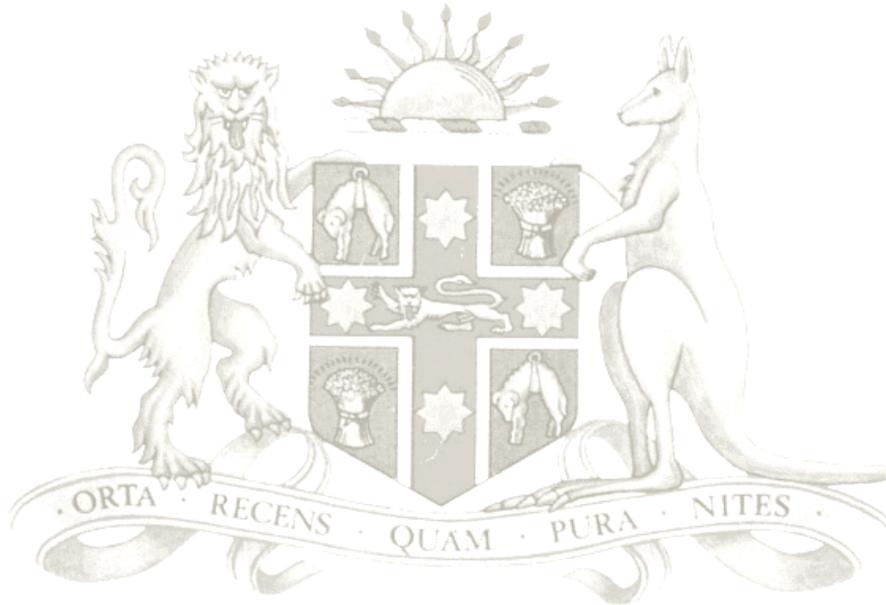


Emergency Management in New South Wales:

An analysis of competence, obstacles and opportunities



Matthew Ellis

Supervisors:

Associate Professor Dale Dominey-Howes

Dr Wendy Shaw

Submitted in partial fulfilment of the requirements for the Degree of Bachelor of Science
with Honours in Geography,

School of Biological, Earth and Environmental Sciences
Faculty of Science
University of New South Wales

October 2011





The University of New South Wales

Faculty of Science

School of Biological, Earth and Environmental Science

Honours Thesis Project Declaration Page

I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at UNSW or any other educational institution, except where the acknowledgement is made in the thesis. Any contribution made to the research by others, with whom I have worked at UNSW or elsewhere, is explicitly acknowledged in the thesis.

I also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance is from others in the project's design and conceptions or in style, presentation and linguistics expression is acknowledged.

I HAVE / HAVE NOT submitted a digital copy of this thesis.

Word Count excluding references, table and captions: 11,760

(Signed)

Date 17th October 2011

Thesis committee (names, not signatures):

Supervisor: Dale Dominey - Howes Co-supervisor: Wendy Shaw

Committee:

I am fully aware that the School retains a copy of the thesis and is free to allow them to be consulted or borrowed. The thesis may be restricted for up to 2 years or longer by a written request to the Head of School.

Table of Contents

Honours Thesis Project Declaration Page.....	2
List of Tables	5
List of Figures	6
List of Acronyms and Abbreviations	7
Glossary	8
Acknowledgements.....	9
Abstract.....	10
1. Introduction	11
1.1. The Effects of Disasters	11
1.2. History of Disasters in NSW	13
1.3. The Impact of Disasters in Australia.....	15
1.4. The Future of Disaster Events.....	16
1.5. An Introduction to Emergency Management.....	17
1.6. Personal Context	19
1.7. Project Aims and Objectives	19
1.8. New South Wales Emergency Management.....	20
1.9. Emergency Management Personnel: LEMOs and DEMOs.....	21
1.10. Summary.....	23
2. Overview of Emergency Management	24
2.1. Emergency Management Legislation.....	24
2.2. Emergency Management as a Profession.....	25
2.3. Key Studies	26
2.4. Contemporary issues	30
2.5. Literature Gaps.....	31
2.6. Summary	32
3. Methods	33
3.1. Selection of Location	33
3.2. Participants.....	34

3.3. Procedure.....	34
3.4. Analysis.....	37
3.5. Summary	37
4. Results	38
4.1. General	38
4.2. Demographics.....	39
4.3. Qualifications	40
4.4. Professional Training	40
4.5. Knowledge	42
4.6. Competence.....	44
4.7. Confidence	47
4.8. Summary	58
5. Discussion.....	59
5.1. Outcomes.....	59
5.2. Limitations	73
5.3. Summary	74
6. Conclusion.....	75
References.....	78
Appendix A - Questionnaire Survey Instrument	85
Appendix B - Letter of Introduction	95
Appendix C - Participant Information Statement	96
Appendix D - Participant Consent Form	98
Appendix E - Project Proposal.....	99
Appendix F - Raw Data	120

List of Tables

- Table 1.1** EMA Disaster Database - Disaster Types
- Table 2.1** Frederickson & Rooney (1990): Five Key Traits of a Profession
- Table 2.2** Britton (1999): Six Key Areas in Emergency Management
- Table 2.3** Blanchard (2005): Top Ten Competencies of Emergency Managers
- Table 2.4** Local Government Emergency Preparedness – Seven Key Areas
- Table 3.1** Composition of QSI

List of Figures

- Figure 1.1** Global natural disaster summary of the years between 1900 and 2010, includes numbers of disasters, deaths and people affected (Linear – Extrapolated Smooth Lines)
- Figure 1.2** Globe technological disaster summary between 1900 and 2010 includes numbers of disasters, deaths and people affected (Linear-Interpolated Smoothed Lines)
- Figure 1.3** Australian disaster event trends between 1790 and 2011, includes number of events within Australia, deaths and those injured or affected
- Figure 1.4** Disaster Types and numbers of incidents across New South Wales
- Figure 1.5** Natural disasters reported between 1900 and 2010 across the globe (With key EM-DAT dates)
- Figure 1.6** List of organisational groups that have a role in emergency management in NSW in conjunction with levels of government. Local Emergency Management Officers (LEMOs) and District Emergency Management Officers (DEMOs) can be seen in their respective levels.
- Figure 1.7** New South Wales is divided into 18 emergency management districts that are managed by DEMOs and District Emergency Management Committees
- Figure 1.8** NSW is divided into 152 local government areas (council areas). This figure outlines the size of various local government areas
- Figure 4.1** Satisfaction level: Level of training
- Figure 4.2** Satisfaction level: Your [Emergency Manager] knowledge
- Figure 4.3** Satisfaction level: Time dedicated to emergency management
- Figure 4.4** Satisfaction level: Your [Emergency Manager] competence
- Figure 4.5** Satisfaction level: As a profession
- Figure 4.6** Satisfaction level: Support by local community
- Figure 4.7** Satisfaction level: Support by local government
- Figure 4.8** Satisfaction level: Support by state government
- Figure 4.9** Satisfaction level: Support by federal government
- Figure 4.10** Satisfaction level: Your [Emergency Manager] skills
- Figure 4.11** Satisfaction level: Financial resources
- Figure 4.12** Satisfaction level: Physical resources
- Figure 4.13** Satisfaction level: Your [Emergency Manager] confidence

List of Acronyms and Abbreviations

AEM	Associate Emergency Manager
ALGA	Australian Local Government Association
BTE	Bureau of Transport Economics
CALD	Culturally and Linguistically Diverse
CRED	Centre for Research on the Epidemiology of Disasters
CEM	Certified Emergency Manager
CSU	Charles Sturt University
DEMC	District Emergency Management Committee
DEMO	District Emergency Management Officer
EMA	Emergency Management Australia
EMAI	Emergency Management Australia Institute
EMNSW	Emergency Management NSW
FEMA	Federal Emergency Management Agency
IAEA	International Atomic Energy Agency
IAEM	International Association of Emergency Managers
LEMO	Local Emergency Management Officer
LEMC	Local Emergency Management Committee
OFDA	Office of U.S. Foreign Disaster Assistance
QSI	Questionnaire Survey Instrument
RFS	Rural Fire Service
RMIT	Royal Melbourne Institute of Technology University
SCU	Southern Cross University
SEMC	State Emergency Management Committee
SEOC	State Emergency Operations Centre
SES	State Emergency Service

Glossary

All Agencies Approach	This approach involves all community organisations in the management of emergencies.
Comprehensive Approach	This approach recognises the need for communities to better organised for emergencies, it utilises the four elements of prevention, preparation, response and recovery.
Disaster	A disruption to the community that involves death or injury that is beyond the daily scope of respective authorities.
Emergency	An event that threatens or endangers life.
Emergency Management	The process of managing various aspect of an emergency, incorporating four key approaches: the all agency approach, comprehensive approach, all hazards and prepared community.
Emergency Response	One of four elements outlined as part of the comprehensive approach. Used synonymously with emergency service organisations.
Emergency Services	An organisation with a focus on emergency response.
Meteorological	A type of disaster: of atmospheric, hydrological or oceanographic in nature.

Acknowledgements

My completion of this thesis was in large part, due to the support and patience of a great number of people. To these individuals: I would like to express my sincere gratitude in this part of my academic journey.

This study would not have been possible without the participants, local councils, the Ministry of Emergency Services, and the NSW Police, the DEMOs and LEMOs whose responses formed this study, I greatly appreciate the time taken out of their busy schedules.

To the University of New South Wales, the Faculty of Science, School of Biological, Earth and Environmental Sciences: Thank you for facilitating my honours year and providing me with a truly educational and informative year. I would also to thank the support staff, Matt Hunt, and David Edwards for their assistance.

Special thanks go to my two supervisors who nursed me through my first foray into research. Dale: you once mentioned that there would be times that I would love doing this and times that I would hate it - I am still waiting for the latter! Wendy, your support, particularly while Dale was gallivanting across the globe was tremendous: thank you both.

Last but not least, I would like to thank Prudence Beattie, my fiancé who dealt with me working full-time on rotational shifts and with my not-so happy-responses to her edits. She kept me honest with my writing.

I am indebted to all those involved as they have made this year a great journey on my search for answers and improvements in an area that I sincerely love and want to see advance towards a fully-fledged profession.

Abstract

Purpose: This study examined the qualifications, training, knowledge, competence and confidence of government Emergency Managers (Local Emergency Management Officers - LEMOs and District Emergency Management Officers - DEMOs) within NSW. This study identified whether Emergency Managers were satisfied with the current status of their role and if there were any outstanding issues.

Method: Thirty-six Emergency Managers across NSW completed a Questionnaire Survey Instrument (QSI). This QSI was composed of 72 questions designed to elicit various responses across six key areas that included Demographics, Qualifications, Training, Knowledge, Competence and Confidence. These responses were then analysed for significance. This information was then cross-surveyed to identify trends.

Results: This study identified several key trends, including lack of support, financial and physical resources, time restrictions, lack of understanding and support from key stakeholders, lack of industry specific tertiary qualifications, a desire for further training and contradictory stances on the employment of a full-time Emergency Manager between LEMOs and DEMOs.

Conclusions: The survey was successful in investigating the three major research aims. Results are discussed with implications for the emergency management industry and its employees. Suggestions for further investigations are made.

Keywords: Emergency Manager, emergency management, LEMO, DEMO, NSW

1. Introduction

Emergency management is a growing industry, providing knowledge and specialist skills in disaster and emergency management. It is through the various levels of government and Emergency Managers that process and protocols are developed to increase community resilience. This study examines the key personnel in emergency management: the Local Emergency Management Officers (LEMOs) and the District Emergency Management Officers (DEMOs) in order to identify areas of potential improvement.

1.1. The Effects of Disasters

From antiquity (e.g., the 79AD eruption of Vesuvius and the destruction of Pompeii) to the present (e.g., the 2009 Victorian bushfires), natural and technological disasters have adversely affected communities. Repeated events reveal systemic failures in the management of emergencies (Parliament of Victoria, 2010a).

According to the Bureau of Transport Economics (2001), the cost of Australian natural disasters between 1967 and 1999 was in excess of A\$37.8 billion¹, taking 565 lives and injuring 7,296 (Bureau of Transport Economics, 2001; Emergency Management Australia, 2006b). The effects of disasters and the importance of those involved in reducing their impact cannot be underestimated. The management of disasters requires complex knowledge and skill sets to develop processes to manage them, in order to build resilient communities and to fulfil a role in emergency management (Blanchard, 2005).

1.1.1. Natural Disasters. According to the Intergovernmental Panel on Climate Change - IPCC (2007) anthropogenic forcing is the main cause of climate change, with growing evidence of an associated increase in extreme weather events (Figure 1.1)

¹ In 1999 values

(Alexander et al., 2007; Intergovernmental Panel on Climate Change, 2007). It is expected that eastern Australia will experience an increase in regional temperatures that will increase extreme weather events such as droughts, floods, wildfire and sea-level rise (IPCC, 2007; Middelmann, 2007). However, the prediction of future events is considered impossible due to small-scale events that cannot be simulated in global models, leaving insufficient data to assess future trends (Houghton, 2009).

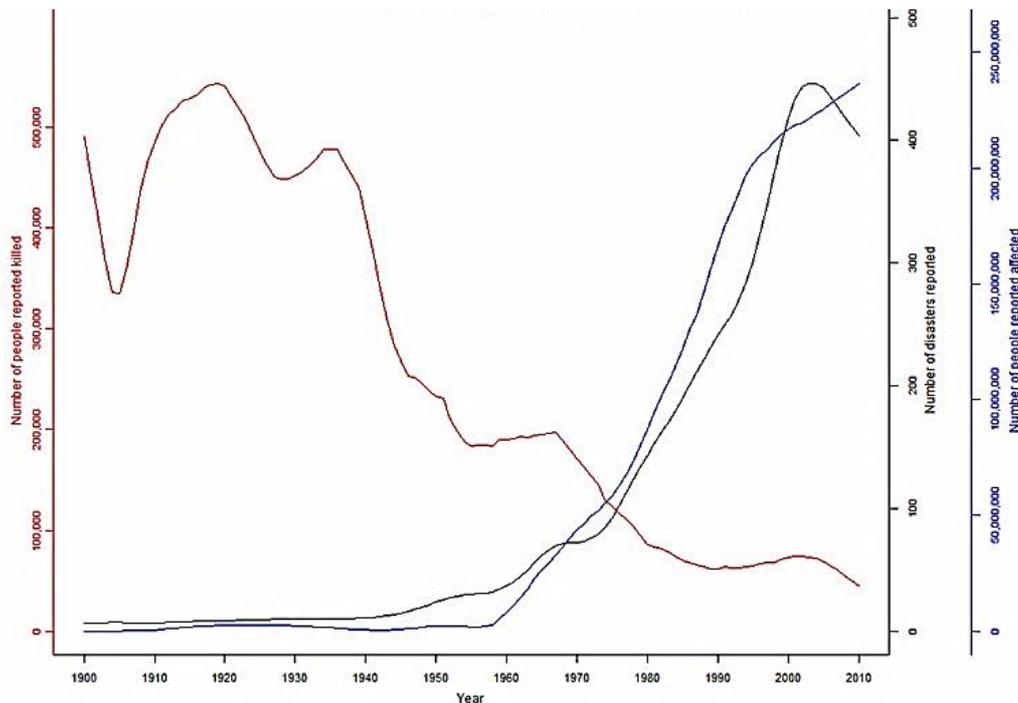


Figure 1.1 Global natural disaster summary of the years between 1900 and 2010, includes numbers of disasters, deaths and people affected (Linear – Extrapolated Smooth Lines) by the Centre for Research on the Epidemiology of Disasters. (2011). The OFDA/CRED International Disaster Database - EM-DAT, . Brussels, Belgium.

While not all natural disasters are climate-related, the majority of Australian events are classified as hydrometeorological. Climate change is expected to cause an increase in the frequency and intensity of weather-related extremes. This means that preparation will become increasingly important and should include the need for specifically trained and qualified personnel; a role currently filled by senior managers in councils (Local Emergency Management Officers - LEMOs) and District Emergency Management Officers (DEMOs).

1.1.2. Technological Disasters. Between 1980 and 2000 there was a major increase in the number of technological disasters, followed by a significant decrease since 2000 (Figure 1.2) (Centre for Research on the Epidemiology of Disasters, 2011). The true number of these events and their impact on the community is not fully understood as not all technological disasters are defined or included in databases (CRED, 2011; EMA, 2011b).

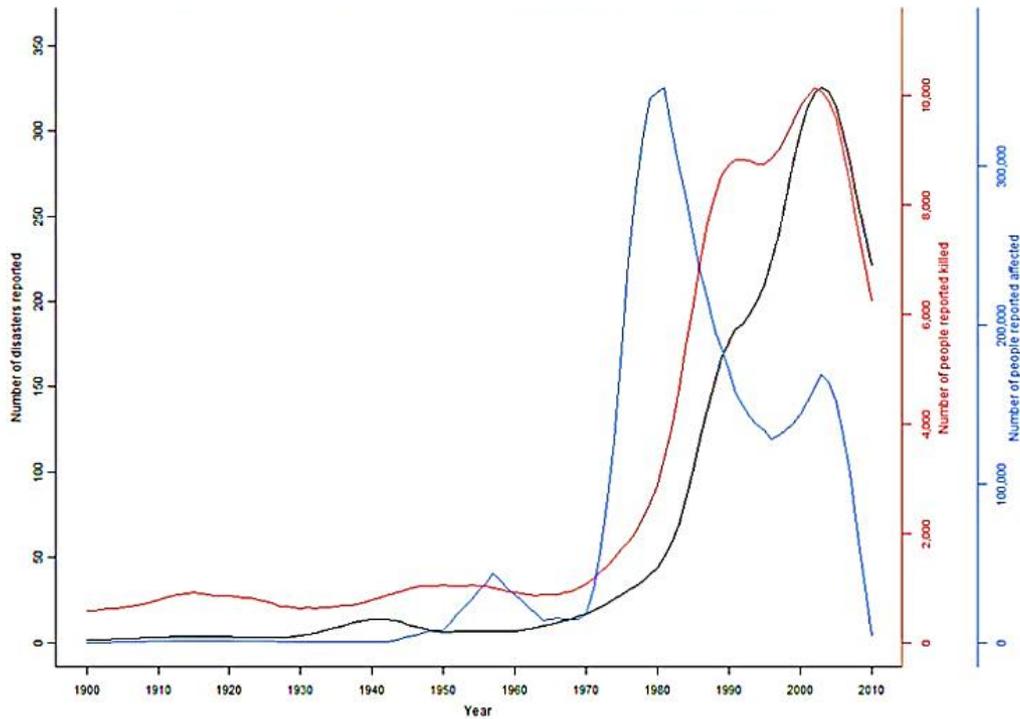


Figure 1.2 Global technological disaster summary between 1900 and 2010 includes numbers of disasters, deaths and people affected (Linear-Interpolated Smoothed Lines) by the Centre for Research on the Epidemiology of Disasters. (2011). The OFDA/CRED International Disaster Database - EM-DAT. Brussels, Belgium.

1.2. History of Disasters in NSW

Between 1968 and 1997, NSW and Queensland² accounted for 66 percent of the total disaster costs and over 50 percent of the total number of disasters across Australia (BTE, 2001).

According to the EMA Disaster Database (2011b), there were 288 events, causing 4,522

² Data obtained was not specific enough to provide separate details between NSW and Queensland.

injuries, 2,818 deaths and over A\$10billion in losses due to various disasters (Figure 1.3) across NSW between the years of 1622 and 2011 (EMA, 2011b).

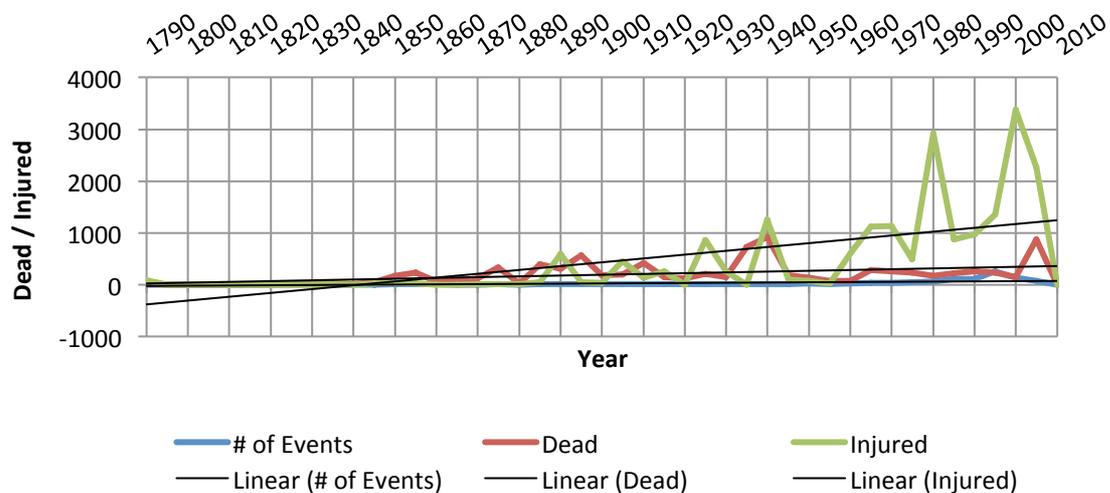


Figure 1.3 Australian disaster event trends between 1790 and 2011, includes number of events within Australia, deaths and those injured or affected. Adapted from “Attorney-General’s Department Disasters Database” by Emergency Management Australia. (2011). Retrieved 21 March 2011 <http://www.ema.gov.au/disasters>.

The disaster type with one of the greatest impacts on NSW is severe storms (Figure 1.4), and until 2010, the 1999 Sydney hailstorm was the most expensive disaster in Australian history, costing in excess of A\$2.3 billion (Bureau of Meteorology, 2011b). Severe storms have impacted the Sydney area and created extensive damage six times between 1937 and 1999, five of which occurred during the 1990s (EMA, 2011b).

Reports and anecdotal evidence reveal that the extent of damage caused by these disasters remains consistent. For example: as storms impact the community they leave water damaged property caused by shattered roof tiles and skylights. These events occur each time a severe storm impacts the community, revealing an inconsistent approach to emergency management and questioning the qualifications and training of emergency personnel (Bitá, 2011a; Emergency Management Australia, 2011b; J. Walker & Bitá, 2011). These issues

highlight gaps in the management of information available to emergency managers and application of information in ensuring community resilience.

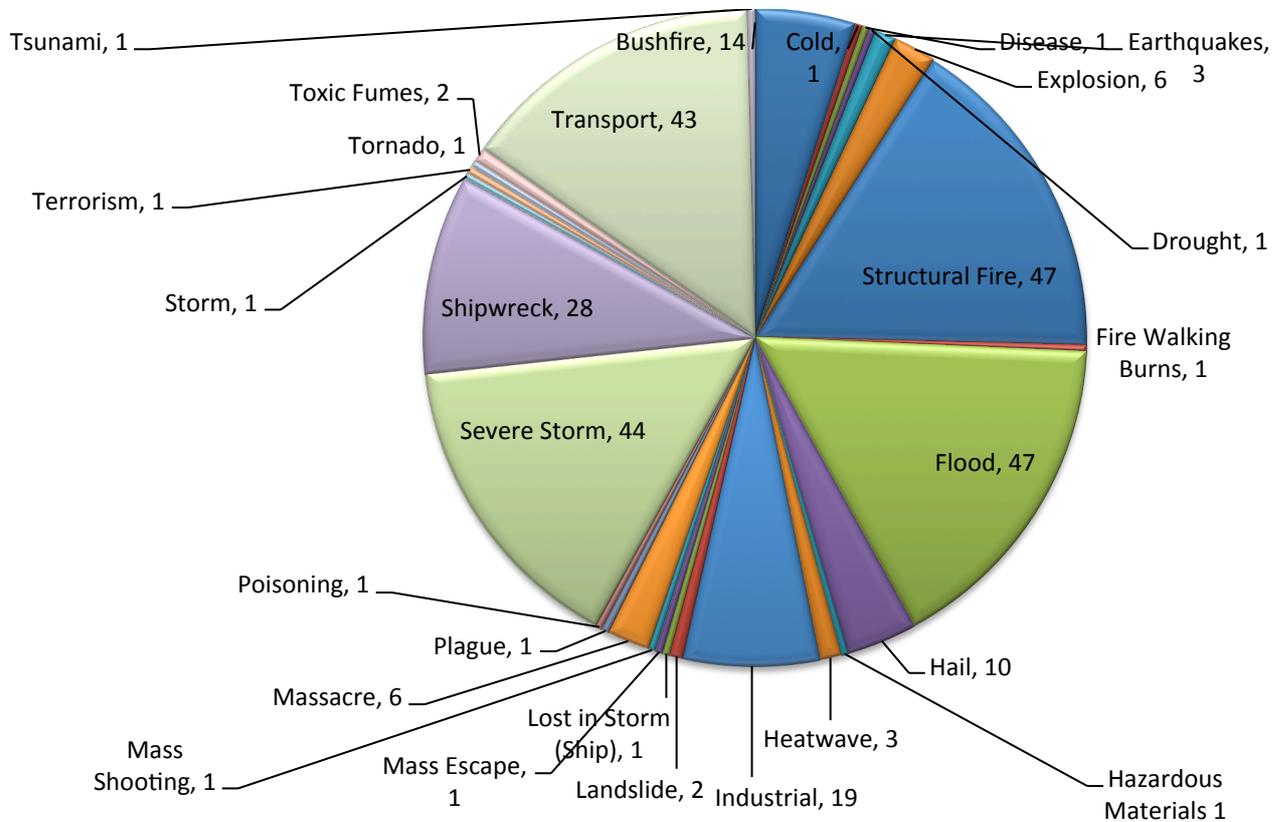


Figure 1.4 Disaster Types and numbers of incidents across New South Wales. Adapted from “Attorney-General’s Department Disasters Database” by Emergency Management Australia. (2011). Retrieved 21 March 2011 <http://www.ema.gov.au/disasters>.

1.3. The Impact of Disasters in Australia

The Emergency Management Australia (EMA) Disaster Database (2011b) lists 19 types of events that have impacted Australia and surrounding territorial waters between 1622 and the present (Table 1.1). The database reveals that Australian disasters have cost the community in excess of A\$487 billion, 330,000 lives and injured in excess of 2 million people (EMA, 2011b).

Table 1.1

EMA Disaster Database - Disaster Types

Category Name	Dead	Injured	Insured Cost
Bushfire	871	9,857	\$1,377,770,000.00
Chemical Emergencies	284	993	\$381,000,001.00
Complex Emergencies	1,204	797	\$2,500,000.00
Criminal Act	103	853	\$0
Cyclone	1,878	1,036	\$367,245,200,000.00
Drought	0	0	\$0
Earthquake	26,314	6,153	\$1,740,670,000.00
Environmental Emergencies	2,571	11,909	\$0
Epidemic	13,803	2,014,237	\$0
Flood	986	1,986	\$2,252,850,000.00
Hail	3	1,160	\$4,827,401,520.00
Industrial Emergencies	569	419	\$0
Landslide	59	61	\$0
Severe Storm	1,505	1,636	\$109,647,000,011.00
Shipwreck	3,789	985	\$7.00
Tornado	11	79	\$48,739,266.00
Transport Emergencies	2,306	5,880	\$0
Tsunami^a	273,820	0	\$0
Urban Fire	290	384	\$13,500,000.00
Total	330,366	2,058,425	A\$487,536,630,805.00

Note. Adapted from “Attorney-General’s Department Disasters Database” by Emergency Management Australia. (2011). Retrieved 21 March 2011 <http://www.ema.gov.au/disasters>.

