funded by NGO's in South Africa.

Please circle the appropriate answer

1. Have you read the participant information sheet?
   YES / NO

2. Have all questions that you have regarding the study been satisfactorily answered?
   YES / NO

4. Have you had an opportunity to discuss this study?
   YES / NO

5. Are you satisfied with your level of understanding of the study?
   YES / NO

6. Who have you communicated your questions/concerns to?
   _____

7. Do you understand your role within this study?
   YES / NO

8. Do you understand that you may withdraw from this study?
   YES / NO
   a) At any time
   b) Without needing to justify your decision
   c) Without impacting on you in any way in the future

9. Do you consent to voluntarily participate in this study?
   YES / NO

Participant Name: _____(in block letters)

Signature: _____ Date: _____

Witness Name: _____(in block letters)

Signature: _____ Date: _____

Research Student: Shannon Du Randt

Signature: _____ Date: _____

If you have answered NO to any of the above questions, please do not hesitate to contact either of my supervisors who will be able to assist you.

Annexure D: Study participant interview schedules

Interview Schedules

One on one interviews with NGO relief-organizing members
Welcome and thank you for being here and participating in this interview. Your name will not be used in any documentation and all information will remain confidential, unless you request them to be published.

Being part of a team responding to Haiti, I myself came across quite a few challenges. I would like to engage in a discussion to try and understand your perspective on the challenges encountered during the organization of relief efforts for this earthquake and other disaster efforts that you have been involved in.

Let's start by saying: How did you get involved in the Haiti relief effort?

(Questions will unfold based on the responses received from interview participants. The existing earthquake diary will be used to guide the discussion)

Focus group interviews
Welcome and thank you for being here and participating in this group interview. Your names will not be used in any documentation and all information will remain confidential.

Being part of a team responding to Haiti, I myself came across quite a few challenges. I would like to engage in a discussion to try and understand your perspective on disaster preparedness and the challenges that your team faced in this context. Let's start by saying, How did your team get involved in the relief effort?

(Questions will unfold based on the responses received from group interview participants.)

Annexure E: Researcher's Log of Events – Haiti Earthquake 2010

This Log of events was not a data collection source but was used during interviews to remind the participants of the timelines of the disaster.

Researcher's Log of events – Haiti Earthquake 2010

Kwa-zulu Natal - University of Technology team

CRS- Catholic Relief Services

Caritas- Local NGO in Haiti that fall under the CRS

Wednesday 13 January 2010

10h00 – Received first notification to be on standby to respond to Haiti.

- Team members confirmed and put on alert.
- Supplies (food and consumables) purchased by team members.
- Logistics lists compiled for rescue effort.

Thursday 14 January 2010

- Team still on standby, no confirmed date and time for departure.
- Passports collected for team member visa applications.

Friday 15 January 2010

- Passports sent to Johannesburg (JHB) for visas.
- Temporary passports not being accepted for visas
- Two members of the original team unable to go due to temporary passports. One new member added to the team.
- No confirmed date or time for departure as yet.
- Packing rescue equipment according to logistics list. (Problem trying to find suitable containers to carry rescue equipment in for transporting).

Monday 18 January 2010

- Passport photos sent up to JHB to arrange visas by 10h00.
- Notified that we were departing today at 15h40 from DBN International Airport to JHB international.
- Final packing of rescue equipment into smaller crates and inventory lists completed.
- Personal gear packed and ready.
- All Gear sent to airport by bus.
- All team members checked in at DBN international airport by 15h20.
- Problems with the weight and size of our equipment. Equipment then sent to cargo and would be sent on next flight out of DBN.
- Arrived at JHB airport at 16h50. Met with four doctors that would be joining our rescue team.
- Equipment arrived from cargo, collected by NGO. Informed of a 32kg weight restriction per item for equipment. NGO Relief Organizing member to get equipment repacked and then sent Santo Domingo airport.
- Brief given to us by NGO Relief Organizing member before our flight out of JHB to Paris, France.
- Equipment arrived and repacked already by NGO staff. Not all equipment can go due to size.
- Left JHB at 20h30

Tuesday 19 January 2010

- Arrived in Paris at 07h30 (SA time) 5h30 (local time)
- Rendezvous with media and news crews at Paris airport.
- Flight out to Santo Domingo Airport at 14h50 (France local time) with the news crews – flight delayed left at 15h40 (France local time).
- Met with Laura from the United Nations OCHA office, she would try and assist our team as much as possible.
- Arrived at Santo Domingo at 00h52 (SA time) 18h52 (Dominican Republic (DR) - local time).
- Waited for equipment to arrive from JHB. Only received some of the search equipment:
    - 2 x High lift jacks
    - 2 x Large Airbags
    - 2 x Small Airbags
    - Snake eye search camera

        - 3 x ALS jump bags
        - Hilti Core drill
        - Hilti Jack Hammer
- Also picked up 5 boxes of food from previous SA NGO team that arrived two days previously.
- O3h30 (SA time) 21h30 (local time), left by four taxis. (One hour delay due to waiting for equipment as well as press personnel holding us up).
- 04h30 (SA time) 22h30 (local time) arrived at hotel. Booked in and managed to secure a storage room for all equipment and food.
- 05h00 (SA time) 23h00 (local time), had a team briefing. Transport to Haiti from Dominican a problem.
- 06h30 (SA time) 00h30 (local time); we all very tired and need to be up early. Went to sleep to be up by 11h30 (SA time) 05h30 (local time) for breakfast at 06h30 (local time).

