



**A FRAMEWORK FOR DISASTER RISK REDUCTION FOR LOCAL GOVERNMENT:
A CASE STUDY OF ETHEKWINI MUNICIPALITY**

BY

MTHOKOZISI PIUS DUZE

215082470

Submitted in accordance with the requirements for the degree of

Master of Administration

In the

School of Management, IT and Governance

at the

University of KwaZulu-Natal, Westville

Campus

Supervisor: Prof. P.S. Reddy

2016

DECLARATION

I MTHOKOZISI PIUS DUZE, the undersigned, hereby declare that:

- i. The work contained in this dissertation is my own original work, except where otherwise indicated.
- ii. All sources used or quoted have been acknowledged by means of complete references.
- iii. Where other written sources have been quoted , then:
 - a. Their words have been re-written but the general information credited to them has been referred;
 - b. Where their exact words have been used, their writing has been placed inside quotation marks and referenced accordingly.
- iv. This dissertation has not been previously submitted, either in its entirety or in part, to any university in fulfilment of the requirements for any degree.

M.P. Duze

Date

ACKNOWLEDGEMENTS

First and foremost I give praise to my God Almighty for blessing me with the aptitude and strength to finish this dissertation.

I would like to thank my esteemed study leader **Professor P.S. Reddy** of the School of Management, IT and Governance at the University of KwaZulu-Natal. The door to Professor Reddy's office was always open. I was also privileged to liaise with him via emails and phone. I consider myself privileged to have had the chance to study under his supervision.

A special word of gratitude to the eThekweni City Manager, **Mr Sbu Sithole** who welcomed the study and most importantly, I wish to acknowledge the Head of the eThekweni Disaster Management Centre, **Mr Vincent Ngubane** and Staff, Councillors, and management of various departments within the municipality who enthusiastically participated in the data collection process and without whom, this important study would not have been successfully completed.

Finally, I must express my very profound gratitude to my late parents and to my wife, **Sthandiwe**, my children **Ongama and Yanga**. Thank you for being understanding during those late nights and early mornings and for providing me with dependable support and continuous inspiration. Without your unwavering support, patience and love, it would have been more difficult to make it.

Mthokozisi Pius Duze

December 2016, UKZN

ABSTRACT

South Africa has seen a progressive development of proactive disaster management policy and legislation, all of which were primarily designed to facilitate progress with respect to Disaster Risk Reduction (DRR). The main purpose of the study was to assess the planning and implementation of disaster risk reduction strategies at a local government level. The eThekweni Municipality in the Province of KwaZulu-Natal was used as a local case study. Based on a local case study analysis, the current study primarily aimed to present a critical assessment of disaster risk reduction practices in order to develop a corrective framework for mainstreaming disaster risk reduction within the local government setting.

A qualitative case-study design was used as the primary paradigm. To achieve this, study participants were purposively selected from a multi-discipline source-population that included municipal disaster management practitioners, councillors and relevant departments within the municipality. Analysis of emergent data was conducted via a combination of descriptive statistical and content analysis.

The study findings showed that the eThekweni Disaster Management Centre has noteworthy capacity constraints, particularly with respect to the staff complement and technical capacity. This is evident in a number of service shortcomings, including the existence of incomplete plans and frameworks coupled with the absence of important institutional arrangements, such as a fully functional Disaster Management Advisory Forum. The municipal approach to disaster management operated on reactive rather than proactive tenets as evident from the lack of a disaster management plan informed by a disaster risk assessment.

Integral to the theory development phase, the study proposed a practice framework and also offered a number of recommendations that can assist local government to improve and enhance mainstreaming of disaster risk reduction into their core business. The framework proposes the alignment of disaster risk reduction planning with the municipal Integrated Development Planning (IDP) processes in a way that will ensure that disaster

reduction initiatives are included in the legal, financial and sound planning mechanisms. This will begin by building and strengthening of municipal disaster management capacity and important disaster management institutional arrangements such as the interdepartmental committee and the advisory forum to facilitate engagement with all relevant stakeholders.

Keywords

Disaster risk reduction, disaster risk, disaster, disaster risk assessment

TABLE OF CONTENTS

DECLARATION	i
ACKNOWLEDGEMENTS.....	ii
ABSTRACT	iii
LIST OF TABLES	xvi
LIST OF FIGURES.....	xviii
LIST OF ACRONYMS	xix
CHAPTER 1	1
INTRODUCTION AND BACKGROUND TO THE STUDY.....	1
1.1 INTRODUCTION	1
1.2 BACKGROUND TO THE STUDY	2
1.2.1 The 1 st United Nations Global Conference: The Yokohama Strategy and Action Plan for a Safer World.....	4
1.2.2 The International Strategy for Disaster Reduction (ISDR).....	4
1.2.3 The 2 nd UN Global Conference on Disaster Reduction: The Hyogo Action Framework (HFA) 2005-2015.....	5
1.2.4 The Third UN Global Conference on Reduction of Disaster Risk: Sendai Framework 2015-2030	6
1.2.5 A Brief Overview of the South African Context.....	7
1.3 LOCATION OF THE STUDY	10
1.4 THE RESEARCH PROBLEM	11
1.5 OBJECTIVES OF THE STUDY	13
1.6RESEARCH QUESTIONS.....	14
1.7PRELIMINARY LITERATURE REVIEW	14
1.7.1 Local Government Theory and Practice – Disaster Risk Reduction Context.....	14

1.7.2 Roles and Responsibilities within Local Government	15
1.7.3 Importance of Disaster Risk Reduction in Local Government	15
1.7.4 Municipal Disaster Risk Management Plan and Integrated Development Planning	16
1.7.5 Global Context: A Shift towards Disaster Risk Reduction	16
1.7.6 Disaster Risk Reduction in South Africa: Legislative and Policy Aspects	17
1.7.7 The Legal Requirements for Disaster Risk Management in Local Government	18
1.7.8 Implementation of Disaster Risk Reduction in Local Government.....	19
1.8 SIGNIFICANCE OF THE STUDY	21
1.9 JUSTIFICATION AND RATIONALE	21
1.10 RESEARCH METHODOLOGY	21
1.10.6 Description of the eThekweni Municipality.....	23
1.10.6.1 eThekweni City Council.....	23
1.10.7 Ethical Considerations.....	24
1.10.8 Study limitations	25
1.11 DEFINITION OF KEY CONCEPTS	25
1.12 CHAPTER DIVISION.....	27
Chapter 1: Introduction and Background to the Study.....	27
Chapter 2: Theoretical Frameworks, International Trends and Development	27
Chapter 3: Legislative and Policy Framework	28
Chapter 4: Research Methodology.....	28
Chapter 5: Findings, Interpretation and Analysis.....	28
Chapter 6: Theory Development: Presentation of a Model for Disaster Risk Reduction.	28
Chapter 7: General Conclusions and Recommendations.....	28

1.13 Conclusion.....	28
CHAPTER 2	30
REVIEW OF CONCEPTS, THEORETICAL FRAMEWORKS, INTERNATIONAL TRENDS AND DEVELOPMENT	30
2.1 INTRODUCTION	30
2.2 DISASTERS: AN OVERVIEW OF DEFINITIONAL ISSUES.	31
2.3 A CONCEPTUAL CLARIFICATION OF DISASTER RISK REDUCTION	35
2.3.1The Disaster Management Cycle/ Continuum	37
2.3.2The emergence of the Disaster Management Cycle	37
2.4 THE DISASTER MANAGEMENT CYCLE: CONTENT AND PROCESS CLARIFIED.	38
2.5 DISASTER RISK REDUCTION (DRR) – A THEMATIC OVERVIEW OF CONTENT AND PROCESS.	40
2.5.1 Disaster Risk Reduction: From Concept and Operational Framework to Practice.	40
2.5.2 Primary Factors Causing Disasters	43
2.5.3 Shift of Focus into Disaster Reduction	45
2.5.4 Components of Disaster Risk Reduction	47
2.6 MODES AND CONTEXTS RELATED TO DISASTER RISK REDUCTION.....	50
2.6.1 Vulnerability mitigation through societal involvement	50
2.6.2 Reducing vulnerability through Legislation and Policy.....	50
2.6.3 Limiting vulnerability through avoidance.....	51
2.6.4 Increasing Awareness	52
2.6.5 Community Empowerment	52
2.6.6 Decreasing vulnerability through assessment of risk.....	53
2.7 FRAMEWORKS OVERVIEW OF DISASTER RISK REDUCTION	54

2.8 GAPS IN DISASTER RISK REDUCTION.....	57
2.9 DETAILED ANALYSIS OF THE CURRENT GAPS IN DRR KNOWLEDGE AND PROGRAMMING.....	58
2.9.1 Limited National Capacity.....	58
2.9.2 Limited Funding for DRR compared to Relief Efforts.....	59
2.9.3 Limited Incorporation of Vulnerability as an Underlying Risk Driver	60
2.9.4 Minimal Coordination amongst Programmes.....	61
2.9.5 Lack of Project Monitoring, Impact Evaluations, and Cost-Benefit Analyses.....	62
2.9.6 Limited Scope beyond Natural Hazards and Rural Areas	63
2.10 CONCLUSION.....	64
CHAPTER 3	66
SOUTH AFRICAN DISASTER MANAGEMENT LEGISLATIVE AND POLICY FRAMEWORK.....	66
3.1 INTRODUCTION	66
3.2 CONSTITUTIONAL BASIS FOR DISASTER MANAGEMENT IN SOUTH AFRICA	66
3.3 DISASTER MANAGEMENT IN SOUTH AFRICA: LEGISLATIVE AND POLICY FRAMEWORK.....	67
3.4 THE SPHERE OF LOCAL GOVERNMENT	69
3.4.1 Local Government’s Role in the Reduction of Disaster Risk	72
3.5 DECENTRALIZATION OF DISASTER-RISK REDUCTION	73
3.5.1 Kinds of Decentralization.....	73
3.5.2 Classification of Decentralization.....	73
3.5.3 DRR and Decentralization in South Africa.....	74
3.5.4 The Importance of Knowing How Decentralization Impacts On DRR.....	76
3.6 EFFECTS OF DRR DECENTRALIZATION.....	77
3.6.1 Decentralization alterations on governmental capacity	77

3.6.2 Decentralization modifying arrangements of funding.....	77
3.7 CHALLENGES RELATED TO DRR FUNDING	77
3.7.1 Training policy-makers and politicians.....	78
3.7.2 Legislation for DRR	78
3.8 ISSUES FACED BY LOCAL GOVERNMENT IN DISASTER RISK REDUCTION ...	79
3.9 SOUTH AFRICAN DISASTER MANAGEMENT PARADIGM.....	80
3.10 PROTECTION AND THE CIVIL DEFENCE PARADIGM	80
3.11 DISASTER MANAGEMENT PARADIGM	81
3.12 THE SIGNIFICANCE OF DISASTER MANAGEMENT LAW IN SOUTH AFRICA.	81
3.13 THE SHIFT TOWARDS DISASTER RISK REDUCTION	81
3.14 SOUTH AFRICA'S INSTITUTIONAL DISASTER MANAGEMENT STRUCTURES	82
3.14.1 The Sphere of National Government.....	82
3.15 THE NATIONAL DISASTER MANAGEMENT CENTRE (NDMC)	84
3.16 THE LOCAL SPHERE OF GOVERNMENT	87
3.17 THE PROVINCIAL SPHERE OF GOVERNMENT	88
3.18 THE MUNICIPAL DISASTER MANAGEMENT FRAMEWORK (MDMF).....	89
3.18.1 The Municipal Disaster Management Centre (MDMC).....	89
3.18.2 The Municipal Disaster Management Advisory Forum (MDMAF).....	90
3.19 DISASTER RISK REDUCTION IN SOUTH AFRICA.....	91
3.20 LOCAL GOVERNMENT: MUNICIPAL SYSTEMS ACT NO. 32 OF 2000	92
3.21 PUBLIC MANAGEMENT AND DISASTER RISK REDUCTION	93
3.22 CONCLUSION.....	94
CHAPTER 4	95
RESEARCH METHODOLOGY	95

4.1 INTRODUCTION	95
4.2 RESEARCH PARADIGM.....	96
4.3 THE CASE STUDY STRATEGY	97
4.4 RESEARCH METHODOLOGY	99
4.5 RESEARCH DESIGN.....	101
4.6 THE SELECTION OF THE CASE STUDY SITE	101
4.7 PARTICIPANTS IN THE STUDY.....	102
4.8 DATA SOURCES	103
4.8.1 Interviews	103
4.8.2 Questionnaires	105
4.9 DATA COLLECTION AND ANALYSIS	105
4.10 RESEARCH EVALUATION: TRUSTWORTHINESS OF THE STUDY.....	108
4.11.1 Credibility.....	108
4.12 RESPONSE VALIDATION	109
4.13 ETHICAL CONSIDERATIONS	109
4.13.1 Informed consent.....	110
4.13.2 Harm and risk	110
4.13.3 Privacy, confidentiality, and anonymity.....	110
4.13.4 Voluntary participation.....	111
4.14 CONCLUSION.....	111
CHAPTER 5	111
DATA PRESENTATION AND ANALYSIS	111
5.1 INTRODUCTION	111
5.2 THE ETHEKWINI DISASTER MANAGEMENT PRACTITIONERS AND MDMC MANAGEMENT PERSPECTIVE	112

5.2.1 Demographics	113
5.2.1.1 Gender	113
5.2.1.2 Level of Employment.....	113
5.2.1.3 Work Experience in the Current Institution	114
5.2.1.4 Respondents' Level of Education.....	115
5.2.2 Integrated Institutional Capacity for Disaster Risk Management	115
5.2.3 Municipal Interdepartmental committee on Disaster Risk Management.....	115
5.2.4 Roles of and Responsibilities of the Municipal Department and Entities	116
5.2.5 Municipal Disaster Management Advisory Forum (MDMAF).....	117
5.2.6 Participation in the Municipal IDP	117
5.2.7 Municipal disaster management ward structures	118
5.3 DISASTER RISK ASSESSMENT	119
5.3.1 Has the DRA been conducted and integrated into IDP?	119
5.3.2 Dissemination of DRA	120
5.4 DISASTER RISK REDUCTION	120
5.4.1 Reduction of Disaster Impact	121
5.4.2 Disaster Early Warning Strategy	122
5.4.3 DRR Responsibilities of the Municipal Departments and Entities.....	123
5.5 PUBLIC AWARENESS AND RESEARCH	124
5.6 POLITICAL SUPPORT AND COMMITMENT	125
5.7 DRR PERSPECTIVE OF THE MUNICIPAL COUNCILLORS	126
5.7.1 Introduction.....	126
5.8 DEMOGRAPHICS	127
5.8.1 Gender	127
5.8.2 Political Party Representation	127

5.8.3 Political Experience in Local Governance	128
5.8.4 Level of Education	128
5.9 DISASTER RISK ASSESSMENT	129
5.9.1 Disaster Risk Assessment Awareness	129
5.9.2 Incorporation of Disaster Risk Profile in Development and Service Delivery...	130
5.10 DISASTER MANAGEMENT POLITICAL LEADERSHIP PARADIGM	131
5.11 POLITICAL PERSPECTIVES ON DRR.....	132
5.12 DISASTER MANAGEMENT IN THE MUNICIPAL DEPARTMENTS	134
5.12.1 Specific Departmental Disaster Management Plan	134
5.12.2 Consideration of Disaster Assessment.....	135
5.12.3 Participation in the Interdepartmental and Intergovernmental Structures.....	136
5.13 FINDINGS	138
5.13.1 Disaster Management Practitioner’s Perspective	138
5.13.2 Councillor’s Perspective	139
5.13.3 Municipal Departments.....	140
5.14 CONCLUSION.....	141
CHAPTER 6	142
THEORY DEVELOPMENT: TOWARDS A MODEL FOR DISASTER RISK REDUCTION IN MUNICIPALITIES	142
6.1 INTRODUCTION	142
6.2 DISCUSSION OF THE KEY FINDINGS AND CORE COMPONENTS OF DISASTER RISK REDUCTION IN LOCAL GOVERNMENT	143
6.2.1 Disaster Risk Reduction Approach in South Africa.....	143
6.3 INTEGRATED INSTITUTIONAL CAPACITY AND ARRANGEMENTS FOR DISASTER RISK REDUCTION	144
6.3.1 The Development and Adoption of Integrated Disaster Risk Reduction Policy	145

6.3.2 The Integrated Direction and Implementation of Disaster Risk Reduction	145
6.3.3 The participation of stakeholders in disaster risk reduction planning and operations	147
6.3.4 Co-Operation for Disaster Risk Reduction	148
6.4 SCRUTINY OF THE DISASTER RISK REDUCTION REQUIREMENTS FOR LOCAL GOVERNMENT IN SOUTH AFRICA	148
6.4.1 Disaster risk management planning	150
6.4.2 Setting priorities for disaster risk management planning	151
6.4.3 Scoping and development of disaster risk reduction plans, projects and programmes	151
6.4.4 Inclusion of disaster risk reduction efforts in other structures and processes..	152
6.4.5 Implementation and monitoring of disaster risk reduction programmes and initiatives	153
6.5 THE PROPOSED DISASTER RISK REDUCTION MODEL FOR MUNICIPALITIES	154
6.5.1 The Nexus between the Municipal IDP Planning Process and DRR Planning	156
6.5.1.1 Phase 1: Analysis.....	156
6.5.1.2 Phase 2: Strategies	156
6.5.1.3 Phase 3: Projects	157
6.5.1.4 Phase 4: Integration	158
6.5.1.5 Phase 5: Approval.....	159
6.5.2 Diagrammatic Illustration of the Proposed Disaster Risk Reduction Model for Municipalities.....	159
5.6 CONCLUSION.....	163
CHAPTER 7	164
GENERAL CONCLUSIONS AND RECOMMENDATIONS	164
7.1 INTRODUCTION	164

7.2 GENERAL CONCLUSIONS	165
7.2.1 Municipal Disaster Management Policy Framework.....	165
7.2.2 Municipal Disaster Risk Assessment (Profile)	165
7.2.3 Municipal Interdepartmental Committee on Disaster Management.....	166
7.2.4 Municipal Disaster Management Advisory Forum	166
7.2.5 Municipal Disaster Management Capacity	167
7.2.6 Political Commitment and Support	167
7.2.7 Methodology for Integrating Disaster Risk Reduction.....	168
7.3 RECOMMENDATIONS	168
7.3.1 Disaster Management Policy, Plan and Implementation	168
7.3.2 Municipal Disaster Risk Reduction Coordination and Integration.....	169
7.3.3 Recommendations drawn from the Literature Review.....	170
7.3.3.1 Increased focus on poor and urban areas in addition to chronically risk prone areas.....	170
7.3.3.2 Standardize definitions, tools, and methodologies	170
7.3.3.3 Focus on reducing vulnerability.....	170
7.3.3.4 Incorporate DRR in development, climate adaptation, and humanitarian programming.....	171
7.3.3.5 Increase monitoring, impact evaluation, and cost-benefit analysis.....	171
7.3.3.6 Understand and incorporate the project cycle.....	171
7.4 RECOMMENDATIONS FOR FURTHER RESEARCH.....	172
7.5 CONCLUSION.....	172
REFERENCES	174

LIST OF TABLES

<i>Table 4.1: Summary of study participants and method of data collection</i>	104
<i>Table 5.1: Gender of the respondents (eThekwini DM Practitioners)</i>	111
<i>Table 5.2: eThekwini DMC’s Respondents level of employment</i>	112
<i>Table 5.3: Years of Experience in Current Position</i>	113
<i>Table 5.4: level of Education</i>	113
<i>Table 5.5: Status of the MIDRMC</i>	114
<i>Table 5.6: Roles and Responsibilities of the municipal departments and entities</i>	115
<i>Table 5.7: Establishment and Functioning of eThekwini MDMAF</i>	115
<i>Table 5.8: MDMC Participation in the IDP Processes</i>	116
<i>Table 5.9: Disaster Management Ward Committees</i>	117
<i>Table 5.10: Status of Disaster Risk Assessment</i>	118
<i>Table 5.11: Identification and implementation of DRR programmes</i>	119
<i>Table 5.12: Status of Loses as a result of Disasters</i>	120
<i>Table 5.13: Distribution of Emergency Social Relief Assistance</i>	120
<i>Table 5.14: MDMC Early Warning Mechanisms</i>	121
<i>Table 5.15: DRR awareness by the Municipal Departments and Entities</i>	122
<i>Table 5.16: Integrated Disaster Management Public Awareness Strategy</i>	123
<i>Table 5.17: Municipal Disaster Risk Management Research Agenda</i>	123
<i>Table 5.18: DRR Political Support</i>	124
<i>Table 5.19: Respondents Gender (Municipal Councillors)</i>	125
<i>Table 5.20: Political Party representation in the study</i>	126
<i>Table 5.21: Number of terms as a councillor</i>	126

<i>Table 5.22: Level of Education (Councillors)</i>	127
<i>Table 5.23: Councillors awareness of the municipal Disaster Risk Profile</i>	128
<i>Table 5.24: Disaster Risk Profile in Development and Service Delivery</i>	128
<i>Table 5.25: Political Disaster Management Approach</i>	129
<i>Table 5.26: Political View on DRR</i>	130
<i>Table 5.27: Political priority of DRR</i>	131
<i>Table 5.282: DRR being a Political Priority</i>	131
<i>Table 5.29: Measures to raise DRR Political Profile</i>	132
<i>Table 5.30: Disaster Management Plans for the Departments</i>	133
<i>Table 5.31: Disaster risk assessment by the municipal department</i>	134
<i>Table 5.32: Departmental participation in the DMIC</i>	135
<i>Table 5.33: Departmental participation in the MDMAF</i>	135

LIST OF FIGURES

<i>Figure 1.1: Map showing the eThekweni Municipality.....</i>	<i>23</i>
<i>Figure 2.1: The Vulnerability Progression (Wisner et al., 2004:51)</i>	<i>33</i>
<i>Figure 2.2: Global Framework for Disaster Risk Reduction (UNISDR, 2004:14)</i>	<i>35</i>
<i>Figure 2.3: The disaster management cycle (Twigg, 2015:27)</i>	<i>36</i>
<i>Figure 3.1: Key elements of the National Disaster Management Framework.....</i>	<i>65</i>
<i>Figure 3.2: National Disaster Management Framework (KZN-PDMC, 2014:12)</i>	<i>66</i>
<i>Figure 6.1: Principles essential for strategic DRR planning and alignment</i>	<i>148</i>
<i>Figure 6.2: Key planning points for disaster risk reduction</i>	<i>150</i>
<i>Figure 6.3: Integrated institutional capacity and arrangements for DRR</i>	<i>159</i>
<i>Figure 6.4: Municipal disaster risk reduction IDP Planning Stages.....</i>	<i>160</i>
<i>Figure 6.5: Detailed municipal disaster risk reduction IDP Planning Stages</i>	<i>161</i>

LIST OF ACRONYMS

DFID	: Department for International Development
DMA	: Disaster Management Act
DMCs	: Disaster Management Centres
DOH	: Department of Health
DRR	: Disaster Risk Reduction
HFA	: Hyogo Action Framework
IDNDR	: International Decade for Natural Disaster Reduction
IDP	: Integrated Development Planning
ISDR	: International Strategy for Disaster Reduction
MDMAF	: Municipal Disaster Management Advisory Forum
MDMC	: Municipal Disaster Management Centre
MDMF	: Municipal Disaster Management Framework
NDMC	: National Disaster Management Centre
NDMF	: National Disaster Management Framework
NGOs	: Non-Government Organizations
SAPS	: South African Police Service
UN	: United Nations
UNDP	: Development Programme
UNISDR	: United Nations International Strategy for Disaster Reduction

CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

A comprehensive review of current literature sources confirms a stark and alarming fact which centres on the acknowledgement that over 4.7 million of all global deaths over a calendar year result from consequences related to disasters – manmade and natural (Kim et al., 2013; Noy, 2009) When quantified, this assertion attributes significant loss of human life to disasters and in fact echoes the view expressed by the UN Secretary-General Ban Ki-moon who is famously quoted as saying

“Vulnerability to disaster is growing faster than resilience. Disaster risk reduction should be an everyday concern for everybody. Let us all invest today for a safer tomorrow.” (Ki-Moon, 2014:56)

The United Nations International Strategy for Disaster Reduction (UNISDR) exists as the cornerstone to supporting nations and communities to lessen disaster threats and rests on building a worldwide culture of disaster prevention even within a wider acceptance that the natural hazards, which cause disasters are, most of the time outside human ability to control. Be that as it may, susceptibility is ordinarily a consequence of human activities (Reddy 2011:14). It is therefore critical that institutions are given a responsibility of managing disasters to identify and advance approaches and scrutinise new ways of preventing and minimizing the impact of such disasters. For that reason, the concept of disaster risk reduction should proactively, as opposed to reactively, deal with disasters by promoting disaster prevention, mitigation and a state of preparedness. However, more work is required to entrench and make this practical, particularly in local government, as it is at the forefront of disaster risk management, and invariably the closest point of contact and communication with the often-vulnerable communities it serves.

The eThekweni Municipality was used as a case study. Specific questions and objectives were set to empirically assess the disaster risk reduction measures, particularly in terms of shortcomings and best practices. The research results were then

used to develop a disaster risk reduction model to guarantee mainstreaming of disaster risk reduction in a coordinated and integrated manner at a local government level.

1.2 BACKGROUND TO THE STUDY

In 1987, the United Nations General Assembly passed a resolution which considered the 1990-1999 period as the worldwide era for Natural Disaster Reduction (Carter et. al., 2007:51). In this era, collective worldwide efforts were aimed at mitigating property loss and life, as well as any social and economic disruptions occurring because of the disruptive effects of nature, in areas that are susceptible. The fundamental intention of this period was to move away from the reactive approach to disasters and towards a new approach that had prevention and pro-active planning at the heart of it (Gaillard, 2007:27). The following are the five (5) major goals of this era:

- Enhancing each country's capacity to reduce the impact of natural disasters, focusing on aiding developing countries in the evaluation of potentially harmful disasters by establishing early warning systems and structures that would aid them in protecting themselves against disaster;
- Building suitable strategies and guidelines for applying existing technical and scientific knowledge, taking into consideration the economic and cultural diversity of different nations;
- Supporting engineering and scientific efforts intent on focusing on reducing the gaps in knowledge in order to limit property and life loss;
- Gathering new and existing technical data linked to calculating the prediction, evaluation and reduction of natural disasters; and
- Establishing assessment measures for the reduction and prediction of natural disasters with the help of technical aiding programmes and the transfer of technology, sharing projects and training – and customizing these to specific locations and disasters – and, finally, measuring the efficiency of these programmes (United Nations (UN), 2002:74).

With the above objectives, the International Decade for Natural Disaster Reduction (IDNDR) set some goals that needed to be reached by all nations at the end

of the 20th century. The vision of the IDNDR initiative was that all nations need to have carried out the assessment of natural risks, established local and national prevention measures, implemented global and preparedness plans, as well as national, regional and local warning systems (UNISDR, 2009:17).

However, the increased international enthusiasm and focus on the socioeconomic impact of disasters demanded development of pragmatic methods of dealing with hazards and vulnerabilities (UNISDR, 2003:34). This led to a greater interest in hazard awareness issues and practices around risk management. Importance was given to the socio-economically vulnerable as a swiftly inclining risk factor in the majority of the communities, which highlighted the requirement to support the greater involvement of local societies in risk- and hazard-mitigation tasks. The IDNDR relied on other aspects as well as financial aid by government members. The United Nations (UN) member states and governments had a responsibility to develop and mainstream their respective disaster risk reduction strategies relevant to country's hazards and disaster risks. The ten-year period had a strong start (ISDR, 2002: 28) and over 130 nations tried to develop local committees. These national committees differed in their effectiveness and capacities, and less than one quarter of them tried to implement their targets in southern Africa and continental Africa. The disaster-reduction field in Africa has never reached the same stature regarding policy or secured financial commitment levels as those in Latin America and Asia. As suggested by Reid and Van Niekerk (2004:17), this can be linked, in a large degree, to the Asian Disaster Centre of Preparedness's' existence and the U.S. involvement in Latin America.

The above paragraph has mentioned the international strategy impetus for the reduction of disaster, but another major event which formed the agenda of disaster-risk mitigation in the period was the conference for the 'World on Mitigation of Natural Disaster', which took place in Yokohama, Japan in May 1994. Here a strategy towards a disaster-free world was adopted and planned.