^a The majority 273,636 dataset is from the 2004 Indian Ocean Tsunami and total losses from the region.

1.4. The Future of Disaster Events

Global disasters have increased nearly 400 percent over the past 100 years (CRED, 2011). It is unclear whether these increases are due to improved reporting techniques or population growth or both (Figure 1.5). However, it is important to note that although these events and people affected have increased, the number of deaths has decreased (Figure 1.1 and Figure 1.2) (CRED, 2011).

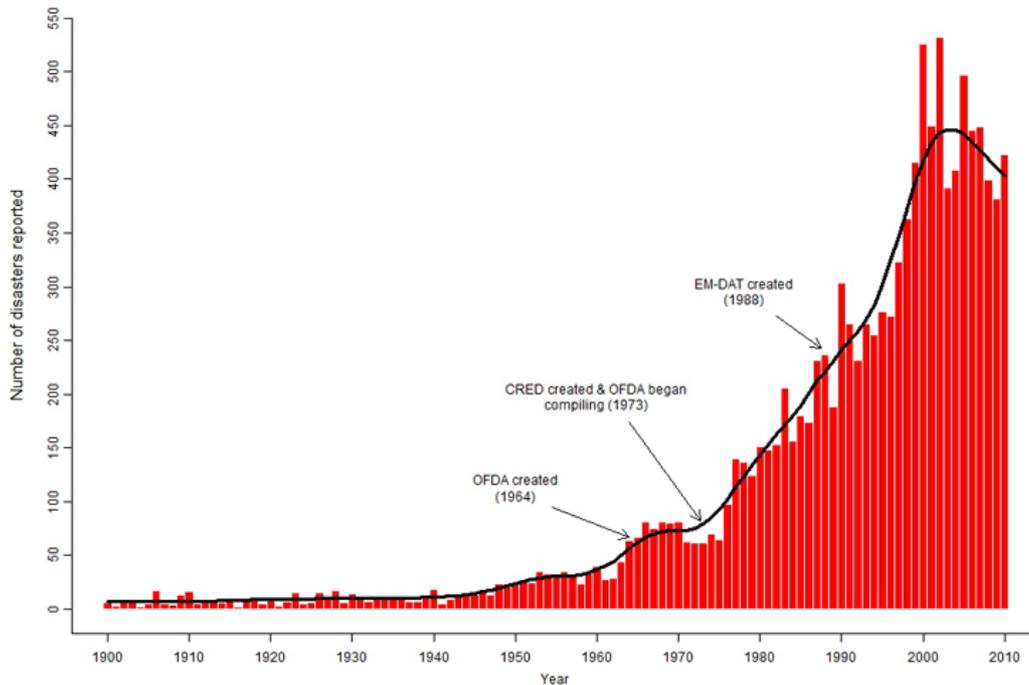


Figure 1.5 Natural disasters reported between 1900 and 2010 across the globe (With key EM-DAT dates) by the Centre for Research on the Epidemiology of Disasters. (2011). The OFDA/CRED International Disaster Database - EM-DAT, . Brussels, Belgium.

1.5. An Introduction to Emergency Management

Emergency management has evolved from a civil defence function for the Australian military to a civilian operation with various officers and managers in critical infrastructure, businesses, emergency services and government with legislative responsibility to the local community (AGD, 2000; Britton, 1999; Smith, 2008; Stehr, 2007). Emergency management is designed to promote community resilience and reduce vulnerability to disasters using various approaches. Consequently, it is imperative that the Emergency Manager has a thorough understanding of industry terminology and approaches (Blanchard, 2005; Britton, 1999).

Government plays an important role in emergency management as it has primary responsibility for protecting the community (Blanchard, 2007; Col, 2007; Eburn, 2009).

Responsibility for emergency management in Australia corresponds to the three levels of government; Federal, States and Territories, and Local (Figure 1.6).

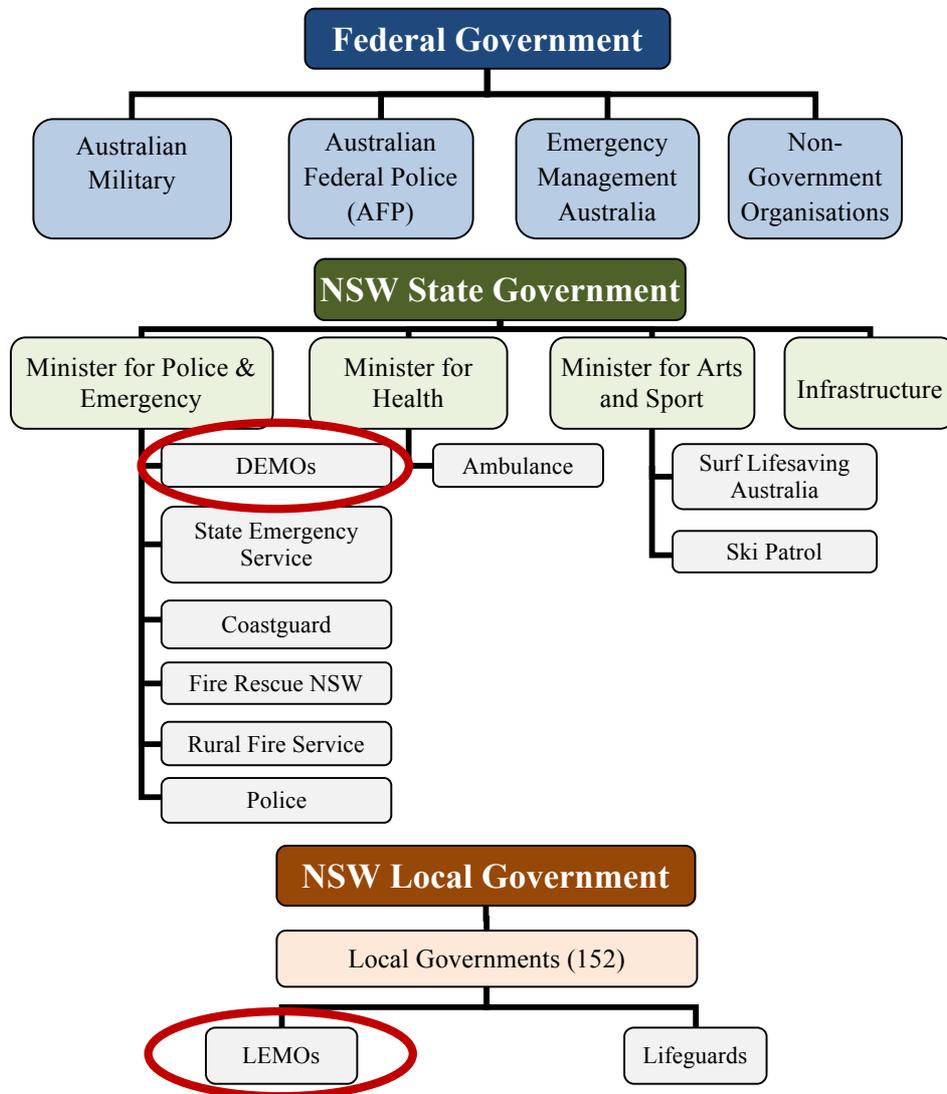


Figure 1.6 List of organisational groups that have a role in emergency management in NSW in conjunction with levels of government. Local Emergency Management Officers (LEMOs) and District Emergency Management Officers (DEMOs) can be seen in their respective levels.

The Federal government supports emergency management through Emergency Management Australia (EMA), an advisory body and coordinator for the Commonwealth government under the Department of Attorney General and Justice (Attorney-General's Department, 2008). There are no Commonwealth legislative agreements for the management

of emergencies at the federal level, with responsibility resting with individual states to manage disasters (AGD, 2000). This requires that each state and territory develop and manage their emergency management arrangements.

1.6. Personal Context

My interest in emergency management was sparked by luck and coincidence. I joined a Surf Club in a year of severe bush fires in Australia and developed an interest in emergency services because I felt a strong desire to be involved. Since that time, I have been involved in emergency services and emergency management, both in a professional and volunteer capacity in Australia and the United States. In the past decade, I began exploring emergency management through various tertiary studies, and have become passionate about improving the industry and inspiring others to do the same. This thesis is driven by my desire to improve emergency management and the open the door to further research in this field.

1.7. Project Aims and Objectives

The literature reveals few studies of Emergency Managers, their knowledge, experience, competence and professional training. It is through a deeper understanding of Emergency Managers that the emergency management industry can mature. This project investigates these points under researched themes and to provide information about the industry for further analysis.

The aims of this research project were:

1. To investigate the qualifications and professional training of Local Emergency Management Officers and District Emergency Management Officers (LEMOs & DEMOs) in New South Wales;

2. To explore the knowledge of LEMOs and DEMOs in emergency management and to describe their experiences; and
3. To examine the competence and confidence of LEMOs and DEMOs in emergency management.

1.8. New South Wales Emergency Management

New South Wales (NSW), located in eastern Australia, has an area of 800,642 km² and a population of 6,967,200 (Brown, Hinton Fletcher, & Jeans, 2011). It is divided into 18 emergency management districts (Figure 1.7) and 152 local government areas (Figure 1.8) (Division of Local Government, 2011; NSW Police Force, 2011b).

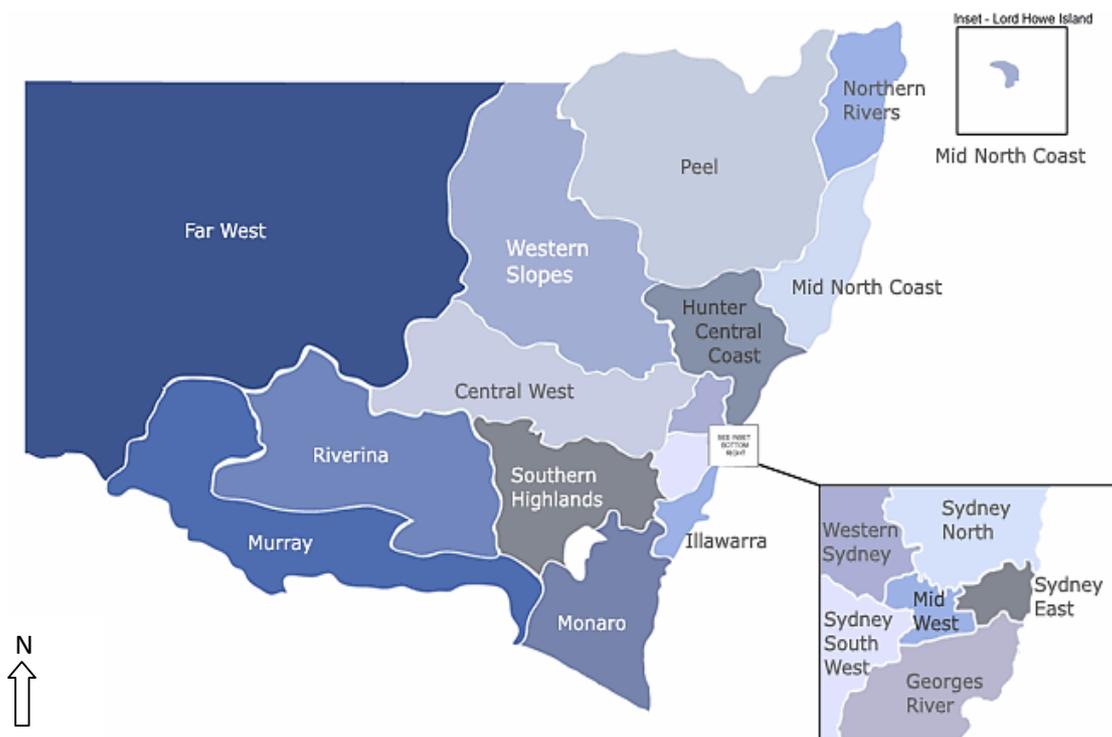


Figure 1.7 New South Wales is divided into 18 emergency management districts that are managed by DEMOs and District Emergency Management Committees. Adapted from NSW Police Force Annual Report 2007-08 by the NSW Police Force. (2008). NSW Police Force Annual Report 2007-08 (Public Affairs Branch and the Office of the Commissioner, Trans.) (pp. 180). 1 Charles Street, Parramatta, NSW 2150, Australia: NSW Police Force

The Ministry for Police and Emergency Services ('Ministry') under the NSW Department of Attorney General and Justice, is responsible for emergency management functions (New South Wales State Government, 2011). It also collects the fire levy and acts as an intermediary between various organisations as part of the *All Agencies* approach. It manages its various responsibilities through internal agencies comprising, the State Emergency Management Committee (SEMC), State Rescue Board (SRB), State Emergency Operations Centre (SEOC) and the 18 emergency management districts (New South Wales State Emergency Management Committee, 2009a).

There are over 110,000 personnel in NSW within the emergency management industry. The majority are frontline response personnel, such as Fire-fighters, Paramedics, State Emergency Service personnel and Police: few fulfil the requirements as emergency managers (Ambulance Service of New South Wales, 2008; Johnson, 2008; New South Wales Fire Brigade, 2009; New South Wales Rural Fire Service, 2009; New South Wales State Emergency Service, 2009; NSW Police Force, 2008). Consequently, the exact number of Emergency Managers is not readily accessible across NSW as there is no system of regulation or registration.

Emergency Managers have a high level of responsibility. However, their experience and level of education and training in emergency management is currently unknown (Smith, 2008). Emergency management officers with roles in NSW government consist of District Emergency Management Officers (DEMOs) and Local Emergency Management Officers (LEMOs) (New South Wales State Government, 1989a).

1.9. Emergency Management Personnel: LEMOs and DEMOs

The 'Ministry', in coordination with the NSW Police Force, manage the DEMOs who provide emergency management support during emergency and non-emergency events (NSW

Police Force, 2011b). In providing support and specialist knowledge to the NSW Police Force, the DEMOs also liaise with local emergency services, local governments and other Emergency Managers. Additionally, DEMOs assist in implementing emergency management policies and procedures and in providing strategic direction to stakeholders through the emergency management districts (Figure 1.7) (NSW Police Force, 2011b).

DEMOs liaise with local governments through the District Emergency Management Committee (DEMC), the Local Emergency Management Committee (LEMC) and the LEMOs. The LEMO is a senior council staff member with the primary responsibility of supporting the LEMC and representing the local government area in the emergency management process (New South Wales State Government, 1989a). There are 152 local government areas within NSW (Figure 1.8) and each area either has a LEMO or shares one with another local government area (Division of Local Government, 2011).



Figure 1.8 NSW is divided into 152 local government areas (council areas). This figure outlines the size of various local government areas. Adapted from NSW Police Force Annual Report 2007-08 by the NSW Police Force. (2008). NSW Police Force Annual Report 2007-08 (Public Affairs Branch and the Office of the Commissioner, Trans.) (pp. 180). 1 Charles Street, Parramatta, NSW 2150, Australia: NSW Police Force

1.10. Summary

Disaster frequency has increased over the past 25 years, with the number and frequency of events expected to continue to increase. However, it is unclear if this increase is attributed to climate change and/or the underreporting of specific data-sets.

This chapter has outlined the background of natural and technological disasters, emergency management within Australia and the role of an Emergency Manager, within government hierarchies. The emergency management process, including the key legislation, the personnel involved, the roles of LEMOs and DEMOs and finally, the history of disasters within NSW were examined. It highlighted the impact of disasters on the state and demonstrates the importance of emergency management within the community.

2. Overview of Emergency Management

A review of the existing literature across global databases reveals little on emergency management and the role of the Emergency Manager within Australia. The Australian Federal government does not have specific legislation for emergency management, and it is the responsibility of each of the states and territories to manage their own emergency management needs (Commonwealth of Australia, 1998).

2.1. Emergency Management Legislation

The State Emergency Rescue Management Act 1989 (SERM) is the cornerstone of emergency management legislation for NSW. This legislation requires local government to have an emergency management committee and appoint a Local Emergency Management Officer (LEMO) to assist in the *prevention of, preparation for, response to and recovery from* emergencies as part of the *Comprehensive approach* to emergency management (New South Wales State Government, 1989a).

Emergency Managers have a complex role that requires extensive study and experience to achieve proficiency (Britton, 1999). The roles and responsibilities of an Emergency Manager are not formally defined in legislation, allowing flexibility with regards to qualifications and experience of the position and is particularly relevant to the LEMOs and DEMOs of NSW (New South Wales State Government, 1989a).

The SERM Act lacks specific details of the requirements for positions of each nominated person and their responsibilities (New South Wales State Government, 1989a). Furthermore, it does not take into account the existing workloads of senior members of staff, the specialised knowledge required of such a position and the issues associated with mandating senior personnel.

2.2. Emergency Management as a Profession

In order to be recognised as a formal profession, an industry must fulfil several criteria. These criteria include specialised knowledge and skills, training at a high level, collective influence and collegial status (Beaton, 2010; Professions Australia, 1997). Formal criteria for recognition as a profession have also been laid out in the academic arena (Table 2.1) (Frederickson & Rooney, 1990).

Emergency Management Australia (EMA) provides contradictory information in its advancement of the emergency management industry towards a formal profession (The Australian National Audit Office, 2008). EMA regards emergency management as a priority within government, and while it promotes safer communities and a professional approach, there has been little in the way of research and development (Emergency Management Australia, 2004; The Australian National Audit Office, 2008). It remains to be seen how EMA can promote a professional approach to emergency management when there are few studies examining the knowledge, background, education, experience and training of Emergency Managers. As such, it is imperative that the industry and all key stakeholders have an agreed understanding and common approach to the development of the emergency management.

Traits of a profession as detailed in Table 2.1 are supported in academic literature (Blanchard, 2005; Britton, 1999; Frederickson & Rooney, 1990). However, when these five traits are reviewed against the existing framework of emergency management in Australia, it is unclear whether they meet the educational, training and competence required of a profession. These criteria are listed below.

Table 2.1

Frederickson & Rooney (1990): Five Key Traits of a Profession

Trait	Description
1.	Possession of a specialised body of knowledge and techniques;
2.	Establishment of a standardized course of training;
3.	Rigorous testing processes and examinations;
4.	Licensing, accreditation and self-regulation of practitioners; and
5.	Autonomy from direct supervision.

Note. Adapted from “How the music occupation failed to become a profession” by Frederickson, J., & Rooney, J. (1990). How the music occupation failed to become a profession. *International Review of the Aesthetics and Sociology of Music*, 21(2).

Britton (1999) identified an additional principle not yet noted in emergency management: the consistent use and application of an agreed definition of the profession. The use of an agreed term allows for discussions and negotiations to take place that improve communication. This was addressed in the United States in 2008, when representatives from five key emergency management agencies endorsed a document ratifying agreed terminology for the definition of emergency management, the vision, mission and principles of emergency management (Johnson, 2008). This is a key component of the establishment of a profession that is not yet present in emergency management in Australia (Johnson, 2008).

2.3. Key Studies

The past two decades have seen an increase in the number of courses and qualifications offered in emergency management (Manock, 2001). It is reasonable to predict that with an increase in the number of universities offering tertiary qualifications, academic studies on emergency management may increase. Three studies focussing on emergency management have been conducted over the past 12 years (Blanchard, 2005; Britton, 1999; Elsworth & Anthony-Harvey-Beavis, 2007). However, evidence suggests that the majority of other

studies and academic literature are case-based, with few studies applying statistical analysis and empirical designs (Blanchard, 2005; Britton, 1999; Elsworth & Anthony-Harvey-Beavis, 2007).

These studies examined emergency management across a broad range of areas, with a focus on issues surrounding emergency management as opposed to issues facing individual Emergency Managers. The first study recognised emergency management as a growing industry and investigated the requirements of future Emergency Managers (Britton, 1999). Britton (1999) identified six key areas that are important for emergency managers and highlights the vast knowledge gap in this industry (Table 2.2).

Table 2.2

Britton (1999): Six Key Areas in Emergency Management

Area	Description
1.	The application of a more comprehensive emergency management framework as opposed to a limited role in preparedness and response;
2.	An understanding that knowledge based programs, skills and experience are equally important as opposed to skills based that have dominated the industry previously;
3.	The recognition that research and practice are integrative tools that are linked and form an important part of emergency management becoming a profession;
4.	An increase in risk management processes that has improved the legitimacy of the industry;
5.	Improved understanding and application of other disciplines that have a direct influence on emergency management; and
6.	An improved understanding that emergency management is a multi-disciplinary area of study.

Note. Adapted from “Whither the Emergency Manager?” by Britton, N. R. (1999). Whither the Emergency Manager? *International Journal of Mass Emergencies and Disasters*, 17(2), 223-235.

This study identified the need for Emergency Managers to integrate various areas of knowledge into their role. These skills include general management and organization studies,

public policy and administration, hazard profiling, assessment and analysis, community profiling, land-use planning and management, risk assessment and risk management, emergency response and emergency operations centre management, disaster psychology and stress management, project management and disaster impact field investigations techniques and research methods (Britton, 1999). These skills reveal the complexities of emergency management and reinforce the need for practitioners to have extensive education and experience, exposing a significant gap in the industry's ability to meet the knowledge required for the position. It is not understood whether Australian Emergency Managers currently meet these requirements as they have not been measured.

A second study (Table 2.3) conducted by a leading emergency management expert in the United States investigated the required skills that existing emergency managers in the United States believed were necessary as part of their role (Blanchard, 2005).

Table 2.3

Blanchard (2005): Top Ten Competencies of Emergency Managers

Area	Competency
1.	The ability to adopt a comprehensive emergency management framework or philosophy;
2.	Good leadership;
3.	Good management;
4.	The ability to network and coordinate with a broad range of organizations;
5.	The ability to integrate emergency management into all aspects of the business;
6.	The ability to understand and utilise the various key emergency management functions;
7.	The ability to work within political, bureaucratic, and social contexts;
8.	A thorough understanding of technical systems and tools;
9.	An understanding of the social vulnerability reduction approach; and
10.	Experience within an emergency management role.

Note. Adapted from “Top ten competencies for professional emergency management” by Blanchard, B. W. (2005). Top ten competencies for professional emergency management. [www.training.fema.gov/EMIWeb/edu/docs/Blanchard percent 20- percent 20Competencies percent 20EM percent 20HiEd.doc](http://www.training.fema.gov/EMIWeb/edu/docs/Blanchard%20-%20percent%20Competencies%20EM%20HiEd.doc)

This supports previous studies and highlights the complexity and breadth of knowledge required by emergency managers in contemporary society (Britton, 1999). Due to limited studies in Emergency Management it is not known whether Emergency Managers in Australia meet these skills.

The third study was conducted in association with the Australian Local Government Association (ALGA) and the Royal Melbourne Institute of Technology (RMIT) University and examined the preparedness level of Australian local governments. This study (Table 2.4) targeted local government personnel with responsibility in emergency management, examining seven key areas (Elsworth & Anthony-Harvey-Beavis, 2007). However, this study was not designed to address the individual Emergency Managers in local government, with the main focus of this study being the general knowledge of council preparedness rather than

staff with emergency management responsibilities. A study of this nature would be useful in determining the attitudes and backgrounds of current Emergency Managers and its absence reveals a gap in the current knowledge base of personnel within Australian emergency management and local government.

Table 2.4

Local Government Emergency Preparedness – Seven Key Areas

Area	Description
1.	General information about the councils;
2.	Hazard awareness and risk perception;
3.	Knowledge and skills available to council;
4.	Councils' preparedness and response and recovery capability;
5.	Funding and resource allocation;
6.	Information management; and
7.	Information about the respondent.

Note. Adapted from “The national local government emergency management survey - final report” by Elsworth, G., & Anthony-Harvey-Beavis, K. (2007). The national local government emergency management survey - final report. Melbourne, Australia: RMIT.

2.4. Contemporary issues

Recent disaster events in Australia such as the Victorian Bushfires (2009) and the Queensland Floods (2010) reveal the pivotal role that governments have in the management of emergencies. They highlight problems and the devastating effect inadequate management can have on the community. Furthermore, they identify the need for appropriately trained and educated personnel to identify risks and develop resilient communities (Parliament of Victoria, 2010a).

The release of the Final Report of the Victorian Bushfires Royal Commission - Summary (2010a) revealed systemic failings across the emergency management process. This report made significant recommendations for changes in the management of bushfires across the

state, including personnel and processes (Parliament of Victoria, 2010a). The Victorian bushfires illustrated the effect of a failure of emergency management, with 173 people dead and a cost to the community in excess of A\$4 billion (Parliament of Victoria, 2010b).

The Queensland Floods Commission Inquiry investigated recent widespread flooding that left 35 people dead and large portions of Queensland submerged (Emergency Management Australia, 2011). Several submissions made to the Flood Inquiry in Queensland revealed that flood maps were not available to residents, who felt that they were not adequately advised of potential risks or provided with evacuation warnings (Madigan, 2011; Thompson, 2011). These events emphasize a significant gap in the knowledge and competence of Emergency Managers in the field and the management of emergencies.

2.5. Literature Gaps

Although emergency management is a young industry seeking to establish itself as a profession, current practices and services are severely limited (Britton, 1999; Manock, 2001; Stehr, 2007). A review of the existing literature suggests that there are gaps in the available evidence base and empirical data pertaining to the impact of legislation, policies and transparency within government bodies (Attorney-General's Department, 2000; Britton, 1999; Parliament of Victoria, 2010a).

A review of existing literature reveals several key areas that have not been investigated, including the workload of designated senior staff, the knowledge of Emergency Managers, training of personnel, support from government, and a holistic approach to course design (Blanchard, 2005). In addition, studies must apply statistical analysis and empirical designs to further the knowledge base and address the needs of emergency managers and review licensing and industry regulations (Darlington, 1999).

The complexity of emergency management warrants the employment of dedicated individuals with specific knowledge and education to manage and coordinate the various elements in the discipline. In the future, it will be important that stakeholders take a more accountable and proactive approach to emergency management arrangements and processes to reduce the impact of hazards.

2.6. Summary

This chapter has examined emergency management as a profession, key studies, contemporary issues and gaps in the current literature. It has revealed that there is little in the way of literature examining Emergency Managers in Australia. It is apparent that emergency management is progressing towards status as a profession. However, the industry requires emergency management to be recognised as a distinct role and these gaps to be rectified before the transition can occur (Britton, 1999; Stehr, 2007).

3. Methods

This chapter details the methods utilised to address the three aims and objectives of this thesis. This study comprised two sections: a practice trial and an online questionnaire survey instrument (QSI) with free-text boxes.

A questionnaire survey instrument was chosen as it allowed for the collection of data across the widely dispersed emergency management community and enabled participants to complete the questionnaire at times that best suited them, minimising disruption to their schedules.