Wednesday 20 January 2010 (Day 1)

- 12h30 (SA time), 06h30 (local time), Breakfast. Updated on transport situation. On standby for flights for the afternoon or 10h00 (local time) tomorrow (Thursday 21st).
- 14h30 (SA time), 08h30 (local time). Plans changed to take four taxis to CRS in Santo Domingo. Taxis booked and waiting at 15h30(SA time) 09h30 (local time).
- Bottled water bought at hotel (60 bottles – 60 Dollars)
- Arrived at CRS, loaded a bus with equipment and food and left at 11h50 (local time).
- 21h50 (SA time) 15h50 (Santo Domingo); 16h50 (Port-au-Prince time), arrived at Dominican Republic/Haiti border post.
- Went through border easily but delayed waiting for security convoy to take us through into port-a-prince.
- 03h12 (SA time) 20h12 (local time), arrived at CRS. Plans to leave press to stay at CRS as not enough space at Caritas base.
- 03h35 (SA time) 20h35 (local time), left CRS to go to Caritas base.
- 04h15 (SA time) 21h15 (local time), arrived at Caritas. Debriefed with first SA NGO team by their team leader. Discussed living arrangements while at Caritas and deployment times.

- Caritas base included CRS personnel, Mexican and Canadian Search and Rescue teams. Bathrooms unhygienic due to overcrowding and water and electricity shortages.
- We were supplied tents to stay in as our equipment had not arrived.
- Kitchen supplied food if required (Not sure of local food as do not want to fall ill).

Thursday 21 January 2010 (Day2 in Haiti)

- Debriefed to be deployed at 08h30 local time. SA NGO team one and two discussed problems with Search and Rescue sites.
- Delay as we had to wait for CRS transport to take us to sites.
- Still no equipment for our teams to use for Search and Rescue.
- Arrived at Search and Rescue site. Site chosen by CRS as they had reports of people still alive on that site.
- Completed search of site and located deceased. Unable to remove deceased.
- SA NGO team one and two debrief and decided that we cease Search and Rescue and move to Field Hospital assistance.
- Went to airport to collect medical supplies from another South African Rescue team preparing to leave today.

Friday 22 January 2010 (Day 3)

- Joined by the South African media that we travelled with at Caritas.
- Limited food supplies with us so we rationed the food out amongst our team of six for five days.
- As per Caritas, medical personnel needed at a rural hospital two and a half hours outside Port-au-Prince. We split our Rescue team into two teams. One team went to rural hospital and second team went to Cathedral field hospital.
- 10h30 (local time) left to Cathedral field hospital to assist with patient care.
- 11h00 (local time) left Cathedral field hospital as called to assist with a collapsed patient out in the town. Didn't go well as patient was not serious and only needed transport to medical facility. Concerned about security and crowd control in the town.
- Transported patient to Cathedral field hospital in the back of a Caritas truck.

- At the Cathedral field hospital we set up a make-shift outdoor theatre for surgical cases such as debridement and amputations. The second team assisted the Mexican doctors and surgeons at the Cathedral hospital.

Figure 36: Make shift theatre at Cathedral field hospital (Shannon du Randt, 2010)

- The first team that went to rural hospital outside Port-au-Prince set up an Out-Patient Department (OPD) tent and a Casualty tent.
- Got back to Caritas, conditions very poor and overcrowded at base camp so decided to move to a hotel. Set up a make shift camp at hotel on grass area to stay the night as no rooms available. Hotel allowed team to shower in the outdoor pool shower.

Figure 37: Hotel in Port-au-Prince, make shift camp (Shannon du Randt, 2010)

Figure 38: Base Camp, Port-au-Prince (Shannon du Randt, 2010)

Saturday 23 January 2010 (Day 4)

- New SA team arrived. Decision to send new team to rural hospital outside Port-au-Prince to take over OPD and casualty and our team to go back to Cathedral field hospital.
- Our team going through to Cathedral field hospital to do follow up wound care.
- New SA team did not go to rural hospital today.
- Had to arrange transport back to Dominican Republic for the next day. Transport not arranged by NGO to go back to Dominican Republic.
- Team leader arranged transport for 11h00 (local time) the next day, bus to pick us up at Caritas base.

Sunday 24 January 2010 (Day 5)

- Bus did not arrive, waited at Caritas entire day. Wasted time could have been at the Cathedral field hospital instead.
- Had to rearrange for bus to pick us up at 09h00 (local time) next day.

Monday 25 January 2010 (Day 6)

- Bus arrived at 09h00 and picked us up as arranged.
- Flights booked for 21h00 that evening from Punta Cana (Dominican Republic) airport to Paris, France.
- Missed our flight to France due to long bus drive. Had to arrange for accommodation in Punta Cana as put on standby for flights next day.

Wednesday 27 January 2010

- Left Punta Cana at 17h00 to Paris, France. Caught connecting flight to OR Tambo and then to Durban.

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