1.2.1 The 1stUnited Nations Global Conference: The Yokohama Strategy and Action Plan for a Safer World

In 1994, it was articulated that the Yokohama Action Plan and Strategy for a disaster-free world might possibly be even more relevant in the 21st century (United Nations Development Programme (UNDP), 2000:105). These postulates provide the basis on which many of the risk mitigation strategies of the new century are based. The Action Plan and Strategy of Yokohama for a safer world emphasized that every nation has the responsibility and sovereignty to safeguard its people from natural disasters and that more emphasis needs to be given to developing countries – specifically the least developed ones, as well as small island states and small land-locked countries.

Moreover, the plan also focused on the significance of strengthening and developing the capabilities of local government. Wherever needed, local laws must be developed for disaster mitigation, preparedness and prevention, which also comprised of mobilising and involving Non-Government Organizations (NGOs) in local communities. Lastly, the strategy showed the significance of strengthening and proposing regional, global and sub-regional cooperation in the mitigation, reduction and prevention of disasters – both natural and otherwise.

The basis of this strategy was that natural disasters have negative economic effects. Whilst the occurrence is often beyond human control, the vulnerability of people is not. Therefore, communities need to develop strong methods for predicting and living with the risks of such hazards. Communities must be empowered to embark on activities aimed at averting and lessening of the effects of catastrophes (Myers, 2009:18). The global conference on disaster risk reduction prepared firm ground for the establishment of the International Strategy for Disaster Risk Reduction (UNISDR, 2000:42).

1.2.2 The International Strategy for Disaster Reduction (ISDR)

The International Strategy for Disaster Reduction (ISDR) concentrated on safety against natural and manmade threats, and by minimising the susceptibility of communities by

enhancing coping capacity (UNISDR, 2002:19). The most important advancement which the UNISDR tried to achieve, vis-à-vis the International Decade for IDNDR ideals and the Strategy and Action Plan for Yokohama for a Safer Globe, was the multi-disciplinary way of cultivating the reduction of disaster within the context of broader and sustainable development (UNISDR, 2004:49). The ISDR takes an international approach to the mitigation of disaster, which comprises of a risk-avoidance culture and the establishment of behaviour that helps to support public-level engagements. The ISDR seeks to expand public consciousness on issues of vulnerability, risk and the reduction of disasters internationally. One of the main focuses is to ascertain that the commitment of the government is towards the implementation and development of disaster mitigation. Increasing inter-sectoral and interdisciplinary integration and the expansion of existing channels as one of the major segments of the ISDR.

The ISDR learned from the IDNDR and asks for significant research in order to grow scientific knowledge around disaster reduction. In order to ascertain that the ISDR ideals will be achieved, the United Nations Secretariat Inter-Agency was founded as the focal point for the UN Assembly General (with the help of 561195 and 541219 resolution) (UN, 2002:15). The UNISDR aims to help facilitate a merger between activities around disaster mitigation and those in the humanitarian and socio-economic areas (UNISDR, 2002:19). One of the qualities of this plan is the ability to merge a broad range of stakeholders from different fields and disciplines, with the support of the Task Force of Inter-Agency on the Disaster Reduction. Moreover, the World Conference on Reduction of Disasters fuelled the emphasis on Disaster Risk Reduction. A debate on contemporary events was carried out in an attempt to shape the reduction of disaster-risk globally.

1.2.3 The 2nd UN Global Conference on Disaster Reduction: The Hyogo Action Framework (HFA) 2005-2015

The Global Disaster Mitigation Conference took place between 18 and 22 January 2005 in Hyogo, Japan. This presented the Action Framework for 2005-2015: establishing the countries resilience to disasters (this was later known as Action Framework). The

meeting demonstrated a unique way of fostering a systematic and strategic approach to limit vulnerability to hazards and risks. It emphasised the importance of establishing resilience in the face of disasters through the Hyogo Framework. The Framework was presented to outline the details that are needed from all the role-players and stakeholders.

It attempted to merge groups including global agencies, governments and professionals on disasters and others into a collective synchronisation structure (Mohapatra et al, 2009:111). The HFA outlined five (5) important activities for prioritization, which provided direction and a realistic way for achieving a better defence against disasters. Its aim was to substantially limit the losses from disasters by the end of 2015 by establishing resilience to disasters. This basically intended to limit the economic, social and environmental losses, as well as lives, when a disaster happens:

- First Action Priority: Ascertaining that the reduction of disaster-risk is a local and national priority that needs to be implemented strongly from an institutional foundation;
- Second Action Priority: Monitoring, assessing and determining the risks of disaster to improve early-warning signs;
- Third Action Priority: Utilizing education, innovation and knowledge to establish a safety culture and all possible levels of resilience;
- Fourth Action Priority: Limiting the factors of underlying risks; and
- Fifth Action Priority: Fortifying the preparedness for disaster for effective, all-level responses.

1.2.4 The Third UN Global Conference on Reduction of Disaster Risk: Sendai Framework 2015-2030

The Sendai Framework for Disaster Risk Reduction 2015-2030 was established by the affiliate states and governments of the UN on 18 March 2015 at the 3rd International Conference of the UN on disaster risk reduction in Japan. This framework is the successes of the HFA which ended in 2015, with specific goals and action priorities to take the agenda of disaster risk reduction forward.

This was the result of consultation with the necessary stakeholders, which started in March 2012 as well as inter-governmental negotiations during July 2014 to March 2015, assisted by the Office of the UN for disaster risk reduction at the UN General Assembly's plenary (Mercer, et. al., 2009:13). The Sendai Mechanism is the instrument and successor of the Hyogo framework of 2005-2015 for Action: Establishing the Communities and Nations' Resilience to Disasters. The HFA was hidden to provide more impetus to the work under the global Action Mechanisms for the Natural Disaster situation for the Decade of 1989 and the Strategy of Yokohama for a safer world (Nakagawa and Shaw, 2004:16).

The Sendai Framework is built on factors that ascertain the continuity of the work done by stakeholders and governments during the negotiations and consultations. Many commentators have determined that emphasis and resources must be put on management of disaster risks and vulnerability as opposed to disaster response, because when such is done there will be minimal damage and the level of preparedness and resilience will be very high. These include the lessening of disaster risk as an anticipated outcome, a goal focused on eliminating new disaster risk, restraining the risk that exists, fortifying resilience as well as building a set of guidelines for preventing disasters and engaging better with communities. Moreover, the disaster-risk reduction scope of work has been broadened to include man-made and natural hazards as well as environmental, biological and technological risks and hazards. The Sendai Framework advocate for the sustained health and wellbeing of people and the environment.

1.2.5 A Brief Overview of the South African Context

South Africa was one of the first nations that developed and initiated disaster-risk legislation, The Disaster Management Act (DMA) No. 57 of 2002 which has since been amended by the Disaster Management Act No. 16 of 2015. The purpose of the Act is to provide a disaster management policy that focuses on systematic coordination and integration of measures and practices that seeks to prevent and mitigate the risk of disaster occurrence as well as the disaster impact. The Act also emphasises the

importance of *disaster preparedness and efficient response to disaster*. *The efficient post-disaster recovery which include long-term solutions to disasters is also an important objective of the Act. The Act requires all spheres of government to build and capacitate disaster management centres.*(South Africa, 2002:3).It also focused on the decentralization of disaster management in South Africa to all spheres of government including the relevant sectors (Komino, 2008:41).

The Disaster Management Act No. 57 of 2002 gives powers to all spheres of government to render disaster management function in a decentralised fashion. This decentralization needs to happen across the three domains of the Government: the national, provincial and local levels. The DMA in section 20, 33 and 47 respectively calls for the establishment of a coordinated and integrated policy for disaster-risk reduction at national, provincial and local sphere of government, in which the major focus would be on prevention and mitigation collectively known as disaster risk reduction. The DMA requires a uniform policy for disaster management in the country hence the National Disaster Management Framework (NDMF) was developed and introduced in 2005. The NDMF is very specific in terms of what must be done to achieve uniformity and also on how disaster management issues must be tackled.

Furthermore, the South African Republic, as set out in its Constitution (1996 Act 108), has a legislative obligation, on the level of the Government, to ensure the safety (in terms of environment and health) of its citizens. As set out in Section 41, Part 1(b) of the legislation, all domains of the Government are needed in order to 'safeguard the welfare of the Republic's people' (South Africa, 2005:29; South Africa, 2015:19). Sections 1(d) of 152 also state that Local Government must ensure 'a healthy and safe environment' for the people. This means that the major tasks regarding disaster management in South Africa lie with the Government (South Africa, 2015:23).

In terms of Schedule 4 of Part A of the Constitution of the Republic of South Africa, disaster management is an imperative that has to be implemented at national, provincial and local spheres of government. Section 156, Part 4 of the Constitution details the role of disaster management. It is most beneficial, moreover, that this be locally

administered – rather than being the task of a national or provincial government. Section 43 of the Disaster Management Amendment Act No. 16 of 2015 puts emphasis on the capacity development of all the municipalities to ensure better services (South Africa, 2015:45).

The severity and number of extreme weather events and manmade disasters have amplified rapidly over recent years, with severe global consequences. Disaster-risk management needs to keep developing an approach that is multi-disciplinary and that is comprised of more collaboration between different companies and societal groups (Odendaal and Olivier, 2008:58). The relevant sectors of the State ought to play a meaningful role in terms of planning and building capacity for rapid response and implementation of disaster risk reduction measures. Disaster management is worldwide accepted as a primary responsibility of the state. The challenge though is that in most cases the disaster management function, is not appropriately or adequately delegated to local bodies further down in the machinery of the Government (Pelling and Wisner, 2009:24). Government agencies need to play a far more prominent role during times of disaster. In many developing nations, the disaster management authority or the ministry handles disaster management affairs.

In many countries, the state is primarily responsible for coordinating disaster management issues, with consolidated resources and authority for making decisions. Governments of the development countries tend to focus more on building response capacity instead of proactive measure. This is however mainly due to limited resources and competing priorities. The building of disaster management capacity at a local government level is usually less of an urgency (Pouliotte et al., 2006:81). Hence, when a major incident or disaster occur, making of decisions are often centralized process, mainly because of pressure from the media and the political sensitivity of such a situation for any government (Mercer *et al.*, 2009:45).

The success of the Local Government disaster risk reduction strategies is mainly associated with the Government's capacity to adopt relevant policies and plans as well as building implementation capacity. Therefore, for there to be an effective reduction in

disaster-risk, it is imperative to deal with the issues affecting Local Government and provide it with the assistance and necessary resources, including proper funding and real authority around decision-making – and this requires a reformation of the structures around disaster-risk reduction and response within the South African Government.

As alluded to above, disaster risk management continues to be fraught with difficulties and there is wide agreement that a need exists to develop empirically supported models of practice to support proactive rather than reactive disaster reduction interventions. Guided by this imperative, the current study was conceptualised.

1.3 LOCATION OF THE STUDY

The eThekweni Municipality, like many parts of the KwaZulu-Natal Province, is facing unprecedented and at times unseasonal disaster risks (KZN-COGTA, 2014:7). Due to the latest factors linked to global warming and consequently climate change and the associated negative impact, studies show that people not only in the Province, but globally are increasingly exposed to more frequent and severe hazardous and dangerous weather conditions, and people are becoming vulnerable to the impact caused by disasters. These are not only accompanied with death-related risks and serious socio-economic setbacks and disadvantages, but the phenomenon can also devastatingly damage the natural and physical resources that people largely depend on for survival (UNISDR, 2004:109).

The eThekweni Municipality is experiencing an unparalleled increase and varying levels of disaster risks. It is said not only to be exposed to a range of natural hazards, but is also exposed to man-made disasters. In addition to this, most of the disasters in the eThekweni Municipality seem to be exacerbated by the fact that a significant part of the population resides in ecologically fragile areas i.e. flood plains and informal settlements. In response to the challenge of disasters, the South African Constitution, through Section 53 (1) of the Disaster Management Act (2002: 61) stipulates that local government ought to prepare customised plans and regularly review these plans to ensure that they continuously and effectively deal with the matters related to disaster

management, and these plans must pay more attention on disaster prevention, mitigation and preparedness.

The International Symposium on Disaster Risk Reduction hosted in Japan in 2005 and the significant outcome called prominently known as Hyogo Framework for Action 2005-2015 gave wide-ranging pointers towards actual disaster risk reduction (United Nations 2005:6-27). Regrettably, South Africa's efforts in planning and implementing suitable disaster risk reduction measures in a systematic manner, particularly at a local sphere of government, have been fraught with difficulty. (Reddy 2014: 6). In response to this imperative, this study seeks to investigate the state of progress with respect to these issues as part of a greater focus on the development of a best-practice framework for effective preparation and execution of disaster risk reduction at a municipal level.

The development of an empirically sound disaster risk reduction mechanism is fundamentally important. Such a framework must offer succinct, adaptable and comprehensive standards of operation for resulting procedures for integrated disaster risk reduction measures. Furthermore, it will serve to control and improve alignment of establishment of disaster risk reduction programmes and interventions to attain long lasting solutions.

1.4 THE RESEARCH PROBLEM

As noted by Coppola, (2015), the incidence of disasters continues to remain disproportionately high across the world and the existence of comprehensive disaster management strategies within different countries acts as an important mediating factor that separates successful disaster management policy from that which is not. The absence of a credible and systematic model to implement disaster management proactive measures (disaster risk reduction) at a local sphere of government is a cause for concern in the Province of KwaZulu-Natal. There are a number of occasions where local government in the Province of KwaZulu-Natal has been found wanting (and often lacking capacity, co-ordination and resources) when it comes to proactive disaster management measures. Almost every year the eThekweni Municipality experiences severe fires and flash-flood related disasters. For example in November 2011, eight

people were killed in Umlazi and Clermont south and west of the city due to floods (KZN-COGTA, 2014:45). According to Birkinshaw (2008:14), the eThekwini municipal areas experience fire disasters almost every day. This is highlighted by the annual statistics of the KwaZulu-Natal Provincial Disaster Management Centre (KZN-PDMC) in figure 3.1 and 3.2., whereby fires account for a bigger share of disasters that occur in the eThekwini area. As also shown in ta 3.1 the eThekwini region tend to be severely affected in terms of loss of asserts and physical impact to life.

Figure 3.1: Disaster/Incidents occurrences in eThekwini Municipality, 2010-2016 period (KZN-PDMC, 2016)

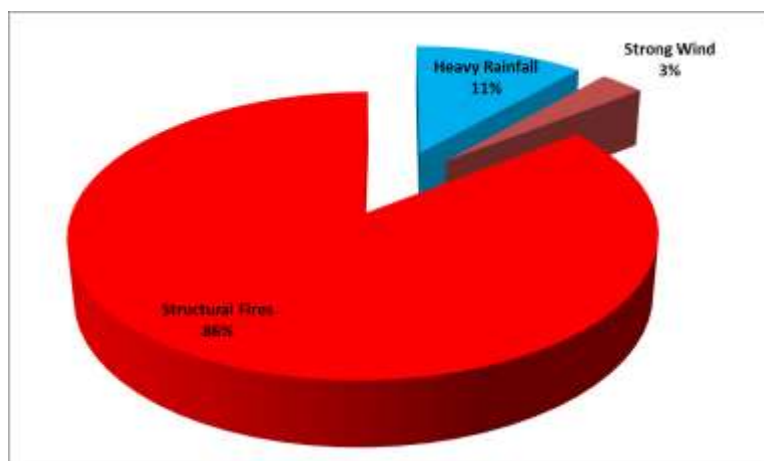


Table 4.1. Impact of disasters in 2010-2016 period (KZN-PDMC, 2016)

Districts	Households Affected	People Affected	Fatalities	Injuries
Umgungundlovu	3847	13921	14	5
Umzinyathi	603	3402	11	16
Ugu	348	1580	10	9
EThekwini	4755	8927	30	50
Harry Gwala	391	1747	13	9
Umkhanyakude	751	3977	9	58
UThungulu	575	2468	13	5
Zululand	730	730	19	5
uThukela	1536	3934	6	36
Amajuba	383	2093	6	29
Ilembe	673	3513	18	52

The main approach of the municipalities tends to be more reactive than proactive. In keeping with the spirit and objectives of the South African legislation and policy relating to management of disasters, focus must be on a proactive disaster management

approach. However, there seem to be serious challenges in the planning and implementation of measures aimed at reducing vulnerability and disaster risk in local government. Arguably, local government efforts are still largely premised on reactive rather than proactive tenets. The lack of an appropriate disaster risk reduction framework for local government may have a significant causal involvement in the lack of up-to-date methodologies and policies blamed for this phenomenon.

Political commitment and the allocation of resources by municipalities in the KwaZulu-Natal Province have been focused on temporary emergency eventualities (KZN-COGTA, 2014:24). Undoubtedly, the role of relief aid through serious periods of disasters will continue to be vital and should be improved. Nevertheless, a fundamental question is whether or not citizens can afford to rate their possessions (both material and social) solely once disasters have struck. This should not be the case. Hence, it is necessary to make certain that an integrated and sound framework is in place to deal with disasters particularly at the local government level.

1.5 OBJECTIVES OF THE STUDY

The objectives of this study were premised or anchored on the overarching goal of emerging with a logical systematic model for an appropriate and efficient disaster risk reduction mainstreaming. The model seeks to control and augment the disaster risk reduction procedures within local government. In order to accomplish the aforementioned goals, the study objectives are as follows:

- To outline and clarify the notion of disaster risk reduction within the eThekweni Municipality;
- To assess the efficiency of the existing disaster risk reduction policy and practices within the eThekweni Municipality;
- To evaluate the implementation of disaster risk reduction strategies by the eThekweni Municipality,

- To examine the impact of existing (if any) municipal disaster management strategies on the development of the municipal Integrated Development Plans; and
- To advance a logical systematic model for appropriate and effective disaster risk reduction for the eThekweni Metropolitan Municipality.

1.6 RESEARCH QUESTIONS

In realizing these detailed objectives, the critical questions below were considered by the study:

- How effective is the implementation of disaster risk reduction strategies within the eThekweni Municipality?
- How adequate and appropriate are the current disaster risk reduction policies and practices in dealing with disasters within the eThekweni Municipality?
- To what extent are disaster risk reduction plans incorporated into the eThekweni Municipality's Integrated Development Plans?
- What must a logical disaster risk reduction model for local government involve?

1.7 PRELIMINARY LITERATURE REVIEW

1.7.1 Local Government Theory and Practice – Disaster Risk Reduction Context

The objective of this segment is to place this study in the context of general theory and practice as it relates to management of disaster, both globally and nationally. It is imperative too, to contextualise South Africa's context in disaster risk reduction within the context of global initiatives and drives that have been initiated. Furthermore, the nexus and responsibilities of local spheres of government in relation to disaster risk reduction will be examined. The South African local government system particularly in terms of its roles and responsibilities will also be described.

1.7.2 Roles and Responsibilities within Local Government

Constitutionally, the municipalities are mainly established for service delivery and local economic development. Municipalities must deliver independent and answerable administration; offer amenities to people in a workable method; encourage public and financial growth; stimulate a harmless environment and boost the participation of populations and community organisations in the issues pertaining to development and governance. The constitution clearly mandates local government to strive towards long lasting orientated developmental solutions. Local governance in South Africa is therefore fundamentally comprehended in terms of delivery of services (Mogale, 2003:13).

1.7.3 Importance of Disaster Risk Reduction in Local Government

The South African Disaster Management Amendment Act No. 16 of 2015 in Section 43 outlines that each municipality ought to establish, in its management capacity, plan and implement disaster management functions. Section 44 further requires municipalities to focus on matters regarding disaster management. Additionally, municipalities must encourage and strive for a cohesive and synchronized method in disaster management, with distinctive prominence on disaster risk reduction, by all relevant departments within the municipality.

In view of the above assertions by the Disaster Management Amendment Act No. 16 of 20015, the local sphere of government ought to play a primary role in the planning and implementation of measures aimed at reducing disaster risk and vulnerability. Local government is a sphere where a number of practical activities concerning disaster risk reduction are likely to occur (South Africa, 1998a:47). Hence, local government essentially needs to see to it that legitimate disaster risk reduction projects and programmes are effectively implemented at local level.

1.7.4 Municipal Disaster Risk Management Plan and Integrated Development Planning

The Integrated Development Plan (IDP) is the purposeful municipal blueprint which requires operationalization and deliberate implementation of progressive projects and programmes responding to people's needs. The IDP must also assist with the incorporation of projects and programmes aimed at reducing vulnerability to hazards and disasters. The Disaster Management Act No. 57 of 2002 and Local Government Municipal Systems Act No. 32 of 2000 requires disaster management plans to be organically integrated into preparation processes of the IDP. The fundamental objective of that is to guarantee that all development initiatives are reducing disaster risk and vulnerability. The IDP is a legally binding document that surpasses all other development plans in the municipality, although it may be complemented by other relevant initiatives.

1.7.5 Global Context: A Shift towards Disaster Risk Reduction

The matter of disaster risk reduction in its current form evolves mostly from developments in the area of civil defence and protection, and more recently in disaster management (UNISDR 2004:7). In this respect, the old emphasis has been placed on the planning and better working competences for an efficient reaction to an imminent occurrence, or the delivery of emergency relief to normalize the situation if a disaster has occurred (UNISDR 2004:7). The difference, of late and possibly inspired at least partly by the regularity and brutality of disasters recently, is that those linked with the sufferers of disasters i.e. politicians, professional and commercial interests, community groups, institutions of higher learning and community leaders have increasingly recognized the importance of continued determinations to decrease the social, financial and ecological expenses associated with natural hazards (UNISDR 2004:8). This has translated into the necessity for more attention to execution of protecting approaches

that can result in elimination or minimization of disaster which will therefore lead to protection of lives, property and the environment. A shift towards a proactive approach in dealing with disasters has resulted in coalescence and prominence of the concept of disaster risk reduction.

It is generally perceived that, in all probability, corrective actions for disaster related issues can be best achieved via the successful accomplishment of development programmes intended to reduce susceptibility to hazards and disaster risk (UNISDR, 2003: 35-38; Comport *et al.* 1999: 45-56; UN, 1999:23-29).

1.7.6 Disaster Risk Reduction in South Africa: Legislative and Policy Aspects

Similarly to the global context, the advancement in the field of disaster management in South Africa is highly influenced by past practices which were to a great extent concentrated on reaction rather than a proactive approach. Disaster risk reduction underlines a paradigm shift towards emphasis on mitigation, prevention and preparedness.

Until the dawn of democracy in 1994, South Africa had not devised a mechanism to comprehensively deal with catastrophes and reduction of vulnerability (Van Niekerk, 2015:57). Until then, South Africa had taken the view that saw disasters as coming about because of 'nature' as uncommon, unavoidable occasions that could not be anticipated or stayed away from.

The Constitution of the Republic of South Africa Act 108 of 1996 (RSA 1996:114) put legal responsibility on the state to see to it that disaster management services are appropriately rendered, and therefore “all levels of government are required to secure the well-being of people, protection of property and the environment. It is thus the duty of government to implement disaster risk reduction plans and also to plan for climate change adaptation and mitigation to reduce the vulnerability of people, infrastructure and other national assets to various hazards (also those relating to climatic change)” (RSA, 1996:114, Bulkeley and Betsill, 2005:59). The key duty for disaster risk reduction

in this country therefore is primarily a responsibility of government. The Republic of South Africa is acknowledged as being the first country in Africa to expansively enact disaster risk reduction (Vermaak and Van Niekerk 2004:57). The proceedings to develop disaster management legislation started in June 1994 and continued with the Disaster Management Act 57 of 2002, (amended in 2015), and the National Disaster Management Framework (NDMF) of 2005).The South African disaster management legislation and policy coordinated a movement towards a disaster risk reduction model (Reid and Van Niekerk, 2008:45; Van Niekerk 2005: 56, NDMF 2005:1).

Disaster risk reduction comprises of cross-cutting matters that require the involvement of a variety of stakeholders and role players (Van Niekerk, 2015:37). Hence, an integrated approach within the municipality is of utmost importance.

1.7.7 The Legal Requirements for Disaster Risk Management in Local Government

The Constitution put an obligation on government to guarantee the well-being of people and the environment. Van Niekerk (2015:205) concludes by saying that the principal responsibility and accountability for disaster management in the Republic of South Africa is mainly a government obligation. It is well accepted that development and execution of measures aimed at reducing vulnerability to and risks of disasters effectively occur at local spheres of government (UNISDR, 2003:78-99). As correctly asserted by Van Niekerk (2015:45), the most critical government level for the successful coordination and execution of disaster risk and vulnerability reduction is the local government. This is the place where the majority of the operational exercises pertaining to disaster risk reduction are implemented. The mainstreaming of disaster management into local government activities is paramount. Local government endures the worst disasters, and these spheres of government will likewise are primary responders to disasters. It is consequently obvious that proactive management and prevention or mitigation of disasters must be given high priority and attention it deserves particularly at the municipal level.

1.7.8 Implementation of Disaster Risk Reduction in Local Government

South Africa became a democratic state in 1994. Since then, a series of policy and legislative developments have been introduced, many of which have been crucial in terms of restructuring and transforming local government (Reddy et al, 2015:77). The post 1994 legislative and policy framework governing local government has been described as being “world class” and very “futuristic”; however, despite the progress made in addressing basic development backlogs, there are still major challenges being experienced (Reddy et al, 2015:26). Amongst others there is the lack of, or poor’ commitment and systematic integration of disaster risk reduction initiatives into core developmental functions of local government. Conceptually, disaster risk reduction cannot work in isolation but it requires a coordinated methodology that local government ought to adopt as a service delivery imperative. This approach must focus on fundamental human rights service delivery issues that are concerned with reduction of disaster risk and vulnerability (Van Niekerk, 2015:21).

The weaknesses at local government in terms of inadequate technical capacity result in inappropriate or lack of planning and implementation of measures aimed at reducing disaster risk and vulnerability, such deficiencies are one of the main elements responsible for escalated susceptibility to natural and manmade hazards in less developed countries (Anderson, 1995:48; Smith, 2001:30). Hence, the United Nations recommended the urgency to decentralise and institutionalise planning and delivery of integrated disaster risk reduction measures particularly at local spheres of governance (UNISDR, 2004:5). The responsibility of municipalities in the reduction of vulnerability and disasters is vital in building strong societies mainly because local government structures and communities are at the coalface of disaster management (UNISDR, 2004:8). Although local government should lead disaster risk reduction initiatives, it encounters a number of major difficulties.

The inadequacy of human resources with desirable expertise, as well as financial resources and the absence of a proactive disaster management approach tend to affect effective planning and implementation (Manyena, 2006: 810; Pearce, 2003:211).

Investing in local government following proper guidance is beneficial in terms of arranging and executing disaster risk reduction measures (Ahrens and Rudolph, 2006:45). It has been recommended that disaster risk reduction should be combined with other developmental initiatives for sustainable disaster risk reduction solutions in order to enhance responses to disasters (Department for International Development (IDFID), 2005:7).

There has since been a worldwide transformation to proactive disaster management approach and sustainable model of managing disaster risk (disaster risk reduction). South Africa has also since progressed towards the disaster risk reduction paradigm, this is evident from the progressive disaster management legislation and policies that have been developed which recognize that reducing vulnerability and disaster risk is a responsibility of every relevant sector and a responsibility of all spheres of government. A number of publications, points out that the local government sphere, particularly in developing countries has not made significant strides with regards to the effective planning and implementation of disaster risk reduction. Many municipalities, particularly in Kwa-Zulu Natal have for long, neglected the disaster management function, claiming that it is an unfunded mandate. They would thus not plan and implement any disaster risk reduction measures, but only panic when they experience serious disruptions in the community by various phenomena and to that extent even fail to respond in an attempt to normalise the situation that they may have been confronted with, because they may not be prepared. The new Disaster Management Amendment Act No. 16 of 2015 strengthened the responsibilities of local government particularly the local municipalities. There is thus a need to develop a framework for proactive disaster management which will largely entail the disaster risk reduction measures. The study is trying to highlight and contribute to development and implementation of the framework for disaster risk reduction in KwaZulu-Natal.