3.1. Selection of Location

NSW was used as the *case study* location and was chosen for its practicality, researcher's personal knowledge and access to information. According to Babbie (2004), case studies examine a single social phenomenon and are utilised to discover flaws in and modifying existing theories. Furthermore, it involves having an understanding of the literature and knowledge before the study commences (Babbie, 2004). In addition, case studies enable researchers to combine both qualitative and quantitative methods, with interest in their use increasing popular with both methods complementing each other (Baxter, 2010).

Between 1968 and 1997, NSW and Queensland³ accounted for 66 percent of the total disaster costs and over 50 percent of the total number of disasters across Australia (Bureau of Transport Economics, 2001). In addition, NSW claims one of the most expensive disasters in Australian history, the 1999 severe storm that struck Sydney.

³ Data obtained was not specific enough to provide separate details between NSW and Queensland.

3.2. Participants

This study encompassed 152 local government areas and 18 emergency districts across New South Wales (NSW) (Division of Local Government, 2011; NSW Police Force, 2011b). The personnel within these districts include Local Emergency Management Officers (LEMOs), District Emergency Management Officers (DEMOs) and their alternates (Figure 1.5). The exact number of emergency management personnel in NSW government is not known.

A questionnaire survey instrument (QSI) (Appendix A), Letter of Introduction (Appendix B), Participant Information Statement (Appendix C), and Participant Consent Form (Appendix D) accompanied a UNSW Ethics application, which was approved on the 5th September 2011. Then, personnel with emergency management responsibilities from each of the 152 local government areas and 18 emergency districts in NSW were identified through the Local Government Association and the NSW Ministry for Emergency Management (Division of Local Government, 2011; NSW Police Force, 2011b).

Personnel were contacted by email submitted to their respective organisations. Inclusion criteria were a formal role in emergency management as a LEMO, DEMO, alternate and any other personnel with emergency management responsibilities. LEMOs and DEMOs were encouraged to pass on details of the study to their alternates or others meeting the inclusion criteria.

3.3. Procedure

A questionnaire was developed utilising WorldAPP (2008) and based upon previous studies identifying the necessary skills to be an effective Emergency Manager (Bird & Dominey-Howes, 2008, Blanchard , 2005; Britton , 1999; Elsworth & Anthony-Harvey-Beavis, 2007).

The study was divided into two phases; a practice trial to review the questionnaire and the online questionnaire survey instrument (QSI).

3.3.1. Questionnaire Design. Questionnaires have been identified as relevant for collecting original data describing a population that is difficult to observe directly, due to dispersed population or population size (Babbie, 2004; McGuirk & O'Neill, 2010). There are several sources that legitimise the use of questionnaire survey instruments in the development of knowledge in emergency management which includes, Bird & Dominey-Howes in their review (Bird & Dominey-Howes, 2008).

The QSI was composed of 72 questions of various types within 7 categories (Table 3.1 and Appendix A). These categories included; general information, education, employment, professional development, work, satisfaction and demographics and were designed to capture and generate data that would be useful for investigating the research questions and aims described in Chapter 1 under Project Aims & Objectives.

Questions utilised qualitative research scales such as binary, Likert and the Gutman Scales to measure responses, in addition to open-ended, dichotomous and multiple-choice questions (Graziano & Raulin, 2004b). These scales were chosen due to ease of use, speed of completion and analysis (Siniscalco & Auriat, 2005). Open-ended questions allowed respondents to expand their answers and maintain flexibility and reduce introduced bias (Bird & Dominey-Howes, 2008).

The satisfaction section of the questionnaire (see Appendix A) evaluated the respondents' level of satisfaction relating to 13 topics utilising a self-evaluation approach. The ranking incorporated seven incremental levels of satisfaction ranging from Dissatisfied, Neutral and Satisfied.

Table 3.1

Composition of QSI

Section	Description of Associated Questions
1.	General: name, local government.
2.	Education: level, number of degrees, name and university of each degree, additional training, training needs.
3.	Employment: type, hours, department, title, time in position, dedicated time to emergency management, years emergency management has been part of role, experience, participation, other experience and other organisations.
4.	Professional development: subscriptions to journals, attends external meetings, interest, mentor program and further development.
5.	Work: Factors, team, hiring of personnel, industry changes, benefits, community planning, hazards, events, experience, location of position, budget, professional status and regulation.
6.	Satisfaction: levels of satisfaction with various aspects and blank space left for additional comments.
7.	Demographics: place of birth, gender, age, ethnic and cultural background, religion, marital status, household status and postcode.

3.3.2. **Ethics Approval.** Once ethics was approved, a trial of the draft questionnaire was undertaken to test and evaluate the questionnaire, improve clarity and identify areas of weakness prior to distribution and in line with previous QSIs. A single LEMO was identified and approached to review the questionnaire. He was informed in advance, that if he participated in this aspect of the design he would be removed from the pool of applicable participants for the main study.

3.3.3. **Practice Trial.** Trial surveys are commonly conducted in order to reduce the likelihood of errors, ambiguities and appropriateness of the questionnaire (Babbie, 2004; Bird & Dominey-Howes, 2008; McGuirk & O'Neill, 2010). This approach has been used to fine-tune a study into the application of QSIs in emergency management and tsunami's and gauge its usefulness before embarking on the full study (Bird & Dominey-Howes, 2008). When consent was formally obtained, the participant was provided with access to the questionnaire.

The responses obtained from this practice trial revealed several ambiguities and inconsistencies that were addressed and used to improve the questions, layout and functionality of the survey.

3.3.4. **Recruitment.** Once the trial had been completed and the QSI adjusted, participants were recruited. LEMOs and DEMOs were recruited via electronic mail addressed to their personal work email addresses obtained through customer care or to council customer care addresses. Once participants agreed to take part in the study by completing and submitting the Consent Form, the survey was made available to them via the MasterURL directing them to the online survey. The survey was closed on September 14th 2011, at 2359hrs.

3.4. Analysis

The survey questions yielded qualitative and quantitative data that was subject to analysis using Key Survey Enterprise Software (WorldAPP, 2008). Responses were counted but the sample size was inadequate to test for Chi-Squared or statistical significance. Qualitative data was analysed against aims to establish themes and anomalies. Themes were established in line with project aims utilising common words or words that received frequent mention in the free-text boxes.

3.5. Summary

This chapter outlined the participants, the procedures and the analysis of the emergency management questionnaire. In addition, it also provided an overview of the two phases of the study and a breakdown of the questionnaire, highlighting the seven key areas identified to achieve the three objectives outlined in Chapter 1, Project Aims & Objectives.

4. Results

This chapter addresses the aims of this research project that include investigating the qualifications, professional training, knowledge, competence and confidence of Local Emergency Management Officers and District Emergency Management Officers (LEMOs & DEMOs) in New South Wales. The results will be divided into demographic information and the five key aims for ease of use; outlining the results and providing the context.

The satisfaction section of the questionnaire evaluated the respondents' level of satisfaction relating to 13 topics utilising a self-evaluation approach. The ranking incorporated seven incremental levels of satisfaction ranging from Dissatisfied, Neutral and Satisfied. For a more detailed examination of the figures, refer to the QSI (Appendix A).

4.1. General

The questionnaire (Appendix A) was made available to 152 local councils (LEMOs), 18 DEMOs and alternates/equivalent personnel (of an unknown number). This represented an unknown number of Emergency Managers across 170 sites.

Of the 152 local councils, 28 participated, with a total of 28 participants. Two councils put forward two participants each and two other participants had responsibility for two council areas each. This yielded a total of 28 participants, representing 28 council areas with a response rate of 18.42percent.

Of the 18 emergency districts contacted, eight participated, with a total of six participants. Two emergency districts put forward four participants, yielding a total of eight districts that participated (including one superintendent). This yielded a total of 9 participants, with a response rate of 50 percent.

In total, there were 36 participants across 170 sites (emergency management areas), yielding an overall response rate of 21.18. Sites were utilised as a guide to the number of Emergency Managers, as the number of Emergency Managers was an unknown factor whereas the number of sites was quantifiable.

4.2. Demographics

The study comprised 36 participants (32 male, 4 female) ranging in age from 18 to >65 years. The most common age bracket was 56 to 64 years, representing 44.44 percent (n=16) of participants, closely followed by 45 to 54 years, representing 27.78 percent (n=10), 35 to 44 years 16.67 percent (n=6) and finally 18 to 24 and 25 to 34 year olds, both represented by 2.78 percent (n=1) of the sample.

Of the 36 participants involved in the study, 80.66 percent (n=29) reported being from a white/Caucasian background with 19.45 percent (n=7) being from a European background. 80.56 percent (n=29) reported their dominant religion as Christian, followed by Agnostic at 13.89 percent (n=5) and Atheist at 5.56 percent (n=2).

Of the 36 participants, 94.44 percent (n=34) were married, with 2.78 percent (n=1) divorced and 2.78 percent (n=1) single. 16.67 percent (n=6) of participants reported having no children, 75 percent (n=27) had between 1 and 3 children and 8.33 percent (n=3) had 4 or more children.

Of the 36 participants, 52.78 percent (n=19) had a 2 member household, 25 percent (n=9) had a 4 member household, 22.22 percent (n=8) had a 3 member household and 27.8 percent (n=10) had people under 18 living in their household.

The main condition of employment at 97.22 percent (n=35) was permanent, with 2.78 percent (n=1) employed on a casual basis. Of the 36 participants, 55.56 percent (n=20) of

participants worked greater than 40 hours per week and 36.11 percent (n=13) worked between 31 and 40 hours and 2.78 percent (n=1) worked fewer than 10 hours per week and 61 percent (n=22) of participants attended meetings outside of work hours.

4.3. Qualifications

The highest level of education reported was a Masters degree, with 22.22 percent (n=9) of participants holding this qualification. The most common qualification was a Bachelor's degree at 25 percent (n=9), with the frequency of a Post Graduate degree reported to be 16.67 percent (n=6). Other qualifications were Advanced Diploma and Diploma, both equal at 11.11 percent (n=4) and High School Certificate at 5.56 percent (n=2). Of the respondents, 30.56 percent (n=11) held more than one degree, three of whom held degrees in emergency management. Participants made the following comments:

“We should Note. Our job description has just been rewritten and [we are] no longer required to have tertiary qualifications (not happy)” Q44 #36 (2011).

“I hold no real formal qualifications just experience” Q61 #30 (2011).

4.4. Professional Training

Of the 36 participants, 94.44 percent (n=34) had received additional training in their role. Of these, 83.33 percent (n=30) felt that the training met their needs and 77.78 percent (n=28) of respondents felt the need for more training in emergency management. Participants made the following comments:

“Additional training ... with education on new resources and techniques” Q11 #3 (2011).

“additional training can always be beneficial” Q11 #20 (2011).

“[I] Have not been able to do further training due to budget constraints.” Q11 #19 (2011).

Of the 36 participants, 8.33 percent (n=3) had a mentor system in place, 67.65 percent (n=23) were interested in having one and 80.56 percent (n=29) believed that a mentor program was warranted for Emergency Managers.

The satisfaction level of training (Figure 4.1) within emergency management revealed 0.00 percent (n=0) were dissatisfied, 19.44 percent (n=7) were neutral and 8.33 percent (n=3) were satisfied with the level of training. 58.55 percent (n=20) of respondents ranked their satisfaction level as being between Neutral and Satisfied.

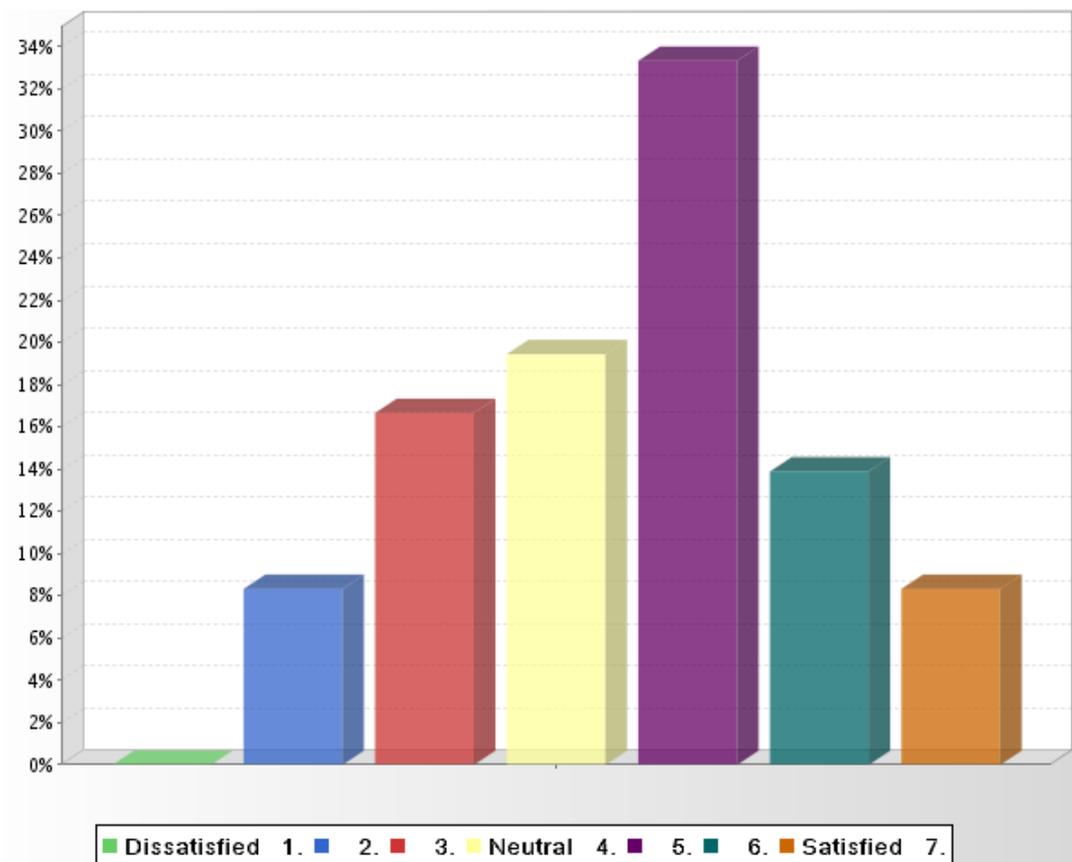


Figure 4.1 Satisfaction level: Level of training

4.5. Knowledge

Of the 36 participants, 33.33 percent (n=12) stated that they subscribed to an emergency management journal and 13.89 percent (n=5) had membership to an emergency management industry body or association. Of the 36 participants, 88.89 percent (n=32) had an interest in developing their emergency management knowledge. Participants made the following comments:

“Increased knowledge helps to increase efficiency in an operation” Q31 #3 (2011).

“More formal training if relevant” Q31 #5 (2011).

“...appropriate training and workshops to improve LEMO effectiveness” Q31 #13 (2011).

When selected for a role in emergency management, 61.11 percent (n=22) believed that experience was the most important determining factor, 52.78 percent (n=19) believed that background was the most important and 30.56 percent (n=22) selected qualifications as the most important factor.

When asked if their community was at risk of a particular hazard, 97.22 percent (n=35) of participants stated that it was, and 77.78 percent (n=28) said that their community had experience in dealing with large⁴ scale emergencies.

“New arrivals have no experience of some emergencies” Q56#2 (2011).

Floods were designated as the most common hazard, with 77.42 percent (n=24) of participants selecting it as being most significant. This was followed by fire at 70.97 percent (n=22), severe storms at 67.74 percent (n=21), drought at 45.16 percent (n=14), power outage

⁴ Definition of large was left to participants discretion

and 'other' both at 19.35 percent (n=6), riot at 12.90 percent (n=4) and tornado, structural collapse and biological threats, each at 3.23 percent (n=1).

Of the 36 participants, 75 percent (n=27) had experience with large scale disasters, of the 36 respondents, 81.48 percent (n=22) stated that they had personal experience with floods, 74.07 percent (n=20) with fire, 59.26 percent (n=16) with severe storms, 33.33 percent (n=9) with 'other', 29.63 percent (n=8) with power outages, 14.81 percent (n=4) with structural collapse and drought, each, 11.11 percent (n=3) with tsunamis, riot and zoological threat, each, and 3.70 percent (n=1) had experiences with earthquakes, tornados and biological threats, each.

When questioned about establishing an agreement with other local governments and sharing emergency management personnel during an emergency, 33.33 percent (n=12) were interested. Of the 36 participants, 88.89 percent (n=32) saw a benefit in sharing personnel with other government organisations to gather practical experience and 47.22 percent (n=17) foresaw barriers to such an arrangement. Participants made the following comments about a mentor program:

"We are a community of knowledge to be shared" Q34 #1 (2011).

"The most learning is from other [Emergency Managers]" Q34 #2 (2011).

When questioned if the participant considered themselves an Emergency Manager, 80.56 percent (n=29) of the 36 participants believed that they were. A respondent made the following comment:

"...there are no other people employed to do Emergency Management at the local level." Q41 #36 (2011).

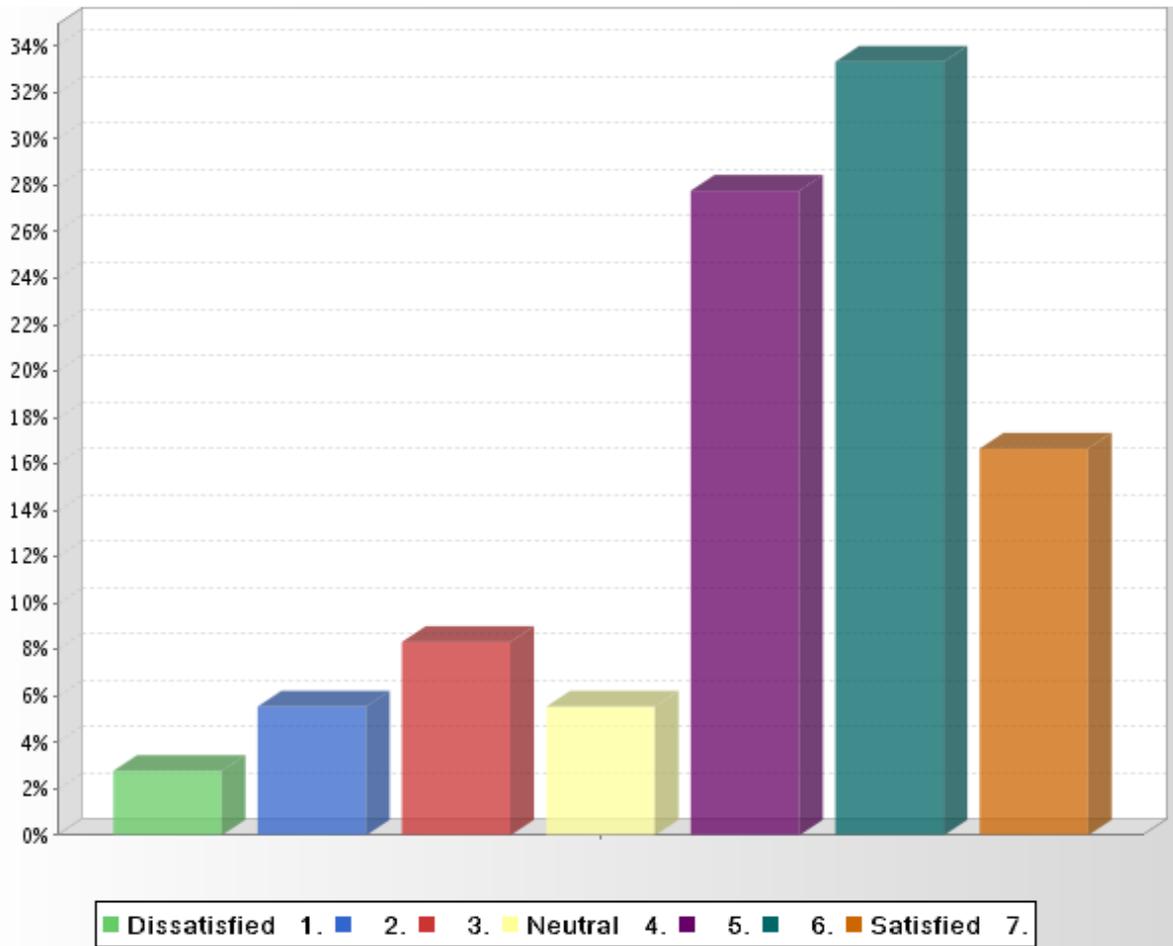


Figure 4.2 Satisfaction level: Your [Emergency Manager] knowledge

The satisfaction level of your knowledge (Figure 4.2) within emergency management revealed 2.78 percent (n=1) were dissatisfied, 5.56 percent (n=2) were neutral and 16.67 percent (n=6) were satisfied. 77.78 percent (n=28) of respondents ranked their satisfaction level as being between Neutral and Satisfied.

4.6. Competence

Of the 36 respondents, 36.11 percent (n=13) reported dedicating less than 5 percent of their time to emergency management, 30.56 percent (n=11) dedicated between 6 and 10 percent, 22.22 percent (n=8) dedicated 100 percent, 8.33 percent (n=3) dedicate 25 percent and 2.78 percent (n=1) dedicated between 11 and 20 percent.

When asked how long participants had held their current position, 25 percent (n=9) stated between 10 and 15 years, 22.22 percent (n=8) between three and five years and five and ten years, 13.89 percent (n=5) greater than 15 years, 11.11 percent (n=4) between one and three years and 2.78 percent (n=1) fewer than six months.

Of the 36 participants, 30.56 percent (n=11) volunteered with another emergency service.

When examining how long emergency management had been part of the participants' employment, 25 percent (n=9) stated that emergency management had been a part of their employment for 10 to 15 years, 22.22 percent (n=8) indicated that it was greater than 15 years, 13.89 percent (n=5) revealed that emergency management had been a part of their role between three to five years and five to ten years, while 8.33 percent (n=3) indicated between one to three years and finally, 5.56 percent (n=2) had less than 6 months with emergency management as part of their role.

When participants were questioned how emergency management became part of their role, 19.44 percent (n=7) stated that they requested emergency management, and 8.33 percent (n=3) of the 36 participants stating that career advancement specific to emergency management was available within their organisation.

Of the 36 participants, 44.44 percent (n=16) stated that they were not responsible for hiring personnel within their department. However, 36.11 percent (n=13) stated that they looked for specific skills in hiring for emergency management, 86.11 percent (n=31) indicated that experience was the most important factor. Of the 36 participants, 66.67 percent (n=24) indicated that background was the second most important factor and 47.56 percent (n=11) rated qualifications as the third most important factor in determining factors for the hiring of emergency management personnel. Those with people employed in emergency management, 86.11 percent (n=31) had less than three people, 11.11 percent (n=4) had

between three and five people and 2.78 percent (n=1) had between six and ten people in their teams.

The satisfaction level for time dedicated (Figure 4.3) to emergency management revealed 13.89 percent (n=5) were dissatisfied, 19.44 percent (n=7) were neutral with the greatest percentage of participants and 5.56 percent (n=2) were satisfied. Of the 36 participants, 55.55 percent (n=20) of respondents ranked their satisfaction level as being between Dissatisfied and Neutral.

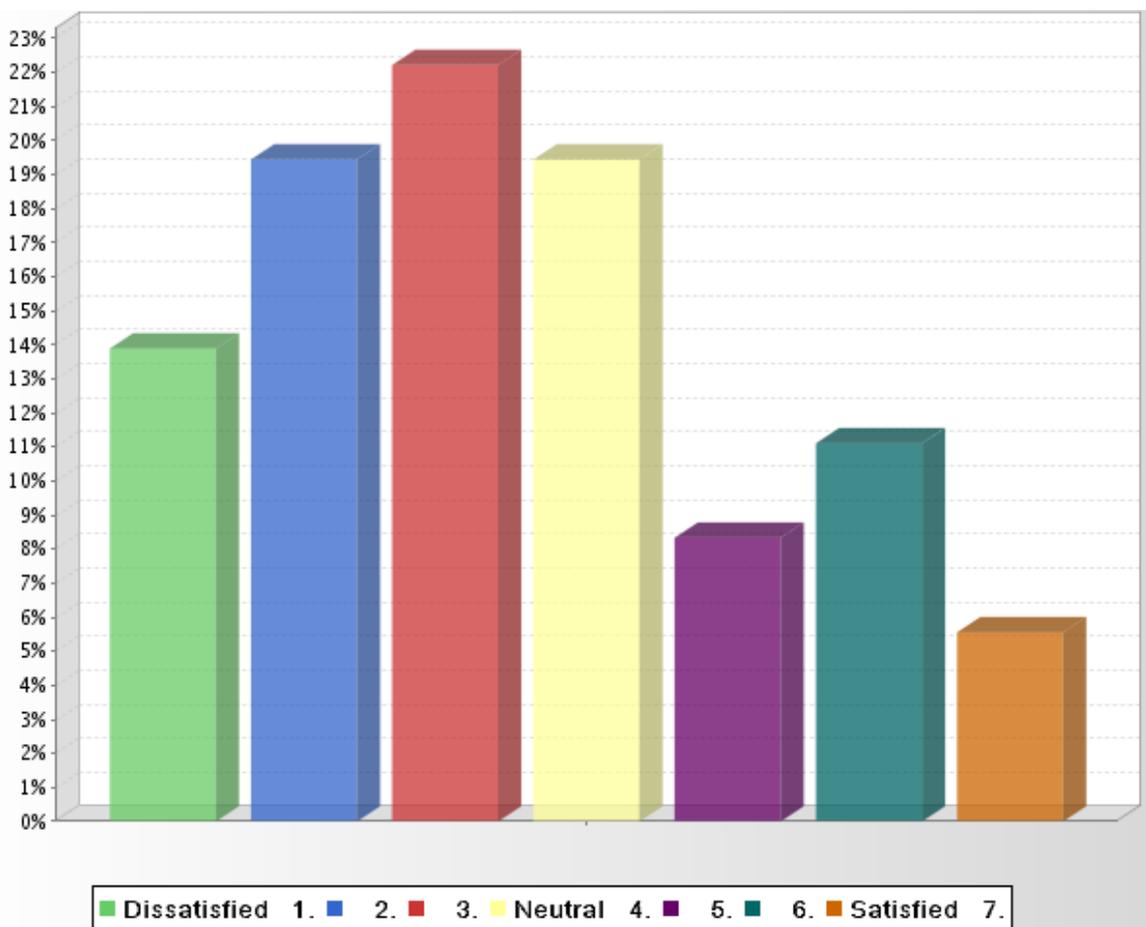


Figure 4.3 Satisfaction level: Time dedicated to emergency management

The satisfaction level for *your competence* (Figure 4.4) within emergency management revealed 0.00 percent (n=0) were dissatisfied, 13.89 percent (n=5) were neutral and 19.44

percent (n=7) were satisfied. 80.55 percent (n=29) of respondents ranked their satisfaction level as being between Neutral and Satisfied.

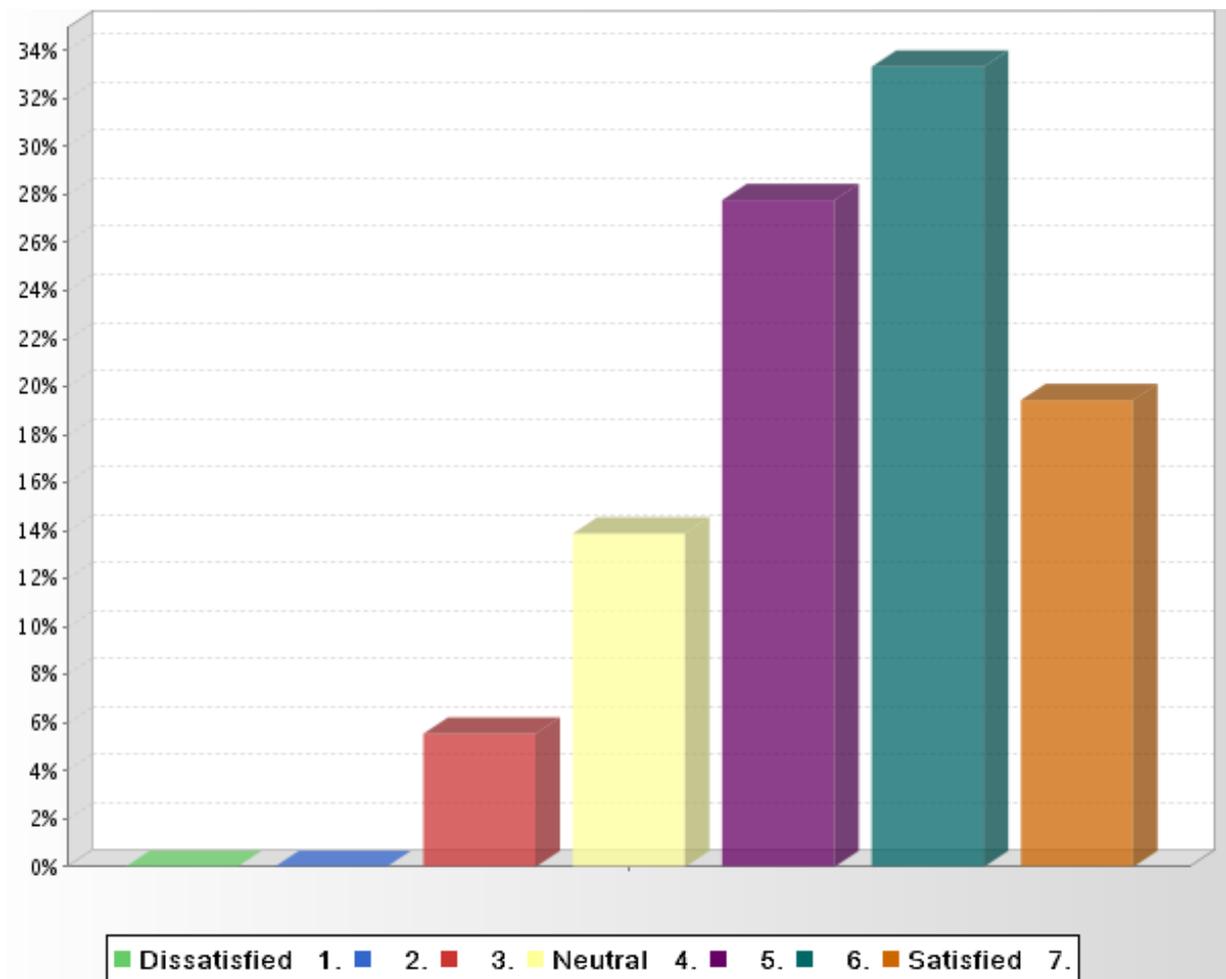


Figure 4.4 Satisfaction level: Your [Emergency Manager] competence

4.7. Confidence

When asked for a self evaluation on how effective their local emergency plans were, the majority of respondents, 58.33 percent (n=21) stated that they were effective, 25 percent (n=9) were neutral, 5.56 percent (n=2) stated that they were highly effective, ineffective and highly ineffective, respectively. In addition, 44.44 percent (n=16) of participants stated that they did not know how long their communities were capable of sustaining themselves for in a large scale emergency, 27.78 percent (n=10) stated between one and three days, 16.67

percent (n=6) stated between one and three days, 8.33 percent (n=3) stated between four and seven days, and 2.78 percent (n=1) stated less than one day.

When asked if the participants believed that emergency management was warranted within their department, 94.44 percent (n=34) believed that it was and 72.22 percent (n=26) believed that the role of emergency manager should be formally attached to their role.

“It is warranted and my department is as good a place as the alternatives” Q57 #13 (2011).

In addition, 61.11 percent (n=22) believed that there should be a stand-alone emergency management position within each local government area, 33.33 percent (n=12) disagreed and 5.56 percent (n=2) stated it was not applicable to them as they were not employed in local council. Furthermore, 19.44 percent (n=7) believed that the role was not being utilised to its fullest. A participant made the following comments when questioned about emergency management being warranted within their department:

“Council does not have the skills to manage large scale emergencies” Q57 #18 (2011).

When asked about the workload in emergency management over the past 2 to 5 years, 72.22 percent (n=26 percent) of the participants stated it had increased, 22.22 percent (n=8) stated that it had remained stable and 5.56 percent (n=2) stated that it had decreased. Furthermore, 72.22 percent (n=26) believed that in the next two to five years, the workload was going to increase, 25 percent (n=9) believed it would remain stable and 2.78 percent (n=1) believed it would decrease. A participant made the following comments about the increasing workload:

“4 major natural disaster declarations in the last 12 months” Q46 #18 (2011).

Of the 36 participants, 80.56 percent (n=29) considered themselves an Emergency Manager. 47.22 percent (n=17) believed they were an emergency management professional. Of the 36 participant, 97.22 percent (n=35) stated that they believed emergency management was a profession and 66.67 percent (n=24) that emergency managers and the emergency management industry should be regulated. One participant made the following comment when questioned if they considered themselves an emergency manager:

“More of an Emergency administrator” Q41 #14 (2011).

The satisfaction level of respondents with emergency management as a *profession* (Figure 4.1) revealed, 2.78 percent (n=1) were dissatisfied with emergency management as a profession, while 36.11 percent (n=13) indicated that they were neutral, and 5.56 percent (n=2) were satisfied with emergency management as a profession. Finally, 49.45 percent (n=16) of respondents ranked their satisfaction level as being between Neutral and Satisfied.

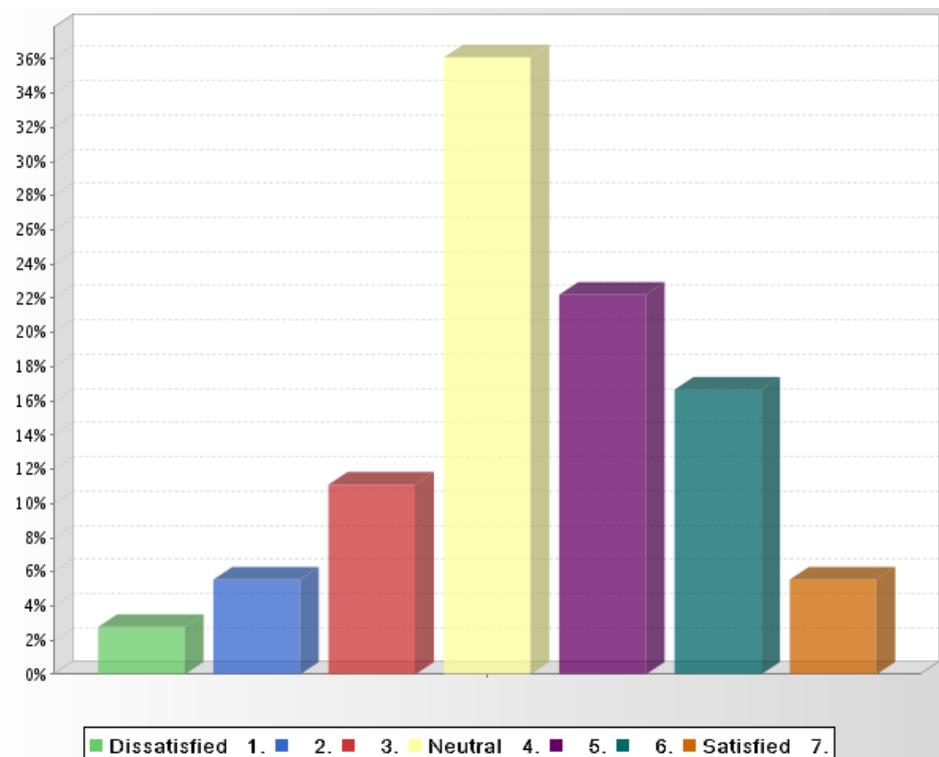


Figure 4.5 Satisfaction level: As a profession

The satisfaction level of Emergency Managers for *support by local community* revealed 5.56 percent (n=2) were dissatisfied with the level of support (Figure 4.6), while 36.11 percent (n=13) were neutral with support and 5.56 percent (n=2) were satisfied with community support. Finally, 36.11 percent (n=13) of respondents ranked their satisfaction level as being between Neutral and Satisfied.

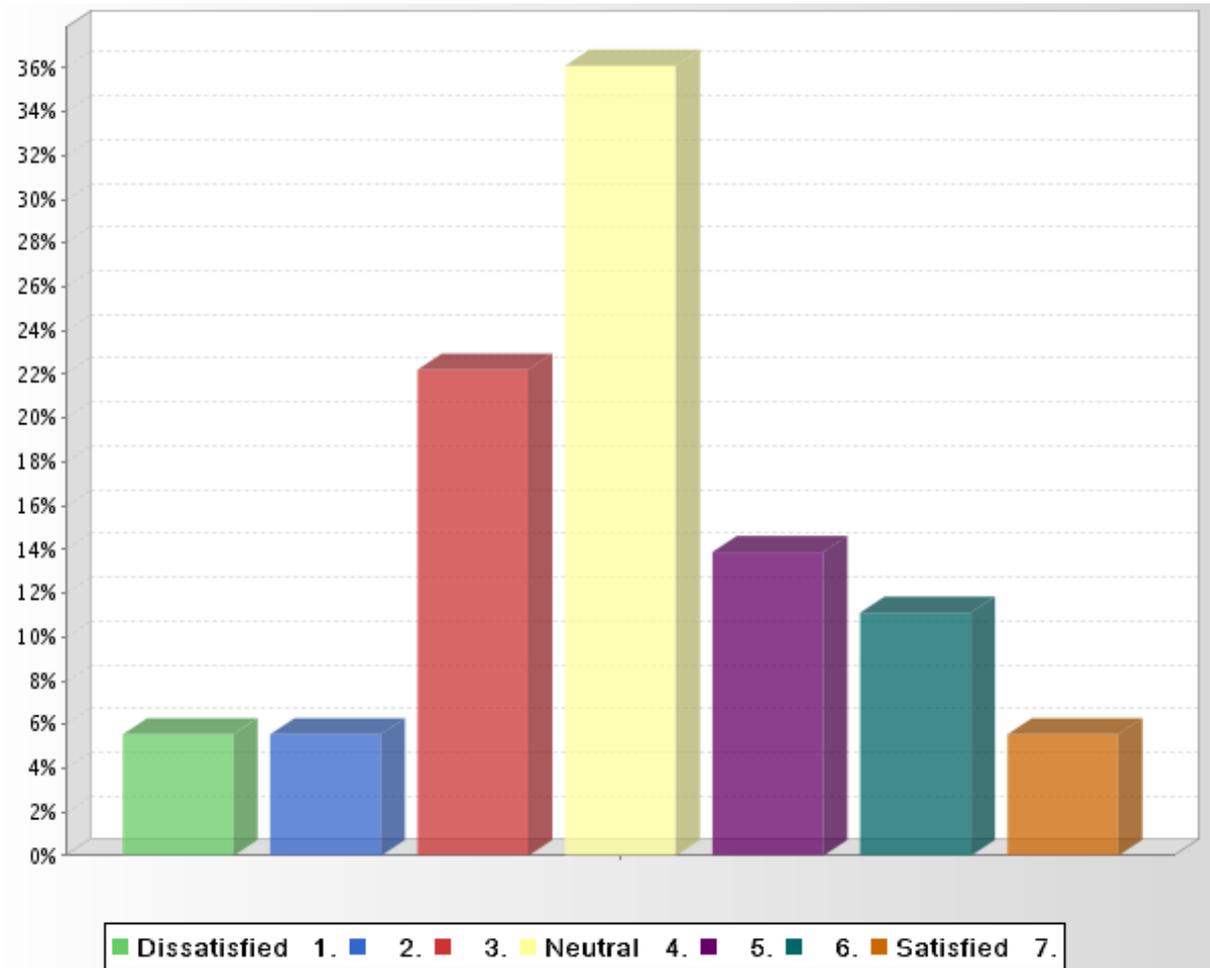


Figure 4.6 Satisfaction level: Support by local community

The satisfaction level of Emergency Managers for *support by local government* (Figure 4.7) revealed 11.11 percent (n=4) were dissatisfied with the level of support from local government, while 19.44 percent (n=7) were neutral and 11.11 percent (n=4) were satisfied the level of support by local government. Finally, 44.45 percent (n=16) of respondents ranked their satisfaction level as being between Neutral and Satisfied.

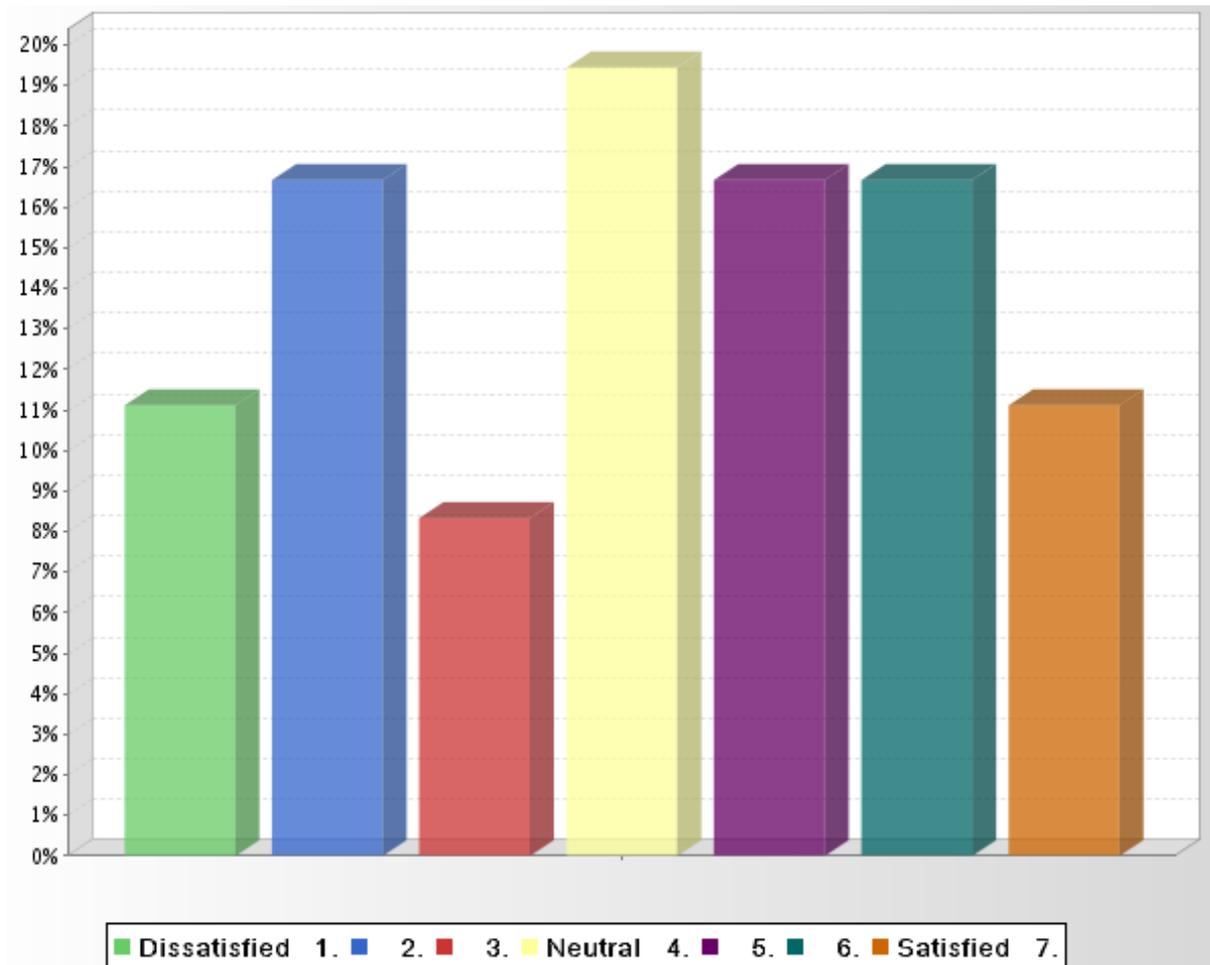


Figure 4.7 Satisfaction level: Support by local government

The satisfaction level of Emergency Managers for *support by state government* (Figure 4.8) revealed 19.44 percent (n=7) were dissatisfied with the support by State government, while 16.67 percent (n=6) were neutral and 5.56 percent (n=2) were satisfied with the level of support offered by State government. Finally, 52.78 percent (n=19) of respondents ranked their satisfaction level as being between Dissatisfied and Neutral.

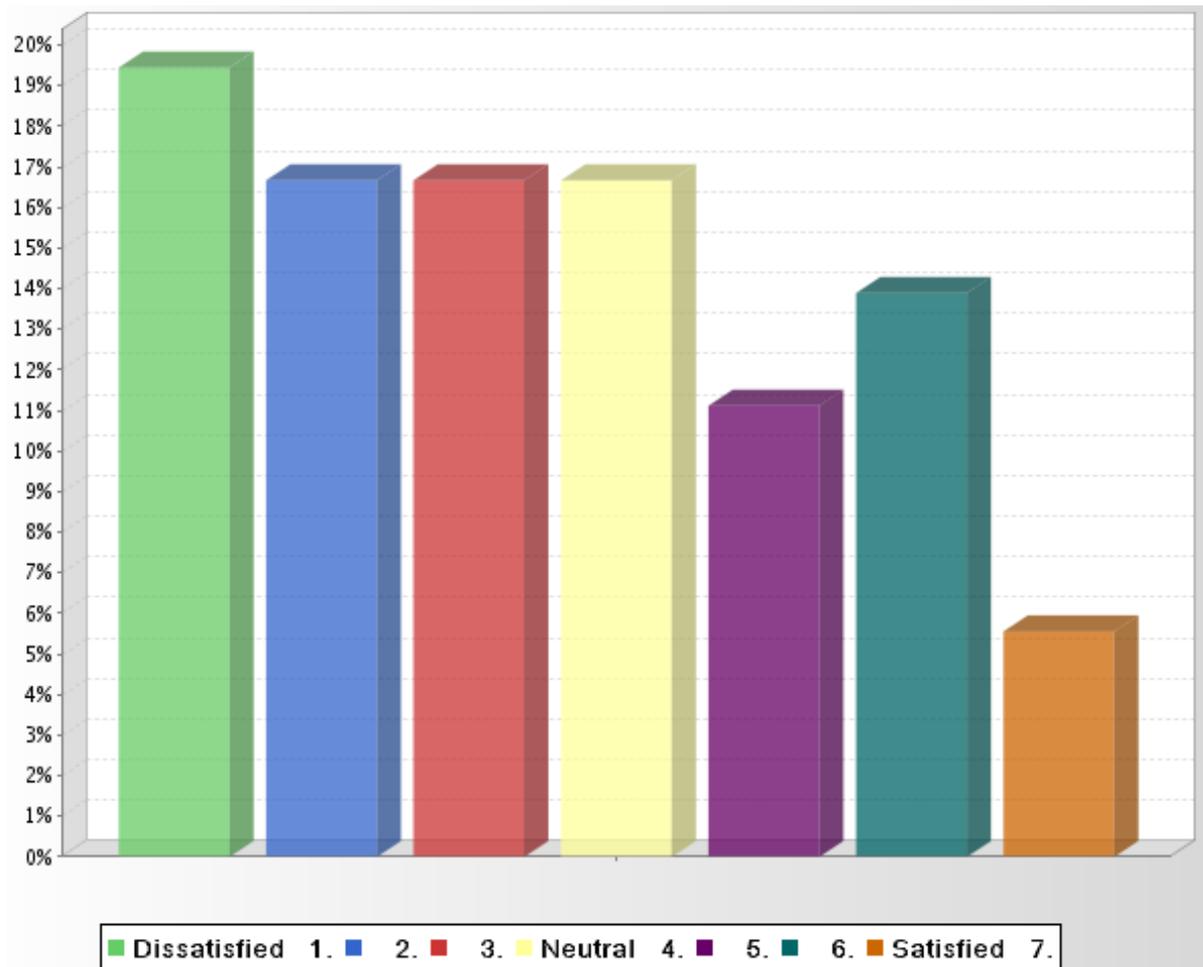


Figure 4.8 Satisfaction level: Support by state government

The satisfaction level of Emergency Managers for *support by the Federal government* (Figure 4.9) revealed 19.44 percent (n=7) were dissatisfied with support from Federal government, while 16.67 percent (n=6) were neutral and 5.56 percent (n=2) were satisfied with the support from the Federal government. Finally, 50.00 percent (n=18) of respondents ranked their satisfaction level as being between Dissatisfied and Neutral.

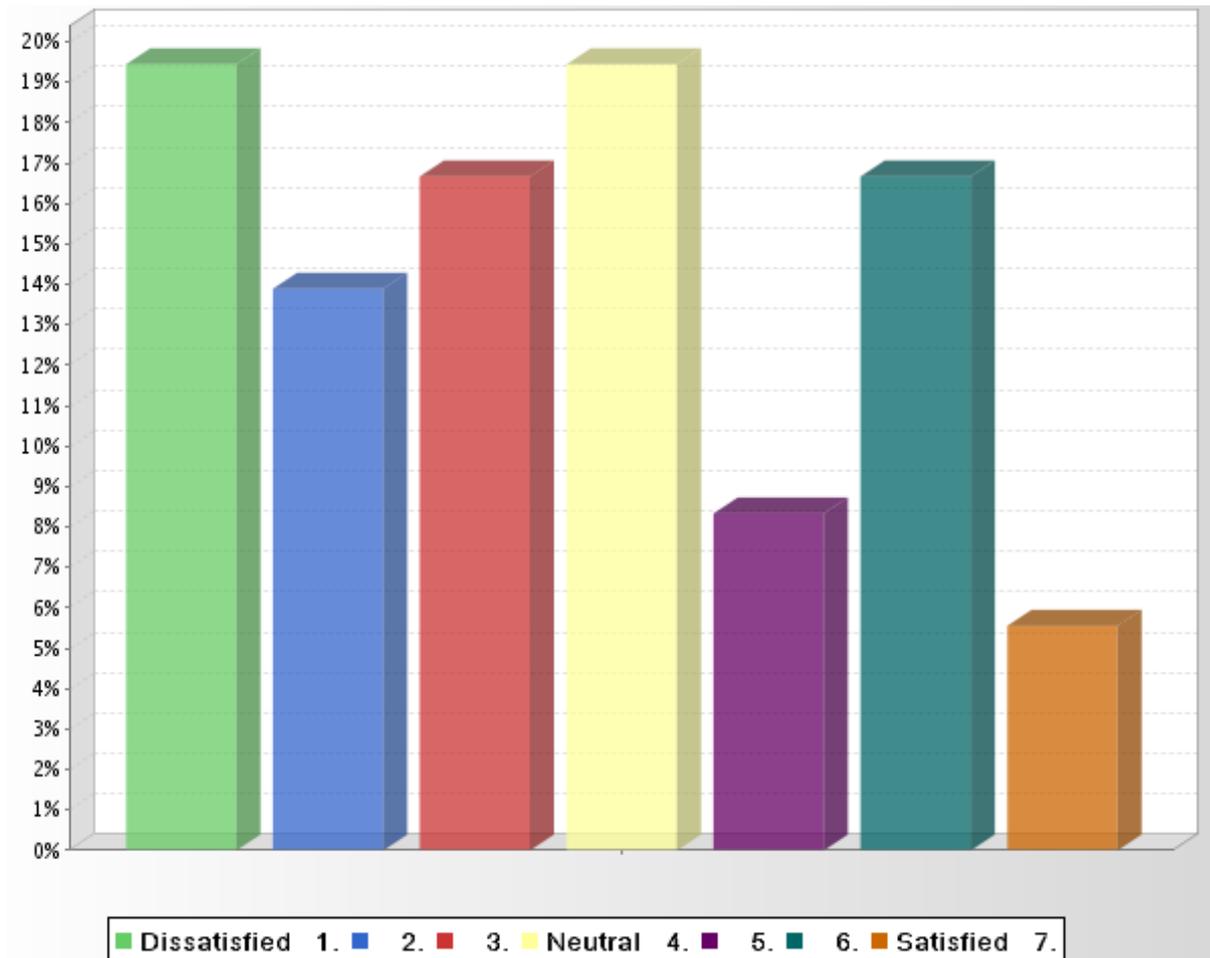


Figure 4.9 Satisfaction level: Support by federal government

The satisfaction level for *your skills* (Figure 4.10) within emergency management revealed 0.00 percent (n=0) were dissatisfied of the level of their skills in emergency management, while 5.56 percent (n=2) were neutral and 19.44 percent (n=7) were satisfied with their skill level. 77.77 percent (n=28) of respondents ranked their satisfaction level as being between Neutral and Satisfied.