1.8 SIGNIFICANCE OF THE STUDY

This study is significant in that it will significantly contribute to expansion of knowledge concerning the application of disaster risk reduction at a local sphere of government. The study will provide empirically guided mechanisms for integrating disaster risk reduction measures as part of the wider aim of facilitating sustainable growth and long term solutions to the challenges of vulnerability and disaster risk, particularly by local government. The implementation of the study findings will enhance systematic planning and the incorporation of disaster risk reduction initiatives.

1.9 JUSTIFICATION AND RATIONALE

This study was conducted to explore and understand challenges facing disaster risk reduction practice at a local government sphere. The study proposed a comprehensive framework for ensuring a systematic incorporation of disaster risk reduction plans by municipalities. If the studies aimed at assisting local government from moving away from a reactive disaster management paradigm to a rather proactive paradigm are not conducted, the fight against disaster risks will take a very long time, and the poor will continue to be vulnerable to such disasters.

1.10 RESEARCH METHODOLOGY

A case study research design was applied as a strategy to conduct this study. The evidence created from a case study research design is considered robust and reliable. The case study research design is versatile and is used in many areas of management studies, amongst others are management strategy, information systems, innovation, organisational change, political science, and public administration research (Yin 2014:1). The ability of a case study research design to use numerous bases of evidence marks it a worthwhile tool where the emphasis is on a definite condition or circumstance (Yin 2014:1).

This study employed a mixed method of data gathering and analysis. The mixed method is used for gathering, examining and integrating qualitative and quantitative data in one research study mainly to dissect and comprehend a study problem comprehensively (Tashakkori and Teddlie, 2003:13). The reason for using both techniques was to improve research quality in terms of thorough comprehension and examination of the research problem, such as a complex issue of planning and application of measures that seeks to reduce or eliminate vulnerabilities and disaster risk at local government level. When employed together, numerical and qualitative approaches balance each other and permit for more comprehensive exploration (Tashakkori and Teddlie, 1998:23).

Charles and Mertler (2002: 43) describe quantitative research as a study where a researcher depends on numerical data. A researcher segregates variables and narrates them to define the degree and occurrence of connections. On the other hand, qualitative inquiry is “a review procedure of comprehending” where the investigator establishes a “composite, all-inclusive depiction, studies words, thorough opinions of interviewees, and carryout the research in a real situation” (Creswell, 1998:67). The research data was collected through a qualitative method at the locale and the environment in which the study is conducted.

A sequential explanatory mixed research design, consisting of two distinct stages was used. Firstly, the quantitative data was gathered using a structured questionnaire and the data subjected to quantitative examination. The quantitative method of enquiry was applied to classify possible critical and dominant variables impeding or enhancing suitable design and carrying out of mechanisms aimed at reducing vulnerability and disaster risk.

In the second stage, a qualitative method was utilised to elicit in-depth explanatory data through semi-structured interviews. The basis for this method of enquiry is that data gathered qualitatively and its findings provide a comprehensive outlook of the research conducted (Charles and Mertler, 2002:23). The qualitative data enhanced and enlightened the statistical results by understanding the respondents’ opinions

profoundly. The results of the two stages were integrated within the summative discussion of the study.

1.10.6 Description of the eThekwini Municipality

The study was undertaken at the eThekwini Municipality in KwaZulu-Natal (KZN), South Africa. The Municipal area is about 2297km² with 103 wards and has a population of approximately 3 442 361 million people (eThekwini Municipality IDP 2015:24). The municipality is made up of different groups confronted by numerous social, economic, environmental and governance issues (eThekwini Municipality IDP 2015:25). The most prevalent kinds of disasters that the Municipality encounters are floods, structural fires, strong-winds and lightning due to extreme coastal storm surges (KZN-COGTA: 2014:24).

The selected study area was convenient since it resembles characteristics of most of the South Africa's municipalities in terms of its urban and rural settings as well as an array of hazards that are experienced in its area. The fact that it has long established its disaster management centre was also an interesting aspect of the study in terms of evaluating disaster risk reduction programmes. However, the newly refurbished and technologically advanced Disaster Management Centre of the eThekwini Municipality was officially opened by the MEC for Co-operative Governance and Traditional Affairs, Ms Nomusa Dube Ncube, on 01 April 2011.

1.10.6.1 eThekwini City Council

The City of Durban is managed by eThekwini Municipality, whose elected Council serves to facilitate the provision of infrastructure, services and support to the people of eThekwini. The Council comprises an elected Mayor, Councillors, executive committee and several implementation committees. The newly elected eThekwini Mayor is Councillor Zandile Gumede. The eThekwini Municipality has two hundred and nineteen

(219) council members, which selects the Mayor, Deputy Mayor and Speaker (IEC, 2016). The eThekweni Municipality is quite vast as depicted below:

Figure 5.3: Map showing the eThekweni Municipality (eThekweni IDP, 2016:26)



1.10.7 Ethical Considerations

Ethical clearance was sought and provided by the University higher degrees committee. Within the empirical phase of the study, consent was elicited from all prospective participants. Prior to the information gathering, the reason and significance of the study was mentioned to the participants. As a commitment of moral responsibility, the respondents were told that participation in this study was voluntary, and nobody was compelled to take part in the study and that they are allowed to pull back anytime without any negative consequences. The privacy and anonymity of the participants in this study was guaranteed. In order to maintain privacy and anonymity, questionnaires

were given numbers instead of using participant's names thus making sure that information about a particular participant was unidentifiable.

1.10.8 Study limitations

Despite a multi-perspective exploration of the phenomenon via the use of mixed methodologies, the study was conducted on a limited sample within a specific population in the eThekweni Municipality and the transferability of findings may be limited by this. Even so, the findings offer a meaningful point of reference for future researchers within the field.

1.11 DEFINITION OF KEY CONCEPTS

Capacity

The balance of all the qualities, strengths and means existing within a particular household, community or institution to achieve and decrease the disaster risk and thus reinforcing the resilience.

Disaster

A significant distraction and dysfunctionality of a household, community or institution as a result of a particular hazard interacting with vulnerable situation, resulting in extensive impact on the environment, economy, property and human beings.

Disaster damage

A complete or limited devastation of property in the area where hazard struck or occurred.

Disaster impact

Characterises an overview of disaster effects, comprising of bad and perhaps advantageous impact.

Disaster management

The process of integrating, development and implementation of certain methods to ensure rapid response to disasters.

Disaster risk

Is regarded as a function of either natural or manmade hazardous element or event, mainly accompanied by conditions of vulnerability and exposure. Disaster risk is generally stated as a possibility of death, injury and loss of property.

Disaster risk management

It is the implementation of legislations, methods and activities aimed at reducing disaster risk by ending existing and potential conditions of vulnerability.

Disaster risk reduction

It is the legislative imperative with sole mandate of mitigation and prevention of disaster risk and thus contribute to consolidation and development of resilience.

Disaster risk reduction plan

A specific programme, project or activity developed by an institution to articulate specific commitments and strategies for eradication of disaster risk.

Exposure

Exposure of systems, infrastructure, property, environment and human beings to hazards.

Hazard

A physical event that may result in death, body harm, damage to property as well as the environment and socioeconomic destruction. A hazard can be natural or manmade

Mitigation

The reduction of the severity of disaster effect achieved by implementing activities to lessen the impact of hazards, such may include structural and non-structural measures.

Prevention

A process of applying actions and methods to stop prevailing and potential risk of disaster occurrence.

Disaster Risk assessment

A method to determine the characteristics and nature of disaster risks by investigating hazards and quantitatively estimate the susceptibility that can result in occurrence of disasters.

1.12 CHAPTER DIVISION

This dissertation is structured into six chapters that articulate the key aspects of the study as they relate to the research process.

Chapter 1: Introduction and Background to the Study

This chapter gives an outline of the study. It comprises an important context of this research, the objective of the study, the fundamental questions investigated, an introductory review of foundational literature, definitions and operationalization of key terms used within the study, an overview of the key components of the study including a synopsis of methodological aspects, the significance as well as limitations of the study.

Chapter 2: Theoretical Frameworks, International Trends and Development

This chapter gives a systematic evaluation of literature relevant to the undertaken study and is presented from distinct thematic perspectives. Firstly, a review of foundational literature to clarify the concept of disaster risks reduction. This chapter will also develop insights into key frameworks within disaster risk reduction.

Chapter 3: Legislative and Policy Framework

This chapter presents a detailed overview of South African legislative and policy issues and practice of disaster risk reduction (DRR). It explains the nexus between disaster risk reduction and general public administration for municipalities

Chapter 4: Research Methodology

The chapter aims to orientate the reader to the research model, research methods, approaches and design employed in the study, participant selection processes, data gathering instruments as well as data gathering and interpretation.

Chapter 5: Findings, Interpretation and Analysis

This chapter presents data and analysis of the collected data. The data is thematically discussed; the data is also presented in a form of tables and percentages.

Chapter 6: Theory Development: Presentation of a Model for Disaster Risk Reduction.

In this chapter, the study proposes a practice framework that has emerged as a result of the empirical data collated during the study. The resulting model will be conceptualised as a Model for Disaster Risk Reduction in Local Government.

Chapter 7: General Conclusions and Recommendations

The report concludes by offering a global discussion of key aspects of the study including the observed conclusions and recommendations. Beyond the theoretical contributions, the chapter articulates the potential for further research in this field of study.

1.13 Conclusion

This chapter provided the background of the study and in so doing provides an overview of all the elements of the study from the conceptual phase to the end of the study. What the study seeks to achieve was also stated. The guiding questions and specific

objectives were presented. Moreover, the chapter gave an impression of the methodology and design employed in this study, as well as the significance and limitations of the study.

CHAPTER 2

REVIEW OF CONCEPTS, THEORETICAL FRAMEWORKS, INTERNATIONAL TRENDS AND DEVELOPMENT

2.1 INTRODUCTION

The previous chapter presented the background and overview of the study. This chapter, i.e. the Literature review is primarily focussed on the presentation of a critical overview of both empirical and theoretical literary sources related to disaster management. Heyvaert, et al (2013: 14) have provided a brief overview of the purpose of literature reviews and conclude that they serve a number of distinct but interrelated functions within the conceptualisation of any study. They surmise that literature reviews can provide an opportunity for the formal crystallisation of phenomena that embodies a number of concepts. Within this function, the review can be utilised to provide clarity on the concept(s) under investigation. Furthermore, they allow for the following:-

1. The identification and critical appraisal of existing and predominant literary views as they relate to the disaster management as a whole.
2. The specification and consideration of both, the areas of agreement and disagreement about the evidence as it relates to best practices within disaster risk management.
3. Utilisation of literature and evidence to develop alternative possible strategies available to support the best practices within disaster risk management.
4. Identification of areas where a lack of agreement exists and in turn, articulating the unanswered questions within the study area.

(Adapted from Heyvaert et al., 2013)

In keeping with the indicated structure of the chapter and to ensure meaningful exploration of disaster risk management related literature, it is important for an initial clarification of central concepts as they relate to the study. A significant number of terminologies and concepts within disaster management are utilized in this study and it

is crucial to discuss and define them as the basis for ensuring clarity for the reader. Similarly, an overview of key seminal debates will be presented as a scene-setter.

2.2 DISASTERS: AN OVERVIEW OF DEFINITIONAL ISSUES.

Various sorts of dangers can lead to disasters. These may be a consequence of nature (for instance lightning, floods, fires etc.), technological (for instance transportation or industrial incidents) or mostly triggered by intentional human acts by individuals or groups (for example, conflict or terrorist incidents). Japan's 2011 Tsunami was, for example, caused by a natural hazard but consequently led further associated disasters, most notably, a nuclear plant crisis, while intense rainfalls and earthquakes can both result in landslides. Other dangers that confront humans include unacceptable inequality, catastrophic failures within the economy, insecurity of food and health hazards (Twigg, 2015:123).

Disasters not only take place in period of time but they can happen in space also. They can be long or short term in their chronological presentation. They can be shocks or sudden events, like storms, outbreaks of disease, or the natural resources degradation and alteration of climate. Disasters are basically deemed as extreme situations in their impact or scale, needing some sort of external help. However, lower intensity; small scale disasters can also have critical effects. These recurrent, small events are normally known as 'extensive risks'. Poor individuals also normally face increased everyday risks, for instance lack of sanitation or clean water, pollution, worse healthcare, road incidents, injuries in occupation, crime, local fires and violence (Nirupama, 2013:89).

Disaster and hazards need to be tackled in their interaction context with conditions of socio economics. The term 'natural disaster', which is generally adopted, is mostly confusing and misleading because there are natural hazards not natural disasters. Confusion on the usage of the term "disaster" and "hazard" is a common mistake, whereby these terms are used interchangeably as if they mean the same thing yet they are two distinct terminologies. A disaster happens once an area or community is attacked or is experiencing a particular hazard. Basically, the damaged and their extent

of a disaster are induced largely by the conditions of susceptibility of the affected to a particular hazard(Noy, 2009:15). This exposure is not happening naturally but is occurring due to the disaster dimensions created by the humans.

Vulnerability to hazards is a deep rooted product of complete range of social, economic, political, cultural and institutional aspects which modify the lives of individuals and develop the atmosphere in which they work and live in (Alexander, 2002:67). The processes of development play a crucial role in introducing people to dangers as well as modifying their exposure to disaster potential. For instance, large population reside in flimsy homes in dangerous areas which could be the amalgamation of various factors like growth of population, displacement caused by the development or poverty (itself is a reasons of global economic aspects, national as well as domestic symptoms), cities or towns migration (which has a series of reasons for socio economic downfall comprising of opportunities of livelihood), political and legal problems, such as state macroeconomic stability, lack of access to land and other political attributes and policies, comprising of feeble civil society and government areas (Alexander, 2002:20).

A substantial body of research across the globe has specifically indicated that it is the vulnerable members of society and the deprived and less advanced societal groups that suffer the worst consequences from disasters. Typically, this includes the very young, the disabled, women, old, displaced, migrated and generally the poor people. Those who face social disadvantage or economic degradation due to one or more of these features are more likely to be hit and suffer from disasters. Being vulnerable to disaster is not only a matter of poverty, but the basic aspect is poverty. The effects of disaster on the community is unequal and not balanced: socially marginalized and poor households are more likely to be defenceless against these losses in contrast to the households who are rich; they are further forced into poverty due to the outcome of the disaster; and the disaster even makes it more harder to recover (Nirupama, 2013:65-78).

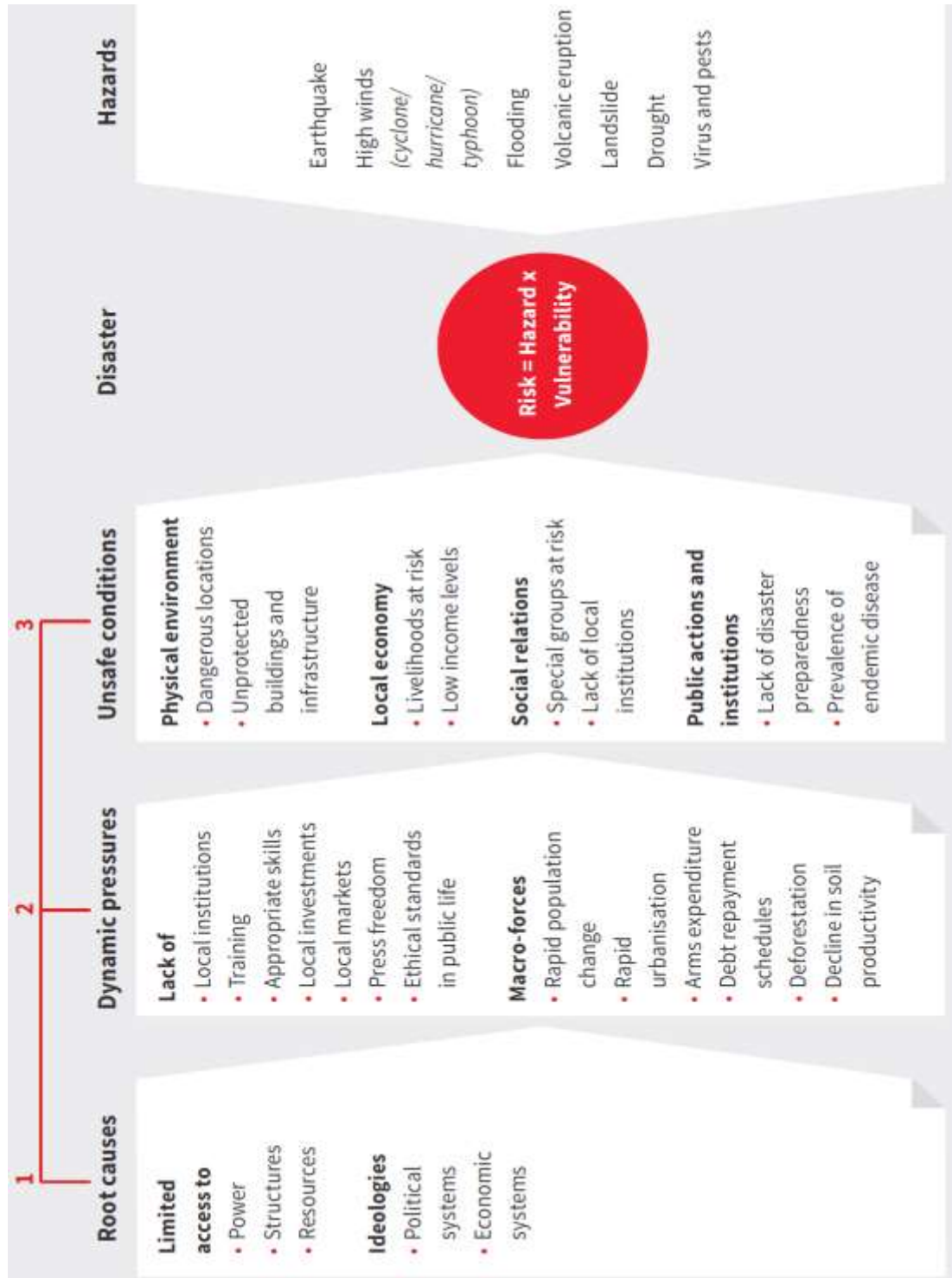
The problem of vulnerability is associated with the context of socio-economics. Therefore it is imperative to understand the effect of disasters and to select options where and how to intervene. Being vulnerable is changing and is highly dynamic;

however defencelessness becomes constant due to deep poverty and social marginalization (Alexander, 2002:17-35).

Not only are the poor nations affected by disasters but also the rich countries. But disaster has a severe effect on countries having less income and weak economy which disproportionately experience more loss of economy and higher mortality in regards to their GDP size (Nirupama, 2013: 45-78). Disasters often reduce the gains of social development and economic opportunities, increases instability of politics and lead to long term damage to the environment. Like low income families, poor nations mostly lack the expertise and resources to manage the disasters.

The numerous factors and pressures which merge to enhance and create the vulnerability can be traced to determine the progression of vulnerability (as illustrated in Figure 2.1 below). These pressures can be dealt with by adopting steps to eradicate vulnerabilities and their respective root causes.

Figure 6.1: The Vulnerability Progression (Wisner et al., 2004:51).



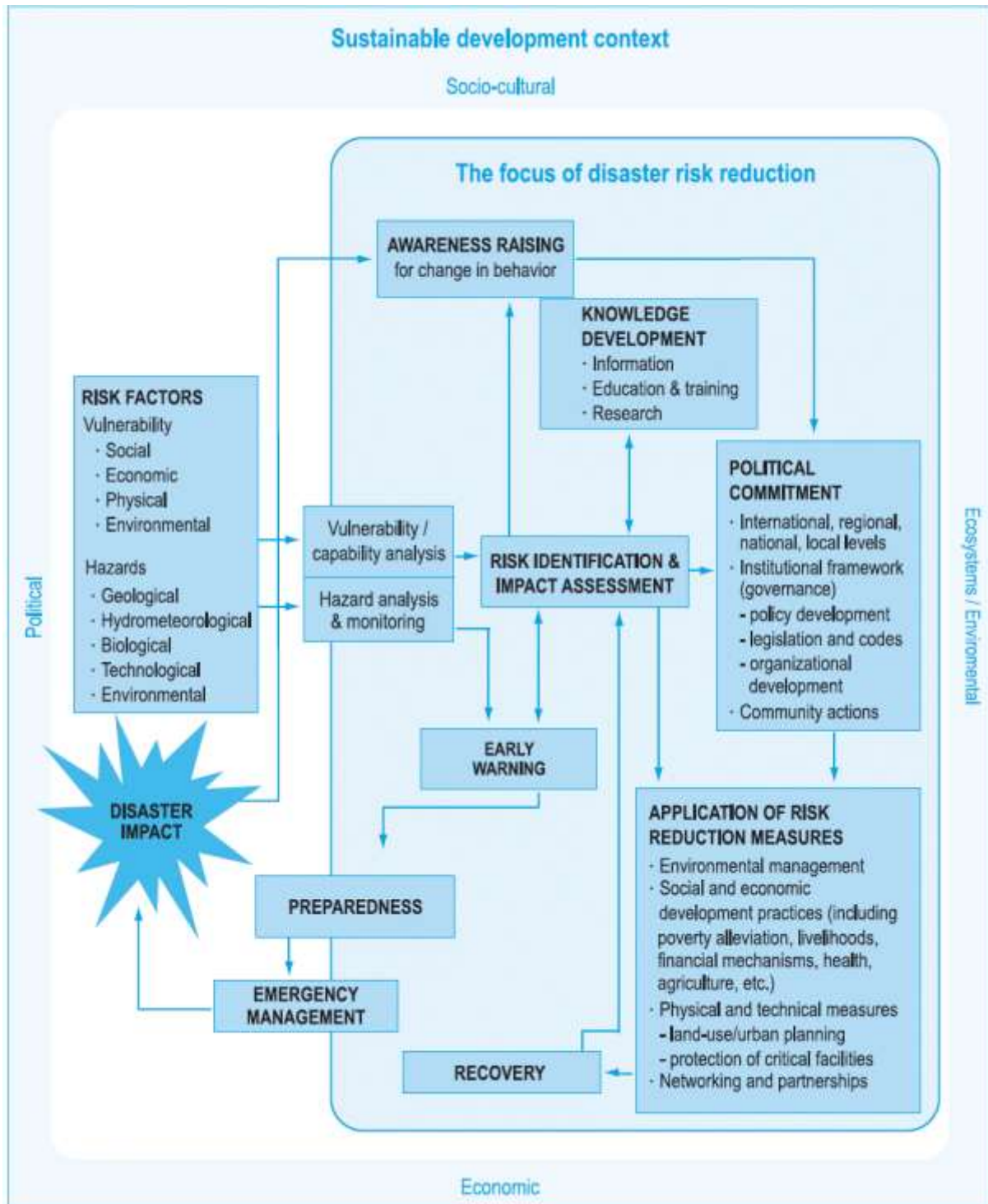
2.3 A CONCEPTUAL CLARIFICATION OF DISASTER RISK REDUCTION

The strategies of disaster risk reduction comprise of vulnerability analysis, as well as few of operational qualities and capacities of the institutions. Mainly the attribute of the strategy of limiting disaster risk comprise of the analysis of crucial facilities important for economy as well as the society. The prudent utilization of the systems for hazards early warning and the usage of various sorts of scientific and technical skills as well as other educational abilities is paramount to reduce the impact of disasters (UNISDR, 2004: 47-78).

The critical involvement of the affected population is paramount in creating new sorts of collaboration which can be influenced by the acknowledgement of shared cooperation and responsibilities. Fortunately, advanced technology in communications and access to information can support the broader networking and exposure that these shifting and new sorts of partnerships need. There are important basic aspects of every strategy for disaster risk reduction, such as, available resources, relative focus, and particular ways of implementation must take measure of the processes which are most feasible to the specific situation of the community (UNISDR, 2004:57-67). Figure 2.2 below shows the basic aspects and context of the management of disaster risk.

The technical literature has a number of ways in which disaster risk reduction is defined. But it is widely known to indicate the use and development of strategies, policies and processes to limit disaster risks and vulnerabilities

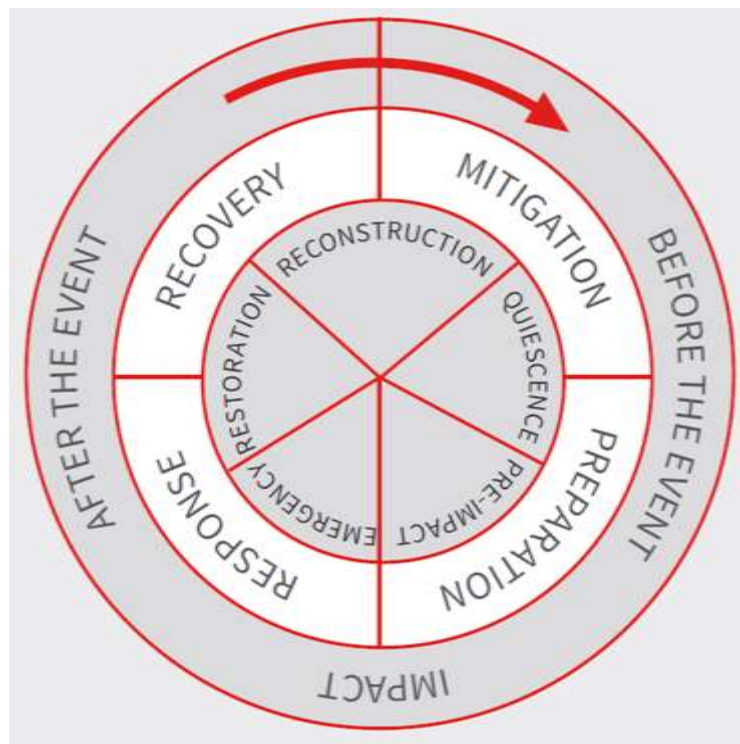
Figure 2.2: Global Framework for Disaster Risk Reduction (UNISDR, 2004:14).



2.3.1 The Disaster Management Cycle/ Continuum

Classical ways to manage disasters have normally been based on the disaster management cycle (figure 2.3). The disaster management continuum is the practical and simple model appreciated and used by disaster management practitioners and organizations throughout the world.

Figure 2.3: The disaster management cycle (Twigg, 2015:27)



2.3.2 The emergence of the Disaster Management Cycle

Researches, debates and studies on different stages of disaster management are as old as 1930s (Meal, 1997:45). Since these old times, both practitioners and scholars of disaster management have utilized activities linked to the different disaster stages to comprehend their field of research as well as to enhance the management of disasters more successfully (Alcántara-Ayala et al., 2015:48).

This classical approach only began to shift during the early 1970s, which experienced a significant rise in disasters which lead to huge economic loss and numerous deaths. Due to this capital and human loss, an efficient way of providing relief and to deal with disasters was suggested (Alcántara-Ayala et al., 2015:99). With the repeated and cumulative deaths and economic loss due to disasters, a new paradigm emerged which suggested a better way of using resources instead of reactive measures such as emergency relief assistance.

2.3.3 Disaster Theory: The Pressure and Release Model (PAR Model)

A theoretical framework that can be useful for understanding and reducing disaster risk is the “disaster pressure and release model” also known as the disaster “PAR Model” (UNISDR, 2004:94). This model shows that vulnerability (pressure), which is rooted in socio-economic and political processes, has to be addressed (released) to reduce the risk of disaster. The PAR Model states that a disaster happens only when a hazard affects vulnerable people. A disaster happens when these two elements come together. A natural phenomenon by itself is not a disaster; similarly, a population maybe vulnerable for many years, yet without the “trigger event”, there is no disaster (UNISDR, 2004:95). A pressure that is rooted in socio-economic and political processes - is built up and has to be addressed, or released, to reduce the risk of a disaster. These processes may include poverty, age-related discrimination, exclusion or exploitation based on gender, ethnic or religious factors. A PAR model was introduced as a counter model and has helped practitioners to identify disaster risk reduction measures in a more comprehensive manner (UNISDR, 2004:95).

2.4 THE DISASTER MANAGEMENT CYCLE: CONTENT AND PROCESS CLARIFIED

The disaster management cycle shows a model of linear operations, segmenting the cycle into stages (after, during and before the disaster), each of which needs various sorts of involvement (preparedness, recovery, mitigation and response). The model is simple to comprehend; it shows how to systematize disaster risk management, which may be the reasons why this approach is gaining admiration. But it does not truly reflect

the intricacy of disasters; it can result in disintegration of disaster management approach.

The first approach in disaster management is prevention which means *“Measures and activities to tackle new and existing disaster risks”* (UNISDR, 2015:59). The mitigation and prevention of disasters shows the intention and commitment to fully avert the negative potential effects of the hazard and conditions of vulnerability.