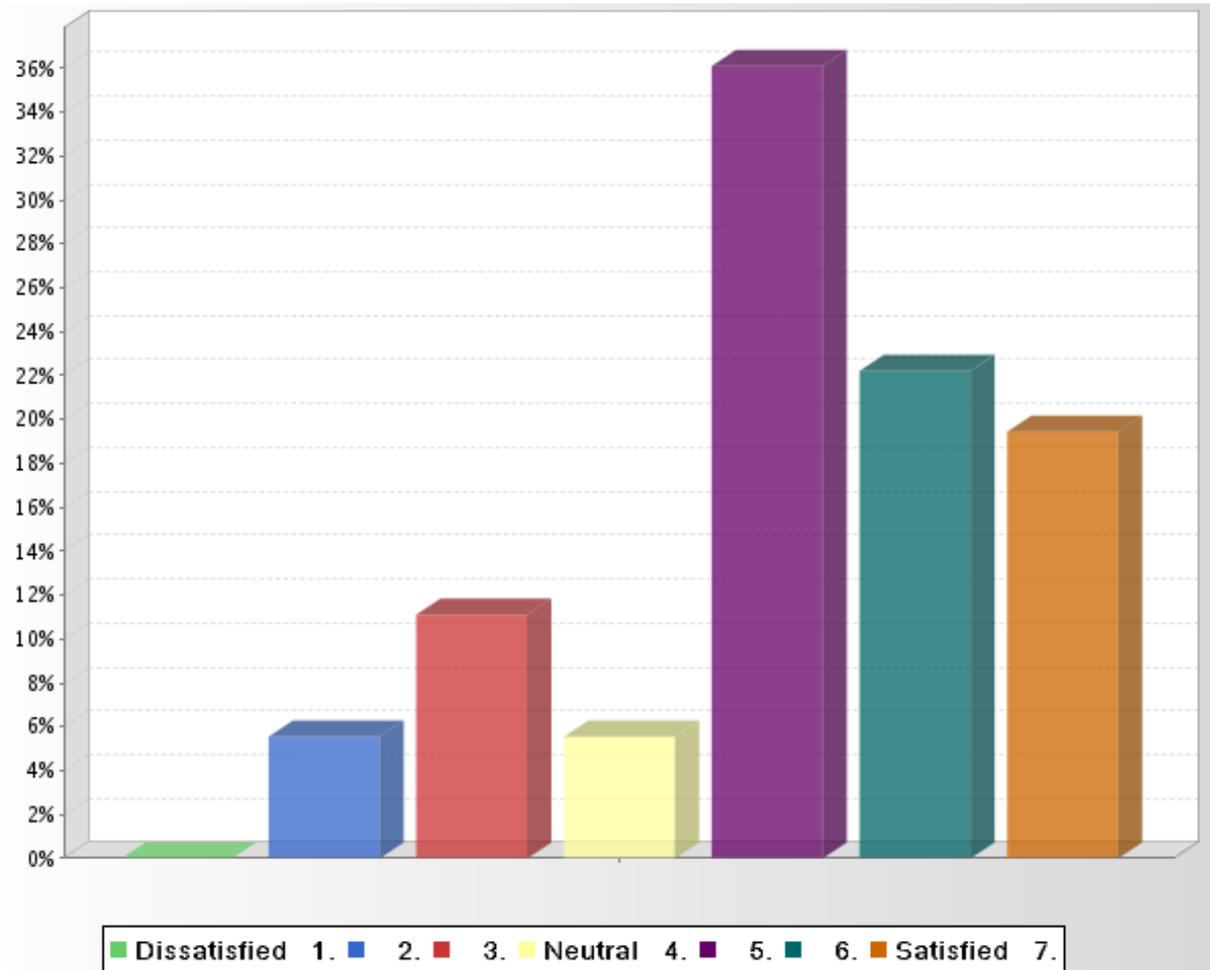


Figure 4.10 Satisfaction level: Your [Emergency Manager] skills

When asked about the dollar amount participants dedicated to their emergency management budget for 2011, of the 36 participants, 38.89 percent (n=14) stated that their departments' budget was less than \$10,000, while 16.67 percent (n=6) dedicated between \$10,000 and \$19,000 for their emergency management budget. 5.56 percent (n=2) dedicated between \$20,000 and \$29,000, while 2.78 percent (n=1) of participants dedicated between \$30,000 and \$39,000 for their budget. Finally, 11.11 percent (n=4) dedicated between \$50,000 and \$100,000 and 25 percent (n=9) dedicated greater than \$100,000 to their emergency management budget.

Of the 36 respondents, 69.44 percent (n=25) stated that the percentage of the council's budget dedicated to emergency management was less than one percent, while 13.89 percent (n=5) said it was between two and five percent or unknown and 2.78 percent (n=1) stated that it was between six and ten percent.

As part of their role in emergency management, 25 percent (n=9) received additional benefits. Of the 36 participants, 16.67 percent (n=6) received a vehicle, 13.89 percent (n=5) received financial benefits and laptop computer, respectively, and 69.44 percent (n=25) stated the question was not applicable.

The satisfaction level of *financial resources* (Figure 4.11) for emergency management revealed 16.67 percent (n=6) were dissatisfied with the level of financial resources, while 19.44 percent (n=7) were neutral and 8.33 percent (n=3) were satisfied with the financial resources dedicated towards emergency management. Finally, 61.11 percent (n=22) of respondents ranked their satisfaction level as being between Dissatisfied and Neutral.

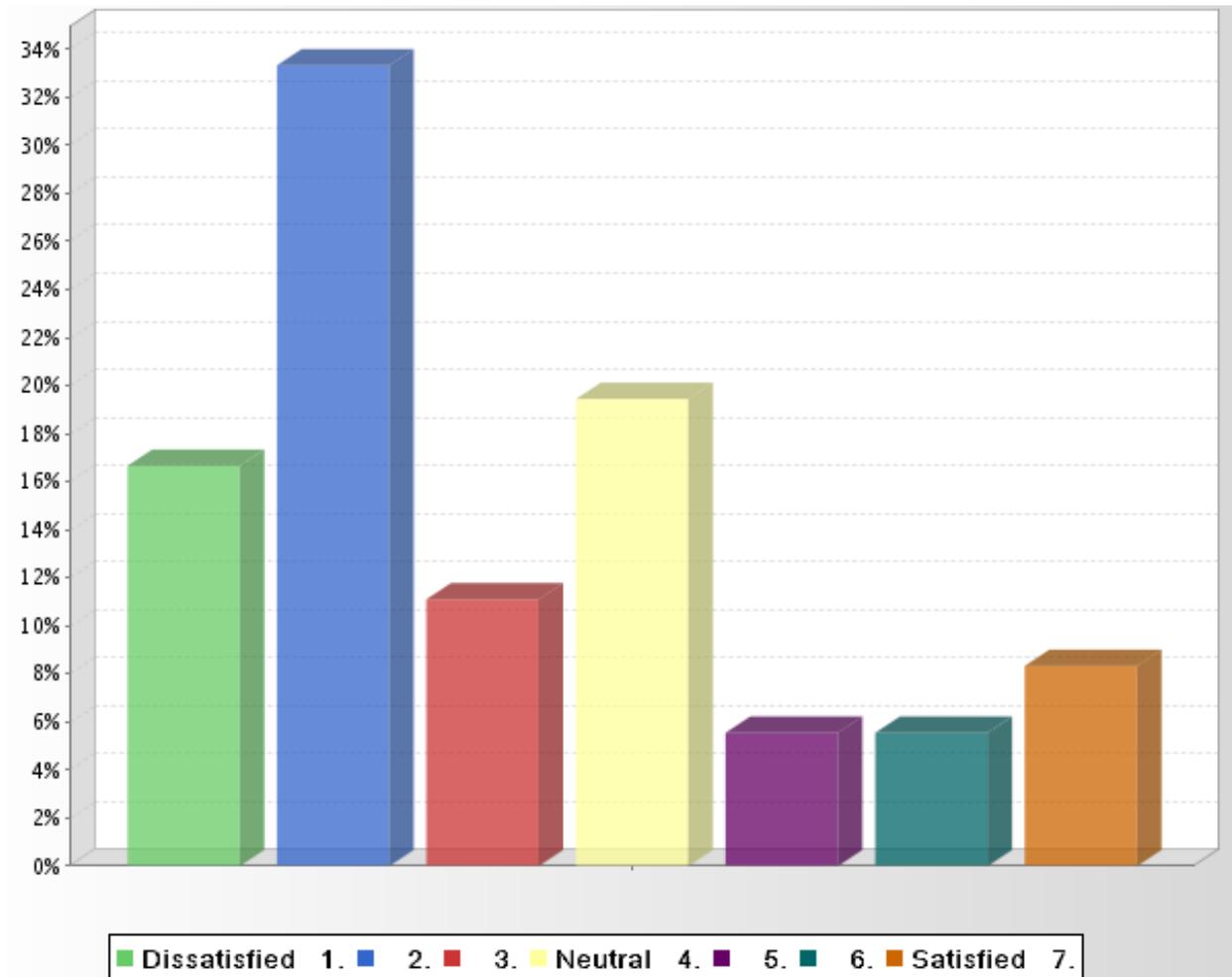


Figure 4.11 Satisfaction level: Financial resources

The satisfaction level of *physical resources* (Figure 4.12) for emergency management revealed 11.11 percent (n=4) were dissatisfied with the level of physical resources, while 16.67 percent (n=6) were neutral and 5.56 percent (n=2) were satisfied with the level of physical resource dedicated to emergency management. Finally, 50.01 percent (n=18) of respondents ranked their satisfaction level as being between Dissatisfied and Neutral.

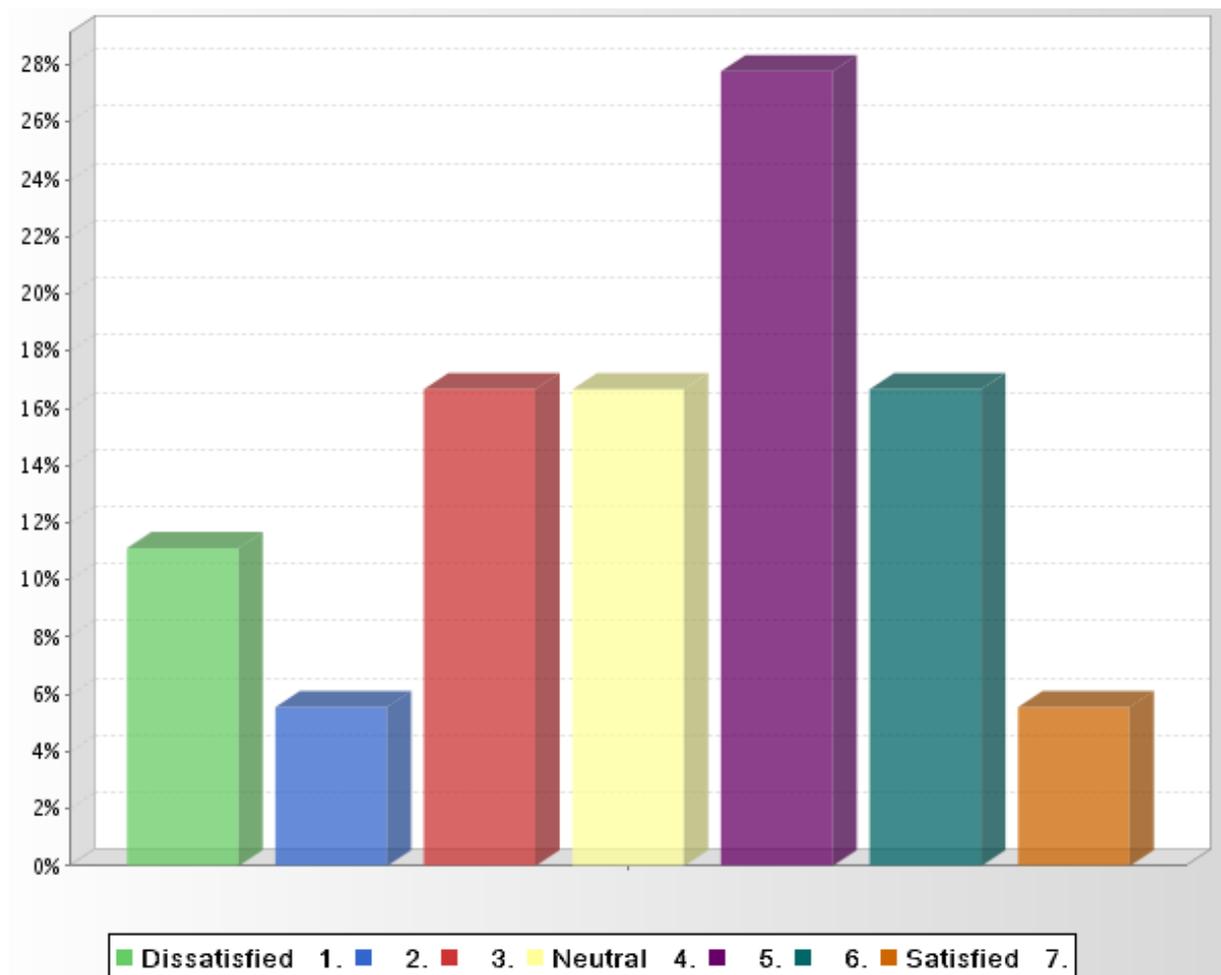


Figure 4.12 Satisfaction level: Physical resources

The satisfaction level for *your confidence* (Figure 4.13) about emergency management revealed 2.78 percent (n=1) were dissatisfied with their level of confidence, while 8.33 percent (n=3) were neutral and 22.22 percent (n=8) were satisfied with their level of confidence about emergency management. 80.56 percent (n=29) of respondents ranked their

satisfaction level as being between Neutral and Satisfied. Participants made the following comments when asked to provide addition comments:

“Lack of confidence ... part time nature of EM...” Q68 #5 (2011).

“EM is not taken serious enough by Local Government.” Q68 #24 (2011).

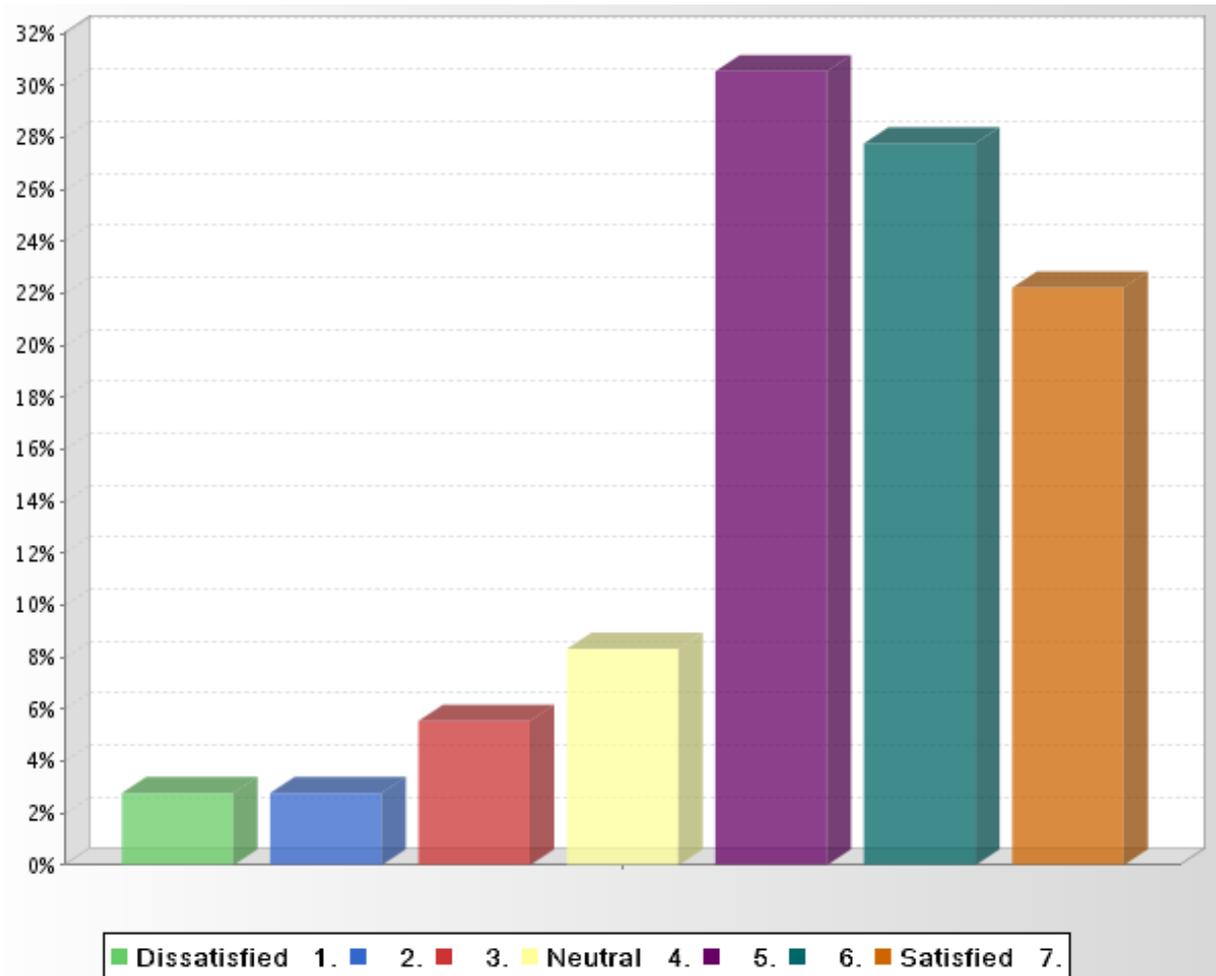


Figure 4.13 Satisfaction level: Your [Emergency Manager] confidence

4.8. Summary

This chapter discussed the results of the questionnaire survey instrument including demographics, education, employment, professional development, work and levels of satisfaction.

5. Discussion

This project sought to explore three major aims: (1) to investigate the qualifications and professional training of Local Emergency Management Officers and District Emergency Management Officers (LEMOs & DEMOs) in New South Wales; (2) to explore the knowledge of LEMOs and DEMOs with respect to emergency management and to document case studies of their experiences; and (3) to examine the competence and confidence of LEMOs and DEMOs in emergency management.

The QSI revealed several trends and points of divergence that suggest conflicting understanding amongst Emergency Managers in NSW. In the following, the demographics of the sample have been outlined to provide an understanding of the participants. Next is a discussion of the first aim, the qualifications and professional training of LEMOs and DEMOs. The second aim (knowledge of LEMOs and DEMOs) is then discussed, followed by the third aim: the competence and confidence of LEMOs and DEMOs.

5.1. Outcomes

5.1.1. **Demographics.** The QSI revealed that 80.56 percent of the respondents identified their main religion as Christian, which is significantly higher than the NSW norm of 70 percent (Australian Bureau of Statistics, 2004). This could be attributed to several factors, including the negative perception of many recent migrants towards emergency management or emergency response organisations (McLennan, 2008). Secondly, it could be due to the age of respondents: 50 percent of respondents in this study were aged 55 or over - an age group more likely to affiliate with religion (ABS, 2004).

Despite the greater-than-background average of persons identifying themselves as Christian in this study, the data collected remains significant to emergency management. It is

plausible that if the demographics of Emergency Managers are not representative they may not be able to meet the needs of the various Culturally and Linguistic Diverse (CALD) groups in the community (Commonwealth of Australia, 2007). A more representative sample of the general population may be found with a larger sample size of LEMOs and DEMOs.

Of the 36 respondents, 97.22 percent reported being employed in a permanent position. Despite full-time employment, 83.33 percent of LEMOs reported that they were not full-time Emergency Managers, with 66.67 percent dedicating less than 10 percent of their time towards emergency management. This could be attributed to emergency management being a secondary responsibility to the respondents' core function, with only one full-time permanent emergency manager position operating within local councils (LEMO).

It is plausible that a lack of time dedicated to emergency management could negatively impact the effectiveness of Emergency Managers (McLennan, 2008; Parliament of Victoria, 2010a). Participants' responses revealed several reasons for the part-time hours dedicated to emergency management.

“I have dual roles at Council and emergency role is a non-paid role” Q19 #15 (2011).

“depends on work load in primary role” Q19 #19 (2011).

“secondary role, lack of time is an issue” Q64 #12 (2011).

Furthermore, when respondents were asked if there should be a full-time position dedicated to emergency management, only 61.11 percent agreed that there should be, commenting;

“EM workload does not justify this for most Councils” Q59 #12 (2011).

“Not required. They would be sitting around not achieving anything” Q 59 #18 (2011).

“Not financially viable” Q59 #22 (2011).

“have asked for full time Local Emergency Management Officers in SERM Act review however, fell on deaf ears” Q59 #36 (2011).

“Does not seem warranted. Given the difficulties...” Q59 #13 (2011).

Responses showed a trend in opinions: those provided by LEMOs and those provided by DEMOs, these opinions disagreed dramatically on the subject of full-time Emergency Managers. In addition, when asked if the role was being utilised to its full potential, 80.55 percent believed that it was, commenting:

“Not enough time allocated with conflicting duties” Q64 #15 (2011).

“Appears to be Empire building and self promotion at the State level” Q64 #18 (2011).

“time, financial, politics and training are barriers” Q64 # 30 (2011).

“The DEMO role is the only role in NSW that is substantive (in the management of emergencies). All other Emergency Managers, under the Act and Displan, have the role tacked on to their more substantive role.” Q64 #35 (2011).

LEMOs, as a cohort, did not see the viability of additional hours dedicated to emergency management, nor a dedicated position. However, DEMOs indicated that they were overworked and taking on responsibilities that traditionally belonged within the LEMO

position. When respondents were questioned about the workload over the next two to five years, 25 per cent believed it would increase, commenting:

“Can’t get any more blood out of stone” Q47 #18 (2011).

“To the point of job dissatisfaction” Q47 # 36 (2011).

The quotes utilised in this section indicates a lack of satisfaction between the time dedicated to emergency management, the required work to fulfil emergency management obligations and the difference of opinions between DEMOs and LEMOs.

5.1.2. **Qualifications.** In being selected for a role in emergency management, 30.56 percent of participants rated their qualifications as the third most important factor, behind experience and background⁵. This shows the decreased significance of qualifications which may limit the industry’s ability to increase knowledge, achieve recognition and mature as a profession (Professions Australia, 1997). Of the 36 respondents, 86.11 percent held qualifications equivalent or greater than a Diploma. However, only three had tertiary qualifications in emergency management. The lack of industry-specific qualifications in the survey sample outlines a growing trend in the emergency management industry revealing a major concern, reiterated by one participant:

“[Emergency Management] is adhoc due to turnover of staff with little or no qualifications in Local Government” Q64 #33 (2011).

“...our job description has just been rewritten and no longer required to have tertiary qualifications (not happy)” Q44 #36 (2011).

⁵ Background was left undefined, allowing respondents to interpret the term.

Tertiary qualifications provide an Emergency Manager with a more in-depth knowledge than traditional training and enables them to keep-up with competing demands of the workforce (Woodbury, 2005). This lack for formal qualifications, identified that emergency management is often a secondary responsibility with qualifications more likely to relate to a primary employment role. Professional acknowledgement is therefore limited, as knowledge remains reliant on training.

It is plausible that a lack of tertiary qualifications may affect the productivity and readiness of Emergency Managers and standing within the international community (Cwiak, 2009; The Institute for Higher Education Policy, 1998). Whilst there is a lack of formal qualifications, 99.44 percent of Emergency Managers indicate they have received some type of training.

5.1.3. **Professional Training.** Of the 36 participants, 94.44 percent stated that they had received additional training in their role, with 88.33 percent stating that this training had met their needs and 77.28 percent feeling that they needed more training in emergency management while identifying funding as the main barrier prohibiting them from participating in further training.

“[I] Have not been able to do further training due to budget constraints.” Q11 #19 (2011).

“Not enough training or expertise” Q61 #1 (2011).

This is a significant finding, as participants expressed a desire for refresher courses, upgrades and more practical application of theory through various comments.

“Recovery and impact analysis (subjects)” Q11 #2 (2011).

“at least introductory / basics (on emergency management)” Q11 #14 (2011).

“putting (emergency management) theory into practice” Q11 #12 (2011).

Tertiary qualifications are important in developing industry based skills, however, the continued training of Emergency Managers is vital in ensuring that they are up-to-date with current legislation and that their skills are ready in case of an emergency (Crews, 2001).

5.1.4. **Knowledge.** In addition to formal qualifications, knowledge is an important aspect of a profession (Blanchard, 2005; Britton, 1999; Professions Australia, 1997). Of the 36 respondents, 88.89 percent expressed an interest in developing their emergency management knowledge, 33.33 percent stated that they subscribed to an emergency management journal and 13.89 percent had membership to an emergency management industry body or association. It is plausible that few held subscriptions as they felt that the information available did not meet their needs, with one respondent commenting that “it was of little value” (#2, 2011). The low proportion of participants subscribed to a publication may also indicate a lack of time with emergency management a secondary role. In fact, 72 percent of Emergency Managers indicated that they expected workloads to increase over the next 2 to 5 years. This highlights a significant gap in the time required of the position and the time availability of current personnel and can impact their level of satisfaction.

The satisfaction of participants with their personal level of knowledge pertaining to emergency management was 16.67 percent. This low level of satisfaction could be attributed to several factors, including the time dedicated to emergency management, lack of financial resources, lack of tertiary qualifications and a formal education in emergency management. The majority of Emergency Managers contribute less than 10 percent of their time to emergency management, leaving them little time to develop and grow their knowledge base.

In addition, participants outlined that some Emergency Managers have gained more practical experience than others:

“[I’ve] never had a real event to manage” Q 37 #20

“Some councils experience very few emergencies, compared to others. Sharing this experience would be a benefit” Q37 #12

These comments reveal a significant limitation in emergency management and the barriers to the application of knowledge. Disasters are not a predictable, regular occurrence, and as such it is imperative that when one occurs, Emergency Managers are able to gain firsthand knowledge and experience. In order to gain this experience, councils could consider sharing emergency management personnel during an emergency: 86.11 percent of participants expressed an interest in such an agreement:

“where relevant it could be beneficial” Q36 #13

“Have loose (emergency management) arrangements” Q36 #31

Comments revealed that several had informal agreements but believed that there were barriers to this idea, such as:

“lack of initiative from some officers...” Q38 #4

“funding and prioritisation conflicts” Q38 #10

“lack of political will, resources, time and money...” Q38 #36

These comments suggest that those designing the positions may not believe that individual emergency management positions are warranted. This is further supported by several respondents indicating that they had no budget or a limited budget for emergency

management. This may also prevent them from dedicating time to advancing their knowledge.

“hardly any involvement at Council LEMC” Q46 #16

“EM is not taken serious enough by Local Government. State Government needs to provide greater support to Local Government for the EM program” Q68 # 24

“...is holding us back not moving with the times” Q11 #36

These comments reveal apathy by councils and indicate a low level of priority placed on emergency management (Cwiak, 2009). Current preparatory measures or practices put in place to prepare the community for disaster, such as emergency plans and training, have revealed that for every dollar spent, between two and four dollars on recovery is saved (2007; BTE, 2001; EMA, 2007). This finding could be used to support the increase in funding for training and development of emergency management, increasing the knowledge and competence of Emergency Managers.

5.1.5. **Competence.** Competence refers to the qualification of a person to a suitable position for a purpose (Macquarie Dictionary Online, 2011). Competence has also been defined as the application of skills and knowledge that enable a person to act effectively in a job or situation (Macquarie Dictionary Online, 2011; WebFinance, 2011). The term is used here to indicate the relevance between appropriately qualified Emergency Managers and their level of competence.

In this study, 91.67 percent of respondents stated that career advancement, specific to emergency management, was not available within their organisation and that the position was not taken seriously. There were numerous comments from respondents on the practical application of emergency management:

“[Emergency management] is a secondary role for LEMOs and suffers as a consequence” Q34 #12

“lack of initiative from some Officers to take on more responsibility” Q38 #4

“Lack of political will, resources and money to be engaged in Emergency Management” Q39 #36

“I was deemed available” Q40 #5

This reveals an important issue as career development can be an important factor in an individual being motivated for the development of skills and knowledge. If the skills and knowledge of Emergency Managers are not adequate, they may be deemed less competent than others who actively pursue knowledge (The Institute for Higher Education Policy, 1998).

Of the 36 respondents, 36.11 percent reported dedicating less than 5 percent of their work time to emergency management, 30.56 percent dedicated between 6 and 10 percent and 22 percent dedicated 100 percent. However, it is important to note that the 22 percent above, consists of DEMOs and one LEMO, leaving 66.67 percent dedicating less than 10 percent of their portfolio to emergency management. One participant commented:

“Minor part of responsibilities EM is less than 5 percent of one person’s role in the organisation.” Q41 #18

Furthermore, 13.89 percent of participants were dissatisfied with the lack of time dedicated to emergency management. This lack of time allocation could be attributed to several factors raised by participants, such as the secondary nature of the role, level of

priority, lack of understanding about emergency management, lack of resources and lack of support by key stakeholders.

Of the 36 respondents, 69.44 percent indicated that they had held their current position between 3 and 15 years. 25 percent indicated that emergency management had been part of their employment for between 10 and 15 years, while 22.22 percent had held their position for greater than 15 years. However, the majority of participants, (80.55 percent), identified that this was not their core business and 66.67 percent dedicated less than 10 percent to emergency management. As such, participants may not have attained the equivalent number of full-time hours of experience as their equivalent employment period. It is therefore plausible that Emergency Managers may not have the skills and knowledge that enable them to act effectively in the job or an emergency situation and leads to questions about their competence, as illustrated by the following comments (Macquarie Dictionary Online, 2011; WebFinance, 2011).

“Council does not have the skills to manage large scale emergencies” Q58 #18

“District has doubled in size and many councils don’t find the time to do EM so as DEMOs we do some of their work force them” Q46 #33

The former comment highlights the concerns of Emergency Managers with respect to emergency management and the ability of council to meet its obligations under legislation. Having individuals appropriately qualified and skilled in a specialised position is vital in ensuring an emergency is managed competently. When asked why their employers selected them for their role in emergency management, responses varied:

“No one else volunteers to do it” Q57 #20

“It was a minor role that filled out the job responsibility package” Q40 #13

“initially available to attend meetings” #30

These comments highlight a feeling of apathy towards the role of Emergency Manager by councils. It is possible that due to lack of qualifications and/or experience in emergency management, employers do not see emergency management as a profession (The Institute for Higher Education Policy, 1998). This suggests that emergency management does not receive the same recognition as other professions, which in turn can limit opportunities for updating skills and knowledge, as well as career development.

At present, the emergency management industry does not offer internships or professional placements and, through necessity, relies on employees volunteering in frontline response organisations to provide individuals with emergency management experience. This highlights a significant problem with gaining experience as an Emergency Manager. Of the 36 respondents, 14 indicated that they were either members of a volunteer emergency response organisation or had previously been a member of an organisation, such as the State Emergency Service (SES), NSW Rural Fire Service (RFS) and Surf Lifesaving Australia (SLSA).

It is important to note that there is a distinct difference between emergency response and emergency management. Emergency service/response organisations have a stronger tactical approach, while emergency management is focussed on the strategic level of the management of an emergency (Crews, 2001). It is interesting, but not wholly unexpected, that a large number of Emergency Managers come from an emergency response background, as emergency management has military and emergency service heritage (AGD, 2000; Britton, 1999). Participants indicated that the SES contribute more personnel than other emergency services to emergency management. It is plausible that this is due to the volunteer-based nature of the organisation and its accessibility across the state. It is unclear what skill sets

prepare SES personnel for a role in emergency management and what qualifications these personnel bring to the role. Further research is needed to address the direct link between volunteer emergency service experience and competence in emergency management.

Of the 36 participants, 61.11 percent selected experience as the most important factor in gaining employment as an emergency manager. These statistics are conflicting, as participants felt unable to progress in their career and gain experience, but noted the significance of experience itself. This application of skills and knowledge that enable a person to act effectively in a job or situation is vital in determining a person's competence (Macquarie Dictionary Online, 2011).

5.1.6. **Confidence.** Confidence can be defined as trusting in something or someone, in this instance, it is trusting in emergency management (Landau, 1999). Of the 36 participants, 38.89 percent stated that their department dedicated less than A\$10,000 to emergency management during the past year, and 25 percent dedicated greater than A\$100,000. A review of comments submitted by respondents revealed that these figures are inconsistent, with some respondents including the contributions made by the Fire Levy and the SES as part of their budget. Quotes obtained and included below, reveal the complexity of emergency management funding arrangements.

“This excludes Councils contribution to SES which is \$75K” Q18 #4

“NSW Emergency Services Levy = RFS \$ \$190,000, SES \$18,000, Fire & Rescue \$34,000, Staff wages \$5,000” Q18 #12

“Zero dollars actually. The local committee [LEMC] has no budget.” Q18 #30

This reveals the financial priority that the organisations place on their emergency management portfolio and the ambiguous line between funding allocated between emergency

management and emergency services, and highlights the possibility that the less visible facets of emergency management will be overlooked for funding. Furthermore, it reveals a lack of confidence in the ability of councils to fund emergency management measures.

“Time and funding as most LEMO positions are unpaid” Q39 # 15

Additionally, 69.44 percent of respondents stated that the council dedicated less than 1 percent of its total budget towards emergency management activities. This may be due to several factors that include a lack of financial resources, competing demands and a low priority on emergency management, as suggested by participants:

“Lack of political will, resources, time and money to be engaged in Emergency Management” Q39 #36

The lack of resources and the low priority of emergency management, as outlined by participants are a significant barrier to the efficiency and effectiveness of the industry.

Of the respondents, 66.67 percent indicated that they believed that the emergency management industry should be regulated. This highlighted the lack of confidence in existing measures and management of the industry, evident in the following comments by participants:

“An overarching Government Agency... that also is a voice of funding etc. A body should be formed that concentrates specifically on EM and not distracted by other agency/government politics such as currently in place.” Q65 #35

“Emergency Management should be its own entity with ... capabilities to drive Emergency Management across all agencies. Current position within Police is inadequate and ineffective.” Q65 #36

These comments reveal a lack of confidence by the participants in current emergency management processes. This also reveals discrepancies between full-time and part time Emergency Managers, with Full-time Emergency Managers indicating that the emergency management industry should be regulated and managed by an organisation with emergency management as the core business. An example includes the Federal Emergency Management Agency (FEMA) in the United States. There is little data on Emergency Managers in the United States that could identify the practical application of such an organisation.

The regulation of the industry could allow for a more coordinated and specialised approach to emergency management, ensure appropriately trained and qualified personnel are employed, and increase the likelihood of the industry be seen and recognised as a profession. Overall, this approach could ensure better management of the core business, improve community services and develop stakeholder confidence in emergency management.

However, some participants were unaware of current changes to the emergency management industry. Responses indicated that participants believed that Emergency Management NSW (EMNSW), the state body for emergency management until April 2011, was still functional, where it was dissolved under a new government prior to the study being commenced (NSW Government, 2011). Responsibilities of EMNSW were transferred to the NSW Police Force under the Ministry of Police and Emergency Services. These changes in the industry may have changed participants' responses to questions about the regulation of the industry and these responses must therefore be interpreted with caution.

The questionnaire reviewed the level of satisfaction of Emergency Managers with the support from various stakeholders including the local community, local government, state government and federal government. Respondents identified that they were satisfied with the level of support that they received from the local community and the local government.

However, they were dissatisfied with the support they received from state and federal government, and neutral with the support they received from local government. Several respondents made comments about emergency management and the support from various stakeholders:

“EM is not taken serious enough by Local Government. State Government needs to provide greater support to Local Government for the EM program” Q68 #24

“...EM role not considered a formal role an "add on" to other roles.” Q68 #19

These comments highlight the lack of support and confidence Emergency Managers perceive from their stakeholders. This could make it difficult for them to effectively and efficiently fulfil their role, while making it difficult to resolve ongoing issues. Several ongoing issues identified by Emergency Managers include lack of resources, both financial and physical, a lack of training, education, experience and support.

5.2. Limitations

Future research is required to generate far more statistical data, from a larger sample size to a central database of Emergency Managers. As there is no central database of Emergency Managers, appropriate personnel were not easy to locate, and had to be sought by contacting individual councils, that filtered the availability of personnel. Several councils were unable to identify appropriate personnel to the researcher, citing restrictions of the “Privacy Act”, which meant that the researcher was unable to identify the exact number of personnel for whom the study was made available and form a conclusive response rate.

5.3. Summary

This chapter identified the main findings of the study, revealing an ageing emergency management demographic that was conflicted about the level training and education. It identified a lack of resources as a key problem area with not enough time or financial resources applied to emergency management. Finally, it revealed several areas that could use further research and investigation.

6. Conclusion

Over the past few decades there has been an increase in natural and other hazards, and the numbers of people affected by them (Centre for Research on the Epidemiology of Disasters, 2011). According to the Intergovernmental Panel on Climate Change (2007), we can expect more disasters – especially those associated with climate change, extreme weather events and increases in population. Well trained and competent emergency managers are necessary for addressing this need and for building resilient communities.

The aims of this research project were threefold. The first aim was to investigate the qualifications and professional training of Local Emergency Management Officers and District Emergency Management Officers (LEMOs & DEMOs) in New South Wales. The second aim was to explore the knowledge of LEMOs and DEMOs in emergency management and to describe their experiences. The third aim was to examine the competence and confidence of LEMOs and DEMOs in emergency management.

The first aim, investigating the qualifications of Emergency Managers, revealed that they were important in the development of the emergency management industry and could contribute to improvements in community resilience (Professions Australia, 1999; Britton, 1999; Blanchard 2005). This study revealed that few Emergency Managers possessed industry-specific qualifications. Although there appears to be a consensus about the legitimacy of tertiary qualifications, it was identified that the secondary nature of the role, limited funding and limited time existed and that these reasons were and why Emergency Managers did not have an interest in pursuing this approach. A consultative approach by stakeholders could identify key requirements of the emergency management industry and work towards resolving existing weaknesses.

The second aim, to explore the knowledge and professional training of LEMOs and DEMOs in emergency management, indicated that Emergency Managers felt that their knowledge was adequate but they desired further training that was not currently being met. This would require the organisation of dedicated funding and would require changes in organisational priorities. Furthermore, this may require future Emergency Managers to obtain a degree in emergency management prior to accepting and acting within the role, in-line with other professions and foreign counterparts.

The third objective was to examine the competence and confidence of LEMOs and DEMOs in emergency management. This revealed that Emergency Managers were both confident and competent in their role as an Emergency Manager, by self-rating. In light of the information obtained from this study, it is unclear if respondents would feel the same if their qualifications and experience in emergency management were compared to their primary role and industry. Respondents also indicated a lack of general support from various stakeholders. These may require a change in public perception, increased awareness and an indepth review of the industry by Emergency Managers and stakeholders.

This study suggests that Emergency Managers need to be hired with appropriate qualifications that can be built on by organisations. It is important that individuals have the time to dedicate to emergency management and they are appropriately qualified. This will require a coordinated approach by the various stakeholders and support from all parties. Although this would increase initial costs to the organisation, there could be positive long-term results for the management of emergencies and the profession itself.

This thesis indicates that emergency management industry is moving towards the status as a legitimate profession but in order for it to accomplish this in Australia a much wider, in-depth approach is needed. It is important the individuals tasked with protecting the wider

community are appropriately qualified, experienced and supported in their endeavour towards a safer Australia.

References

ABS See: Australian Bureau of Statistics.

AGD See: Attorney-General's Department.

Alexander, L., Hope, P., Collins, D., Trewin, B., Lynch, A., & Nicholls, N. (2007). Trends in Australia's climate means and extremes: a global context. *Australian Meteorological Magazine*, 56, 1-18.

Ambulance Service of New South Wales. (2008). Annual Report Ambulance Service of NSW 2007/08. *Annual Report*, 2010, from www.ambulance.nsw.gov.au/publications

Attorney-General's Department. (2000). *Commonwealth Emergency Management Arrangements*. Canberra, Australia.

Attorney-General's Department. (2008). Emergency Management in Australia. Retrieved 25 March, 2011, from http://www.ema.gov.au/emaweb.nsf/Page/Emergency_Management

Australian Bureau of Statistics. (2004). 4102.1 - Australian social trends. Retrieved 02 October, 2011, from <http://www.abs.gov.au/ausstats/abs@.nsf/1020492cfcd63696ca2568a1002477b5/fa58e975c470b73cca256e9e00296645!OpenDocument>

Babbie, E. (2004). Survey research. In E. Howard (Ed.), *The Practice of Social Research*. (10 ed., pp. 243-280). California, USA: Thomson Wordsworth.

Baxter, J. (2010). Chapter 5 - Case studies in qualitative research. In I. Hay (Ed.), *Qualitative Research Methods in Human Geography*. (3 ed.). South Melbourne: Victoria: Oxford University Press.

Beaton, G. (2010). Why professionalism is still relevant. Retrieved 20 August 2011, from http://www.professions.com.au/Files/Professionalis_Beaton.pdf

Bird, D., & Dominey-Howes, D. (2008). Testing the use of a 'questionnaire survey instrument' to investigate public perceptions of tsunami hazard and risk in Sydney, Australia. *Natural Hazards*, 45. doi: 10.1007/s11069-007-9172-8

- Bitá, N. (2011). Elemental struggle. *The Australian*. Retrieved from <http://www.theaustralian.com.au/news/features/elemental-struggle/story-e6frg6z6-1226004256001>
- Blanchard, B. W. (2005). *Top ten competencies for professional emergency management*. Emergency Management Institute, National Emergency Training Center, Federal Emergency Management Agency, Department of Homeland Security. Emmitsburg, Maryland, USA. Retrieved from [http://scholar.google.com.au/scholar?start=680&q=percent 22emergency+managers percent 22&hl=en&as_sdt=1,5](http://scholar.google.com.au/scholar?start=680&q=percent+22emergency+managers+percent+22&hl=en&as_sdt=1,5)
- Blanchard, B. W. (2007). *Principles of emergency management*. Emergency Management Higher Education Program. Federal Emergency Management Agency. Retrieved from <http://training.fema.gov/EMIWeb/edu/emprinciples>
- Britton, N. R. (1999). Whither the emergency manager? *International Journal of Mass Emergencies and Disasters*, 17(2), 223-235.
- Brown, N., Hinton Fletcher, B., & Jeans, D. N. (2011). New South Wales. Retrieved 26 July, 2011, from <http://www.britannica.com/EBchecked/topic/412057/New-South-Wales>
- Bureau of Meteorology. (2011). Severe Thunderstorms Retrieved May 5, 2011, from <http://www.bom.gov.au/info/thunder/#storms>
- Bureau of Transport Economics. (2001). Economic costs of Natural Disasters in Australia. Report 103. (The Bureau of Transport Economics, Trans.) (Vol. 103). Canberra: The Bureau of Transport Economics,.
- Centre for Research on the Epidemiology of Disasters. (2011). The OFDA/CRED International Disaster Database - EM-DAT. Brussels, Belgium.
- Col, J. (2007). Managing disasters: The role of local government. *Public Administration Review*, 114-124.
- Commonwealth of Australia. (1998). Australian Constitution. Canberra: ACT.
- Commonwealth of Australia. (2007). *Guidelines for emergency management in culturally and linguistically diverse communities - manual number 44*. Canberra: ACT: Emergency Management Australia.
- CRED See: Centre for Research on the Epidemiology of Disasters.

- Crews, D. T. (2001). The case for emergency management as a profession. *Australian Journal of Emergency Management*, 16(2), 2-3.
- Cwiak, C. (2009). *Strategies for success: The role of power and dependence in the emergency management professionalization process*. Doctor of Philosophy, North Dakota State University, Fargo: ND. Retrieved from <http://ndsu.edu/emgt/graduate/alumni> (10-29-009)
- Darlington, J. D. (1999). *The profession of emergency management, educational opportunities and gaps*. Study. Department of Sociology and Anthropology. Western Illinois University Macomb, IL. Retrieved from www.training.fema.gov/EMIWEB/edu/prof_em.pdf
- Division of Local Government. (2011, 9 April 2009). Council contact details. Retrieved 15 January, 2011, from http://www.dlg.nsw.gov.au/dlg/dlghome/dlg_CouncilContactDetails.asp?slacode=8710
- Eburn, M. E. (2009). *Australia's international disaster response – laws, rules and principles*. Doctor of Philosophy, Monash University Retrieved from <http://arrow.monash.edu.au/vital/access/percent20/services/Download/monash:14147/THESIS01>.
- Elsworth, G., & Anthony-Harvey-Beavis, K. (2007). The national local government emergency management survey - final report. Melbourne, Australia: RMIT.
- EMA See: Emergency Management Australia.
- Emergency Management Australia. (2004). *Emergency Management in Australia - Concepts and Principles - Manual 1*. Canberra: ACT: Commonwealth of Australia.
- Emergency Management Australia. (2006). *Hazards, Disasters and your community* (7 ed.). Canberra ACT: Emergency Management Australia.
- Emergency Management Australia. (2007). Principles of emergency management. In Emergency Management Australia (Ed.). Melbourne, Australia.
- Emergency Management Australia. (2011). Disaster Database. Retrieved 21 March 2011 <http://www.ema.gov.au/disasters>
- Federal Emergency Management Agency - FEMA. (2007). Principles of emergency management. Emergency Management Higher Education Program. Federal

Emergency Management Agency. Retrieved from <http://training.fema.gov/EMIWeb/edu/emprinciples>

- Frederickson, J., & Rooney, J. (1990). How the music occupation failed to become a profession. *International Review of the Aesthetics and Sociology of Music*, 21(2).
- Graziano, A., & Raulin, M. (2004). *Research Methods: A process of inquiry* (5 ed.). Boston, MA, USA: Pearson Education Group.
- Houghton, J. (2009). *Global warming: the complete briefing* (4 ed.). New York: Cambridge University Press.
- Intergovernmental Panel on Climate Change. (2007). Climate change 2007: Impacts, adaption and vulnerability. Working Group II contribution to the Intergovernmental Panel on Climate Change, Fourth assessment report.
- IPCC See: Intergovernmental Panel on Climate Change.
- Johnson. (2008). Emergency management - definition, vision, mission, principles. Retrieved 22 May, 2011, from <http://www.training.fema.gov/EMIWeb/edu/emprinciples.asp>
- Landau, S. (Ed.). (1999). *Websters compact dictionary*. (1999 ed.): Trident Press International.
- MacDonald, A. (2011). Take no risks, fires told, *The Courier-mail*. Retrieved from <http://www.couriermail.com.au/ipad/take-no-risks-fires-told/story-fn6ck45n-1226045668153>
- Macquarie Dictionary Online. (2011). Competent. Retrieved October 10, 2011, from <http://www.macquariedictionary.com.au>
- Madigan, M. (2011, February 19, 2011). Call for a five-level warning system, *The courier-mail*. Retrieved from <http://www.couriermail.com.au/ipad/call-for-a-five-level-warning-system/story-fn6ck51p-1226008243189>
- Manock, I. D. (2001). Tertiary emergency management education in Australia. *Australian Journal of Emergency Management*, 16(2), 4-7.
- McGuirk, P. M., & O'Neill, P. (2010). Using questionnaires in qualitative human geography. In I. Hay (Ed.), *Qualitative research methods in human geography*. (3 ed., pp. 432). Ontario, Canada: Oxford University Press.

- McLennan, J. (2008). Issues facing Australian volunteer-based emergency services organisations: 2008 - 2010 Retrieved 10 October, 2011, from [http://www.ema.gov.au/www/emaweb/rwpattach.nsf/VAP/\(9A5D88DBA63D32A661E6369859739356\)~Literature+Review+-+EM+Volunteers+-+FINAL+REPORT.PDF/\\$file/Literature+Review+-+EM+Volunteers+-+FINAL+REPORT.PDF](http://www.ema.gov.au/www/emaweb/rwpattach.nsf/VAP/(9A5D88DBA63D32A661E6369859739356)~Literature+Review+-+EM+Volunteers+-+FINAL+REPORT.PDF/$file/Literature+Review+-+EM+Volunteers+-+FINAL+REPORT.PDF)
- Middelmann, M. H. (2007). *Natural hazards in Australia: identifying risk analysis requirements*. Canberra: Geoscience Australia.
- New South Wales Fire Brigade. (2009). About us. Retrieved November 23, 2009, from <http://www.nswfb.nsw.gov.au/page.php?id=45>
- New South Wales Police Force. (2008). NSW Police Force Annual Report 2007-08 (Public Affairs Branch and the Office of the Commissioner, Trans.) (pp. 180). 1 Charles Street, Parramatta, NSW 2150, Australia: NSW Police Force.
- New South Wales Police Force. (2011, 25 January 2011). Emergency Management Retrieved 25 March, 2011, from http://www.police.nsw.gov.au/community_issues/emergency_management
- New South Wales Rural Fire Service. (2009). About us. Retrieved November 23, 2009, from http://www.rfs.nsw.gov.au/dsp_content.cfm?cat_id=1003
- New South Wales State Emergency Management Committee. (2009). Annual Report 2008-2009 (New South Wales State Emergency Management Committee. Committee, Trans.) (pp. 123). Sydney, NSW: New South Wales State Emergency Management Committee,.
- New South Wales State Emergency Service. (2009). Homepage Retrieved November 23, 2009, from <http://www.ses.nsw.gov.au/>
- New South Wales State Government. (1989). State Emergency and Rescue Management Act 1989. (165).
- New South Wales State Government. (2011a). *Public Sector Employment and Management (Departments) Order 2011*. Sydney: Australia: New South Wales Government Retrieved from <http://www.legislation.nsw.gov.au/temp/si/2011-184.pdf>.
- New South Wales State Government. (2011b). The Ministry for Police and Emergency Services - About us. Retrieved 10 October, 2011, from <http://www.emergency.nsw.gov.au/aboutus>

- Nie, N. H., & Hull, C. H. (2006). *SPSS 15.0: Command syntax reference*. Chicago, Illinois: SPSS Inc.
- Parliament of Victoria. (2010a). 2009 Victorian Bushfire Royal Commission - Final Report Recommendations. *Commonwealth Response*.
- Parliament of Victoria. (2010b). 2009 Victorian Bushfire Royal Commission - Interim Report. *Commonwealth Response* (pp. 277-284).
- Pickrell, J. (2011, 27 April, 2011). The worst disaster in recent history, *ABC Environment*. Retrieved from <http://www.abc.net.au/environment/article/2011/04/27//3197103.htm>
- Professions Australia. (1997). Definition of a profession. Retrieved 27 August, 2011, from <http://professions.com.au/definitionprofession.html>
- Risk Frontiers. (2009). Attributing blame in the Black Saturday wildfires: February 7, 2009. *Risk Frontiers*, 8(2).
- Siniscalco, M. T., & Auriat, N. (2005). Module 8 - Quantitative research methods in educational planning. In International Institute for Educational Planning/ UNESCO (Ed.), *Questionnaire design*.
- Smith, A. (2008). Identifying nationally recognised emergency management skill sets: Godsend or poisoned chalice? *Australian Journal of Emergency Management*, 23(1), 58-63.
- State Emergency Management Committee. (2010). *The New South Wales Disaster Plan - Displan 2010*.
- Stehr, S. D. (2007). The changing roles and responsibilities of the local emergency manager: An empirical study. *International Journal of Mass Emergencies and Disasters*, 25(1), 19.
- The Australian National Audit Office. (2008). *ANAO Audit Report No.27 2007-2008 - Emergency Management Australia*.
- The Bureau of Transport Economics. (2001). Economic costs of Natural Disasters in Australia. Report 103. (The Bureau of Transport Economics, Trans.) (Vol. 103). Canberra: The Bureau of Transport Economics.

- The Institute for Higher Education Policy. (1998). *Reaping the benefits: defining the public and private value of going to college*. The Institute for Higher Education Policy. Washington, DC. Retrieved from www.ihep.com.
- Thompson, T. (2011, April 17, 2011). Ipswich council 'failed flood victims', *The courier-mail*. Retrieved from <http://www.couriermail.com.au/ipad/ipswich-council-failed-flood-victims/story-fn6ck45n-1226040465514>
- Walker, J., & Bitá, N. (2011). Summer of fury exposes planning failures, *The Australian*. Retrieved from <http://www.theaustralian.com.au/news/nation/summer-of-fury-exposes-planning-failures/story-e6frg6nf-1226004691620>
- WebFinance. (2011). Definition - Competence. Retrieved October 10, 2011, from <http://www.businessdictionary.com/definition/competence.html>
- Woodbury, G. L. (2005). Critical curriculum for emergency management leaders: Three essential themes. *Journal of Emergency Management*, 3(2), 72-92.
- WorldAPP. (2008). Key Survey Enterprise Solutions (Version 7.1). Braintree: MA: WorldAPP. Retrieved from <http://www.keysurvey.com/>

Appendix A

Questionnaire Survey Instrument (QSI)

This study aims to gather information about emergency managers within NSW, specifically District and Local Emergency Management Officers. The research intends to establish a baseline of information that may allow for further studies and provide recommendations to be made about the industry.

You have been invited to participate in this study as you are currently employed in an emergency management role in NSW government. Please pass this study on to anyone that fulfils an emergency management role within your area, i.e., alternate, substitute, etc...

IMPORTANT: Please note that some questions are similar in nature and caution should be taken when reading. This questionnaire should take about 30 minutes to complete.

1. Name

2. Local Government Area

3. What is your highest level of education?

High School

Certificate I

Certificate II

Certificate III

Certificate IV

Diploma

Advanced Diploma

Bachelor

Post Graduate Certificate

Masters

PhD

Other

4. Do you hold more than one degree?

Yes

No

5. If yes, please specify the name of each degree and the university it was obtained from:

6. Have you received additional training in your role?

Yes

No

7. If yes, please specify what additional training have you received in this role (please insert course code if it is nationally recognised training course)?

8. Has this training met your needs?

Yes

No

9. Do you feel that you need more training in emergency management?

Yes

No

Comments

10. What is your employment condition?

Permanent

Hourly

Casual

11. How many hours per week do you work?

Fewer than 10

11 - 20

21 - 30

31 - 40

Greater than 40

Please specify:

12. What is your department?

13. What is your main title?

14. How long have you held this position?

Fewer than 6 months

6 to 12 months

1 to 3 years

3 to 5 years

5 to 10 years

10 to 15 years

Greater than 15 years

Please specify:

15. Please provide an estimate for your 2011 emergency management budget?

Less than \$10,000

\$10,000 to \$19,999

\$20,000 to \$29,999

\$30,000 to \$39,999

\$40,000 to \$49,999

\$50,000 to \$100,000

Greater than \$100,000

Please Specify:

16. What percentage of your working week is dedicated to emergency management?

<5 percent

6 - 10 percent

11 - 20 percent

25 percent

50 percent

75 percent

Other:

Please specify:

17. How many years has emergency management been a part of your role?

Fewer than 6 months

6 to 12 months

1 to 3 years

3 to 5 years

5 to 10 years

10 to 15 years

Greater than 15 years

Please specify:

18. Do you have any previous experience in emergency management?

Yes

No

19. If yes, how many years?

Less than 6 months

6 to 12 months

1 to 3 years

3 to 5 years

5 to 10 years

Greater than 10 years

Please specify:

20. Did you request emergency management to be a part of your role?

Yes

No

Please specify:

21. Is career advancement, specific to emergency management, available in your organisation?

Yes

No

22. Do you volunteer for another emergency service or emergency management organisation?

Yes

No

23. If yes, what is the name of the organisation/s?

24. Do you subscribe to any emergency management journals?

Yes

No

Please specify:

25. Do you have a membership to an emergency management industry body or association?

Yes

No

Please specify:

26. Do you attend any emergency management meetings outside of work hours?

Yes

No

Please specify:

27. Do you have any interest in further developing your emergency management knowledge?

Yes

No

Please specify:

28. Do you have a mentor program in place?

Yes

No

29. If no, are you interested in having a mentor program?

Yes

No

Please specify:

30. Do you believe that a mentor program is warranted for Emergency Managers?

Yes

No

Please specify:

31. Do you have an agreement with other local governments to share emergency management personnel during an emergency?

Yes

No

32. If no, are you interested in establishing a agreement with other local governments to share emergency management personnel during an emergency?