The next stage is the mitigation of disaster impact. It refers to the *“limitation or reduction in the negative impacts caused by the hazard.”* (UNISDR, 2015:67). The reduction of disaster risk is not a responsibility of a separate or single sector. It needs to be the business of everyone and huge options and processes are there to prevent and mitigate disaster risks (Khan, 2008:95).

The Disaster Preparedness stage deals with the last preparatory actions required before the disaster. According to Messer (2003:13), Disaster Preparedness *“involves measures taken to ensure effective response to the impact of disasters. Preparedness measures include, for example, evacuation plans, early warning systems, pre-stocking of relief items - all being part of a national disaster relief plan”* (Messer, 2008:58).

The Disaster Response stage describes the immediate actions after a disaster event occurs. According to UNISDR (2015:40) disaster response is a series of *“activities taken during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected”*.

Amongst the critical stages of the disaster management continuum is recovery which involves rehabilitation and reconstruction efforts. According to UNISDR (2015:45) Disaster Recovery refers to *“Decisions and actions aimed at restoring or improving livelihoods, health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development, including build back”*.

2.5 DISASTER RISK REDUCTION (DRR) – A THEMATIC OVERVIEW OF CONTENT AND PROCESS.

Essentially, this section discusses the concept that is Disaster Risk Reduction (DRR), through evaluating its evolution, components and developed DRR frameworks. In the disaster context, this chapter mainly focuses on the humanitarian and initial emergency responses that need to be put in place in the event of a risk as well as the mitigation of risk. In recent times, there has been a growing consensus amongst the disaster management practitioners and policy makers as well as the affected populations that the value and the importance of disaster management proactive measures are necessary and effective.

In essence, the International Strategy for Disaster Reduction (ISDR) and the Hyogo Framework of Action (HFA) acknowledge that DRR should include improved governance, early warning, building up resilience in households and communities, reduction of underlying risk factors as well as strengthening of disaster preparedness (ISDR, 2004:37). In spite of the fact that DRR's value has been recognized, it is a nebulous concept and needs programming elements such as mitigation and prevention as well as building of stronger resilience in communities. However, organizations still try to figure out and struggle with identifying what DRR needs to encompass.

In this regard, this section will mainly focus on identifying concepts and programming elements of Disaster Risk Reduction. This review will therefore offer baseline definitions as well as trends and review existing literature in this regard. This section will also highlight identified gaps in the literature as well as focus on the case study.

2.5.1 Disaster Risk Reduction: From Concept and Operational Framework to Practice.

DRR is a conceptual framework comprising of elements that are carefully considered in regards to their capabilities to minimize disasters and vulnerabilities to risks in a society with the intention of avoiding/ preventing or merely limiting (preparedness and

mitigation) any adverse effects that may arise when hazards arise and risks occur in regards to sustainable development (2004:67). This definition makes DRR a double-edged sword since it strongly dwells on and encompasses the concept of proactive planning and implementation of DRR measures.

DRR involves building of government capacity, enhancing community preparedness, improving informational systems, improving analytical models, boosting partnerships, creation of better codes, enhancing resilience of nations and international partners, as well as enhancing agricultural conservation (UNISDR, 2004:67-70). There are numerous programs currently labelled DRR with various actors presuming that anything that reduces risk and improves incomes can be termed as such. As much as various organizations assume DRR and development to be distinct, some acknowledge that there is actually only a slight difference (UNISDR, 2004:105).

Such programmes are helpful in ensuring the wellness of physical and financial capital, in protecting natural capital, and in making households more resilient in disaster preparedness although sometimes this does not occur. For instance, income improvement or increase of savings is said to enhance reduction of risk. Nevertheless, there are other methods to reduce risk in this regard such as increasing credit facilities.

Each organization adopts its own operational priorities and perceives the purposes of DRR programming distinctively from other organizations. For example, a common mechanism is to integrate disaster risk reduction measures and interventions into developmental agenda of the institution. This mechanism put emphasis on reduction of vulnerability and realization of resilience and preparedness.

DRR is primarily concerned about creation of more resilient and safer communities and societies. In essence, this invokes a situation regarding the inclusion of disaster mitigation and prevention in all phases of as outlined in the disaster management continuum. In fact, some organizations will only term the programs to be DRR if it is meant to handle and mitigate some specific risks from hazards and in preparation of disaster. This makes organizations views DRR too critically and therefore do not take note and implement effective strategies to improve the outcomes of people and

livelihoods. Therefore, the DRR models in this regard are only used as a program and model for just humanitarian efforts and related efforts.

In this method, the “D” in DRR is removed, to ensure that there is a deliberate emphasis on disaster management as a whole which include caring for those who are affected by disasters whilst also focusing on reduction of vulnerability and development interventions. Such an approach will ensure that disaster management is not pigeonholed as a humanitarian sector but requires all sectors to purposefully work together to mitigate and prevent disaster risk where possible.

Some organizations implement DRR programs in conserving soil and water, agriculture conservation, maintenance of environmental ‘hot-spots,’ mitigating drought, protecting livestock, revision of seeds that resist drought, irrigation, as well as agro-forestry. In this instance, since most of the efforts are bent on handling natural resources, funding in this regard is likely to be linked with environmental conservation.

The management of natural resources contributes to the mitigation of climate change impact particularly the extreme weather events such as floods and veld fires. Disaster risk reduction programmes perfectly fall under climate change adaptation. Hence, the disaster risk reduction initiatives related to climate change interventions tend get the most attention from government and donors for funding purposes (UNISDR, 2004:105).

Agricultural conservation is one of the areas that have been subjected to DRR. For instance, in South Africa where projects have been used immensely, DRR programs have been used in agriculture and livestock to enhance positive results when seasons are ideal as well as to reduce negative results in times when seasons get rough. These programs include cultivation practices such as irrigation on small scale and farming of short cycle seeds that are resistant to drought among other things. Essentially, programming of this kind meets the cut for what most organizations term to be DRR programs in most cases.

A practice in DRR that has in recent times received much attention and investment is in building codes and infrastructure (UNISDR, 2004:35). Creating more information is necessary to ensure that architects, engineers, and other involved parties adhere to the

set and standard building codes unlike in the same way that other regulations are ignored to reduce disasters and risks involved with lack of adherence to such rules- particularly in areas prone to risk. To accomplish this, it is of great importance to ensure that technical professionals such as engineers and land use planners are aware of disaster risk reduction initiatives, so that they can incorporate such activities in their routine plans. One of the practical methods of ensuring systematic and sustainable inclusion of disaster risk reduction into mainstream development is establish an arrangement of incentives and codes to be complied with and penalties if not.

As with investment on infrastructure, there must be an unmistakable and maintainable arrangement to ensure that the infrastructure is in good conditions at all times including the private infrastructure. Regularly, Government provides grants that enable victims to rebuild their asserts post disasters, however sometimes this creates dependency if no proper mechanisms are put in place more so to those that are self-sufficient and not indigent (World Bank, 2006:134).

Because of the little distinction between implementing DRR projects and advancement of climate change programmes, a number institutions feel that they need to constrain what can fall under the realm of DRR. DRR projects are regularly restricted to communities and households vulnerable to obvious disaster risks. Disaster risk reduction methodologies must be custom made to address relevant disaster risk in specific communities, because communities in a particular space and settings are dynamic, and the disaster risks and levels of vulnerability is dynamic as well.

2.5.2 Primary Factors Causing Disasters

Catastrophes have quickly risen in number over the previous century; the effect has likewise been serious especially in poor and developing countries. The increase of global population, expanded urbanization, occupation and building in more hazard sites, and environmental change are all main considerations adding to the increasing number of catastrophes. The socioeconomic and environmental vulnerability of the affected community as well as the efficiency of government and non-government organizations

determines the magnitude and scale of disaster impact. Moreover, the suffering from the impact of disasters often cause vicious and prolonged cycle of poverty (Boudreau, 2009: 45). By and large, the population that is now exposed to hazards is double than what it was the previous decade (DFID, 2006:49).

Disaster risk is a worldwide worry as much as not all communities or people encounter an equivalent danger from risks. The severe impact of disasters is often experienced in poorer countries with weaker administration and low income. Countries with quick economic development, and where the vulnerability of people and resources is becoming quicker than the application or implementation of disaster risk reduction mechanisms (UN, 2009; ISDR, 2004 and Twigg, 2007).

The poor are especially powerless against catastrophes given their existing low incomes and drained resource base, and along these lines keep on suffering from expanding unemployment and lower compensation or higher costs, particularly on fundamentals needs such as food. The measure of the level of disaster impact is viewed as an element of the lack of capacity and resilience (UN, 2009:18). The population in urbanised area are turning out to be progressively more powerless against the effect of hazards given the surge of development in huge and medium sized urban areas, bringing on an expansion in shanty towns and ghettos in zones that are exceedingly inclined to avalanches, flooding, fires and different types of hazards (UNDP, 2004: 34).

Disasters result in extreme decimation of property, death and injuries of human and animals; definitely bringing about great deal of socioeconomic suffering and the crumbling of livelihoods. Disasters ordinarily result in expensive scale annihilation of essential infrastructure, for example, road infrastructure, ports, telecommunication lines, industries as well as water and sanitation system (Collier, 1999; Cavallo, 2003 and Noy, 2009). Generally, severe disruption of socioeconomic and infrastructural investments are huge in poor and countries with emerging economies because of the utilization of poor building items, unavailability and lack of adherence to building standards coupled with poor enforcement thereof (Cavallo and Noy, 2009:29).

People can suffer even more devastation through the injury and death occurrences, illness and resettlement. Disasters result in unbearable unhealthiest situation due to malnutrition especially amongst vulnerable age groups such as children and in this manner affect the possibility of getting educated and chances of better employment in future (Akresh et al, 2010:39; Bundervoet, 2009:50, Adelman et al, 2010:66).

The extent of disasters and their impact on populations as outlined above demands a radical approach especially by the institutions that are given a mandate to implement DRR responsibility; a change in disaster management approach is warranted to alleviate further impact and suffering. Local government has a huge responsibility in this regard.

2.5.3 Shift of Focus into Disaster Reduction

It is critical to build up a common approach and understanding of the fundamental principles of DRR as this literature addresses them. The perspectives, capacities, and practices that are portrayed here are distinctive from those components identified with crisis or management of disasters. In the course of recent years or past three decades, there has been a persistent advancement in the practice of reactive disaster management approach (UNISDR, 2004:77). These collections of practices in disaster management have evolved over the years and have been regularly alluded to as civil defence, crisis help, disaster response, alleviation of human suffering, philanthropic help, crisis administration, protection of civilians, disaster Risk Management and recently disaster risk reduction which focuses on disaster prevention and mitigation.

The practice of Disaster Risk Reduction in the present day period draws its importance and relevance to a great extent from prior contributions and past practices in the field of civil defence and later practices of management of disasters. In this regard, the main point of emphasis has been on the arrangement and enhancement of disaster response capacities with respect to timely reaction to an imminent or occurring disaster, or the supply of basic necessities to affected households and communities. In number of occasions, political responsibility and the distribution of resources to address disaster

risk or unsafe conditions has been focused overwhelmingly on short term interventions (UNISDR, 2004:87).

It is certainly a fact that humanitarian assistance amid the intense period of disaster impact will stay critical and should be improved at all levels. Notwithstanding, the vital question raised is on whether societies value social or material assets after a disaster has been experienced. However, in recent years and maybe inspired in any event somewhat by the recurrence and seriousness of devastating disasters in the previous decades, the disaster management practitioners including politicians media, institutions of higher learning, and various leaders and sectors are continuously seeing the need of planning and implement proactive measures to prevent or mitigate the impact of disaster where possible. (UNISDR, 2004:103).

This converts into the requirement for much more prominent consideration on execution of proactive disaster risk reduction techniques which can add to sparing lives and protecting property and assets before they are lost. It is consequently a reason why a more comprehensive methodology that stresses reduction of vulnerability and hazards must be ensued to limit loss caused by disaster impact.

There is a developing acknowledgment underlying such a rationale: the disaster risk is on a very basic level connected to natural issues and uncertain around sustainable livelihoods and development. Many countries now acknowledges that it cannot be acceptable to attend to disasters once they have occurred but a concerted effort must be made instead to prevent or rather limit the impact of disasters. Thus, ensuring the protection of social resources and financial assets. The arrangements of disaster risk reduction measures and initiatives should be executed with an aim of empowering communities so that they can be resilience and be shielded from other pertinent hazards.

It is similarly important that the reduction of disaster risk is seen as a consistent arrangement of attempts implemented across socioeconomic, political, environmental and other relevant areas of action. Rather than being comprehended as a specialization

of humanitarian assistance or crisis management but be understood that disaster risk reduction needs to include many sections of society and professions.

This conceptual understanding is fundamental if disaster management stakeholders and institutions tasked with the disaster risk reduction responsibility are to appreciate the fact that proactive measures limits and sometimes prevent the impact of disasters. Some of the disaster risk reduction activities are not media attractive unlike the actual disasters. Perhaps because they are not dramatic but very efficient in terms of reducing disaster risk and vulnerability. It is hard to cover 'what did not occur'. In any case, such disaster risk reduction strategies are the way to effective, and reasonable reduction of disaster risk and vulnerability.

The inclusion of techniques aimed at reducing disaster risk in legislative and policy frameworks ought to take place as a proactive mechanism to deal with disaster risk and vulnerability. Such policy inclusion ought to address issues related to social, economic, political and environmental risk and vulnerability. This needs the full contribution and engagement of all relevant stakeholders primarily the affected communities. It additionally requires diverse types of sectors and disciplines to solicit diverse viewpoints than those normally related to emergency management.

2.5.4 Components of Disaster Risk Reduction

To begin with, the ISDR defines risk as: “the probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions” (ISDR, 2004:167). Hazards, in this definition, are events or occurrences that may result in fatalities, body-harm and destruction of property and the environment. Whereas, susceptibility or vulnerability is mainly characterised by socioeconomic status and exposure to disaster risk.

Disaster risk emanate from the interaction between the hazard to which a valuable subject may be susceptible to for example people, houses and infrastructure, but the most important variables that must be enhanced are capacity and resilience to withstand that particular hazard and also to respond promptly when needed. (Cannon et

al, 2003:45). A typical scenario is famine or food insecurity due to drought, famine is related to drought magnitude and location in relation to community or household level of economic capacity and resilience, absent of other income sources may exacerbate the severity of famine.

Hazards can be broken down and differentiated by climatic, pandemic, environmental, technological and geo-physical. Vulnerability is characterised and explained in terms of exposure as well as the resilience and capacity to be aware and prepare for imminent risk, manage and recuperate from a particular hazard (Thomalla *et al*, 2006:26).

Despite the fact that the "hazard" part of the disaster risk equation or formula is extensively development and understood, "Vulnerability" has demonstrated more complex in view of the absence of assertion over how to make an interpretation of the expressed definition into a logically vigorous one (Boudreau, 2009:29).

A key refinement is whether a hazard influences people or family units independently or the whole community or more extensive areas and the varying level of capacity and reliance thereof. These distinctive sorts of hazard will have varying outcomes. Particular hazards and risks identify with individual households however not really to the entire group. Individual household's possessions and other capacities may be harshly affected while the next household may not be affected due to better capacity and other factors such as minimal exposure to disaster risks.

The disaster risk equation highlights the importance of reducing vulnerability and enhancement of capacity to reduce disaster risk. This is an illustrative way in which disaster risk can be methodologically tackled. Disaster management continuum approach a practical way of institutional mainstreaming of disaster risk reduction programmes. Disaster management continuum specifically outline the activities prior, during and after a disaster (Boudreau, 2009:29). Another strategy is the Harita Conceptual Framework, which is a comprehensive way of dealing with hazards. The Framework comprises of disaster risk reduction, disaster risk transfer and taking of calculated and acceptable disaster risk (Eade and Williams, 2009:17). There are a few different varieties of these two models that consider and prioritise disaster risk

reduction. At the centre of reducing disaster risk, there must be a clear understanding of the crossing point between hazard, interventions, and means of livelihood. Therefore, a framework for livelihood strategy developed by the Department of International Development (DFID) is utilized as explanatory framework.

This livelihood framework is of great assistance when analysing and dissecting the household economic situation of poor people and surveying the effectiveness of poverty reduction programs. The structure comprises of benefits or assets held by family units and communities, generally classified as human, natural, physical, social and financial.

The efficiency of these benefits is confirmed by procedures, government welfare institutions, and legislative frameworks which characterize the household and community vulnerability setting by forming, empowering, and limiting what individuals can accomplish with their assents. Families apply distinctive means and techniques of livelihoods, which are methods in which resources are joined to accomplish livelihood outcomes, which in a thriving community coordinate the objectives the families are attempting to accomplish (Chambers and Conway, 1992:23).

A critical measurement of disaster risk reduction is the unique circumstance and population in which such programmes are taking place. A vital distinction is the contrast between urban and rural communities particularly in terms of their respective means of livelihoods. Urban and Rural environments are susceptible to varying hazards in a unique way. Such factors essentially affect the choice and impact of the selected disaster risk reduction interventions. It is additionally critical to see how disaster risk varies among various social groups, for example, people living with disabilities, old persons, children and the sick. The critical distinction is the kind of livelihood means employed by the family or community affected by a particular disaster risk. Livelihood strategy may include livestock and crop farming done at a particular scale. Planning and implementation of disaster risk reduction and addressing these issues altogether is imperative.

2.6 MODES AND CONTEXTS RELATED TO DISASTER RISK REDUCTION

A review of literature highlighted a number of modalities by which disaster reduction could be mitigated. These included (i) societal involvement; (ii) legislation and policy; (iii) avoidance; (iv) increasing awareness; (v) Community empowerment; (vi) effective assessment of risk (O'Donnell, Smart, and Ramalingam, 2009:14). The debates and evidence based for each are considered below.

2.6.1 Vulnerability mitigation through societal involvement

A study by Adelman, Giligan and Lehrer (2010:34) and case-study research have indicated that few of the most effective reduction-of-risk initiatives have included communities who know the risks and make suitable mitigation and response plans. Society-based groups who manage groups or communities are found to be the most effective. These groups know that socio-economic constraints seriously affect the capacity a group or community has to mitigate risks.

The problems of disaster mitigation need to be established inside a society's cultural, socio-economic and environmental context. The participation of the society involves a process that determines associations between formal government structures and a society's social structure – and then establishes mechanisms to combine them into general institutional processes and procedures (Pouliotte *et al.*, 2006:34).

2.6.2 Reducing vulnerability through Legislation and Policy

The policy of disaster-risk reduction looks at the course of action implemented by civil society and the government to examine dangers and vulnerability and thus adopt measures mitigation of risk. Instances of risk reduction policies comprise of institutional and legal arrangements that govern urban planning, the use of land and the enforcement and enactment of the regulations of the Constitution. Nonetheless, the practical knowledge reveals that even in instances where good legislation and policies

are in place, the lack of enforcement can undermine the effectiveness of such legislation and policies. For instance, the majority of developing nations have building codes that are competent, yet provisions of the code are neglected in the process of implementation because the enforcement framework is lacking (Savage and Harvey, 2006:23).

The mitigation and reduction of disaster-risk is normally too complicated to be adopted by the Government as it comprises inter-government proactive coordination and reaching out to other stakeholders and communities (McLeman and Smit, 2006:10). Furthermore, the mitigation and risk-reduction policies normally raise the usual basic socio-economic problems like resource allocation, the safety of livelihoods and the Government's inability to solve issues around equality. Hence, other evolving frameworks for influencing policies of disaster reduction are required (Ahrens and Rudolph, 2006:15). These would include advocacy groups at the grass-root level, risk dissemination and the spread of knowledge and stakeholder partnerships. Integration between stakeholders – the Government and civil community – provides excellent opportunities to develop processes and policies that can foster more effective management of disasters and risks (Savage and Harvey, 2007:19).

One necessity is for the Government to develop more of an ability to adopt administrative as well as legislative policies to minimize risk. Secondly, the Government needs to develop its ability to work collaboratively with the civil community towards a similar agenda – which would include trying to avoid any losses from human-induced or natural dangers and working towards the establishment of a prevention culture and a safer environment (Komino, 2008:20).

2.6.3 Limiting vulnerability through avoidance

Establishing a prevention culture to limit a community's vulnerability to dangers leads to the foundation of disaster-risk reduction. Cultural aspects show how individuals view their motivation and risk to improve tolerance or tackle vulnerability. Establishing a habit of disaster risk avoidance behaviour solve many challenges that could have led to huge

impact of disasters, which helps to grow a confident society with the knowledge and skills to tackle the effects of hazards and to proactively fight the negative impact of future events. Chowdhury, Stephen and Nath (2008:17) highlight the main actions for establishing a culture of prevention as follows:

- Increasing awareness;
- Organising the community;
- Forging a culture of accountability;
- Empowerment

These actions are explained in more detail below. When they combine as positive catalysts they can change the culture of risk and disaster management.

2.6.4 Increasing Awareness

According to Amirthalingam and Lakshman (2009:29) governments that increase awareness helps communities, individuals and the Government to become more aware of the negative outcomes and vulnerability of those affected by disasters – especially regarding their potential to earn a good income. Equipped with this information, they can become more aware of their context and take a more active role in its administration. Every person involved in the reduction of risk has a competitive edge, which enables them to fight the risk of vulnerability more effectively. However, increasing awareness is more effective when specific parts of society are targeted.

NGOs, the Government and civil communities need to reform the actual structures of their social politics to make them more effective in dealing with the needs of the society. Education processes, attempting to increase awareness, need also to be placed in the framework of a society's day to day encounters in order to grab the community's attention. Risks concerned with the safety of people must be made clear – even if they are apparently at a low-level of probability. This requires the existence of robust social structures that can deal with these challenges.

2.6.5 Community Empowerment

The empowerment process is helped on a range of levels when there is good information and the community can access a range of resources. A robust Government fortifies communities and people and helps them to become more active participants in society. Knowledge is an important empowerment tool. A society that knows about its vulnerability to disasters can be more effective in taking action. Information fosters vigilance and confidence. More essentially, knowledge enables communities to have active tools for participating in calculated decisions regarding the allocation of resources and environmental issues (Messer, 2008:48).

The period following recent disasters has given societies an opportunity to establish channels focused on advancing the management of disasters, response and preparedness. During this stage, when an awareness and fear of danger and feelings of vulnerability were increased, members of the community became more active in attempting to learn about how to tackle life-threatening dangers. Sustainability programmes for the development and participation of society created a culture of prevention, which was not only encouraged by anxiety and fear alone. It needs to be aided by a society increasing its knowledge of financing, instilling a sense of ownership in the community and establishing networks that are able to take an active role in the effective assessment of disaster and risk (Smith, 2009:24).

2.6.6 Decreasing vulnerability through assessment of risk

The effective mitigation of disaster relies on a continuous assessment of vulnerability and strategies that are able to help monitor, examine and update all the changing conditions. The robust assessment of disaster risk is viewed as a fundamental step towards successful pragmatic practices and policies involving disaster risk reduction. Reduction of disaster risk by implementing appropriate measures must be built upon constant evaluation of hazards and vulnerability, developing a detailed know-how concerning the risks of the disaster (Schwoebel and Menon, 2004:11). After all, a method for locating, identifying and understanding a disaster risks and vulnerabilities is

an important primary requirement that precedes the formulation of strategies and plans to implement a comprehensive disaster risk reduction programme.

2.7 FRAMEWORKS OVERVIEW OF DISASTER RISK REDUCTION

The development of an institutionalized structure for Disaster Risk Reduction (DRR) is fundamental for setting up a modern and effective method of ensuring adequate capacity for coordination and integration of planning and implementation of activities prior, during and after, disasters. A survey of DRR body of knowledge underpins this need and shows that coordination is minimal between relevant sectors. The absence of cohesion is recognized as one of the biggest challenges that impede the appropriate planning and implementation of DRR.

The reviewed body of knowledge communicates a solid need to incorporate DRR systems and measures within the mainstream development and poverty alleviation programmes to address rising levels of poverty and disaster vulnerability. If poverty is left unattended, it will undermine the impact of disaster risk reduction programmes hence it imperative to implement the holistic approach to minimise or eliminate societal weakness that exacerbate the impact of disasters (Benson and Twigg, 2007:45). This section reviews several publications that have alluded to the issue of mainstreaming disaster risk reduction into development and disaster risk reductions programmes.

The United Nations International Strategy for Disaster Reduction (UNISDR) made a significant contribution in terms of providing guidance on how to develop mechanisms for mainstreaming of Disaster Risk Reduction into developmental and sustainable programmes. There are number of prominent sectors that have published extensively on this subject, for example NGOs and the World Bank. These institutions furthermore provide technical and monetary assistance to organizations that aim to advance the mainstreaming and incorporation of disaster risk reduction into sustainable development (Benson and Twigg, 2007:89 and UNISDR, 2004:78).

The frameworks published include the following:

- The International Strategy for Disaster Reduction (UNISDR, 2001:13-33).
- Hyogo Framework for Action (UNISDR, 2005:67-78).
- The Oxfam HARITA Conceptual Framework (Eade and Williams, 2009:17).
- The World Bank Five-Pillar Policy Framework (World Bank, 2007:23).
- The Mainstreaming of Disaster Risk Reduction into Development Projects in Hazard-prone Country's Framework (Benson and Twigg, 2007:64-76).

The above mentioned frameworks were identified mainly because of their recognition of the importance of prioritising disaster risk reduction consideration in any infrastructural development, and the importance of different phases of disaster management continuum. These frameworks outline a general view, and some are context and specific to particular hazards and risks. But what is important is that they provide a solid understanding of fundamental elements of disaster risk reduction.

For efficient and adequate inclusion of diverse input and responsibilities from relevant sectors, the literature suggest that an institutionalized disaster risk reduction methods must be developed accompanied by standardised impact evaluation mechanisms of the impact of the implemented disaster risk reduction programmes (Webb and Harinarayan, 1999:19). The lack of firm methodologies guiding the mainstreaming of disaster risk reduction, introduces a huge gap in DRR programming. A recognised system would not just encourage measuring the viability of DRR regarding lives and employment, but would additionally deliver a standard reaction and programming guide that can be used by disaster management and development practitioners (UNISDR, 2004:119).

Almost all evaluated frameworks focuses on common issues such as political, and socioeconomic empowerment. Moreover, most frameworks contain the distinguishing of hazards and disaster risks, and relate to any ensuing procedures. Disaster risk is characterized as an element of hazards and vulnerability. Normal components most of the time incorporated into DRR systems incorporate the affirmation of certain risk elements, the recognizable proof of risk, and the appraisal of vulnerability, logical evaluation, readiness, prompt reaction and recuperation. A few structures particularly

incorporate a system cycle, while other structures only do not. Extra components present in numerous structures incorporate early cautioning frameworks, the raising of open-mindedness or conduct change, coordination instruments and open proprietorship, and the fusion of past lessons informing future programming and hazard administration. An expanding utilization of group-based methodologies, including group-support and neighbourhood-learning regarding catastrophes, has been noted.

The majority of structures fuse components of a straight representation of the essential strides of disaster management administration. While a regulated procedure fits a straight stream outline, it does not demonstrate the utilization of a critical circle, or present the possibility of an ongoing procedure. The ISDR (2001:24) system, for instance, does not give any sign that past advances ought to be inspected and re-assessed as the structure moves from one stage to the next. A few systems like to incorporate an extensive variety of ideas that could fit into DRR for a range of connections, and others are produced from a tighter perspective. The Disaster Reduction Hyper base, for instance, is significant only for group-based techniques, but key standards of the project cycle can be summed up by different contexts and populations that may require stronger structures: for example, urban versus provincial systems; or sexual-orientation-based structures.

Components recognized as key variables for a generalizable structure incorporate an input circle, a checking and assessment framework, particular assessments of risk and the distinguishing proof of types of risk, past utilization of risk diminishment measures and a survey of current programming. Structure achievement can likewise be dictated by the joining of a community-oriented, multi-risk, cross-sectoral programme outline.

In spite of the need to include an assortment of associations in DRR, some risks are underrepresented regarding association strengths. Outside help or specialized aptitudes are by and large excluded from these DRR systems. However, specialized help might be required under certain circumstances. These circumstances include organic and financial risks, and conflict-related risks (ISDR, 2004:35).

Social measurements, in so far as they identify vulnerabilities, recuperation and calamity readiness, are also regularly excluded (IEG, 2009:32). One of the biggest gaps regarding these structures is the inability to address ramifications of missing political, financial or social frameworks. Also excluded is the idea of a more all-encompassing risk administration. This idea is displayed in the Harita Conceptual Framework but is generally absent from the writing.

Other standards missing from the relied on structures that demonstrate conceivable requirements for future DRR systems need to be combined to advance the supportability (ISDR, 2009:78) and the fusion of DRR into all levels of the disaster management planning and implementation. In conclusion, the rising issue of environmental change, with respect to the expansion of recurrence and extent, has meant that a ceaseless re-assessment of risks and formerly excluded risks is required in order to represent all the changes in vulnerabilities and adapting methodologies.

2.8 GAPS IN DISASTER RISK REDUCTION

Disaster Risk Reduction is generally a new field of study and various gaps are available which require a lot of continuous practical work and research:

- The national capacity for carrying out disaster risk reduction is restricted in contrast to the global capacity.
- There is a lack of adequate funding modalities.
- Vulnerability and exposure to hazards are frequently ignored as basic risk-drivers.
- There is a general lack of an evidence base to support what works and does not – and why it does not work within the field of disaster risk reduction. Without such work in support, it is difficult to decide on the best disaster risk reduction practices.

2.9 DETAILED ANALYSIS OF THE CURRENT GAPS IN DRR KNOWLEDGE AND PROGRAMMING

2.9.1 Limited National Capacity

The capacity and better understanding of disaster risk reduction have generally expanded. All global associations, NGOs and national governments have some sort of programming around disaster-hazard decrease. These projects are not generally influential or very much supported, but the expansion of them indicates an increased mindfulness and discussion on the subject (ISDR, 2004:15). At present there are better institutional arrangements for managing risk and recuperation and expanded risk and hazard-mapping capacities. Enhanced early cautioning frameworks have been embraced all through the globe. Nonetheless, comprehensive understanding and shared enthusiasm amongst the global community and government unfortunately does not automatically lead to disaster risk reduction initiatives at a local level.

Keeping in mind the end -goal to expand the limits of national actors, data, training and financing – advances should come through global discussions and exchanges in government and with neighbouring countries. This requires co-operation between different levels of groups, including neighbouring and national governments, local initiatives – regarding, for example, intelligence around flood notices. Without this, DRR projects – for example, with regard to hazard- and risk-mapping – cannot be applied to poor and risk-inclined groups (Christoplos, 2010:11).

The fact that most funds meant for DRR come from international funders rather than from national governments means that the funds are limited to effectively bankroll and take care of these programmes making them more vulnerable to inefficiency in managing risks as well as their sustainability (Christoplos, 2010:14). After many risks and disasters, the primary objective is aimed at risk reduction as well as recovery efforts and not on analysis of natural hazards that may cause devastating disasters in the future (Christoplos, 2010:34). This methodology overlooks the hidden risks regarding a particular group or family unit, rendering them more vulnerable in the face of a disaster. Moreover, consideration is still focused on how to react to a characteristic disaster as

opposed to how projects can adopt the financial elements that might contribute to a community or family unit being better equipped to avoid, find relief from or adapt to these risks (Christoplos, 2010:14).

2.9.2 Limited Funding for DRR compared to Relief Efforts

Disaster response and awareness has grown in the wake of Hurricane Mitch in 1998, the Tsunami in 2004 and the Haiti seismic tremor in 2010. Be that as it may, the greater part of these new standards is still focused on alleviation endeavours. Most benefactors reserve just 5-10% of their yearly spending plan for DRR exercises (German Committee for Disaster Reduction (GCDR), 2007:47). To increase the relationship between spending on alleviation and spending on DRR, crisis reactions should be directly connected to catastrophe and hazard-decreasing programmes. For instance, WFP's financial plan for early cautioning is focused on tonnage of nourishment help, and DRR subsidizing from national benefactors is a part of their philanthropic spending plan but it doesn't take into account DRR requirements for that year.

There are a few reasons for the inconsistencies in subsidizing regarding DRR and reaction. One is the undeniable urgency and importance of alleviation. The philanthropic approach means that more noteworthy assets will be allotted to help in a crisis before DRR. The help stage is frequently dominated by extensive donations, and relief organizations often sidestep vital national structures to disperse their aid. In the process, the need to consider calamity-risk and how it can be consolidated into compassionate activities and manageable advancements is regularly side-stepped (Christoplos, 2010:14).

Besides, finance for aid operations is normally an irregular instalment – and is not something used with moderation and long-term readiness, which requires maintaining a regular subsidy in order to be effective. Most associations report that it is difficult to get financing for projects that last more than five years, and, more often than not, only three years (Christoplos, 2010:123). This has constrained current DRR work, making it confine itself to conceivably higher-impact arrangements in lieu of an emphasis on less

coherent or predictable possibilities. The supposition of some disaster specialists is that DRR programming ought to influence future improvement choices (i.e. where a family will make their home after they have moved out of their interim asylum, and what they will have gained from the system that will help them to make a more adaptable home in the future) and not just manage the present consequences of a disaster.

At the end of the day, DRR needs to recognize, oversee and prepare for future risk and, in order to do so, it should be part of a multi-structured, long-term, multi-nation arrangement. For instance, a few associations are endeavouring to execute a 'system methodology' that indicates longer-term targets for a specific spot or geographic region, afterwards utilizing particular tasks to work towards those objectives, instead of simply focusing on transient projects.

In the event that more subsidies are to be channelled towards avoidance and relief, DRR projects will need to show that they are financially adaptable as far as future crisis reaction is concerned. A DFID study argues that for each dollar spent on relief, around two to four dollars are saved in decreased calamity impacts (DFID, 2006:34). A comparative finding was made in India where flood-inclined regions were examined regarding DRR programming and how this might save money (Venton and Venton, 2004:89). In any case, this sort of exploration is constrained in amount and scope. To increase subsidizing DRR, strong evidence is required that an interest in DRR saves money and lives – in the present and future.

2.9.3 Limited Incorporation of Vulnerability as an Underlying Risk Driver

Disaster risk is a direct result of the existence of one or more hazards and the lack thereof of adequate capacity. Less focus on disasters and more attention on the underlying factors and reasons for susceptibility would assist in coming up with long-term and sustainable interventions. Vulnerability is dictated by socioeconomic and political factors, as opposed to actual exposure to hazards only. Better understanding of conditions of vulnerability provides a clear indication of suitable programmes for interventions (Handmer and Dovers, 2007:5). This recognition of vulnerability would

serve to ensure jobs, strengthen adaptation techniques and back existing foundations in catastrophe avoidance (Cannon et al, 2003:45).

Vulnerability assessment develops a better idea about the nature and levels of vulnerability and thus contribute to the specific development of effective disaster risk reduction initiatives (Cannon et al, 2003:45).

2.9.4 Minimal Coordination amongst Programmes

One of the biggest gaps in disaster risk reduction practice is the need for a coordinated effort amongst the different aspects required in reduction of disaster risk and administration thereof, including development, destitution avoidance, environmental issues and philanthropic projects, keeping in mind the end-goal to energize cross-disciplinary areas of knowledge into, for example, risk assessment and identifying vulnerabilities.

It is important to guarantee that the new procedures do not unwittingly create new types of vulnerability or intensify existing ones (Benson and Twigg, 2007:56). A central emphasis in the literature is the significance of joining DRR to other relevant segments. ISDR, the Prevention Project, the United Nations, the World Bank and different associations have underscored the need to standardise disaster-hazard avoidance and to pool resources and information (Benson and Twigg, 2007:78; ISDR, 2004:109).

As shown by Handmer and Dovers (2007:45) there are two fundamental kinds of catastrophe-risk administration. The first - pending disaster administration approaches - are coordinated into maintainable advancement programming and arranging; the second approach is concerned with compensatory disaster administration, including calamity readiness or reaction. Planned disaster administration is expected for medium- to long-term risks and warrants programme-checking to guarantee that any advancement mediations are not fuelling hazards. Compensatory calamity administration is to be used for current risks to help existing vulnerabilities (UNDP, 2004:65).

Both are important in order to get ready for and react to disasters effectively. A significant part of the literature looks to change the conception of catastrophe as an intrusion and instead conceives of it as something that can be planned for, using advancement methodologies both nationally and internationally (World Bank, 2006:31).

2.9.5 Lack of Project Monitoring, Impact Evaluations, and Cost-Benefit Analyses

Lack of methods and systems to evaluate and document the impact of disaster risk reduction as well as the cost benefit analysis for disaster risk reduction is a major concern (ISDR, 2004:73). To achieve disaster risk reduction in its entirety, a proper and complete blend of indicators and systematic strategies are required. Proposed devices and techniques for covering these necessities incorporate data-mapping, socioeconomic improvement indicators, comprehensive capturing and analysis of disasters and their impact over a particular period of time (Benson and Twigg, 2007:57).

Notwithstanding, systems regarding risk-mapping, decentralization, checking and assessment, the joining of catastrophe-hazard administration into an undertaking cycle and straightforwardness, are distinguished as vital for achieving these techniques. Current issues hindering the success of these indices and analytical targeting methods include multiple scales of analysis leading to aggregation problems, the absence of objective benchmarks and dynamic systems that involve different combinations of explanatory variables over place and time (Thomalla et al, 2006:103).

A more grounded emphasis needs to fall on observation, impact assessments and money-saving-advantage examinations, keeping in mind the end-goal to determine the general impact of alleviation and readiness mediations. ‘An ounce of counteractive action is justified, regardless of a pound of cure,’ – however, in the event that there is no information to affirm this, then financing will not be put towards DRR (ISDR, 2004:78). A more significant focus on both subjective and quantitative information is important to work out if the mediation really decreases hazards, giving a valuable confirmation base apparatus for examination of DRR and showing a financial contention for the

intervention (Venton and Venton, 2004:10). The survey of what has been written has discovered insufficient confirmation of the positive or negative effects of DRR.

With respect to assessments, most have a tendency to be task-particular and constrained to venture yields. With the end-goal, associations should completely comprehend the estimation of an intercession. Impact (lives lost, resources lost and so forth) must be measured, as must the fundamental drivers behind it (ISDR, 2004:60). Generally, if these lessons are less inclined to be standardized and mediations are totally unsuitable for the context, the catastrophe or hazard may be made worse.

Assessments need to concentrate on past events so they do not just assess the procedure of actualizing projects without understanding their real effect on the group level. Appropriate assessment could both propose a stronger case for more disaster risk reduction financing as well as determine best-practices without requiring repetition of the same errors. Despite the fact that long-term effects may be hard to measure for short-term activities, programmes can be set up and measure transient expectations. Another imperative concern is that the impact of disaster risk reduction cannot be measured completely until a genuine risk strikes. Along these lines, an alternative kind of evaluation is probably required to quantify the effects of disaster risk reduction (Maxwell et al., 2009:25).

2.9.6 Limited Scope beyond Natural Hazards and Rural Areas

Disaster risk reduction is commonly deliberated in the context of changing climate and hazards induced by nature, and thus excluding vulnerabilities caused by civil wars and politics. Other than discord there are various different risks that are underrepresented in the DRR writing. Reviewing most organizations' mission statements, the commitment to disaster reduction in regard to economic hazards as well as in environments prone to various kinds of hazards is an example (UNISDR, 2004:63). Therefore, greater research is necessary to enhance the understanding of capacities in affected communities in a bid to improve planning and implementation of relevant disaster risk reduction activities and development.

Development of appropriate programmes to address disaster risk in urban areas is of great importance. Urban settings have high population concentrations so when disasters occur they tend to affect great numbers of people and cause extensive damage to property. A great number of disaster risk reduction professionals draw their experiences in work and studies related to rural poverty and development (ISDR, 2004:45). As a result there is a practice of wanting to transfer rural disaster risk reduction programmes to urban settings, only to find that the programmes are not successful because of a lack of compatibility in terms of the unique dynamics prevalent in urban settings particularly the impact of informal settlement and rapid urbanisation.

2.10 CONCLUSION

In short, the increasing acceptance and recognition of the importance of disaster risk reduction continues to grow internationally. The amount of literature on disaster risk reduction has significantly increased over the years which has resulted in information sharing of challenges and best practices. One of the crucial challenges is the need to continuously adapt the measures of disaster-risk reduction to the changes in an overall context of climate change. However, there is a global acceptance that endeavours to limit the risk of disasters need to be integrated systematically into plans, programmes and policies for poverty reduction. As such, poverty reduction, sustainable development, mitigation of disaster risk and robust governance are mutually supportive in fulfilling the goal of growing an awareness of disaster risk internationally.

The conclusion is that the majority of disaster mitigation reduction plans fail to achieve their goals and only impact marginally on vulnerability and building capacity. Normally this is because in most cases the resources are distributed on a short-term basis. The reduction of disaster risk needs to be recognized as something that can be achieved with the help of sustained and well-planned endeavours that are supported by a process of systematic risk assessment. Therefore, the sustainability and furtherance of the reduction of disaster risk needs commitment. This section noted the global paradigm shift in as far as disaster management approaches are concerned. There has been a

realization that more can be done to minimise or avert the impact of disasters through proactive measures aimed at reducing vulnerability. The United Nations has been at the forefront of effecting and ensuring a proactive disaster management approach by setting the agenda and engaging its member states and governments.

CHAPTER 3

SOUTH AFRICAN DISASTER MANAGEMENT LEGISLATIVE AND POLICY FRAMEWORK

3.1 INTRODUCTION

This chapter look at the various pieces of legislation and policies relevant to the manner in which disaster management issues are dealt with in South Africa. It begins by making reference to the South African Constitution (Act 108 of 1996) in terms of the role of government and spheres thereof. The decentralization of disaster management is also discussed; including the challenges faced by Local Government.

3.2 CONSTITUTIONAL BASIS FOR DISASTER MANAGEMENT IN SOUTH AFRICA

The South African Republic, as set out in its Constitution (Act 108 of 1996), is obliged to see to it that the safety of everyone in the Republic is realised and effectively ensured. As set out in Section 41, Part 1(b) of the constitution, all relevant sections of the Government are required to 'safeguard the welfare of all the people of South Africa. Section 24 of the Constitution, the Bill of Rights also states that everyone has a right to environment that is not harmful to health and wellbeing. This basically means that government has a primary responsibility in as far as disaster management is concerned.

As per Schedule 4 of Part A of this legislation, disaster management is an imperative that has to be implemented at all levels of government. Section 156, Part 4 of the Constitution details the role of disaster management. It is most beneficial, moreover, that this be locally administered – rather than being the task of a national or provincial government. Section 43 of the Disaster Management Amendment Act No 16 of 2015 puts emphasis on the capacity development of all the municipalities to ensure better services (South Africa, 2015:45).

3.3 DISASTER MANAGEMENT IN SOUTH AFRICA: LEGISLATIVE AND POLICY FRAMEWORK

The Republic of South Africa was amongst the first countries that developed and initiated a progressive and disaster risk reduction oriented legislation. It also focused on the decentralization approach (Komino, 2008:41). The South African Disaster Management Act No. 57 of 2002 required decentralization arrangement of disaster management in the country across the three spheres of Government: the national, provincial and local. The Act called for the development of an integrated policy for disaster risk reduction, in which the main emphasis must be on building resilience and the reduction of vulnerability. The National Disaster Management Policy Framework was therefore developed and introduced in 2005.

The South African legislation and policy are comprehensive and if well implemented a lot can be achieved. The objectives of the South African legislation and policy can only be achieved if the necessary resources are made available particularly the technical capacity, funding and disaster management centres as well as political and administrative commitment and support. The SANDMF is systematically organised into seven (7) key areas of planning and implementation. These key areas are outlined in figure 3.1. Figure 3.2 provide a diagrammatical representation of the South African National Disaster Management Framework (SANDMF).

Figure 3.1: Key elements of the National Disaster Management Framework (NDMPF, 2005:16)

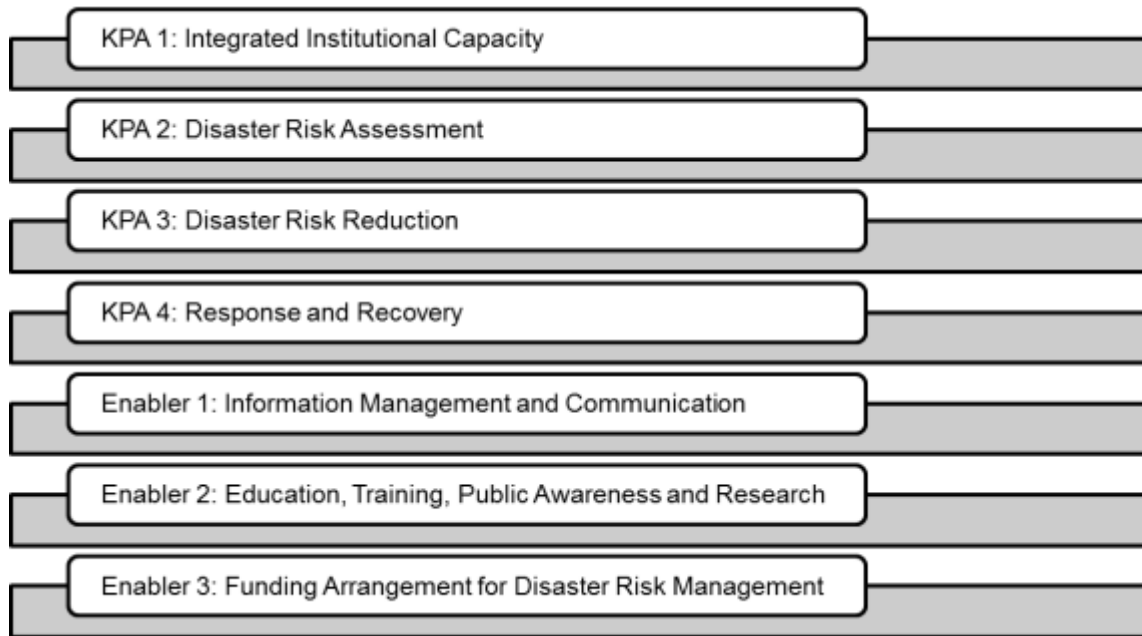
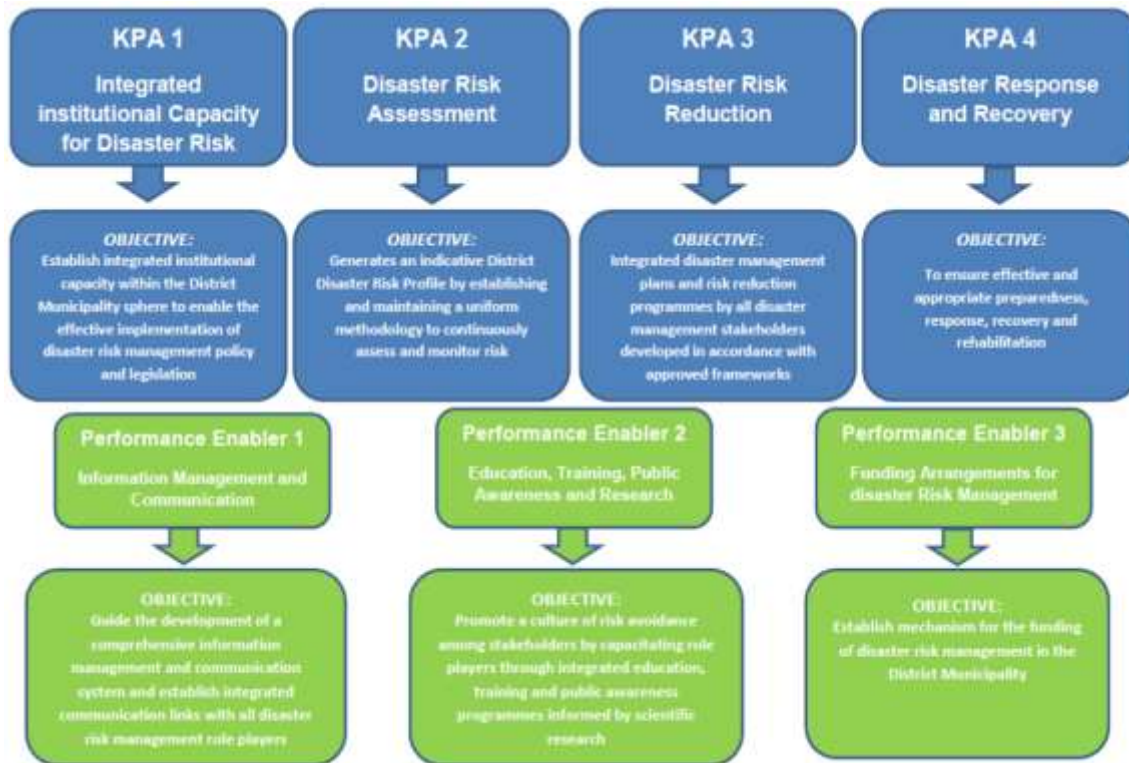


Figure 3.1. Provides a list of the key pillars of the National Disaster Management Policy Framework which gives guidance on specific operational and compliance issues articulated in the Disaster Management Act.

Figure 3.2: National Disaster Management Policy Framework (KZN-PDMC, 2014:12)



Each KPA and enabler has a specific objective and are interlinked to one another. The disaster management centres and relevant sector department and agencies are legally bound to implement the policy framework as given in figure 3.2.

3.4 THE SPHERE OF LOCAL GOVERNMENT

Local Government in South Africa has the responsibility to ensure that programmes, policies and projects are implemented at all levels of society. This is achieved with the development and implementation of local policies, standing plans, processes and procedures. The Integrated Development Plan (IDP) is a strategic and operational plan from which the Municipality must consolidate and coordinate the implementation of the proposed projects and programmes. The IDP also needs to act as an operational plan for consideration of disaster-risk reduction in the municipal structures.

It is generally accepted that poverty is a central impediment to advancing protection against hazards. This is especially true for South Africa, where apartheid has left a major legacy for the Government to address. There are many disadvantaged and impoverished communities that have become victims of the increasing number of disasters (La Trobe, 2005:28). It is within these local communities that people are most vulnerable and most are not in a financial position to repair the damage – in terms of property, livelihood and injury – that has followed. Specific planning and implementation of measures aimed reducing vulnerability and disaster risk need to be concentrated at a local level of government. The application of intervention related to reduction of vulnerability effectively occurs at the lowest level of Government such as the municipality (UN, 2009:34).

On the basis of the directives and provisions of the Local Government Municipal Systems Act No. 32 of 2000, it is natural to conclude that a disaster management is a vital obligation of the state. Furthermore, Local Government is expected under the fourth and fifth schedules of the Constitution to take responsibility in matters related management of disaster risk such as sanitation, firefighting services, water services, municipal healthcare, air pollution, building regulations and municipal planning. The Disaster Management Amendment Act No. 16 of 2015 advocates the development of disaster management capacity in all spheres of government through the establishment of Disaster Management Centres (DMCs) in all spheres of government.

By examining the South African disaster management legislation and policy, it is quite clear that the state has a primary obligation to take seriously disaster risk reduction in the country. The implementation of disaster management proactive measures seeks to protect human rights as enshrined in the Bill of Rights of the Republic's Constitution, these rights are pertaining to equality, the right to life, to own property, have a clean environment and access to water, food, healthcare and a secure society.

Management of disaster risks include the establishment of disaster management institutions within the public sector. The disaster management centres will ensure proper coordination and integration of disaster management function at a specific sphere of government. Amongst other responsibilities to be carried out by disaster

management centres is to play an oversight role, provide guidance on matters related to disaster management. The Disaster Management White Paper (1999, 25) had highlighted that the capacity for disaster management in South Africa varies greatly especially between the rural and urban settings. Such discrepancies were mainly attributed to the absence of:

- a comprehensive and effective strategy for disaster management;
- clear and coordinated responsibility lines for those tasked with disaster management function;
- government capability to perform disaster management function particularly at a local level and least developed areas such as rural villages; and
- Sufficient inclusion of broader society and other relevant disaster management stakeholders.

Municipal Disaster Management Centres (MDMCs) were established to coordinate disaster management issues at a local government level and mainly deal with the discrepancies mentioned above. Since the Green Paper's Policy on Disaster Management (South African Republic, 2005:19), the National Disaster Management Centre has become more important. In terms of the South African disaster management legislation and policy, the National Disaster Management Centre is the conduit and repository of the data and any information related to hazards and disaster management. Further, there was to be a body for coordinating and establishing cross-sectoral nodes of management.

The South African disaster management legislation and policy give directives to relevant government institutions to establishment disaster management structures at all levels of government. Since the dawn of democracy in 1994 the South African government has been committed to strengthen the country's disaster management capacity which include the establishment of MDMCs. Some of the municipalities and provinces began strengthening their respective disaster management capacities even before it was a legal compliance enforceable through the Disaster Management Act.

Since the plans regarding the development of the Disaster Management Act were initiated in 1994, the recognition of the importance of building disaster management capacity at all levels of government was very clear. At the beginning the main focus was on building the national capacity and policy development to ensure consistence and uniform approach (South Africa, 2005:18). The National Disaster Management Centre would have been responsible for overall management of disasters in the country. However, as the practical arrangements developed, emphasis was put on developing appropriate disaster management capacity at a provincial and more especially at the local level of government (South Africa, 2005:39).

3.4.1 Local Government's Role in the Reduction of Disaster Risk

Disaster risk management needs a multi-disciplinary approach that is comprised of collaboration between different components and sectors of society (Odendaal and Olivier, 2008:16). Government agencies need to play a crucial role during times of disaster. In many developing nations, the national disaster management authority of a government manages disaster management affairs. The responsibilities and activities of government are often not sufficiently decentralized, and authority is not sufficiently delegated to relevant departments within the Government (Pelling and Wisner, 2009:57). Government agencies need to play a more prominent role during a disaster. In many developing nations, the disaster management authority or the ministry handles disaster management affairs.

In the majority of nations, the Government delegates who oversee the resources and decision-making regarding disaster management. For the most part, these emphasize response instead of a proactive minimization, and Local Government actions for disaster management are usually less of a priority (Pouliotte et al., 2006:45). Therefore, when a disaster occurs the decision making process tend to be centralised which often results in delayed response. The cited reason for centralization of the decision making process is mainly because of the pressure of the media and the volatile political context in which disasters happen (Mercer et al., 2009:89).

3.5 DECENTRALIZATION OF DISASTER-RISK REDUCTION

The literature highlights the decentralization of decision making process as a phenomenon or practice primarily linked with the participation of Local Government as well as the local structures of governance (Sabates-Wheeler *et al.*, 2008:54). It is necessary to take into account the following when implementing a more decentralized system at a local level (Mercer *et al.*, 2009:78):

- the system of decentralization needs to ensure the outcomes are reached after mutual consultation and support from all sectors;
- it is essential that local authorities and agents are given sufficient resources and finance; and
- When distributing new resources and finance, it is also crucial to establish suitable frameworks for their implementation and control.

3.5.1 Kinds of Decentralization

Decentralization is associated with the history of a nation, its capacities and priorities (Buscher and Heller, 2010:30). It usually involves transferring fiscal, political and administrative duties down different levels of the state. It is imperative to highlight the various categories of the methods related to decentralization and that these are associated with a range of distinct practices in different governments.

3.5.2 Classification of Decentralization

Administrative decentralization takes place when the Government's decisions on policy and implementation are adopted and carried out by administratively different spheres of government or entities where there is a central funding of services (UN, 2009:91). These administrative units are accountable to the central government.

Decentralization of the fiscal systems of Government is the most far-reaching and complex form of decentralization. Political decentralization takes place when financial resources are transferred, along with certain kinds of grants and taxes, to sub-national Government units (UNDP, 2006:45).

A range of decentralization processes in government can simultaneously take place. A typical example is the case with the South African Police Service (SAPS) whereby lines of accountability are arranged in such a way that they start at a national level right to the level of local police station. On the other hand, the national Department of Health (DOH) has structures at a local level and different provincial departments. The local health structures are not directly accountable to the national level, but rather reports the districts and provincial departments (Carter *et al.*, 2007:67).