Yes

No

Please specify:

33. Do you see a benefit in sharing personnel with other government organisations to gather practical experience?

Yes

No

Please specify:

34. Do you foresee any barriers to such an agreement?

Yes

No

Please specify:
-----**35. What factors were important for your employer in selecting you for a role in emergency management?**

Background

Experience

Qualifications

None

Other
-----**36. Do you consider yourself an Emergency Manager?**

Yes

No

Please specify:
-----**37. How many people are employed in emergency management in your local government?**

Less than 3

3 to 5

6 to 10

11 to 20

21 or more
-----**38. Are you responsible for the hiring of personnel in your department?**

Yes

No
-----**39. Do you look for specific skills in emergency management?**

Yes

No

Please specify:
-----**40. What would you look for in your emergency management personnel?**

Background

Experience

Qualification

Please specify:
-----**41. Has your work load in emergency management over the past 2 - 5 years...**

Increased

Remained Stable

Decreased

Please specify:

42. Do you believe your emergency management duties over the next 2-5 years are going to...

Increase

Remain stable

Decrease

Please specify:

43. Do you get any additional benefits as part of your emergency management responsibilities?

Yes

No

44. What benefits do you receive?

Financial

Vehicle

Laptop

Not applicable

Please specify:

45. How effective are your local emergency plans?

Highly Effective

Effective

Neutral

Ineffective

Highly Ineffective

46. For how many days is your community capable of sustaining itself in a large scale emergency?

Less than 1

1 - 3

4- 7

Greater than 7

Unknown

47. Is your community at risk of any particular hazard?

Yes

No

Unknown

Please specify:

48. Does your community have experience in dealing with large scale emergencies?

Yes

No

49. If yes, what do these events include?

Fire

Flood

Earthquake

Tsunami

Avalanche

Severe Storm
 Tornado
 Riot
 Terrorism
 Structural collapse
 Power outage
 Biological
 Nuclear
 Drought
 Zoological
 Other please specify:

50. Do you have any experience with large scale emergencies as an Emergency Manager?

Yes
 No

51. If yes, what do these events include?

Fire
 Flood
 Earthquake
 Tsunami
 Avalanche
 Severe Storm
 Tornado
 Riot
 Terrorism
 Structural collapse
 Power outage
 Biological
 Nuclear
 Drought
 Zoological
 Please specify where and when:

52. Do you believe emergency management is warranted within your department?

Yes
 No
 Please specify:

53. Do you believe that the role of Emergency Manager should be attached to your role?

Yes
 No
 Please specify:

54. Do you believe that there should be a dedicated, stand-alone emergency management position within each local government area?

Yes
 No
 Not applicable (DEMO)

Please specify:

55. If no, in which department do you believe this position should be located?

Please specify;

56. What percentage of council's budget is dedicated to emergency management?

less than 1 percent

2 - 5 percent

6 - 10 percent

11 - 25 percent

26 - 50 percent

greater than 50 percent

unknown

Please specify:

57. Do you consider yourself to be an emergency management professional?

Yes

No

Please specify:

58. Do you consider emergency management a profession?

Yes

No

Please specify:

59. Do you believe that the emergency management role is being utilised to its fullest?

Yes

No

Please specify:

60. Do you believe that Emergency Managers and the emergency management industry should be regulated? If so, how and by who?

Yes

No

Please specify:

61. Please rate your level of satisfaction with the following aspects of emergency management:

As a profession

Financial resources

Your knowledge

Physical resources

Time dedicated

Support by local community

Support by local government

Support by state government

Support by federal government

Level of training

Your skills

Your confidence

Your competence

**62. Please complete this section if there are any questions you feel need to be expanded:
Please note which questions/s your responses apply to:**

63. Place of birth

Country

64. Please select your gender

Male

Female

65. Please select your age group from the list below

Under 18

18 - 24

25 - 34

35 - 44

45 - 54

55 - 64

65 or older

66. Please specify your ethnic or cultural background:

Black

Asian

White/Caucasian

European

Aboriginal

Other:

67. Religion

Judaism

Christianity

Islam

Hinduism

Buddhism

Atheist

Agnostic

Please specify:

68. Marital status:

Married

Separated

Divorced

Single

Other

69. Do you have children?

No

1-3

4+

70. Please select the number of members in your household.

- 1 person
- 2 people
- 3 people
- 4 or more people

71. Are there any children or young adults under 18 currently living in your household?

- Yes
- No

72. What is the postcode of your current residency?

Appendix B

Letter of Introduction

Dear XXXX

RE: Possible assistance in undertaking a research survey on roles, values and challenges of LEMO activities

My name is Dale Dominey-Howes and I am Co-Director of the Natural Hazards Research Lab at the University of New South Wales.

One of my Honours students – Matthew Ellis is undertaking a research thesis for his Honours examining the current status of Emergency Managers within NSW, particularly District and Local Emergency Management Officers in order to establish a baseline of information for further studies.

We are interested in your LEMO participating in this study. This would be voluntary and no identities would be revealed in the study or any work arising. The aims of the study are to explore their knowledge, experience, competence and professional training. As a new research field, this study will allow for the generation of data using quantitative and qualitative methodologies.

The anticipated outputs will include a report submitted to the University of New South Wales as part of an Honours Thesis and submission to a peer reviewed journal. We expect the outcomes of the work could include a better understanding of the qualifications, experience and self-assessed competence of current Emergency Managers within local and state government in NSW.

In order for us to comply with our University Human Ethics research code, we cannot approach LEMOs directly. As such, I am writing to seek your permission by return of email to approach your LEMO directly to participate.

If you consent, we will contact your LEMO and organize to provide a copy of the *Participant Information Statement*, *Participant Consent Form* and electronic link to the survey – “Emergency Management in NSW government” *online questionnaire*.

Should you have any further questions about the project, please do not hesitate to contact me.

In advance, many thanks and warm wishes

Dale

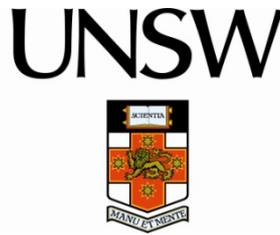
Associate Professor Dale Dominey-Howes FGS FRGS
Co-Director
Australia - Pacific Tsunami Research Centre & Natural Hazards Research Laboratory
School of Biological, Earth and Environmental Sciences
University of New South Wales
Sydney, NSW 2052
Email: dale.dh@unsw.edu.au
Tel: +61 2 9385 4830
Fax: +61 2 9385 1558
Web: www.nhrl.unsw.edu.au

Vice Chairman – Commission on Hazard and Risk, International Geographical Union http://www.igu-net.org/uk/what_is_igu/commissions.html

Commission member – International Tsunami Commission, IUGG

Appendix C

Participant Information Statement



Approval No.: 1583

THE UNIVERSITY OF NEW SOUTH WALES
PARTICIPANT INFORMATION STATEMENT
Emergency Managers in New South Wales

Participant Selection and Purpose of Study

This project entails a survey and an interview concerning the qualifications, background, experience, and self-assessed competence of Emergency Managers within NSW governmental bodies. You have been invited to participate, having been identified as an Emergency Manager through your governmental body or through the Ministry for Police and Emergency Services.

Description of Study and Risks

Your responses to the survey and interview will be used to understand the distribution of education, employment, professional development, work satisfaction and demographic features of Emergency Managers themselves and in comparison with corresponding community-wide features derived from the Australian Bureau of Statistics. The findings are aimed at informing the education and development of Emergency Managers in the future. The findings will also be used to identify specific areas of concerns among Emergency Managers.

Your responses should help the community of Emergency Managers. However, we cannot and do not guarantee or promise that you will receive any benefits from this study.

There are no foreseeable risks associated with participating in this study. You may decline to answer any or all questions at any time. You are free to withdraw at any time. Your participation is entirely voluntary and unpaid.

Confidentiality and Disclosure of Information

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or except as required by law. If you give us your permission by signing this document, we plan to incorporate the findings in an honours thesis that will be available to the participants on request. In the thesis or any subsequent publication, information will be provided in such a way that you cannot be identified.

Your consent

Your decision whether or not to participate will not prejudice your future relations with The University of New South Wales. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice.

Inquiries

If you have any questions or concerns following your participation, Mr. Matthew Ellis, (m) 0408 627 551, email: m.ellis@student.unsw.edu.au or Associate Professor Dale Dominey-Howes, tel 02 93854830, email: Dale.dh@unsw.edu.au will be happy to address them.

Complaints may be directed to the Ethics Secretariat, The University of New South Wales, SYDNEY 2052 AUSTRALIA (phone 9385 4234, fax 9385 6648, email ethics.sec@unsw.edu.au).

Please keep this information sheet and one copy of the Participant Consent Form. The investigator will keep the other signed copy. Both copies should be signed by you and the investigator.

Appendix D

Participant Consent Form (Template)

THE UNIVERSITY OF NEW SOUTH WALES

Approval No.: 1583

PARTICIPANT CONSENT FORM

Emergency Management in New South Wales

You are making a decision whether or not to participate. Your signature indicates that, having read the information provided on the participant information sheet, you have decided to participate.

.....
Signature of Research Participant

.....
(Please PRINT name)

.....
Date

.....
Signature(s) of Investigator(s)

.....
Please PRINT Name

REVOCAATION OF CONSENT

Emergency Management in New South Wales

I hereby **WITHDRAW** my consent to participate in the research proposal described above and direct that any data collected from me be destroyed.

I understand that such withdrawal **WILL NOT** jeopardise any treatment or my relationship with The University of New South Wales, (*other participating organisation[s] or other professional[s]*).

.....
Signature

Date

.....
Please PRINT Name

The section for Revocation of Consent should be forwarded to Mr. Matthew Ellis, PO BOX 2184, Bondi Junction NSW 1355.

Appendix E

Project Proposal

Honours Research Proposal

Title

Emergency Management in NSW – An Analysis of Competence, Obstacles and Opportunities

Proposal Summary

The aim of this study is to examine existing government-appointed Local and District Emergency Management Officers (LEMOs and DEMOs) within New South Wales, to explore their knowledge, experience and professional training. As a new research field, this study will allow for the generation of data using quantitative and qualitative methodologies. This will contribute to improved emergency management in NSW, as well as paved the way for future research. Outcomes are expected to include increased knowledge of current emergency managers employed by government, reduced financial losses, improvements in the professional development of emergency managers and increased community resilience associated with future emergencies.

Aim and Background

Background

Disasters, both human-made and natural, have the ability to decimate communities in a number of minutes, leaving little in their aftermath (Pickrell, 2011). This has become increasingly apparent in recent years with 24-hour news media cycles providing greater access to detailed reporting of events to the general community. These events raise an important question: Who is responsible for assisting communities to develop processes and techniques to manage these events? Under NSW state legislation, local governments are required to have an emergency management committee and appoint an emergency management officer to assist in the prevention of, preparation for, response to and recovery from emergencies (New South Wales State Government, 1989b).

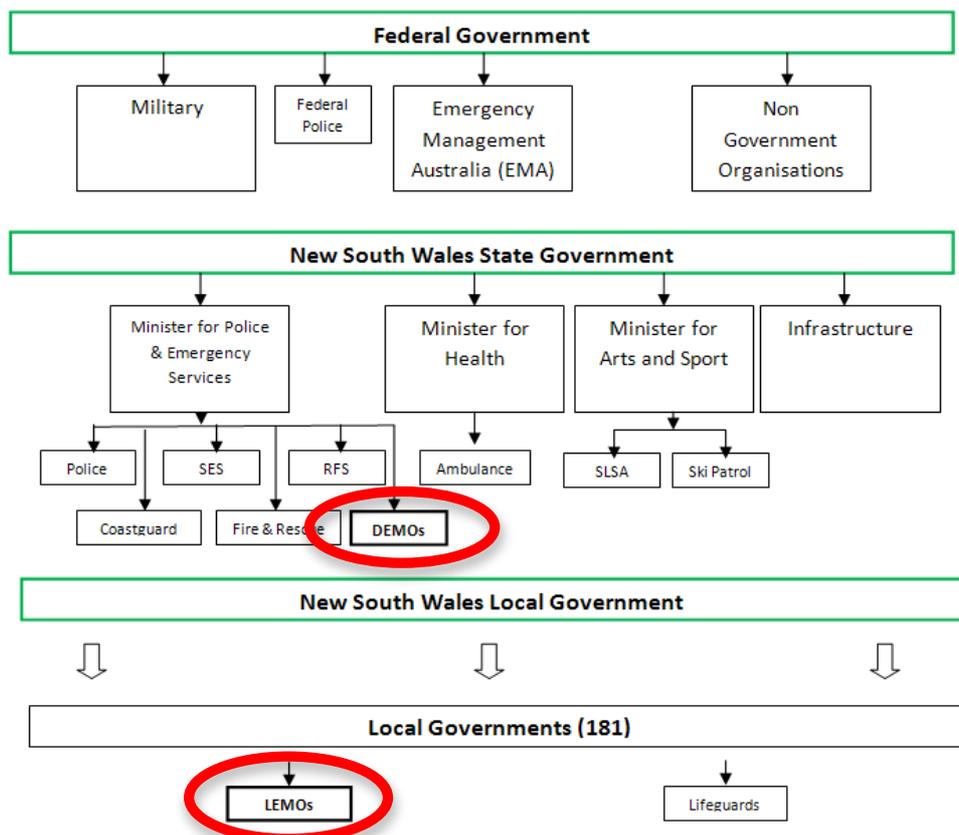
Emergency management is a relatively new industry that was introduced in the mid-1950s under the guise of Civil Defence; it focuses on providing solutions for the various phases of an emergency (Britton, 1999). The Australian emergency management community recognises the complexity of large scale hazards and over the past two decades has made significant changes in the way its processes are conducted. Initially, emergency management was under the direct supervision of the military. In late 2001, the transition was made to civilian ownership, and Emergency Management Australia (EMA) was handed over to the Commonwealth Attorney Generals' Office (Attorney-General's Department, 2008).

Approaches to Emergency Management in Australia

In addition to the changes in general management, the industry has adopted several key approaches to the management of emergencies within the community. These key areas include, the All Agencies, All Hazards and the Comprehensive approach to emergency management (New South Wales State Emergency Management Committee, 2009b). The All Agencies approach recognises the need for various community organisations to work together to resolve the complex issues posed by disasters. The All Hazards approach recognises that although hazards may be different in how they operate, they majority of measures put in place to manage these events are similar, therefore, a balance must be made between their similarities and their differences (Federal Emergency Management Agency - FEMA, 2007). Finally, the Comprehensive approach recognises the four elements of prevention, preparation, response and recovery from emergencies (New South Wales State Emergency Management Committee, 2009b).

Emergency Management in Australia corresponds to the three levels of government as depicted in figure 1 in green. At the federal level of government, emergency management is supported through Emergency Management Australia (EMA), an advisory body or coordinator under the Department of Attorney General and Justice (Australian Government, 2008). There are no commonwealth legislative agreements for the management of emergencies, and responsibility falls to the individual states to manage disasters (Attorney-General's Department, 2000). Due to a lack of specific legislation targeting emergency management at this level, responsibility defaults to the individual states and territories (Australian Government, 2008).

Figure 1. Emergency Management



Organisation of Emergency Management in New South Wales

In NSW, the State Emergency Rescue Management Act 1989 (SERM Act) is the key piece of emergency management legislation. It provides an outline of key organisations, their roles and their responsibilities (New South Wales State Government, 1989b). The SERM Act is further supported by individual legislation targeting emergency service organisations and other comprehensive documents targeting specific hazards (State Emergency Management Committee, 2010). In NSW, overall responsibility of emergency management is delegated to the Ministry for Police and Emergency Services (Ministry) a division of the Department of Attorney General and Justice and falls under the Minister for Police and Emergency Services (New South Wales State Government, 2011).

The Ministry for Police and Emergency Services is supported through several agencies internal to the 'Ministry'. These agencies include the State Emergency Management Committee (SEMC), State Rescue Board (SRB), State Emergency Operations Centre (SEOC) and the various emergency management districts (New South Wales State Emergency Management Committee, 2009b). This 'Ministry' is supported by the Minister for Police and Emergency Services and is responsible for the collection of the fire levy and acts as an intermediary between various groups in emergency management and local government (Australian Government, 2008).

Emergency Management Personnel – LEMOs and DEMOs

Emergency management, in-line with the 'Comprehensive' approach consists of several key elements including prevention, preparedness, response and recovery. In NSW, over 180,000 personnel⁶ fall within the emergency management industry. However, as the majority of personnel fall within the response element, they are not considered emergency managers. An emergency manager can be defined as any person with responsibility for making decisions in the commonly accepted 'All Agencies', 'All Hazards' and the 'Comprehensive' approaches to emergency management (New South Wales State Emergency Management Committee, 2009b).

In recent years, emergency management has evolved to include various officers and managers in government, critical infrastructure, businesses, emergency services controllers, commanders, coordinators and local government officers with legislative responsibility to the local community (Attorney-General's Department, 2000; Britton, 1999; Smith, 2008; Stehr, 2007). Many of these officers hold a great deal of responsibility. However, their experience or level of formal education in emergency management is currently unknown and their effectiveness is still to be measured (Smith, 2008). Emergency management officers with roles in NSW government consist of District Emergency Management Officers (DEMOs) and Local Emergency Management Officers (LEMOs) (New South Wales State Government, 1989b) (see Figure 1).

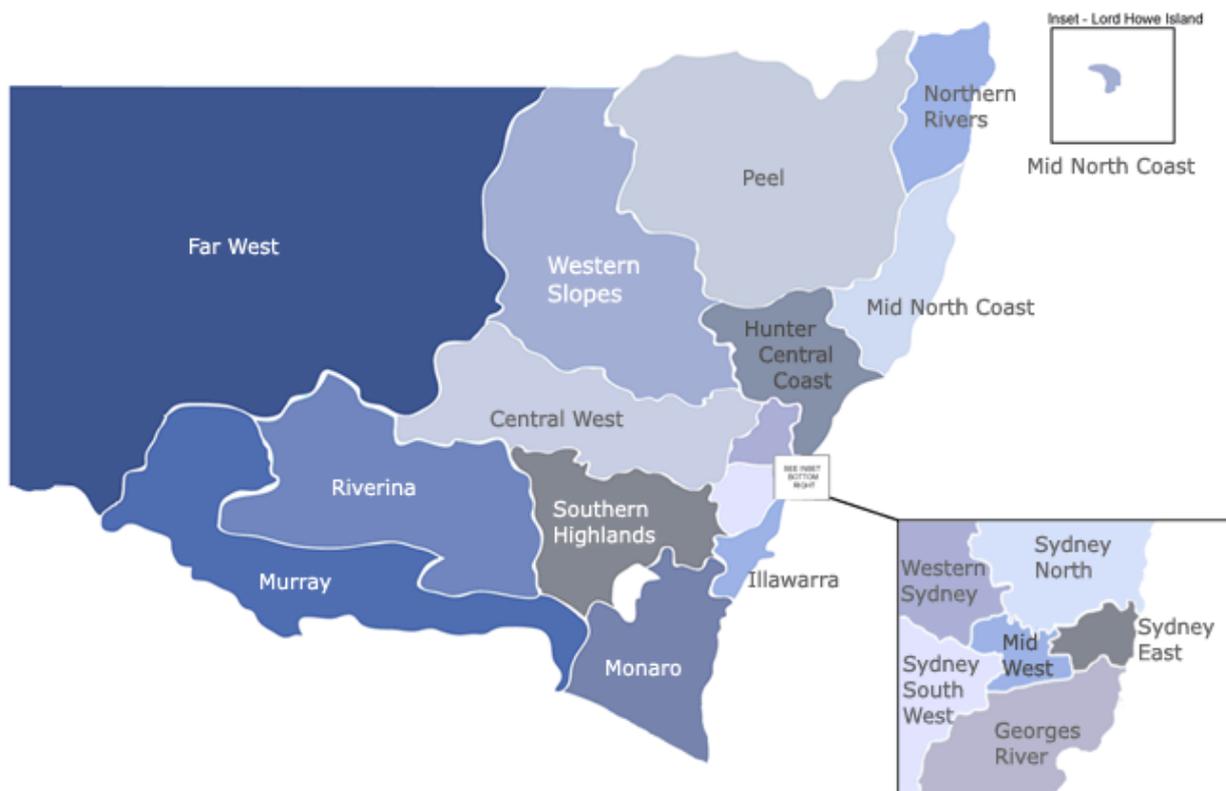
The responsibilities of LEMOs and DEMOs include the management of the various phases and elements of emergency management and fall within the role of an emergency manager (Britton, 1999). Emergency managers have a complex role that, like many disciplines and professions, requires extensive study and experience to achieve proficiency (Britton, 1999). Even though the roles and responsibilities of an emergency manager are generally understood

⁶ This is a list of Emergency Services within NSW and the number of personnel within their respective agency as outlined within official sources, such as annual reports or websites.

within the industry, they are not formally defined in legislation. This allows flexibility with regards to what qualifications or experience meet the requirements of the position (New South Wales State Government, 1989b).

The 'Ministry,' in coordination with the NSW Police Force, manages the DEMOs which provide emergency management support during emergency and non-emergency events (NSW Police Force, 2011a). In providing support to the NSW Police Force, the DEMOs also liaise with local emergency services, local governments and other emergency managers. In addition, DEMOs assist in implementing emergency management policies and procedures and in providing strategic and tactical direction to stakeholders through 18 Emergency Management Districts across NSW as depicted in Figure 2. District Areas (NSW Police Force, 2011a).

Figure 2. Map - District Areas in NSW (2009b)



DEMOs in NSW regularly liaise and provide support to various organisations involved in emergency management, including local government through the District Emergency Management Committee (DEMC), the Local Emergency Management Committee (LEMC) and the LEMOs. The LEMO is a senior council staff member with the primary responsibility of supporting the LEMC and local government in the emergency management process (New South Wales State Government, 1989b). There are currently 181 local government areas within NSW, each area either has a LEMO or shares one with another local government area. These 181 local government areas can be seen in Figure 2.

Issues in the management of emergencies continue to arise as the Queensland Floods Commission Inquiry investigates the recent widespread flooding that left 35 people dead and large portions of Queensland under water (Emergency Management Australia, 2011a). Several submissions made to the Flood Inquiry in Queensland stated that local councils did not make flood maps available to residents, advise them of potential risks or warn them to evacuate early enough (Madigan, 2011; Thompson, 2011). In one area, residents started to build their own levees as faith in the government to provide appropriate planning strategies was limited (Bita, 2011b). Furthermore, several senior emergency service personnel had difficulties communicating with other agencies when telephone numbers supplied by the combat authority failed to work. It also emerged that neither they nor the combat authority had received appropriate training or were equipped to manage the emergency (MacDonald, 2011). Further, investigations into the Queensland floods revealed a 'secret' report that was commissioned by Emergency Management Australia in 2005 to determine the capacity of the nation to handle large scale events. This report found "severe limitations in the capacity to cope with a natural or technological disaster" which highlights the need for improvements across emergency management and the development of improved processes (J. Walker, and Bitá, N., 2011).

Cyclone Yasi devastated parts of Queensland including Cairns and forced the evacuation of its hospital. Following this, the government has allocated an additional \$4.46 billion in order to redevelop the site. Furthermore, the Planning Institute of Australia, Queensland Division, stated that many people knew that the areas hardest hit were in flood prone areas and questions why this practice has been allowed even though the risk of flooding has been known for decades (J. Walker, and Bitá, N., 2011). Additional examples of inadequate emergency management planning can be seen across Australia with communities building on the urban fringe without proper consideration of the hazards (Bita, 2011b).

The EMA Disaster Database and the Bureau of Meteorology website provide information on disasters from 1622AD across the globe and allows the user to manipulate the data to hone in on types of disasters and their locations (Bureau of Meteorology, 2011a; Emergency Management Australia, 2011a). This highlights significant problems with emergency management in Australia as access to disaster databases is readily available and capable of providing emergency managers with appropriate information to formulate appropriate plans and responses.

Literature Review

The past two decades have revealed an increase in the number of courses and qualifications offered in emergency management. It is feasible that with an increase in the number of universities offering tertiary qualifications, academic articles and studies on emergency management have also increased. However, anecdotal evidence suggests that the majority of articles are based upon case studies and focus on first-hand accounts of events. Exceptions in this include Britton (1999), who recognised emergency management as a growth industry and conducted studies into the requirements of future emergency managers. In this study, Britton identified six key areas or 'positive developments' in emergency management as seen in Table 1.

Table 1: Britton's 6 key areas in emergency management

1. The application of a more comprehensive emergency management framework as opposed to a limited role in preparedness and response;
 2. An understanding that knowledge based programs, skills and experience are equally important as opposed to just the skills based programs that have dominated the industry in the past;
 3. The recognition that research and practice are integrative tools that are linked and form an important part of emergency management becoming a profession;
 4. An increase in risk management processes that has improved the legitimacy of the industry;
 5. Improved understanding and application of other disciplines that have a direct influence on emergency management; and
 6. An improved understanding that emergency management is a multi-disciplinary area of study.
-

Emergency managers need to incorporate various aspects of study that include general management and organization studies, public policy and administration, hazard profiling, assessment and analysis, community profiling, land-use planning and management, risk assessment and risk management, emergency response and emergency operations centre management, disaster psychology and stress management, project management and disaster impact field investigations techniques and research methods (Britton, 1999). These areas reveal the complexities of emergency management and reinforce the need for practitioners to have extensive studies and experience in order to meet the requirements of the position and the community.

A leading emergency management expert in the United States, under the Federal Emergency Management Agency (FEMA) conducted a study as part of a series of conferences across the United States. This study investigated the required skill sets that existing emergency managers in the United States believed were necessary to function effectively in the role (Blanchard, 2005). Table 2 reveals the results of this study are emergency managers who have;

Table 2: Top 10 competencies of emergency managers

1. The ability to adopt a Comprehensive Emergency Management framework or philosophy;
2. Good leadership;
3. Good management;
4. The ability to network and coordinate with a broad range of organizations;
5. The ability to integrate emergency management into all aspects of the business;
6. The ability to understand and utilise the various key emergency management functions;
7. The ability to work within political, bureaucratic, and social contexts;
8. A thorough understanding of technical systems and tools;
9. An understanding of the social vulnerability reduction approach; and
10. Experience within an emergency management role.

Elsworth and Anthony-Harvey-Beavis (2007), in association with the Australian Local Government Association and RMIT University in Melbourne, conducted a study that examined the preparedness levels of local governments across Australia. This study targeted the local government personnel with responsibility in emergency management and examined seven key areas, including;

Table 3: Local government emergency preparedness seven key areas

1. General information about the councils;
2. Hazard awareness and risk perception;
3. Knowledge and skills available in council;
4. Councils' preparedness, and response and recovery capability;
5. Funding and resource allocation;
6. Information management; and
7. Information about the respondent.