3.5.3 DRR and Decentralization in South Africa

The decentralization arrangements in South Africa are sophisticated and encompasses of fiscal, administrative and political decentralization, It is however a complex system with various levels of ambiguity (Christoplos *et al.*, 2010:43). Moreover, the provincial, national and municipal spheres are generally autonomous. They do not report to one another, but funds are transferred between them. The provinces are divided into different categories of municipalities. The provinces may have a one or more metropolitan municipalities depending on its level of development and urbanization. The provinces have district municipalities consisting of local municipalities and lastly the local municipalities are made up of wards. The residents of each ward elect a councillor who will presumably represent their aspirations and other related issues to the municipal council. The councillors are also elected by the residents to the District Municipal Council.

To deal with the issue of coordination and integration of disaster management function in the country, the disaster management centres were established as central institutional structures at all levels of government to facilitate disaster management issues with their respective jurisdictions. The disaster management centres play a vital role of becoming custodians of information management and communication of disaster related data and information.

The Disaster Management Act No. 57 of 2002 has led to the establishment of disaster management centres at all levels of government and mandated them with a specific function of ensuring safety and rapid response to threatening and occurring disasters. The

requirement to develop disaster management centres was recognized spontaneously by a number of municipalities and provinces even before the promulgation of the new legislation.

Since the investigations and progress made on disaster management from 1994, it is quite clear that government recognises the importance of building disaster management capacity and institutional arrangement primarily accountable for planning and execution of disaster management programmes in compliance with the disaster management legislation and policy. As formal engagement and processes for developing the disaster management legislation and policies took place, more emphasis was given to the development of local disaster management capacity, this is further confirmed by the new Disaster Management Amendment Act No. 16 of 2015 which stresses the importance of building municipal disaster management capacity.

In South Africa the provincial level of government is the liaison bridge between the national and local spheres of government. There is therefore is very little involvement or interaction between the local and national government. There is a proposal to scrap the provincial level of government. Those that are in favour of this proposal argue that the provincial government obstructs the effective flow of information and the coordination between Government levels and also that unnecessary costs will be eliminated.

Every sphere of government has a particular role to play to ensure that the level and quality of disaster management services are improved and rendered efficiently. The national government has mainly been given a responsibility of legislation and policy making and also provides necessary support to provinces and relevant sectors. The provinces are custodians of disaster management within the provincial area of jurisdiction and mainly support the municipalities and ensure compliance with the disaster management legislation. The municipalities are at the coalface of disaster management, they are given the task to ensure that disaster management issues are well taken care of as they are an important structure of government that is closest to the people.

3.5.4 The Importance of Knowing How Decentralization Impacts On DRR

Disaster risk reduction has always been a local problem, and societies have been adjusting to new schemes to protect themselves for hundreds of years. However, institutional and political mechanisms for strengthening DRR are more recent – many of them only established in recent times (UN, 2009:51).

The scholarly information on disaster risk reduction emphasizes robust governance as a vital aspect for developing an environment that enables the development of DRR programmes and policies. For instance, the Global Evaluation Report of 2009 points to robust governance as a vital risk-driver. The risk of disaster is always experienced locally; therefore strong local governance is fundamental to the success of the planning and implementation of measures aimed at reducing disaster risk and reduction of vulnerability. Moreover, disaster management decentralization is recognised as a best practice and an effective way of ensuring rapid decision making and capacity at a local level which consequently results in development and implementation of relevant disaster risk reduction programmes through proper and reasonable consultative processes. It is of great importance that relevant local stakeholders are consulted and involved to raise awareness about decentralization and its impact on the policies, structures and methods of DRR. Calls spurred by the Disaster Management Act have been for the establishment of a coordinated and integrated disaster management policy which recognises proactive measures as supreme and the first option. The National Disaster Management Framework was finalised and became operational in 2005. This policy explains the different structures of disaster management to be developed in each sphere of Government, with a fundamental objective of the involvement of local communities, the Government, the private-sector, parastatals and traditional leaders.

3.6 EFFECTS OF DRR DECENTRALIZATION

3.6.1 Decentralization alterations on governmental capacity

A case study carried out by Hudon and Seibel (2007:67) reveals that there are lot of developments around the issue of disaster management decentralisation in developing countries such Colombia, Indonesia and South Africa. Such decentralisation efforts are aimed at building local disaster management capacity and efficiency (Hudon and Seibel (2007:67). The methods used to build local capacity include funding and technical assistance directed at local government and other relevant institutions including the implementation of long-term and sustainable disaster risk reduction solutions.

3.6.2 Decentralization modifying arrangements of funding

To mainstream DRR, it makes sense to add it across all levels of the local budget and not concentrate the finance of DRR within a specific fund (LeBillon and Waizenegger, 2007:78). However, evidence from Mozambique, Columbia and South Africa indicates that funds have not been earmarked for DRR and are mostly diverted into other segments. This issue around DRR funding is connected with those around disaster-risk reduction and political economy. Local development plans are mainstreamed across the budgets of the Local Government.

Unfortunately, in all the above-mentioned nations, this leads to DRR funds being diverted to sectors that are more politically sensitive. Also, in South Africa the Disaster Management Framework in 2005 had a chapter on DRR funding arrangements, but unfortunately it was never finalized by the Treasury.

3.7 CHALLENGES RELATED TO DRR FUNDING

One of the major issues in adopting DRR successfully is that of funding. Clearly, DRR needs to be incorporated across the local budget as a whole so that all the sectors are funded aside from DRR. However, in Columbia, Mozambique and South Arica this method has been adopted but it has led to DRR finance being diverted.

The funding for climate change adaptation programmes has over the years increased drastically. The increased funding for programmes aimed at dealing with the impact of climate change covers a lot of activities and measures relevant to disaster risk reduction. It is widely accepted that adaptation to climate change is related if not the same as disaster reduction, it also important to note that extreme weather events or occurrences are directly linked or exacerbated by the effects of climate change.

3.7.1 Training policy-makers and politicians

All personnel working in the field of disaster management need proper training in DRR. This includes elected councillors, who need training as they start their term of office, and those who are directly responsible for DRR.

3.7.2 Legislation for DRR

It is vital that, at a local level, measures are taken to promote DRR activities. These include the following:

- The Government must ensure that land-use practices are safer and better regulated, so that better construction practices are promoted and implemented. Preventative actions need to be taken to limit harm to the environment and to ensure that housing for disadvantaged civilians in urban and rural areas is safe. (UN, 2009:55).
- As per the ten checklists established by the UNISDR (2010:22), the Government needs to manage education programmes and add them to their risk-reduction activities.
- Local bodies need to use their experience from past disasters and develop local allies around sustainable systems for disaster management.
- Local bodies need to sustain and develop inclusive institutional systems for effective disaster management – comprising of specialized task forces to ensure

channels for communication – especially around alerting, transportation, evacuation, the provision of supplies and so on.

- Informal and formal social networks need to provide frameworks to tackle the conditions of the households susceptible to disasters.
- Local institutions could help to build frameworks for contingency funding for rapid recovery and reconstruction for communities most in need.

3.8 ISSUES FACED BY LOCAL GOVERNMENT IN DISASTER RISK REDUCTION

Even though the role of Local Government in disaster-risk reduction has been widely recognized in the literature by different researchers and authors, some gaps in the actual contribution made by the Local Government have been recognized. In the case of Hurricane Katrina, the USA's Gulf Coast defined what was in the best interests of the people affected – and this was made difficult because of the multiple layers of Government. The same can be said in the Asian tsunami in 2004, where repercussions were seen in Sri-Lanka and Indonesia due to inherent administrative weaknesses (Osei, 2007:62).

One of the steps to reduce the above-mentioned challenges in South Africa has been to establish a structure of management at a local level to drive disaster management. From the Green Paper's inception on disaster management (South Africa, 2005:19), the National Disaster Management Centre has become vital. The aim envisaged by the NDMC was to work as a repository and conduit of data linked to hazards, disasters and risks of disaster. Further, there was to be more coordination amongst the various cross-sectoral bodies of management.

The general arrangement in South Africa is that National Government interacts with the Provincial Government, and Provinces interact with the Local Sphere of Government. As a result there is a minimal interaction between the National and Local spheres of government. As a result, there are calls for a complete removal of the Provinces within an

argument that they limit the effective flow of information including unwanted bureaucracy and expenditure.

Every sphere of the government has a different disaster risk reduction mandate. The national level concentrates on reporting and the making of policies and has an overseeing role. The provincial level has to work within provincial boundaries and in accordance with the activities of the DRR. At the municipal, metro and district levels, the expectations are to see robust engagements with local communities and stakeholders, mainly to identify problems and solutions in a consultative manner. The municipal war rooms are building units of the municipalities, therefore their participation in planning and implementation of disaster risk reduction activities through relevant community structures is of great importance.

3.9 SOUTH AFRICAN DISASTER MANAGEMENT PARADIGM

Until June 1994, South Africa did not have a holistic approach when it came to tackling risk issues and disasters. Until then, South Africa had adopted the classical model, which regarded disasters as the outcome of acts of nature, which were inevitable and rare events and could be avoided or predicted (Messer, 2008:19). Due to this, the methods of dealing with such incidents were more reactive than proactive. In other words, the emphasis was only on the measures taken after a disaster and was designed to combat the adverse impact and consequences of the disaster (Akresh, Verwimp, and Bundervoet, 2010:90).

3.10 PROTECTION AND THE CIVIL DEFENCE PARADIGM

In the early 1950s, the Civil Defence Department gained the attention of the South African Government. A meeting of different government departments occurred in Cape Town in 1956, which presented a new way of thinking about civil defence. In February 1957, a civil defence director was elected under the Justice Department. In May 1959, a Civil Services department was created – although it was disbanded in 1962 to start the

Emergency Planning Directorate. This Directorate was later changed to the Civil Defence Directorate.

3.11 DISASTER MANAGEMENT PARADIGM

In the middle of 1990s, Disaster Management was generally noted as dealing with catastrophic events. During that period the prevailing paradigm was mainly concerned with the protection of civilians in situations where disasters occur. Prior the development of the current Disaster Management legislation and policy, the services of civil protection were conducted under the Civil Protection Act of 1978 and the Fundraising Act of 1988 (Thomallaet *al.*, 2006:5). These Acts guided the civil protection operations. Globally, there was a move to recognise that greater focus must be on better planning and the emergence of development strategies would help to enhance a society's resilience towards disasters and disaster risks.

3.12 THE SIGNIFICANCE OF DISASTER MANAGEMENT LAW IN SOUTH AFRICA

The Constitution of the Republic of South Africa places a legislative duty on the Government to ensure the safety and health of its citizens. In regards to the Constitution Section 41(1) (b), 'All the government spheres are needed to secure the welfare of the Republic's people' (South African Republic, 2005:37). Moreover, Section D (152) states that local government also needs to make sure it provides the people with a healthy and safe environment. In the light of the above arguments, it can be said that developing disaster management guidelines is a major responsibility for South Africa and that this responsibility lies with the Government.

3.13 THE SHIFT TOWARDS DISASTER RISK REDUCTION

Earlier sections of this study discussed the development of the current disaster management approach from its earliest phase where it was more concerned about civil defence. The earliest developments and approaches in the field of disaster

management guided the formulation of the current paradigm widely considered as progressive and known as Disaster Risk Reduction. The South African Disaster Management Act and Policy are recognised as being progressive and perfectly articulate the mainstreaming of disaster risk reduction into government's development programmes particularly at a local government level through the alignment with the Municipal Integrated Development Plans (MIDPs).

3.14 SOUTH AFRICA'S INSTITUTIONAL DISASTER MANAGEMENT STRUCTURES

Since the disaster management discussions initiation in 1994, it has been clear that the new democratic government realised the significance of building specific structures of government responsible for the day to day planning and implementation of disaster management in South Africa at all spheres of government. Primarily, the main objective was institute the National Disaster management Centre (NDMC) to drive the new developments and strategy to tackle the issues of disaster management in the country. The NDMC is thus to date a national custodian of disaster management in the whole of South Africa. The development of South African Disaster Management Legislation recognised from the beginning the importance of disaster management decentralisation and the role of Provinces to assist the municipalities (South African Republic, 1999:18). The section below will give a detailed view on the function of disaster management at all three stages of the Government. The major responsibilities of every sphere will be applied to these structures of disaster management. The discussion will focus predominantly on politics as well as the managerial responsibility of executives in regard to the Disaster Management Act (Giné and Yang, 2009:39)

3.14.1 The Sphere of National Government

Since the Green Paper and White Paper, up to the final Disaster Management Act, South African Disaster Management has debated and set out certain aims and goals. Most of these goals are still relevant and in place today (Hill, 2004:18). The Green

Paper related to disaster management shows that the Government needs to play an active role in ensuring that the aims for the management of disaster are achieved. The objective of this period was to make sure the former reactive response was changed into a system that also dealt with prevention and pro-active planning (Gaillard, 2007:10).

The five major aims of this period included:

- Enhancing each country's capacity to reduce the impact of natural disasters, focusing on aiding developing countries in the evaluation of potential disaster and harm and in helping to establish warning systems wherever required that would aid resistance to potential disaster;
- Building suitable strategies and guidelines for applying existing technical and scientific knowledge, and taking into consideration the economic and cultural diversity of various nations (Giné, and Yang, 2009:19);
- Supporting engineering and scientific efforts aimed at focusing on closing the gaps in knowledge in order to limit the loss of property and life;
- Gathering new and existing technical data linked to calculating the prediction, evaluation and reduction of natural disasters; and
- Establishing measures for the reduction and prediction of natural disasters with the help of technical aid programmes, and transferring technology, sharing relevant projects, training, educating and customizing relevant knowledge to specific locations where disasters are likely and, finally, measuring the efficacy of these programmes (UN, 2002:99).

With the above objectives in mind, the IDNDR set some goals that needed to be reached by all nations by the end of the twentieth century. The vision of the IDNDR was that all nations needed to have carried out the assessment of natural risks, and established national, regional and local measures for prevention, preparedness and warning (UNISDR, 2009:17). It was assumed by the IDNDR that the political conduct and will of the various governments would be evident in the endeavour to reach the above objectives. Initially, the IDNDR was largely influenced by technical and scientific interest groups and not always by government structures (Handmer and Dovers, 2007:16).

3.15 THE NATIONAL DISASTER MANAGEMENT CENTRE (NDMC)

The institutionalization of the NDMC was a vital step in terms of making sure that issues of disaster management are well and systematically coordinated in the Republic of South Africa. The NDMC provided the administrative direction and an opportunity to lead and guide disaster management agenda including the development of disaster management capacity in the relevant spheres and sectors of government. The NDMC developed five action priorities, and provided various principles and guidelines in reaching pragmatic ways of developing resilience from catastrophes. Its objective was to significantly reduce the damages from disasters by the end of 2015 by developing coping capacity at a national and local level (Barakat, 2003:27). This meant limiting the loss of social, environmental and economic assets as well as the number of lives in the event of a disaster taking place.

- First Action Priority: Ascertaining that the reduction of disaster-risk is a local and national priority that will be implemented strongly from an institutional foundation.
- Second Action Priority: Monitoring, assessing and determining the risks of disaster in order to improve early warning signs.
- Third Action Priority: Utilizing education, innovation and knowledge to establish a safety culture at all levels.
- Fourth Action Priority: Limiting the underlying risk factors.
- Fifth Action Priority: Developing the readiness for disaster by developing all possible levels of response

This was the early phase in the operation and institutionalization of proper disaster management in South Africa focusing on proactive disaster management methods. The provinces and municipalities were quick to follow the trend of establishing their respective disaster management centres even before that became a legal requirement. The Green Paper examined various outcomes for the NDMC and at first envisaged the NDMC as an integrating body comprising of different government departments. The Disaster Management White Paper (South Africa, 2003:45) concentrated on this

requirement but also aimed at scaling down the centres to more decentralised municipal and provincial levels (Harding, 2003:78).

The NDMC, however, only developed into a statutory phase with the help of the Disaster Management Act. Since 1999, the NDMC has been functioning and operating from inside the COGTA – also previously known as the DPLG. As a result, initial reports are given to the minister first and not to the highest executive political authority, as is the case in many other countries (for instance Madagascar, Tanzania, Zambia, Ethiopia, India, New Zealand, Japan, Bangladesh and India).

The highest executive administrative authority in South Africa for the management of disaster remains the NDMC. The goal of the centre is to foster a coordinated and collaborative disaster management system within the Republic of South Africa. It also aims to maintain and build processes within the institution, which will allow the Disaster Management Act to be effectively implemented (South Africa, 2003:16). When provided with the responsibility of having to adapt its measures, the NDMC will provide for the progressive development of risk profiles in order to implement strategies of risk mitigation and informed planning (UNISDR, 2009:19).

The focus of the NDMC remains on the mitigation and prevention of disasters at all levels. It is also responsible for collecting data on hazards related to disasters and to provide an updated information base on all potential risks and their mitigation – in southern Africa as much as in South Africa. The Centre also records and classifies disasters (national, local and provincial) (South Africa, 2013, Section 23). One of the key responsibilities of the NDMC is to act as a conduit and repository of the data related to disasters, dangers, the management of disasters and impending disasters. The NDMC functions as the supreme organ in the implementation, monitoring and review of the policy and law of disaster management. This is mainly done with the help of a framework of policy-making, as discussed earlier in this literature review (UNISDR, 2009:27).

The Local Centre needs to promote further training, recruitment and the participation of communities and volunteers in the management of disaster. The Disaster Management

Act (Section 7 (2) and Section 5(e) (v) (VI) focuses specifically on the recognition and involvement of indigenous knowledge regarding prevention and mitigation. The Disaster Management Centres (DMCs) at all levels of government need to work hard at coordinating and encouraging the development and inclusion indigenous knowledge (Giné, and Yang, 2009:90).

The development and implementation of capacity building programmes is vital, such programmes can be implemented in communities and schools to raise awareness about the hazards and relevant precautionary measures. Conducting research is also a vital responsibility of Disaster Management Centres. Importance must also be given to the establishment of a risk-avoidance culture amongst the basic population (South Africa, 2005:15). The Disaster Management Centres also need to develop and update the database for all relevant stakeholders operating in their respective jurisdictions. Apart from the upkeep of the directory, the Disaster Management Centres need to build chains of communication with every role-player and involve them in productive dialogue in order to address issues associated with vulnerability and the risk of disaster (Giné, and Yang, 2009:56).

The directory mentioned above is part of a much larger information base that ought to be maintained by the National Disaster Management Centre (with the aid of the Municipal Disaster Management Centres and Provincial Disaster Management Centres). This information base is comprised of all the relevant information that will help in the Management of Disaster and it focuses on centres at all levels of government (as government in Section 17, Part 3, of the Disaster Management Act). The Disaster Management Centres must see to it that information management and communication is conducted accordingly at all times and ensure that such information is accessible to all who needs it for various official purposes. (Giné, and Yang, 2009:17).

Another goal of the Disaster Management Centres is to establish guidelines regarding the development of programmes related to disaster management. These programmes must include mitigation, prevention, risk, contingency, recovery and response activities, as well as those filed under operational guides and standard operating procedures (SOPS). The NDMC also has the responsibility to assist and provide support to all the

relevant government sectors. The integration and alignment of all the plans mentioned above plays a crucial role, and the NDMC needs to work hard to make sure such collaboration takes place (Giné, and Yang, 2009:67). The above-mentioned integration is a crucial part of the IDP's processes, as shown previously. All of the activities and functions of the NDMC need to take place within the NDMF.

Crucial to the basic management of these various centres of disaster management is the appointment of its Head. The Disaster Management Act would be the particular focus of such a Head. Section 31, 45, 10 outlines the appointment requirements of this crucial role.

The government of South Africa recognised that disaster management, at a multi-sectoral and multi-disciplinary level, necessitates the involvement of a series of professionals whose responsibilities are external to the spheres of Government. Hence, the Disaster Management Act No. 57 of 2002 advocates the establishment of disaster management advisory forums at all levels of government.

3.16 THE LOCAL SPHERE OF GOVERNMENT

The most critical sphere of the Government regarding the successful management of disaster and its implementation is local government. This is where the majority of the activities linked to the management of disaster will happen. Local government must ensure that the appropriate methods and programmes receive adequate consensus and support at a community level. Such support and consensus can be reached through robust consultation with communities. The IDP is the structure through which Government is required to implement all their public goods and services. The IDP has been explained above; it also works as the operational body for the mitigation of disaster at a governmental level (Borkhuu, 2008:99).

Every city, town and rural area in South Africa has various profiles of risk and therefore each of them experiences different risks and potential outcomes. At present, the South African government is still essentially reactive when it comes to risk and disaster. This is because of a lack of resources, awareness and political will. The law as explained in

this literature review is geared clearly towards altering the present scenario. The importance of collaboration regarding disaster management on a local government level can't be emphasized enough. Regional areas are where the brunt of a disaster is experienced and this is where the responses to any disaster will come from initially (Blattman, 2009:58). In light of the mammoth task the local sphere of government has in as far as disaster management is concerned, it is imperative that adequate support be provided to ensure that citizens are given quality disaster management services to protect their wellbeing at all times.

The planning and implementation of the disaster management function must be conducted as the Disaster Management Act and policy directs.

As discussed in previous sections, the metropolitan municipality is an independent unit. But on the level of operation, especially regarding the implementation of provincial and national policy, they still have a duty to perform accepted management practices. The process of policy-making on the level of local government has been established.

3.17 THE PROVINCIAL SPHERE OF GOVERNMENT

The roles, responsibilities and powers of the Provincial sphere of government is clearly pointed out in Chapter 3 of the Disaster Management Act. In terms of the Constitution of the Republic of South Africa, the Provincial sphere of government has a responsibility of ensuring integration and coordination of disaster management function in the respective Provinces. This basically highlights the executive authority given to Provinces in terms of Disaster Management as articulated in the Constitution. This also means that the Provinces must recognise and embrace their responsibility of being an extension of the national Government (Kelman, 2003:27).

The provincial domain therefore needs to concentrate on functional strategies, goals, policies and disaster management budgets in their responsibility area. The policymaking processes at the provincial level needs to reflect similar methods as those of the development of the National Disaster Management Framework. For practices and principles of disaster management to be consistent throughout South Africa, the same

institutional structures that have been established at a national level must also be developed at a local and provincial level (Tran, et.al. 2007).

3.18 THE MUNICIPAL DISASTER MANAGEMENT FRAMEWORK (MDMF)

The development of the Municipal Disaster Management Framework (MDMF) is a legal requirement, as seen in Section 42 of the Disaster Management Act. As with the provincial and national mechanisms, the MDMF tries to ensure a coordinated and integrated way of managing disasters at a municipal level. The above section emphasized the importance of consultation between local and district municipalities in the development of these mechanisms (EU, 2009:46).

The MDMF's presence in Category C municipalities is crucial in helping to regulate the working relationship between the various local municipalities and districts (Collins, 2008:95). The section above again emphasized the need for consultation between local municipalities and districts, to outline the manner in which disaster management issues are to be tackled in their respective areas of jurisdiction.

3.18.1 The Municipal Disaster Management Centre (MDMC)

The development of a municipal disaster management centre is crucial. Every district or metropolitan municipality must build such a centre (South Africa, 2004:29). A local municipality can also build a disaster management centre if it chooses to do so, but that must be done in consultation with the relevant district municipality.

The MDMC is crucial (as seen in the Disaster Management Act, Section 43). Every district and metropolitan municipal council needs to build such an institution (South Africa, 2005:19). The MDMC's major goal is to give aid to the relevant NDMC and PDMC. It needs to ensure that the local disaster management policy is adopted and that the national and provincial disaster management priorities and aims are reached (Adamo, 2009:76).

An MDMC district needs to be collaboratively adopted and established with the national municipalities in its area of jurisdiction. It will have the authority to ascertain that the

Disaster Management Act is suitably implemented. Also, these institutional arrangements are built on the Disaster Management Act and they are in compliance with the national as well as the provincial levels (South Africa, 2005:38). Every MDMC needs to establish risk profiles in advance that will inform the building of the municipal disaster management plan and will inform the IDP.

The major goal of any MDMC is to ensure that the emphasis is on vulnerability reduction and risk in societies who are most likely to be affected. The MDMC's aim should be to compile disaster plans in compliance with the integrated development processes so that rapid and effective responses can be implemented (Brockman, 2009:69).

3.18.2 The Municipal Disaster Management Advisory Forum (MDMAF)

The Disaster Management Act advises municipalities to establish their respective Municipal Disaster Management Advisory Forums (MDMAF) for the purpose of effective disaster management coordination and integration. The National Disaster Management Framework states that it is hard to view how the municipalities can successfully implement the disaster management function without such an important Inter-Governmental Relations structure. The mitigation and reduction of the risk of disasters is normally too complicated to be a responsibility of a single institution as it requires proactive coordination and outreach to other stakeholders and communities (Cavallo and Noy, 2009:26). Furthermore, mitigation and risk reduction policies normally raise basic socio-economic problems like resource allocation, the safety of livelihood and equity through which the Government cannot do alone. Hence, other changing frameworks to influence disaster policy reduction are required. These comprise of advocacy groups at a grass root level, risk dissemination, knowledge and stakeholder partnerships. Integration between stakeholders, the Government and civil community provide excellent opportunities to develop processes and policies that could foster the effective management of disaster-risk. In the era of competing demands, success is normally linked with these two essential aspects (Brockman, 2009:46).

3.19 DISASTER RISK REDUCTION IN SOUTH AFRICA

The literature considered thus far has indicated the important role played by governments in maintaining and promoting the well-being and safety of its individuals. In the absence of political will and good policies, risk-establishing practices will continue and the situation will remain unsustainable (Swift, 2006:13). The management of risk needs to be embodied at all levels of management in the Government.

A broad-based literature review is provided in order to facilitate an in-depth understanding of reduction of risk theory and practice inside the environment of South Africa. The review begins by providing an overview of the Government system of South Africa and most specifically the emergence of the South African disaster management approach.

Since the dawn of democracy in South Africa, systematic methods have been established and frameworks developed to improve the quality of life for all individuals at the level of Local Government. These newly established policies and laws were intended to tackle, most specifically, disaster management issues. Local Government was given the responsibility, in line with the remit of the Constitution, to oversee the coordination and integration of disaster management issues at a local government level

Disasters lead to economic loss, environmental distraction, fatalities and injuries across the globe annually especially in poor and developing countries. A drastic rise has been witnessed in terms of magnitude and severity of catastrophes over the past years. According to official figures from the Centre for Research into the Epistemology of Disaster (CRED) in 2010 at the International UN Strategy for Disaster Reduction (ISDR/UN), natural disasters have led to an increased number of deaths. The figure given of deaths over the past decade is 780,000 people. These disasters have also led to damage of infrastructure and properties amounting to \$960 million (UNISDR, 2010:80).

In acknowledgement of the overwhelming and enduring impact of disasters, the significance of application of disaster management proactive measures has been broadly accepted by scholars and decision-makers globally. There have been huge

challenges associated with the adoption of initiatives around disaster-risk reduction and, therefore, new tools, strategies and inter-disciplinary methods have been required to ascertain the proper resourcing and management of risk-reduction efforts (Sabates-Wheeler et. al., 2008:70).

The response to and mitigation of disaster is a multi-sectoral and multi-disciplinary activity (UN and the World Bank, 2010). Countries have opted to establish National Disaster Management Centres that are replicated at lower level or sphere of government. It widely recognised and accepted that municipalities must play a lead and meaningful role in terms of coordinating and implementing disaster risk reduction programmes (UNISDR, 2010:50).

Local Government needs to be strengthened and encouraged to collaborate with relevant role players including the ordinary people at a community level to ensure that the implemented interventions are relevant and accepted by recipients (UN and the World Bank, 2010:21). Despite an increasing call among practitioners and researchers to increase municipal disaster management capacity, management of disasters has been inadequate due to insufficient technical capacity and resources allocated to deal with disaster management issues at a Local Government level.

Smith (2009:10) has determined that few local governments do, in fact, work closely with individuals in need and this has made it harder to find sensible solutions to problems associated with disasters. As Twigg has argued (Twigg, 2004:12), protection against disaster by local authorities is dependent primarily on appropriate management and planning, as well as on new interventions. Thus, it is imperative to identify specific challenges impeding the proper planning and implementation of disaster risk reduction initiatives, and most importantly to see how municipalities can be reinforced.

3.20 LOCAL GOVERNMENT: MUNICIPAL SYSTEMS ACT NO. 32 OF 2000

The Local Government Municipal Systems Act No. 32 of 2000 is the statute that empowers municipalities to improve their communities by guaranteeing access to fundamental services. The Local Government Municipal Systems Act No. 32 of 2000

describes the legislative circumstances of the local government in relation to communities being served and make clear of the executive and legislative powers of municipalities. It seeks to increase effective local government by developing an outline for municipal planning, performance monitoring and use of capital. The Act also sees to it local government take into cognisance the plight of poor and vulnerable households when determining fees for services and it endorses the involvement of local people in local governance. Part two (2) of this Act prescribes the contents of the Municipal Integrated Development Plan; as a result Section 26 (g) requires municipalities to develop applicable disaster management plans.

3.21 PUBLIC MANAGEMENT AND DISASTER RISK REDUCTION

It has been argued that the philosophies at the centre of public administration and management of disasters are synonymous as they are mainly falls within the public sector (Tran *et al.*, 2007:37). The following discussion provides contributions on both the applied and academic stages of these processes.

The Government, mainly at local level, is responsible for city, town and regional structuring and planning – and its policies or lack of policies can, as a result, situate a community in such a way that would make individuals vulnerable to certain dangers. Mechanisms or people that have the task of ascertaining that an environment is safe and secure are central at this stage. The success of Public Management is determined by its capacity to focus on the welfare of the community.

Public Management as a subject has gained attention from Political Science and has been a growing concern that has been through a range of stages and paradigm shifts since the 1880s. A number of theorists including Hudon and Seibel (2007:57-103) and Hunter (2005:67-92), have contributed significantly to the development of Public Management as a scientific tool. DRR can be deemed as a distinct, emerging research area that has been initiated from a range of different areas – including Public Management and Environmental Research, which were core disciplines in the early

1990s. But a unique and distinct methodology or body of knowledge has not emerged sufficiently for this research area to be typified as a 'discipline' (Gaillard, 2007:45).

3.22 CONCLUSION

The phase of the Disaster Management Cycle that relates to this study is Disaster Risk Reduction (Prevention, Mitigation and Preparedness). Disaster risk reduction is more concerned about the policy objectives focused on eradication and mitigation of disaster risk as well as efficient response through disaster preparedness.

As has been evident from the literature reviewed in this section, the risk of disasters is highly concentrated in low income areas such as South Africa, with others feeling it acutely in urban areas such as ghettos. Hazards and disasters like floods, famine, storms, conflicts, and economic crises among other things in combination to various other vulnerabilities that exist in these areas result in loss of life and livelihood for many people. Therefore, reducing the risks and vulnerabilities to disasters is an essential factor that can facilitate reduction of poverty that comes with loss of livelihood and the little wealth people may have when disasters occur. To ensure progress in disaster mitigation and DRR programs, it is essential to drive efforts more towards research and programs that will ensure that the existing gaps in literature and knowledge are addressed.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

The researcher has a responsibility to properly identify the paradigm within which the phenomena of interest can be most accurately aligned with and it is on this basis that a number of fundamental assumptions can be elicited. In essence, among these fundamental and basic research assumptions is that research should always be based on particular philosophical assumptions that constitute valid and scientific research. Most importantly, every activity of scholarly enquiry must employ methods that have been reviewed as being suitable for the expansion of fresh information in the domain in which the study is based. This chapter is a guideline that provides the logical assumptions that are underlying in the pursued research as well as the design and the methodology used in the research. In ensuring this, the bases for each methodological choice will be systematically discussed with attention being paid to the acknowledgement of the pros and cons of the chosen research methodology and the position of research among the existing customs in Disaster Risk Reduction (DRR).

The study was based on a case study methodology with the unit of enquiry being eThekweni Municipality. Macome (2002:37-89) establishes the philosophical approach underpinning the case study as originating from the interpretive tradition. The fieldwork was conducted on-site during over a 1-month long index period during which time communication was sustained with the various informants. Data collection methods used in this study included individual face-to-face interviews, self-complete questionnaires, and documentation analysis.

This chapter focuses on the research plan and strategy: it defines the strategy executed in the case study research. The chapter also focuses on study design and explains the rationale for choosing the study area, data and information sources, study analysis sub-components, data and information collection process and its analysis, as well as a specific narrative on the adopted framework. Lastly, the chapter details the overall

methodology and design employed including the data collection and analysis procedures.

4.2 RESEARCH PARADIGM

Case study is a major method used in this research. Case studies are critically and positively interpreted so as to definitely define the research study techniques (Walsham, 1995:24). The philosophical approach that was used in this kind of research is interpretive, critical and positivist (Myers *et al.*, 2009: 89). Positivism research paradigm is characterised by testing of hypothesis, variables that are quantifiable as well as inference capabilities from the data obtained from the study participants (Orlikowski and Baroudi, 1991:16).

According to TerreBlanche and Durrheim (1999:26), ontology, epistemology, and methodology are the three dimensions of the research process in accordance with the definition. It can also be identified using terminologies in three dimensions that include research paradigm, thinking and all the encompassing systems. Gephart (1999:8) define and classify the research paradigms into three philosophical distinctions. These classifications were positivism, interpretivism, and critical postmodernism. This study has found the use of Gephart's classification ideal as the three categories can be used conveniently in the study area. The three have also helped in policy and management as they hold more specific sociological and psychological theories that can be used in the definition of the research process and the study effectively.

Furthermore, in the field of research methodology, the defined three philosophical perspectives are said to be popular paradigms. They play an important role in making sure that effective research is conducted based on the contemporary social, management and organizational research requirements.

4.3 THE CASE STUDY STRATEGY

The Case study research strategy is generally associated with qualitative method of enquiry, it is however not limited to qualitative studies but also compatible with quantitative studies if appropriately designed (Yin, 1994:10).

The case study permits much of the inquiry that needs to maintain the important features of real life events or situations (Yin, 1994:12). When all the contextual conditions are studied in every event, a case study is highly important. Therefore, a case study is defined as a research strategy that encompasses various techniques used for collection of data and analysing the same data directed by the stated theoretical assumptions. To ensure that the research is more valid, the data should be collected from different sources (Yin, 1994:19).

Stake (1993:7) distinguishes case studies into three broad categories: instrumental, collective and intrinsic. A case study is unique when it cannot be a representative of the other case presented. Case studies are only intrinsic when one can be representative of the other. It is very important to use this approach in coming up or building a foundation of a theory as it provides an intrinsic interest. Stake (1993:9) defines an instrumental case study as the one that is selected and is used to develop an existing theory or provide further insights of the matter. The case study gives an opportunity to conduct a thorough in-depth analysis of the phenomenon (Stake, 1993:237). The holistic method is the same as instrumental case study but it extends to more than one instance.

This study builds a basis for defining and using an instrumental case study approach during the research. At one instance, one municipality is selected- eThekweni. The municipality was selected to be used when conducting an in-depth analysis of DRR planning and implementation during the study.

In the past years, criticisms have arisen among researchers as case study research studies are said to be lacking statistical generalizability. Conford and Smithson (1996:17) also puts across that richness and complexity of data collected is always open to different interpretations rather than specific and thus can lead to potential research bias. Miles and Huberman (1994:14) acknowledge that case study research

lacks detailed step-by-step analysis and case studies lack ability to generalize in a rigorous statistical manner. However, Pettigrew (1985:19) holds the view that case studies that can be used in research are very useful in defining both generalizable concepts and multiple concepts that can bring generalisations in terms of propositions.

An interpretive epistemological stance derives the validity of the case study approached, which is based on the 'plausibility and cogency of the developed logical reasoning' as defined by Walsham (1993:15). This logical understanding is applied in presenting the results from the cases and making sure that appropriate conclusions are drawn. Similarly, case studies are usually applied for their critical and thorough view based on the theoretical propositions that existed during the research for the study (Yin, 1994:48).

Furthermore, Walsham (1995:37) and Yin (1994:27) state that the case study research strategy offers immense details that provide the researcher with the opportunity of making changes and different levels of data analysis and interpretation. Yin (1994:58) further defines that these multiple interpretations could have been lost in experimental and quantitative strategies.

When conducting projects of a procedural nature, which may extend over a long period of time, the case study approach is more appropriate (Walsham, 1993; Benbast et. al 1987; Mitev, 2000b; Yin, 1994).

This research adopts the interpretive stance. Therefore, the case study method of enquiry is given priority as a suitable research approach in this study. The research question of understanding the planning and implementing of the DRR in the eThekwini Municipality also explains why a case study strategy was employed as a suitable research method for the entire research. Surveys could also have been used in examining the same research questions to examine the level and approach of municipalities in terms of the holistic planning and implementation of the DRR as well as the associated challenges; thus, showing the quality and outcomes of DRR implementation. However, when a survey is used, it might not reveal unique experiences of individual municipalities and the layers of factors influencing the success

or failures in detail. Therefore, the case study approach is chosen in the research because of its advantages in creating novel and profound insights and because a case study focuses on examining the rich administrative and political issues underlying factors.

4.4 RESEARCH METHODOLOGY

Myers (2009:13) has defined research methods as a strategy that is made in seeking to provide a valid design and data collection from the underlying assumptions. They are classified into two distinct classifications called qualitative and quantitative. These two models are not the only classification, but are also the major classifications of research models. The ultimate purpose of research is to better the understanding of the world and giving distinctions about the nature of the knowledge that is obtained as a result of the study. This is also seen as a method whereby data is gathered and interpreted as well as how the data is packaged and represented.

In natural sciences, a quantitative research approach was initially designed to explore natural studies. Cultural and social phenomena can be easily described in the application of quantitative research. In the education sector, both qualitative research methods and quantitative research methods are used. The current studies acknowledge the fact that there is no method that is better than the other when performing research. The context, nature and purpose of the research are used to determine the best method to use in the study. Therefore, facts about the data needed, concerning the studies, have to be followed strictly.

A mixed method can also be used when conducting research. Researchers apply this in order to achieve the advantages from the two methods or eliminate problems that could arise from using one method and foregoing the other method. The methodological foundation of the study is important in determining the need for the two methods and how they can be used interactively to bring out the main objective of the research. Brysman and Burgess (1999:45) provide a case study approach that attempts to explain and show how the mixed method was used during a single research work.

The emergence of the combined method (Quantitative and Qualitative) as a procedural strategy in the behavioural and social sciences began during the 1980s (Tashakkori and Teddlie, 2003:57). The collection, analysis and integration are involved in or during the use of mixed methods research. The two may be mixed during a single study or used for longitudinal program inquiry and process of consulting during the study. Therefore, the main purpose of this form of research is that both the qualitative and quantitative research helps to provide a better understanding of the research problem and other issues that may arise due to the problems rather than focus on the research problem alone. Rationale for using mixed method approach includes the following:

- Variation in data collection leads to greater validity.
- When one methodology does not provide all the information required.
- Ensures that there are no 'gaps' in the information / data collected.
- Answers the question from a number of perspectives.
- Ensures that pre-existing assumption from the researcher is less likely.

There are three major differences between the qualitative and quantitative methodology. Firstly, quantitative designs are bent on understanding the purpose of the study while qualitative is based on the distinction between understanding and explanation of the purpose of the inquiry. Moreover, qualitative is personal while quantitative is the impersonal role of the researcher. Finally, the qualitative route is knowledge discovered while the quantitative is knowledge constructed (Stake 1995:37).

Furthermore, qualitative design is an inductive type of research while quantitative is a deductive method of research. Moreover, it is not a requirement for the hypothesis to appear in the beginning of the research in qualitative research. Qualitative method uses inductive data analysis to improved research results and mutually shaping influences and to elucidate the interrelating realisms and familiarities of researchers and participants (Lincoln and Guba, 1985:9).

The design may not be revised at the beginning of the study but is allowed to evolve during the study. This is because of the fact that it is difficult to foretell the product and the nature interactions to be experienced and the data obtainable. The need to revise

the design as research evolves is as a result of various points of view of research participants and the researcher, and eventually affects the outcome of the results and the reality of its interpretation. Quantitative research requires a clear and defined hypothesis before the researcher can start to conduct the research.

4.5 RESEARCH DESIGN

Research design show how all the other major parts work together to address the research questions. The parts of the research include samples, measures, programs and groups. Therefore, the research design is a master plan of the research work, which foreshows how the study will be conducted.

A research design enhances the legitimacy of the collected data of a particular research problem understudy. It is an actualization of the set of procedures that a given research is based on. The research design helps to plan, structure and execute the research strategy and also to ensure validity of the findings (Mouton, 1996:175). Assumptions of research design and data collection depend on the research design for their directions. Yin (2003:19) adds that, “colloquially a research design is an action plan for getting from here to there.’ In this regard, ‘here’ may be defined as the initial set of questions to be answered and that ‘there is a set of (conclusions) answers”.

In this study, the research design is based on the use of a descriptive and interpretive case study. Qualitative methods are used largely in this study as much as it contains small quantitative components. With the help of the qualitative method, the research data is then analysed inductively. The description part allows the researcher to make analysis and interpret the theories about the phenomenon as well as work in line with the theoretical framework.

4.6 THE SELECTION OF THE CASE STUDY SITE

There is a need to study various issues at local government level such as the roles played by politicians and administration. Thus, as it has been stated, the main purpose

of the thesis is to ensure that better and understandable knowledge of the planning and implementation of DRR is conveyed. Hence, the eThekwini Municipality was identified to fulfil the study research. The use of the interpretive approach helps in the understanding of the phenomena in the existing real world situation (Walsham, 1995:29). The case study research approach was selected as a method to assess the planning and implementation of disaster risk reduction at the eThekwini Municipality. The consultation with study participants (data collection) was conducted in June 2016 for a period of one month.

Many municipalities exist in the country but eThekwini Municipality was chosen based on two major issues. Firstly, the municipality is the only metropolitan municipality in the province. Matters concerning Development and Disaster Risk (DDR) are dynamic and it has a long established Municipal Disaster Management Centre (MDMC). Secondly, the municipality was easily accessed during the research of the thesis and made the collection of appropriate data easier and more efficient.

4.7 PARTICIPANTS IN THE STUDY

The participants in this study included a variety of role-players in terms of their responsibilities in as far as management of disasters is concerned. The participants involved were eThekwini Disaster Management Practitioners including the management and Head of the MDMC, Municipal Heads and Managers responsible for relevant departments that ought to play a particular role in DRR (i.e. Water and Sanitation, Human Settlements, Fire and Rescue, Safer Cities, Environmental Health, Development, Planning and Environmental Management) and Honourable Councillors serving in the disaster management cluster were also interviewed.

Patton (2002:99) argues that the idea of a purposive sampling technique may be used to describe the scenario above. This type of sampling has been used in this research to select the “information-rich” cases for the in-depth analysis of the research problem. Merriam (1998:87) stated clearly that purposeful sampling will only take place when the research paper follows the procedure of selecting the participants to enhance

information gathering. The essence is rich information concerning the subject matter and deals with the central important purpose of the research. Patton (2002:16) puts it clearly that the purposeful sampling technique that is employed to fulfil this research chooses a common pattern that emerges from the variations of particular interest. It captures important data about the central and shared dimensions of the research field to bring a clear meaning of the phenomenon.

4.8 DATA SOURCES

The research is made valid and rich in data by the help of primary and secondary sources of data. The key informants for a case study mentioned in the sections above are used as the primary source. The disaster management plans, technical documents, management legislation and policies, government publications and disaster management plans are used as the secondary sources. The secondary data sources mentioned above provided the essential preparation for the interviews. It also served the purpose to learn about other different developments and studies in the field of DDR.

The research evaluated and analysed other researchers' work. The secondary data that was obtained from different sources was therefore analysed as prior preparation for the interviews. This helped in cross-checking the officials' information and showed how to make evaluations concerning DRR. Furthermore, the prior studies helped in supporting the exploration of particular responses that were received during the interview. Therefore, the literature review, questionnaires and interviews were used as the main methods of data collection. Participant observation, group discussion and general observations were used as other methods of data collection techniques.

4.8.1 Interviews

Interviews, as a method of gathering information, are widely used with research and are based on the use of oral questions to explore phenomena of interest. According to Shneiderman and Plaisant (2005:68), during an interview, the interviewer can pursue

very specific issues that concern and focus on the issues being researched. Constructive suggestions may be offered in return when an interview is being taken. Genise (2002:18); Shneiderman and Plaisant (2005:14) provide the main advantages of interviews as:

- There is direct contact with the users or the participants and can often lead to specific, constructive suggestions concerning the topic.
- There is always good detailed information obtained in the process.
- Rich and detailed data is obtainable even if the number of participants is low.

There are different forms of interviews characterised by purpose, design and a particular need. The interviews may be semi-structured and structured, and can be conducted with an individual (key informant) or as a focus group. However, this research study used semi-structured interviews as the process of gathering detailed information on the topic. The interviews were conducted only with MDMC management and Councillors (Appendix A).

The use of semi-structured interviews in this research is based on the fact that it has the features of both the structured and unstructured methods. Also, it uses closed and open ended questions that allow interviewers to probe further to obtain rich data needed for the research. Furthermore, the method used has the advantages that arise from the structured and unstructured method of interviewing. The researcher and the participants have prepared questions to streamline the line of questioning relevant to the study. This will allow for consistency of the research and make the process smooth. During the process of the interview, the interviewee is given an opportunity to provide or make his/her feedback elaborate so that relevant information is obtained. Therefore, the use of the semi-structured interviews is more flexible and can lead to more research that has much of the relevant data.

4.8.2 Questionnaires

Interviews are more user specific and allow the use of only few people. When wider audience are required, then questionnaires are the best applicable method of data collection that can be used in the process. In this research, questionnaires are used as it is listed below:

- Disaster Management Practitioners (Appendix B)
- Heads and Managers of Departments (Appendix C)

4.9 DATA COLLECTION AND ANALYSIS

Personal interviews are one of the methods used to collect data and act as a source of information. Secondary analysis provides a valuable source of information from the questionnaires and the semi-structured interviews are regarded as the most valuable sources of information for these studies. These methods are efficiently and effectively delivered during the interview for the main delivery approach.

Walsham (1995:45) puts it clearly that social disaster vulnerability has led many DRR researchers to adopt human interpretation and meaning as their primary focus of the research approach. It can be seen that people hold social reality and subjective meaning. When the approach is used, then it will allow examining of the subjective meanings and the social realities by eliciting and making keen observations on what is significant and more important to them.

The processes of data collection and analysis are inseparable. Due to the nonexistence of rigid separation, the process is defined as an iterative cycle of the gathering and interpretation of data. The results help in the subsequent data interpretation and analysis as the research proceeds (Walsham, 1995:18). As the process continues, the cycle is repeated and theory elaborated and checked. When conducting interpretive research, there is a need for the researcher to interact directly and intensively with the participants. This helps them gain more data that is useful in the development of the conclusions.

The study allowed the choosing of interviewees on the basis of their knowledge and experience in the field of disaster risk reduction. The research made many extensions as more and more of the respondents were interviewed. When it was realized that nothing new was being learnt, the decision was made to halt the research. This was made by the assumptions that when nothing new is learnt, then a state of theoretical saturation has been attained. When conducting the interview, the participants were subjected to provide the best knowledge that they have studied during the period of study. Also, the researcher needed to examine the terms of the level of experience of the participants in the organisational and managerial issues. The research was not essentially deemed to limit interviewees to eThekweni Municipal staff and councillors but also to NGOs so as to solicit their perspective and experience.

The main languages used during data collecting were English and IsiZulu. The researcher made the translation of the interviews from IsiZulu for the purpose of writing this thesis. The extensive notes were taken during the interviews in line with the prepared questions. The transcription and written notes from the interviews were then analysed systematically through iterative and repeated re-reading of the obtained information. The re-reading process allows for each interviewees viewpoints and perspectives to be understood so as to allow for the links and contradictions within and across the other interviewees information. This enabled the researcher to identify complex contextual factors emerging to be analysed and relevant responses that emerges that are related to all the data obtained are made.

In the case study, a total of 41 participants were engaged. The distribution of numbers per specific group and method of data collection are outlined in Table 1.

Table 4.3: Summary of study participants and method of data collection

Specific Group	Number of Participants	Method of Data Collection
MDMC Management	3	Semi-Structured Interviews

eThekwini Municipality Heads of departments	7	Semi-Structured Questionnaire
MDMC Disaster management practitioners	10	Semi-Structured Questionnaire
Councillors	20	Semi-Structured Interviews
NGO Al-Imdaad Foundation	1	Semi-structured interview
Total	41	

The case study approach allowed for the gathering of data from all the sources in order to address and understand the DRR complexity and processes of the eThekwini Municipality.

The cross-checking mechanism for the data used in the case study is noted to be evolutionary. In the field work, the questions were clarified first and then refined during the process of gathering data that is required for the study. The results of the analysis were checked by the key informants who reviewed the transcriptions of the interviews and the meetings that were held by the key participants. This provides them with a chance to make reflections on the case and get the results in big pictures that cover the whole scope of the study.

The data was then categorized and organised to help in the process of data analysis. This helped to search for critical themes and patterns in which the data is being categorized and results into meaningful information obtained from the data results. Strauss and Corbin (1990) argue that there is a time when researchers identify and tentatively name the conceptual categories in a form that can be observed and grouped. In such a case, this is defined as “open coding”. In such a case, the main goal is to build a creative description that is multi-dimensional and provides the preliminary framework for analysis. The categories that emerge are important as the qualitative researchers tend to use the inductive analysis. The quantitative data from questionnaires was also captured, coded and analysed accordingly and presented using tables and graphs.

4.10 RESEARCH EVALUATION: TRUSTWORTHINESS OF THE STUDY

In case studies, the use of smaller and non-random samples is employed. Unlike the scientific and experimental studies, which require credibility of the research and reliability and validity of the data, evaluation criteria may not apply strictly on the case study. There are no instruments that are required for assessment but only researchers need to understand the meanings of the questions from the interviews and explanation of the prevailing circumstances. The element of assessment method and value in qualitative studies is a greater question that revolves all around the research study. Merriam (1998:17) cautions the researchers on the debates that rise from the question above as ones that result from constructs of reliability and the validity of the quantitative research.

Accuracy of qualitative assessment is relative. Nevertheless, there are several possible methods applied to reinforce the credibility of qualitative research findings (Monace, 2002:31). There four (4) methods for measuring trustworthiness of research, these are transferability, conformability, dependability and credibility (Guba and Lincoln (1981:78); Krefting (1991:34); and Creswell (1998:23). Moreover, when each strategy is used, each can be used separately in a manner showing the reflexivity and dense descriptions.

4.11.1 Credibility

It is comparable to internal rationality to demonstrate how findings tie in with the actuality and extent to which the data analysis is trusted. Reality is based on the philosophy that qualitative research is built by people in their social contexts. It is known that the qualitative research may not be valid to other people due to the possibilities of multiple realities, which are different to many people.

There is a need for increasing the credibility of research. The findings, feedback, interpretations and the conclusions from the participants are included in the research. This inclusion will help enhance the credibility of the study. Lincoln and Guba (1985:314) consider this method best as examination is combined with the research

findings and is the most critical technique for establishing credibility of the data and research.

4.12 RESPONSE VALIDATION

Individual interviews were conducted with key informants comprising of management of the eThekweni Disaster Management Centre, relevant departments and Councillors. The outcomes of the interviews were triangulated with the questionnaires completed by the Disaster Management Practitioners and NGOs as well as the official documents available to the MDMC such as the Disaster Management Cooperate Plan. The opinions of the interviewees were crosschecked with the results of the data gathered through the questionnaire.

4.13 ETHICAL CONSIDERATIONS

The study utilised both qualitative and quantitative data collection approaches and in that regard represented a mixed method study. Even so, the emphasis in the engagement with participants was deeply guided by the qualitative ethos and involved deep involvement with participants as active contributors to knowledge creation. The personal domains of DRR knowledge and practice have to be given many considerations when conducting the research. Silverman (2000:201) cautions researchers that though they are conducting ethically cleared studies, private space of is being invaded and that must be respected. This section addresses a number of ethical issues and certain issues may arise during or after the research have been conducted. According to Creswell (2003:67), there is a need for the researcher to always consider the fundamental rights of the participants in a study.

There are other issues that researchers need to take into consideration before, during and after conducting research (Miles and Huberman, 1994:18). These issues are mainly needed so as to take into consideration the facts by ensuring that security of participants' data, credible and trustworthiness of information has been put across. Some of these issues are highlighted and discussed as following;

- Informed consent
- The study ensures that it is safer for the participants to participate in.
- Honesty and trust (Is what being presented by the studies upholding the need of being truthful and honest when conducting the research?)
- Privacy, confidentiality, and anonymity of the information concerning the participants. How can the information privacy be upheld and supported by the researchers?

With respect to ethical issues, cultural sensitivity arises in an unexpected matter. Silverman (2000:10) states that the interaction between the researcher and the participant throughout an interview session must be carried out in a way that professionalism and acceptable conduct are upheld. It will be necessary to adhere to strict ethical guidelines by the researchers to ensure that ethical guidelines are upheld before, during or after the research. Therefore, the privacy and anonymity of the participants, confidentiality, dignity and the rights of the participants were upheld. The issues raised above are described in the following section particularly on how moral matters were handled.

4.13.1 Informed consent

The research process was made easier through the application of informed consent to prospective participants. The researcher informed the participants of the objective of the study before data collection process and participants were asked to sign the consent form (Appendix D).

4.13.2 Harm and risk

This research did not involve any physical activity hence the possibility of harm and risk was non-existent. Whether physically or psychologically. The data collection was conducted in a safe and convenient environment

4.13.3 Privacy, confidentiality, and anonymity

There is no need for the names of the participants to be used or mentioned anywhere in the research because the researcher needs to maintain privacy of information and thus each participant will have no data about them shared or revealed in any way during and after the research has been conducted.

4.13.4 Voluntary participation

The study does not force any participant to participate as the purpose of the research was mainly academic. Though precautions were made, participation in the study was absolutely voluntary. Therefore, no participant was paid or lured to provide data for the research.

4.14 CONCLUSION

The research methodology chapter discussed all the methodological aspects of the study and did this so by offering insights into related concepts in research. Research paradigms, methodologies, the strategies and design used are discussed. Also, data collection tools, analysis methods, data credibility issues, and participants are also discussed in this section. Descriptive and interpretive approaches of research design were largely used. The description of various stages in the design and procedures implemented in this study were articulated in this chapter. This chapter sets a background for the next chapter which deals with the presentations and analysis of data.

CHAPTER 5

DATA PRESENTATION AND ANALYSIS

5.1 INTRODUCTION

This chapter presents data and analysis thereof, with a view to understanding the DRR approach in the eThekweni Municipality by examining the collected data. The qualitative and quantitative data were collected. Thereafter, the data was processed to establish

best practices and approaches that have the potential to optimally mainstream DRR in eThekweni integrated planning and implementation and also to identify possible impediments that have a negative effect on DRR consideration and implementation and thus in chapter 8 propose the logical framework for mainstreaming DRR at local government level.

Key role-players were engaged to solicit relevant data and their respective perspectives on the subject matter. The role-players identified were eThekweni Disaster Management Practitioners, MDMC management, Heads of Relevant Departments and Councillors.

In this section, the collected data is presented and analysed to give a graphic picture and prevailing trends and differences amongst the respondents about the various issues concerning the municipal DRR.

The discussion presented in this section emanates from the use of data analysis and interpretive processes mainly articulated in chapter 6 (research methodology). To ensure the systematic analysis of data, research themes were identified to lead and structure the reasoning provided within the particular context.

The discussion is focused on specific disaster risk reduction requirements as articulated in the South African disaster management legislation and policies as well as the literature review of this dissertation.

5.2 THE ETHEKWINI DISASTER MANAGEMENT PRACTITIONERS AND MDMC MANAGEMENT PERSPECTIVE

The semi-structured questionnaires and semi-structured interviews were respectively administered to MDMC disaster management practitioners (6) and management (3). The following section present and analyse their perspectives on the current situation and institutional approach in as far as DRR is concerned at eThekweni Municipality.

This section is divided into two; the first section presents the demographic data of the respondents in terms of Gender, Positions, Experience and Level of Education. The

final section presents the data and analysis of the core questions and perspectives relevant to the study objectives and questions.

5.2.1 Demographics

5.2.1.1 Gender

The gender of the respondents from the MDMC was recorded (Table 5.1) whereby 7 out of 9 respondents were males. Issues of gender representation are important however there is nothing the researcher could do to strike the balance and this is unlikely to affect the integrity of the data collected.

This is however a clear indication that disaster management is a male dominated field of work; such findings are also confirmed by the provincial study conducted by Ndlazi (2015:89) in his Masters Dissertation where 89% of respondents were males. Such statistics require serious transformation and gender equity in the field of disaster management.