Although these studies examined emergency management across a broad range of areas, the focus was more on issues surrounding the emergency manager rather than the role itself. According to an official report published by The Bureau of Transport Economics (2001), the cost of natural disasters to the Australian community was in excess of \$37.8 billion between 1967 and 1999⁷ (Emergency Management Australia, 2006a). The states impacted the greatest by disaster were NSW and Queensland, accounting for 66 percent of the total disaster costs and over 50 percent of the total number of disasters (The Bureau of Transport Economics, 2001). In addition, natural disasters have cost the lives of over 565 people and injured 7 296 (The Bureau of Transport Economics, 2001).

⁷ In 1999 values

Literature Gaps

Although emergency management is a young industry seeking to establish itself as a profession, current practices and services are severely limited and have led to some significant gaps (Britton, 1999; Stehr, 2007). Failure to properly understand and manage this industry can have significant repercussions for the community, as illustrated in the Victorian bushfires where 173 people died and cost the community approximately \$4 billion (2009). Furthermore, the Sydney severe storm and hail event (1999) cost in excess of \$2.3 billion and the 2011 Queensland floods, with costs still to be finalised (Emergency Management Australia, 2006a). If individuals within the industry want to improve services and move towards a professional status, it is necessary to identify the existing gaps in knowledge and education and move towards correcting them (Britton, 1999; Stehr, 2007).

Literature gaps in emergency management include legislation, academia and transparency within government bodies (Attorney-General's Department, 2000; Britton, 1999; Royal Commission on 2009 Victorian Bushfires, 2009). Significant gaps in the industry are expected due to the current financial crisis and competing demands on funding and resources (Britton, 1999). These gaps highlight the complexity of emergency management and the need to employ dedicated individuals with specific knowledge and education available to manage and coordinate the various elements. In the future, it is important that stakeholders take a more accountable and proactive approach to emergency management arrangements and processes if the community is to reduce the impact of hazards.

Approach and Methodology

Conceptual Framework

This project utilises standard human geography research techniques and applies these to a new field of research. The proposed research seeks to combine the human component of emergency management with physical sciences methodologies to better understand emergency managers within NSW.

Design

Study Design. This project is a survey-based exploratory study into the qualifications, backgrounds, experience, confidence and competence of emergency managers within NSW government. The emergency manager survey was developed by Matthew Ellis with the assistance of Associate Professor Dale Dominey-Howes and Dr Wendy Shaw. The questionnaire survey instrument (QSI) will utilise quantitative and qualitative questions designed to elicit information on the status of emergency managers in NSW government.

Method

Participants

This study will comprise approximately 181 LEMOs and 18 DEMOs from throughout NSW local and state government. An exact number is not available as local governments 'share' LEMOs across political boundaries (Figure 2. Council Areas in NSW). In addition, some council areas may have secondary LEMOs or different personnel acting as Chairpersons of there LEMC.

Participants are expected to vary in age, gender, socio-economic status and education. Participants will be included if they are employed in the capacity of an emergency manager in local or state government but do not possess the title of LEMO or DEMO. For example, a participant acting as a LEMO or DEMO in a temporary, transitional capacity, or fulfilling the specific job description of these roles without formal employment under that title, will be included.

Procedure

Recruitment. Participants will be identified through telephone and/or email contact through local government and the Ministry for Police and Emergency Services. Individual participants will be identified through these organisations. Each individual will then be approached via telephone/email and will be offered the opportunity to participate in the study.

Ethics. This research will be conducted with clearance from the University of New South Wales Human Research Ethics Panel/Committee. All data will be secured appropriately.

Confidentiality. Participants will be informed of the purpose of the project and will be asked to provide their written consent to responses being used for research purposes. Once the data has been analysed and interpreted, it will then be compiled as part of an honours thesis and made available to those who have indicated they would like to be provided with a copy of the results. All responses will be de-identified if disclosure is required.

Survey Design. This research will utilise survey investigation techniques to produce primary data which can then be compared to secondary data supplied through the Australian Bureau of Statistics (ABS). Two questionnaire survey instruments (QSI) will be used as the main form of data collection. One will target DEMOs and the second will target LEMOs in order to recognise the different levels of skills, experience and backgrounds of respondents.

The survey will target seven key areas of emergency managers including personal, household, education, employment, professional development and work satisfaction. Questions will be developed based upon generic demographics and key studies. They will be chosen to provide a comprehensive view on emergency managers, while enabling a comparison to be made against ABS and general demographic information.

The QSI will utilise several qualitative research scales such as Binary and the Likert and Guttman Scales to measure responses. These have been chosen due to ease of use and speed of completion and analysis. In addition, there are several options involving open-ended questions and fill-in-the-blank responses, to enable the respondents to expand their answers and maintain flexibility in the overall process. These questions will yield qualitative and quantitative data which will be subject to analysis.

Data Collection. A pilot study will be conducted through a single LEMO to ensure reliability and practicality of the questions and improve the design. A single LEMO will be chosen with consideration given to the limited population size. The questionnaire will then be refined and made available to the main population through email, with the LEMO involved in the pilot to be excluded from the main survey.

This phase will utilise interview techniques to enable the expansion of the QSI while allowing flexibility and access to unforeseen areas of exploration, in addition to comparative analysis of various demographic groups.

Participants who complete the first QSI will be asked to volunteer for this section. These questions will utilise pre-selected areas of interest, (i.e., rural vs. urban, high-hazard area vs. low-hazard areas, individual local government area vs. multiple government areas). The questionnaire will be made available to the respondents via hardcopy through email or other online source.

Analysis. Data will be analysed using the Statistical Package for the Social Sciences (SPSS; Nie & Hull, 2006). As the specific response sizes are unknown, the exact analyses to be used are yet to be determined.

Reliability. To increase reliability and validate internal consistency a preselected question will be repeated in the questionnaire and compared for reliability when evaluated, it will be analysed for test-retest reliability (Graziano & Raulin, 2004a). Variations in response to this test question will be evaluated to determine whether the particular questionnaire should be excluded from the study for matters of confounding data.

Analysis and Interpretation. The data will be analysed and interpreted based upon the type of data collected, this ranges from quantitative responses with significance set at $p = < 0.05$; responses will be counted and analysed for trends and correlations. Qualitative data will be analysed to establish themes and anomalies – such as gaps in training.

Submission. Once the data has been analysed and interpreted, it will be compiled as part of an honours thesis and made available to those who have indicated they would like a copy of the results. Access to this thesis will be through the Faculty of Science, School of Biological, Earth and Environmental Sciences, Thesis library. In addition, efforts will be made to submit the manuscript to a relevant peer reviewed academic/professional journal such as the Australian Journal of Emergency Management (AJEM) (or similar). AJEM, is published by Emergency Management Australia and is available online, free of charge.

Significance and Innovation

Disasters have a significant impact on the Australia community with economic losses from disasters at \$37.8 billion between the years, 1967-1999 (The Bureau of Transport Economics, 2001). Although there are numerous studies examining natural hazards from the perspectives of geologists, climatologists, social scientists and tsunami scientists and the like, there has been little work conducted into the practical application of this knowledge within the community context. Identifying areas of improvement will assist in strengthening the local government response to emergencies.

Research Significance

This study is significant as understanding this information means that recommendations can be made that will ensure future improvements in professional practice that will lead to reduced socio-economic losses in future disasters.

Application of Research

There is currently no consensus of the professional competencies of emergency management staff within NSW even though these emergency managers are at the forefront of emergency management within the community. Understanding who these people are is an integral part in managing emergencies within the local community. The skills these individuals employ in addition to the sum of their backgrounds, education and experience and understanding of emergency management is imperative in developing appropriate techniques to effectively managing hazardous events.

Advancement of Knowledge

It is anticipated that the outcomes from this study will serve to advance the emergency management industry and the community through increasing the knowledge and understanding of the roles existing emergency managers. This is an important review due to the requirements of NSW State Emergency Rescue Management Act 1989 which requires each local government to either have an emergency management officer or share one with another local government. This study will enable the community and government to compare the realities of this legislation to the actual results and enabling further studies and improvements.

Innovative Aims and Concepts

There is currently no research that profiles emergency managers. Existing research tends to focus on the preparedness of communities and the various perspectives or case studies on events; however, none examine the existing emergency managers in office. It is important that the general public is aware of whom they are being served by and how the monies allocated to the education of emergency managers is being utilised. Understanding those designated to combating hazards is important in ensuring that the best responses and management are undertaken.

New methodologies and Technologies

This research will utilise the application of standard human geography research techniques to a new field of research. This will pilot their application of this particular type of research to the emergency management industry and encourage growth.

Expected outcomes and national benefit

Expected outcomes

This study is expected to increase awareness of emergency managers in NSW and will be completed through four key areas that include the development of new evidence based practices to improve the professional development of emergency managers.

First, it will provide an increased understanding of qualifications and experience in emergency management that will allow for improvements in training and education and improve their handling of emergencies.

Second, it will allow for a better understanding of how these individuals see their roles and allow for further investigations into their general backgrounds, thoughts on the role as well as their confidence and competence in emergency management.

Third, these insights will allow for a more directed approach and practical methodology of training and development of personnel.

Finally, it will provide increased transparency into the role of emergency manager it will enable better insight into the suitability of personnel holding these positions and the identification of areas of improvement.

Economic Benefits

Natural disasters within Australia in the years between 1967 and 1999 have cost the Australian community in excess of \$36.8 billion (BTE, 1999). This study will allow for improvements in emergency management that will assist in reducing financial loss due to better preparedness measures.

Environmental Benefits

As an industry that relies heavily on multi-disciplinary interaction, this study will allow for improved management of emergency events through better planning processes and land management techniques leading to a reduction in damages to the environment.

Social Benefits

Emergency managers are responsible for reducing damage to communities through the identification of risk to the community. This study will enable the community to understand identify the strengths and weaknesses of emergency managers and allow for the potential improvement of emergency management in communities.

National and Community Benefits

The ability to qualitatively analyse emergency management process across Australia is currently not viable due to the lack of studies in emergency management and emergency managers. This study will provide the means to critically evaluate emergency managers within Australia, thereby, increasing community resilience to disasters and reducing socio-economic losses during future events.

Logistics and Personnel

Table 1: Timeframe of work

	Apr	May	Jun	Jul	Aug	Sep	Oct
Research Proposal	■	■	■	■			
Ethics Approval		■	■	■			
Notify 'Ministry'			■				
Questionnaire Design			■	■	■		
Pilot survey			■	■	■		
Identify secondary subject group			■	■	■		
Submit Questionnaire				■	■	■	■
Analyse Data					■	■	■
Thesis writing						■	■
Printing							■
Thesis Submission							■

Roles, Responsibility and Contributions of all of the Investigators Working on the Project

This proposal is part of the Bachelor of Science, Geography (Honours) program through the University of New South Wales, Faculty of Science, School of Biological, Earth and Environmental Sciences.

Title	Title	Title
Primary Researcher	Student	Matthew Ellis
Supervisor	Associate Professor	Dale Dominey-Howes
Supervisor	Dr	Wendy Shaw

Summarise the roles and levels of involvement of other participants, such as technical staff.

Matthew Ellis has primary responsibility for conducting all research, completion of the Honours thesis and the final project. This also includes liaising with supervisors, developing project, obtaining Ethics approval, design of project, reports, grant proposal, consulting with supervisor about issues, advice and interpersonal issues, and develop, maintain and secure data and finally to develop and meeting deadlines.

Associated Professor Dale Dominey-Howes is responsible for liaising with the student, monitoring progress, providing ongoing support and guidance throughout the thesis. In addition, he will provide advice and assist with the Ethics application, data collection, and analysis, ensure student has necessary training and provide advice on matters related to the thesis. In addition, he will also provide suitable feedback on progress and status of project and writing up thesis.

Dr Wendy Shaw is a co-supervisor, providing support on the design, collection and analysis of the survey questionnaire instrument, providing feedback on progress of survey and writing up thesis.

References

ABS See: Australian Bureau of Statistics.

AGD See: Attorney-General's Department.

Alexander, L., Hope, P., Collins, D., Trewin, B., Lynch, A., & Nicholls, N. (2007). Trends in Australia's climate means and extremes: a global context. *Australian Meteorological Magazine*, 56, 1-18.

Ambulance Service of New South Wales. (2008). Annual Report Ambulance Service of NSW 2007/08. *Annual Report*, 2010, from www.ambulance.nsw.gov.au/publications

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6 ed.). Washington: DC: American Psychological Association.

Attorney-General's Department. (2000). *Commonwealth Emergency Management Arrangements*. Canberra, Australia.

Attorney-General's Department. (2008). Emergency Management in Australia. Retrieved 25 March, 2011, from http://www.ema.gov.au/emaweb.nsf/Page/Emergency_Management

Australian Bureau of Statistics. (2004). 4102.1 - Australian social trends. Retrieved 02 October, 2011, from <http://www.abs.gov.au/ausstats/abs@.nsf/1020492cfc63696ca2568a1002477b5/fa58e975c470b73cca256e9e00296645!OpenDocument>

Australian Government, A.-G. s. D. (2008, 21 May 2009). Emergency Management in Australia Retrieved 25 March, 2011, from http://www.ema.gov.au/emaweb.nsf/Page/Emergency_Management

Babbie, E. (2004). Survey research. In E. Howard (Ed.), *The Practice of Social Research*. (10 ed., pp. 243-280). California, USA: Thomson Wordsworth.

Baxter, J. (2010). Chapter 5 - Case studies in qualitative research. In I. Hay (Ed.), *Qualitative Research Methods in Human Geography*. (3 ed.). South Melbourne: Victoria: Oxford University Press.

Beaton, G. (2010). Why professionalism is still relevant. Retrieved 20 August 2011, from http://www.professions.com.au/Files/Professionalis_Beaton.pdf

- Bird, D., & Dominey-Howes, D. (2008). Testing the use of a 'questionnaire survey instrument' to investigate public perceptions of tsunami hazard and risk in Sydney, Australia. *Natural Hazards*, 45. doi: 10.1007/s11069-007-9172-8
- Bitá, N. (2011, February 12, 2011). Elemental struggle, *The Australian*. Retrieved from <http://www.theaustralian.com.au/news/features/elemental-struggle/story-e6frg6z6-1226004256001>
- Blanchard, B. W. (2005). *Top ten competencies for professional emergency management*. Emergency Management Institute, National Emergency Training Center, Federal Emergency Management Agency, Department of Homeland Security. Emmitsburg, Maryland, USA. Retrieved from http://scholar.google.com.au/scholar?start=680&q=%22emergency+managers%22&hl=en&as_sdt=1,5
- Blanchard, B. W. (2007). *Principles of emergency management*. Emergency Management Higher Education Program. Federal Emergency Management Agency. Retrieved from <http://training.fema.gov/EMIWeb/edu/emprinciples>
- Bouwer, L., Crompton, R., Faust, E., Hoppe, P., & Pielke Jr., R. (2007). Confronting disaster losses. *Science*, 318(6), 753. doi: 10.1126/science.1149628
- Britton, N. R. (1999). Whither the emergency manager? *International Journal of Mass Emergencies and Disasters*, 17(2), 223-235.
- Brown, N., Hinton Fletcher, B., & Jeans, D. N. (2011). New South Wales. Retrieved 26 July, 2011, from <http://www.britannica.com/EBchecked/topic/412057/New-South-Wales>
- Bureau of Meteorology. (2011a). Severe Thunderstorms Retrieved May 5, 2011, from <http://www.bom.gov.au/info/thunder/#storms>
- Bureau of Meteorology. (2011b). Severe thunderstorms. Retrieved May 5, 2011, from <http://www.bom.gov.au/info/thunder/#storms>
- Bureau of Transport Economics. (2001). Economic costs of Natural Disasters in Australia. Report 103. (The Bureau of Transport Economics, Trans.) (Vol. 103). Canberra: The Bureau of Transport Economics,.
- Centre for Research on the Epidemiology of Disasters. (2011). The OFDA/CRED International Disaster Database - EM-DAT. Brussels, Belgium.
- Col, J. (2007). Managing disasters: The role of local government. *Public Administration Review*, 114-124.
- Commonwealth of Australia. (1998). Australian Constitution. Canberra: ACT.
- Commonwealth of Australia. (2007). *Guidelines for emergency management in culturally and linguistically diverse communities - manual number 44*. Canberra: ACT: Emergency Management Australia.

CRED See: Centre for Research on the Epidemiology of Disasters.

Crews, D. T. (2001). The case for emergency management as a profession. *Australian Journal of Emergency Management*, 16(2), 2-3.

Cwiak, C. (2009). *Strategies for success: The role of power and dependence in the emergency management professionalization process*. Doctor of Philosophy, North Dakota State University, Fargo: ND. Retrieved from <http://ndsu.edu/emgt/graduate/alumni> (10-29-009)

Division of Local Government. (2011, 9 April 2009). Council contact details. Retrieved 15 January, 2011, from http://www.dlg.nsw.gov.au/dlg/dlghome/dlg_CouncilContactDetails.asp?slacode=8710

Eburn, M. E. (2009). *Australia's international disaster response – laws, rules and principles*. Doctor of Philosophy, Monash University Retrieved from http://arrow.monash.edu.au/vital/access/%20/services/Download/monash:14147/THE_SIS01.

Elsworth, G., and, & Anthony-Harvey-Beavis, K. (2007). The National Local Government Emergency Management Survey - Final Report, (C. a. L. i. E. The Collaboration for Interdisciplinary Research, Trans.). In RMIT University Circle (Ed.), (pp. 54). Melbourne, Victoria, Australia: RMIT University.

Emergency Management Australia. (2004). *Emergency Management in Australia - Concepts and Principles - Manual 1*. Canberra: ACT: Commonwealth of Australia.

Emergency Management Australia. (2006). *Hazards, Disasters and your community* (7 ed.). Canberra ACT: Emergency Management Australia.

Emergency Management Australia. (2007). Principles of emergency management. In Emergency Management Australia (Ed.). Melbourne, Australia.

Emergency Management Australia. (2011). Disaster Database. Retrieved 21 March 2011 <http://www.ema.gov.au/disasters>

Frederickson, J., & Rooney, J. (1990). How the music occupation failed to become a profession. *International Review of the Aesthetics and Sociology of Music*, 21(2).

Graziano, A., & Raulin, M. (2004). *Research Methods: A process of inquiry* (5 ed.). Boston, MA, USA: Pearson Education Group.

Houghton, J. (2009). *Global warming: the complete briefing* (4 ed.). New York: Cambridge University Press.

Intergovernmental Panel on Climate Change. (2007). Climate change 2007: Impacts, adaption and vulnerability. Working Group II contribution to the Intergovernmental Panel on Climate Change, Fourth assessment report.

IPCC See: Intergovernmental Panel on Climate Change.

Johnson. (2008). Emergency management - definition, vision, mission, principles. Retrieved 22 May, 2011, from <http://www.training.fema.gov/EMIWeb/edu/emprinciples.asp>

Landau, S. (Ed.). (1999). *Websters compact dictionary*. (1999 ed.): Trident Press International.

MacDonald, A. (2011). Take no risks, fires told, *The Courier-mail*. Retrieved from <http://www.couriermail.com.au/ipad/take-no-risks-fires-told/story-fn6ck45n-1226045668153>

Macquarie Dictionary Online. (2011). Competent. Retrieved October 10, 2011, from <http://www.macquariedictionary.com.au>

Madigan, M. (2011, February 19, 2011). Call for a five-level warning system, *The courier-mail*. Retrieved from <http://www.couriermail.com.au/ipad/call-for-a-five-level-warning-system/story-fn6ck51p-1226008243189>

Manock, I. D. (2001). Tertiary emergency management education in Australia. *Australian Journal of Emergency Management*, 16(2), 4-7.

McGuirk, P. M., & O'Neill, P. (2010). Using questionnaires in qualitative human geography. In I. Hay (Ed.), *Qualitative research methods in human geography*. (3 ed., pp. 432). Ontario, Canada: Oxford University Press.

McLennan, J. (2008). Issues facing Australian volunteer-based emergency services organisations: 2008 - 2010 Retrieved 10 October, 2011, from [http://www.ema.gov.au/www/emaweb/rwpattach.nsf/VAP/\(9A5D88DBA63D32A661E6369859739356\)~Literature+Review+-+EM+Volunteers+-+FINAL+REPORT.PDF/\\$file/Literature+Review+-+EM+Volunteers+-+FINAL+REPORT.PDF](http://www.ema.gov.au/www/emaweb/rwpattach.nsf/VAP/(9A5D88DBA63D32A661E6369859739356)~Literature+Review+-+EM+Volunteers+-+FINAL+REPORT.PDF/$file/Literature+Review+-+EM+Volunteers+-+FINAL+REPORT.PDF)

Middelmann, M. H. (2007). *Natural hazards in Australia: identifying risk analysis requirements*. Canberra: Geoscience Australia.

New South Wales Fire Brigade. (2009). About us. Retrieved November 23, 2009, from <http://www.nswfb.nsw.gov.au/page.php?id=45>

New South Wales Rural Fire Service. (2009). About us. Retrieved November 23, 2009, from http://www.rfs.nsw.gov.au/dsp_content.cfm?cat_id=1003

New South Wales State Emergency Management Committee. (2009a). Annual report 2008-2009. 123.

New South Wales State Emergency Management Committee. (2009b). Annual Report 2008-2009 (N. S. W. S. E. M. Committee, Trans.) (pp. 123). Sydney, NSW: New South Wales State Emergency Management Committee.,.

- New South Wales State Emergency Service. (2009). Homepage Retrieved November 23, 2009, from <http://www.ses.nsw.gov.au/>
- New South Wales State Government. (1989a). State Emergency and Rescue Management Act 1989. (165).
- New South Wales State Government. (2011). *Public Sector Employment and Management (Departments) Order 2011*. Sydney: Australia: New South Wales Government Retrieved from <http://www.legislation.nsw.gov.au/temp/si/2011-184.pdf>.
- New South Wales Government. (2011). The Ministry for Police and Emergency Services - About us. Retrieved 10 October, 2011, from <http://www.emergency.nsw.gov.au/aboutus>
- New South Wales Police Force. (2008). NSW Police Force Annual Report 2007-08 (Public Affairs Branch and the Office of the Commissioner, Trans.) (pp. 180). 1 Charles Street, Parramatta, NSW 2150, Australia: NSW Police Force.
- New South Wales Police Force. (2011, 25 January 2011). Emergency Management Retrieved 25 March, 2011, from http://www.police.nsw.gov.au/community_issues/emergency_management
- Nie, N. H., & Hull, C. H. (2006). SPSS 15.0: Command syntax reference. Chicago, Illinois: SPSS Inc.
- Parliament of Victoria. (2010a). 2009 Victorian Bushfire Royal Commission - Final Report Recommendations. *Commonwealth Response*.
- Parliament of Victoria. (2010b). 2009 Victorian Bushfire Royal Commission - Interim Report. *Commonwealth Response* (pp. 277-284).
- Pickrell, J. (2011, 27 April, 2011). The worst disaster in recent history, *ABC Environment*. Retrieved from <http://www.abc.net.au/environment/article/2011/04/27/3197103.htm>
- Professions Australia. (1997). Definition of a profession. Retrieved 27 August, 2011, from <http://professions.com.au/definitionprofession.html>
- Risk Frontiers. (2009). Attributing blame in the Black Saturday wildfires: February 7, 2009. *Risk Frontiers*, 8(2).
- Royal Commission on 2009 Victorian Bushfires. (2009). 2009 Victorian Bushfire Royal Commission: Final Report: Summary. In P. o. Victoria (Ed.), (July 2010 ed., pp. 42). Melbourne: Parliament of Victoria.
- Siniscalco, M. T., & Auriat, N. (2005). Module 8 - Quantitative research methods in educational planning. In International Institute for Educational Planning/ UNESCO (Ed.), *Questionnaire design*.

- Smith, A. (2008). Identifying nationally recognised emergency management skill sets: Godsends or poisoned chalice? *Australian Journal of Emergency Management*, 23(1), 58-63.
- Smyth, T. R. (2004). *The principles of writing in Psychology*. New York: NY: Palgrave Macmillan.
- State Emergency Management Committee. (2010). *The New South Wales Disaster Plan - Displan 2010*.
- State Emergency and Rescue Management Act 1989, New South Wales State Government, (1989b).
- Stehr, S. D. (2007). The changing roles and responsibilities of the local emergency manager: An empirical study. *International Journal of Mass Emergencies and Disasters*, 25(1), 19.
- The Australian National Audit Office. (2008). *ANAO Audit Report No.27 2007-2008 - Emergency Management Australia*.
- The Bureau of Transport Economics. (2001). Economic costs of Natural Disasters in Australia. Report 103. (T. B. o. T. Economics., Trans.) (Vol. 103). Canberra: The Bureau of Transport Economics.
- The Institute for Higher Education Policy. (1998). *Reaping the benefits: defining the public and private value of going to college*. The Institute for Higher Education Policy. Washington, DC. Retrieved from www.ihep.com.
- Thompson, T. (2011, April 17, 2011). Ipswich council 'failed flood victims', *The courier-mail*. Retrieved from <http://www.couriermail.com.au/ipad/ipswich-council-failed-flood-victims/story-fn6ck45n-1226040465514>
- Walker, J., & Bitá, N. (2011). Summer of fury exposes planning failures, *The Australian*. Retrieved from <http://www.theaustralian.com.au/news/nation/summer-of-fury-exposes-planning-failures/story-e6frg6nf-1226004691620>
- WebFinance. (2011). Definition - Competence. Retrieved October 10, 2011, from <http://www.businessdictionary.com/definition/competence.html>
- Woodbury, G. L. (2005). Critical curriculum for emergency management leaders: Three essential themes. *Journal of Emergency Management*, 3(2), 72-92.
- WorldAPP. (2008). Key Survey Enterprise Solutions (Version 7.1). Braintree: MA: WorldAPP. Retrieved from <http://www.keysurvey.com/>

Appendix A – Emergency Services

New South Wales (NSW)			
Organisation	Personnel	Stations	Document
<u>Police</u>	18500	500+	(NSW Police Force, 2008)
<u>Ambulance</u>	3600	226	(Ambulance Service of New South Wales, 2008)
<u>Fire - Urban</u>	12860	338	(Fire & Rescue NSW, 2011)
<u>Fire - Rural</u>	71,400	2100	(NSW Rural Fire Service, 2011)
<u>Emergency Services</u>	10,000	228	(NSW State Emergency Service, 2011)
<u>Emergency Management</u>	18	18	(New South Wales State Emergency Management Committee, 2009)
<u>Surf Life Saving NSW</u>	67,000	129	(Surf Life Saving New South Wales, 2011)
<u>Local Governments</u>	155	151	(State Emergency Management Committee, 2004)
<u>Volunteer Rescue Assoc.</u>	3500	70	(New South Wales State Emergency Management Committee, 2009; NSW Volunteer Rescue Association, 2011)

Appendix F

Raw Data

Please see Electronic version on CD-Rom (Raw data) is too large to include in document.