Table 5.1: Gender of the respondents from the eThekweni Disaster Management Centre.

Gender	Count of Gender	% Gender
Male	7	78%
Female	2	22%
Grand Total	9	100%

5.2.1.2 Level of Employment

The level of employment plays a significant role in terms of data richness and quality. The level of responsibility at a work place also reflects the understanding of the institutional mandate and processes. The current positions of the respondents were therefore recorded, as shown in Table 5.2.

The respondent's current positions ranged from Disaster Management Officer to the Head of Department. The researcher was very pleased with the diverse respondents' level of employment as the data was collected from Operational Staff, Middle and Senior Management of the MDMC.

Table 5.2: eThekweni Disaster Management Centre's Respondents level of employment.

Current Position	Count of Position	% Position
Officer	3	33%
Assistant Manager	3	33%
Manager	1	11%
Senior Manager	1	11%
General Manager	1	11%
Grand Total	9	100%

5.2.1.3 Work Experience in the Current Institution

The years of experience are important in any field of work as they signify the level of competence and comprehension of the job and its responsibilities including the institutional mandate and culture. Therefore, the respondent's years of experience in the current institution was recorded. As indicated in Table 5.3, the years of experience ranged from 2 to above 10 years. Notably, senior management staff had each 9 to above 10 years of experience working at the MDMC. This is indeed a sign of valid and quality data as a high number of years in a particular institution reflect solid institutional memory.

Table 5.3: Years of Experience in Current Position

Years of Experience	Respondents	% Count of Respondents
1 - 2 Years	1	11%
3 - 4 Years	3	33%
5 -6 Years	1	11%
9 -10 Years	1	11%

Above 10 Years	3	33%
Grand Total	9	100%

5.2.1.4 Respondents' Level of Education

The level of education of the participants was also recorded. The results are shown in Table 5.4. Notably, all respondents have been exposed to a certain level of formal education. The respondent's level of education ranges from High School to Post Graduate level. The Level of education is a significant indicator of competence.

Table 5.4: level of Education

Level of Education	Count of Level Education	% Level of Education
High School	1	11%
Diploma	5	56%
Degree	1	11%
Post Graduate	2	22%
Grand Total	9	100%

5.2.2 Integrated Institutional Capacity for Disaster Risk Management

The respondents were asked a number of questions concerning the eThekweni disaster management institutional capacity. The integrated institutional capacity for disaster management plays a major role in ensuring successful planning and implementation of DDR programmes. The National Disaster Management Policy Framework (NDMPF, 2005:24) identifies certain elements as key disaster management institutional components - hence these elements were interrogated in relation to current research.

5.2.3 Municipal Interdepartmental committee on Disaster Risk Management

The disaster management practitioners of the eThekweni Disaster Management Centre were asked the availability and functionality of the Municipal Disaster management Interdepartmental Committee. The responses are shown in Table 5.5.

Table 5.5: Status of the MIDRMC.

Establishment of the MIDRMC	Respondents	% Count of Respondents
Yes	5	83%
Not Established	1	17%
Grand Total	6	100%

As shown in Table 5.5, five out of six respondents confirmed that the MIDRMC was established however the majority view was that the current format and its effectiveness in terms of coordinating DRR in the municipality was not ideal. This view is further solidly shared by the MDMC management. The lack of an ideal MIDRMC has dire implications in terms of planning, implementation and evaluation of DRR in the municipality.

5.2.4 Roles of and Responsibilities of the Municipal Department and Entities

The DRR is a multi-sectoral and shared responsibility. Therefore, it is imperative to ensure that municipal departments and entities are fully aware of their responsibilities in as far as DRR is concerned. The respondents were asked if the responsibilities of the relevant departments and entities of the municipality involved in disaster management were identified and assigned accordingly. Table 5.6 shows the views of the respondents in terms of the involvement of the municipal departments and entities.

Table 5.6: Roles and Responsibilities of the municipal departments and entities

Have Roles been Assigned to Municipal Departments?	Respondents	% Respondents
Yes	4	67%
No	1	17%
Partially	1	17%
Grand Total	6	100%

Even though the majority of respondents (Table 5.6) agreed that the roles and responsibilities were known by the municipal departments and entities, there is a concern that oftentimes cooperation has not been what one would wish for, however the intervention of the City Manager has been very effective mainly with regard to integration and coordination of the Municipal Disaster Management activities where relevant departments were expected to submit their respective plan to the MDMC.

5.2.5 Municipal Disaster Management Advisory Forum (MDMAF)

The respondents were asked about the existence and effectiveness of the Municipal Disaster Management Advisory Forum of the eThekweni Municipality. Table 5.7 indicates the views of the respondents with regards to the existence and effectiveness of the eThekweni MDMAF.

Table 5.7: Establishment and Functioning of eThekweni MDMAF

Has the MDMAF been Established and Effective?	Count	% Count
Yes	3	50%
No	3	50%
Grand Total	6	100%

The view expressed by the DM Practitioners and Management was that the MDMAF was established but is only constituted by the internal stakeholders and that is inconsistent with the terms of reference of the MDMAF prescribed by the NDMC and the disaster management legislation and policies. According to the management a number of attempts have been made to solicit attendance through advertisement but to this end the participation by external stakeholders has been dismal. The holistic and integrated approach to disaster management can only be effectively achieved though properly constituted and sustainable MDMAF.

5.2.6 Participation in the Municipal IDP

The question regarding the participation of the MDMC to the Municipal IDP processes was put to the DM Practitioners and Management As shown in table 6.8, there is unanimity amongst the respondents that the MDMC participates in the Municipal IDP processes. Such practices provide the MDMC with the opportunity to influence the entire Municipal IDP and thus drive the Municipality towards DRR.

Table 5.8: MDMC Participation in the IDP Processes

Does MDMC participate in the IDP Processes?	Respondents	% Count of Respondents
Yes	6	100%
No	0	0%
Grand Total	6	100%

5.2.7 Municipal disaster management ward structures

Disaster risk reduction ought to be a community focused undertaking. Municipalities have a primary responsibility to effectively plan for participation and active involvement of local groups in disaster risk reduction programmes of the community. Authorities must facilitate workshops aimed at improving the clarity and implementation of disaster risk reduction concepts and practical measures. Prioritisation of projects is essential and must involve the affected communities.

The development of ward based disaster risk management committees or forums is of great importance to augment disaster management institutional capacity especially at the communal level. Such committees must improve disaster management coordination as well as reporting of disasters to enhance rapid response and recovery.

Table 6.9 shows the respondents' view or understanding of the state of the eThekweni disaster management ward committees.

Table 5.9: Disaster Management Ward Committees

Existence of the Disaster Management Ward Structures	Respondents	% Count
---	--------------------	----------------

Yes	5	83%
No	1	17%
Grand Total	6	100%

There is general agreement that the ward structures are available but their functioning and effectiveness are questionable. Such a concern was raised by the DM Practitioners. These structures are not established to solely deal with disaster management issues but to deal with other community issues of development and so forth. However the effectiveness of these municipal ward structures varies per ward. There was no evidence or indication of ward based disaster management plans and programmes.

5.3 DISASTER RISK ASSESSMENT

Disaster Risk Assessment (DRA) is vital to ensure that identified disaster risk reduction interventions are relevant and implemented where most required (NDMPF, 2005:47). The DRA being the most fundamental step in planning and implementation of DRR was investigated to understand the DRA situation in the eThekweni MDMC.

5.3.1 Has the DRA been conducted and integrated into IDP?

The question was asked whether the MDMC has a comprehensive DRA and also that has it been integrated into the IDP. Table 5.10 shows the view and responses of the DM Practitioners.

Table 5.10: Status of Disaster Risk Assessment

Has the DRA been Conducted?	Respondents	% Count of Respondents
Yes	1	17%

No	5	83%
Grand Total	6	100.00%

As shown in Table 5.10, the majority view was that the MDMC does not have a comprehensive DRA. The management however indicated that the MDMC had commissioned a study to undertake the DRA or the entire Disaster Management Plan. The Service Provider had already been appointed and a draft report was available. The eThekweni Disaster Management Cooperate plan was examined and there was no indication or evidence of comprehensive DRA and mapping.

5.3.2 Dissemination of DRA

Dissemination of DRA outcomes to all internal and external stakeholders is of utmost importance. For stakeholders to effectively integrate DRR they must have DRAs. A lack of DRA has a negative impact on planning and implementation of DRR by individual departments and entities. Therefore, without a comprehensive DRA and disaster management plan, DRR cannot be systematically achieved.

5.4 DISASTER RISK REDUCTION

The main area of focus for this study is and it can only be achieved through focused initiatives that reduce underlying disaster risk. The question was asked from the DM Practitioners and management about the identification and implementation of specific DRR programmes. Table 5.11 indicates the views of the respondents.

Table 5.11: Identification and implementation of DRR programmes

Has the DRR projects been identified and implemented?	Respondents	% Respondents
Yes	5	83%
No	0	0%
Not Sure	1	17%

Grand Total	6	100%
--------------------	----------	-------------

As shown in Table 5.11, the majority view is that DRR programmes are identified and implemented. The MDMC management confirmed that DRR programmes are identified and included in the IDP for implementation. The programmes are however limited to soft but very important activities such as awareness campaigns. As highlighted in section D the goal of attaining the municipal comprehensive DRR programme is not achievable without a thorough DRA with area based risk and most importantly such DRA must be disseminated to all relevant stakeholders for planning, implementation and evaluation purposes.

The MDMC management acknowledge that there have been a lot of DRR activities going on in the municipality however a certain degree of fragmentation was a concern. The fundamental question remains as to what guides or inform those DRR activities since the municipality does not have a comprehensive DRA at this point in time.

5.4.1 Reduction of Disaster Impact

Reduction of disaster impact and a decrease in the distribution of emergency social relief are one of the positive indicators that signal the progressive results of the implementation of DRR. In the study the question was asked about the status of loses due to disasters and also the level of distribution of social relief to disaster affected communities.

Table 5.12: Status of Loses as a result of Disasters

Is there a Reduction of Disaster Loses?	Respondents	% Count of Respondents
Yes	5	83%
No	1	17%
Grand Total	6	100%

Table 5.13: Distribution of Emergency Social Relief Assistance

Is there a decrease of Social Relief Distribution?	Respondents	% Count of Respondents
Yes	4	67%
No	2	33%
Grand Total	6	100%

As respectively shown in Table 5.12 and 5.13, there is a general view and agreement amongst the DM practitioners. Although not unanimous, that there is a slight decrease of disaster losses and distribution of emergency social relief. The disaster losses are mainly characterised by fatalities, injuries and destruction of property. The emergency social relief entails the distribution of essential items such as food, blankets, building material and the establishment of transit camps. The view of the respondents is that disaster response forms a bigger part of their function as the MDMC as opposed to pre-disaster activities.

5.4.2 Disaster Early Warning Strategy

An Early Warning Strategy is one of the critical components of DRR, without it, disaster preparedness would be difficult to effectively achieve. The respondents were asked about the availability of the MDMC early disaster early warning mechanism.

Table 5.14: MDMC Early Warning Mechanisms

Does the MDMC have an Early Warning Strategy?	Respondents	% Count of Respondents
--	--------------------	-------------------------------

Yes	5	83%
No	1	17%
Grand Total	6	100%

As depicted in Table 5.14, there is a consensus amongst the respondents that the MDMC has a disaster early warning strategy. From the discussions held with the DM Practitioners and management it surfaced that the MDMC was using available platforms to inform communities of imminent risks particularly the natural hazards. Radio stations, councillors and community structures were used to disseminate early warning messages and precautionary measures thereof.

5.4.3 DRR Responsibilities of the Municipal Departments and Entities

The MDMC compiled the disaster management cooperate plan for the eThekweni Municipality. The plan details what is expected of municipal departments and entities in terms of all the activities involved in the entire continuum of disaster management including DRR and the submission of specific departmental disaster management plans. The respondents highlighted the difficulties in having those plans done and submitted to the MDMC to a level where by the City Manager had to intervene unfortunately 100% compliance had not been achieved to this end.

The respondents were asked whether the municipal departments and entities are aware of their DRR roles and responsibilities. The responses paint an uncertain picture in this regard (Table 5.15). Two thirds of respondents either said the municipal departments were not aware or they were not sure. This is certainly not a good indication of holistic DRR approach in the municipality and thus likely to have negative implications in terms of planning, execution and evaluation of DRR.

Table 5.15: DRR awareness by the Municipal Departments and Entities

Are Municipal Departments aware of their DRR Responsibilities?	Respondents	% Count
Yes	2	33%

No	1	17%
Not Sure	3	50%
Grand Total	6	100%

Municipal line function departments and entities must plan and implement disaster risk reduction intervention as most of the activities out to be rendered by specialising sectors and entities. Thus, the clear understanding of the responsibilities is crucial and must be achieved and sustained at all times.

5.5 PUBLIC AWARENESS AND RESEARCH

The NDMPF (2005:89) put emphasis on the development of a strategy for disaster management public awareness, training and education informed by the prevailing condition of disaster risk and vulnerability.

The DM practitioners and management were therefore engaged about the municipal strategic public awareness and research agenda. From the questionnaires and interviews it has emerged that there was no formal or documented disaster management public awareness strategy and research agenda however, the public awareness were conducted and even included in the municipal IDP.

DRA based integrated public awareness strategy is essential to ensure collaborations with other stakeholders to maximise the impact of awareness campaigns and impact evaluation.

Table 5.16: Municipal Integrated Disaster Management Public Awareness Strategy

Do the MDMC have an Integrated Public Awareness Strategy?	Respondents	% Count of Respondents
Yes	1	17%

No	4	67%
Not Sure	1	17%
Grand Total	6	100%

Table 5.17: Municipal Disaster Risk Management Research Agenda

Do the MDMC have Disaster Risk Management Research Agenda?	Respondents	% Count of Respondents
Yes	2	33%
No	3	50%
Not Sure	1	17%
Grand Total	6	100%

Table 5.16 and 5.17 respectively shows the respondent's views with regards to municipal disaster management integrated public awareness strategy and disaster risk management research agenda. The responses clearly indicate the inadequacies of such strategic policy mandates.

5.6 POLITICAL SUPPORT AND COMMITMENT

Greater political support and commitment and discourse across policy pertaining to disaster management is imperative to ensure that correct and proper policy direction is followed. The fact that the eThekweni Municipality does not have a completed and approved comprehensive disaster management policy framework and plan is a challenge on its own. The management believed that the MDMC enjoys political support and commitment but highlighted that the support and interest was mainly shown or high in areas of disaster response and recovery.

The DM practitioners had a contrasting view about the political support and commitment to DRR (Table 5.18). The DM Practitioners highlighted lack or poor attendance of disaster management workshops by councillors as serious concern, there was also an

indication that councillors would only be interested in disaster management issues once disasters have occurred.

Table 5.18: DRR Political Support

DRR Political Commitment	Respondents	% Count of Respondents
Very Low	1	17%
low	3	50%
Medium	2	33%
Grand Total	6	100%

DRR remains an area whereby political interest and support must still be solicited and stimulated.

5.7 DRR PERSPECTIVE OF THE MUNICIPAL COUNCILLORS

5.7.1 Introduction

The semi-structured interviews were conducted with twenty (20) municipal councillors of different political parties to solicit their views on municipal DRR situations and approach. The interviews were conducted at their convenience in their respective constituency's offices. The Councillors were purposefully selected because they serve under the Disaster Management, Health, Safety and Social Services Committee. The following section presents and discusses the findings of the engagement with the councillors. This section is subdivided into four (4) sections viz. Demographics, Understanding of DRR, Disaster Management Political Leadership Paradigm and DRR Political Perspective.

5.8 DEMOGRAPHICS

5.8.1 Gender

The gender representation and perspective is always important when conducting a study of this nature that deals with delivery of such important services to communities. The researcher managed to strike a gender balance as shown in Table 5.19.

Table 5.19: Respondents Gender (Municipal Councillors)

Gender	Respondents	% Count of Gender
Female	10	50%
Male	10	50%
Grand Total	20	100%

Disasters tend to hit the poorest and most marginalized people the hardest. Women and girls are particularly exposed to climate-related disaster risk and they are likely to suffer higher rates of mortality, morbidity and economic damage to their livelihoods.

Women bring unique experiences and skills to the field of disaster management whether as professional or ordinary citizens. However, these skills are often not sufficiently acknowledged or tapped. It is thus vital to ensure that disaster risk reduction initiatives are gender sensitive and balanced, taking into account both gender-based vulnerabilities as well as women's unique contributions.

5.8.2 Political Party Representation

It is important to diversify views when dealing with matters of political governance. Hence, councillors from different political parties were interviewed (Table 5.20). The 2011 local government election results were to ensure fair proportional distribution of a number of councillors to be interviewed per political party.

Table 5.20: Political Party representation in the study

Political Parties	Respondents	% Count of Political Parties
A	12	60%
B	4	20%
C	2	10%
D	1	5%
E	1	5%
Grand Total	20	100%

5.8.3 Political Experience in Local Governance

The experience of councillors in local government was also assessed (Table 5.21). The experience of councillors ranged from one term (5 years) to three terms (15 years). The experience depicted in Table 5.21 is important to ensure validity and reliability of responses since the councillors have served for number of years in local government and assumed to have vast knowledge of municipal governance and processes relevant to the study.

Table 5.21: Number of terms as a councillor

Experience	Respondents	% Count of Respondents
One Term	9	45%
Two terms	7	35%
Three Terms	4	20%
Grand Total	20	100%

5.8.4 Level of Education

The councillors' level of education was also recorded. The results are shown in Table 5.22. Notably, all councillors have been exposed to a certain level of formal education.

The councillor’s level of education ranges from High School to Post Graduate level. The level of education is a significant indicator of competence.

Table 5.22: Level of Education

Level of Education	Respondents	% Count of Respondents
Degree	3	15%
Diploma	5	25%
Grade 12	6	30%
High Certificate	3	15%
Post Graduate	3	15%
Grand Total	20	100%

5.9 DISASTER RISK ASSESSMENT

5.9.1 Disaster Risk Assessment Awareness

During the interviews the councillors were interrogated on their awareness and understanding of the eThekweni disaster risk profile. The interviewed councillors considered fires and floods as priority hazards. However, they confirmed that they have never seen an official or documented and mapped disaster risk profile of the municipality. The councillors were asked if they are conscious of the disaster risk of the disaster profile of the municipality; Table 5.23 shows the responses in this regard.

Table 5.23: Councillors awareness of the municipal Disaster Risk Profile

Are you aware of the Municipal Disaster Risk Profile?	Respondents	% Count of Respondents
No	13	65%
Yes	7	35%

Grand Total	20	100%
--------------------	-----------	-------------

A significant percentage (65%) of the respondents indicated that they were not aware of the municipal disaster risk profile. The unawareness of the councillors is not surprising because the municipality has not conducted a complete disaster risk assessment, and thus it has not been presented to stakeholders. The lack of a complete disaster assessment has a negative effect on the systematic planning and monitoring of DRR programmes by the political leadership. This has a potential of undermining political commitment and support.

5.9.2 Incorporation of Disaster Risk Profile in Development and Service Delivery

The question was then asked from the councillors if matters of DRR and DRA are considered when planning development and service delivery. Table 5.24 shows the responses in in this regard.

Table 5.24: Consideration of Disaster Risk Profile in Development and Service Delivery

Is risk profile considered when planning development or service delivery?	Respondents	% Count of Respondents
I don't know	6	30%
Minimal	5	25%
Medium	6	30%
Extensively	3	15%
Grand Total	20	100%

Some of the respondents (30%) were not are aware if DRA and DRR are considered. The 25% and 30% of respondents respectively said DRR and DRA were minimal and averagely considered, whereas 15% believed that DRA and DRR was extensively incorporated on matters of development and service delivery. In light of the views expressed by the respondents the ideal scenario is where all councillors are having a common understanding and approach on how to view and consider issues of

development and DRR and relationship thereof. The current scenario and knowledge gap requires serious intervention.

5.10 DISASTER MANAGEMENT POLITICAL LEADERSHIP PARADIGM

The respondents were asked about the disaster management political leadership paradigm prevailing in the municipality. As shown in Table 4.25, half of the respondents believed that the municipal disaster management political leadership paradigm is reactive. Whereas 25% thought the approach was proactive and the other 25% indicated that the approach was both proactive and reactive.

Table 5.25: Political Disaster Management Approach

Disaster Management Approach	Respondents	% Count of Respondents
Proactive and Reactive Approaches	5	25%
Proactive Approach	5	25%
Reactive Approach	10	50%
Grand Total	20	100%

It is unfortunate that the impact of disasters is increasing, but most resources are utilised on reactive interventions, instead of investing in sustainable and long-term solutions aimed reducing disaster risk and vulnerability (Mitchell and Wilkinson, 2012:28). If such approach and spending trajectory continues, the spending on rebuilding and humanitarian interventions will soon be unsustainable (Mitchell and Wilkinson, 2012:19). A more robust political understanding, support and commitment and discourse across all role players including the decision makers is necessary to fast-track investment on disaster risk reduction interventions.

Even though South Africa has world renowned legislation that is in favour of disaster risk reduction, reaction disaster management is still popular amongst the authorities. There is a view that politicians do not see disaster risk reduction as a priority mainly because there no immediate political result. Instead, politicians favour disaster response

and humanitarian interventions because it comes with more public relations and publicity (Williams, 2011:23). Disaster risk reduction is considered intangible (Williams, 2011:78). Unfortunately, this perception might be the key factor that undermines the country's progress in terms of the robust implementation of proactive measures.

To interrogate this perspective the councillors were asked if they agreed with the view alluded by Williams (2011:19). Table 5.26 shows the respondent's responses in relation to Williams view. Interestingly, 75% of respondents disagreed and 25% agreed with Williams view.

Table 5.26: Political View on DRR

Politicians regard DRR as too immaterial in Comparison with the very real imminence of disaster response.	Respondents	% Count of Respondents
Agree	5	25%
Disagree	10	50%
Strongly Disagree	5	25%
Grand Total	20	100%

5.11 POLITICAL PERSPECTIVES ON DRR

Political costs of disasters should act as a legitimate incentive for DRR, because disasters result in political costs for political leaders (Williams, 2011:19). In number of instances poor response to disasters have resulted in post-disaster leadership change.

According to Williams (2011:78) there are two main factors around political costs. In the main is that people cease to support political organizations or leaders when they feel that not enough is done to mitigate or prevent. Soon after disaster have occurred people may be mobilised and protest if unsatisfied. In view of these potential political costs highlighted by Williams (2011:19), it is imperative to consider DRR as a political priority at all levels of governance.

The councillors were asked if DRR should become a political priority and the answer was overwhelmingly yes (Table 5.27). Such responses give a positive indication of a possible political commitment and support in as far as DRR is concerned.

Table 5.27: Political priority of DRR

Shouldn't DRR Become a Political Priority?	Respondents	% Count of Respondents
Yes it should become a Priority	20	100%
Grand Total	20	100%

A follow up question was asked, as to why DRR is not a political priority, if not. As shown in Table 5.28, 40% of respondents indicated that focus on other pertinent developmental and social priorities tended to trump DRR activities. The 60% of respondents highlighted the lack of DRR awareness which often results in a lack of DRR prioritization.

Table 5.284: DRR being a Political Priority

Why DRR not a Political Priority, if not?	Respondents	% Count of Respondents
Focus on other Priorities	8	40%
Lack of Awareness	12	60%
Grand Total	20	100%

The respondents were asked to voice their opinions on measures that can be implemented to raise DRR political profile. As indicated in Table 5.29, the majority of the respondents (75%) believed that disaster management workshops for councillors could raise the DRR profile and 25% were of the opinion that strengthening MDMC capacity and authority would raise the DRR profile.

Table 5.29: Measures to raise DRR Political Profile

Measures to Raise DRR Political	Respondents	% Count of
--	--------------------	-------------------

Profile	Respondents	
Disaster Management Workshops for Councillors	15	75%
Strengthen MDMC Capacity and Authority	5	25%
Grand Total	20	100%

5.12 DISASTER MANAGEMENT IN THE MUNICIPAL DEPARTMENTS

Disaster management is everybody's business, and it is the responsibility of all relevant departments and entities within the municipality. DRR ought to be streamlined in all developmental activities and services of the municipality. Certain municipal departments were asked specific questions about their understanding and involvement in the municipal DRR. These departments were:

- Human Settlement
- Water and Sanitation
- Fire and Emergency Services
- Security Management
- Safer Cities
- Environmental Health
- Development Planning, Environment and management

Hereunder, the discussion of the responses from the management of the departments is provided. The questions were mainly about planning and implementation of DRR in their respective departments and awareness thereof of various DRR components particularly in terms of plans, risk profile and municipal institutional arrangements for DRR.

5.12.1 Specific Departmental Disaster Management Plan

Section 52 of the Disaster Management Act No. 57 of 2002 states that each relevant municipal entity or department must develop a sector specific disaster management plan, outlining disaster risk relevant to its sector and counter measures thereof. Additionally, the Act requires municipal departments to articulate their particulars of its

disaster management strategies. The departments are also expected to regularly review and update their plans and ultimately submit these plans to the MDMC.

In light of the above mentioned legislative requirements, a number (7) of relevant departments within the eThekweni Municipality were asked if their departments had the specific departmental disaster management plans. Table 4.30 has the responses from the departmental management, only 43% confirmed the availability of the required plans. However, the MDMC highlighted that it was only one department that had submitted its plan.

Table 5.30: Disaster Management Plans for the Departments

Does your department have a disaster management plan?	Count	% Count
No	4	57%
Yes	3	43%
Grand Total	7	100%

One department that did not have a plan mentioned that they subscribed to the corporate disaster management plan developed by the MDMC, two departments highlighted the lack of awareness as a reason of not developing their specific plan. Departments further mentioned that they have various operational plans and SOPs that are specific to different types of emergency incidents, which are ready for implementation at any given time.

5.12.2 Consideration of Disaster Assessment

Disaster risk assessment is central to effective disaster risk reduction as, without it, a legitimate disaster risk reduction programme would be impossible or rather difficult to achieve. Hence, the municipal departments were asked if they consider disaster risk assessment in the development of their respective developmental programmes and service delivery.

Table 5.31: Consideration of the disaster risk assessment by the municipal department

Does your department consider disaster risk profile?	Count	% Count
No	3	43%
Yes	4	57%
Grand Total	7	100%

As shown in Table 5.31, four out of seven departments indicated that they consider disaster risk profile in the planning and implementation of programmes.

5.12.3 Participation in the Interdepartmental and Intergovernmental Structures

The Disaster Management Interdepartmental Committee is a very important institutional arrangement. The fundamental objective of this internal committee is to guarantee disaster risk reduction activities within the municipality, since disaster management is multifaceted and multi-sectoral. This committee ought to be constituted by various relevant municipal departments and entities to discuss municipal disaster management issues. The departments were asked if they are involved in the municipal disaster management interdepartmental committees. The respondents' responses are shown in Table 5.32. All investigated departments confirmed their participation in the disaster management interdepartmental committee.

Table 5.32: Departmental participation in the disaster management interdepartmental committee

Does your department participate in the municipal disaster management interdepartmental committee?	Count	% Count
No	0	0%
Yes	7	100%
Grand Total	7	100%

The Municipal Disaster Management Advisory Forum (MDMAF) is an ideal structure for ensuring holistic coordination and integration of disaster management activities of various and diverse stakeholders (NDMF, 2005:56). The fundamental purpose of the MDMAF is to provide an official and recognised mechanism for all relevant disaster management stakeholders to consult each other and to organise their separate and collective disaster management and related actions (NDMF, 2005:10).

It is problematic to imagine how a municipality would implement the principles of co-operative governance, when there is no formally instituted IGR structure comprised of relevant stakeholders. Therefore, the involvement of the municipal departments in the MDMAF was investigated.

Table 5.33 shows the responses of the respondents. Only four out of seven departments confirmed their participation in the municipal disaster management advisory forum.

Table 5.33: Departmental participation in the municipal disaster management advisory forum

Does your department participate in the municipal disaster management advisory forum?	Count	% Count
No	3	43%
Yes	4	57%
Grand Total	7	100%

5.13 FINDINGS

5.13.1 Disaster Management Practitioner's Perspective

The provisions and directives of the South African Disaster Management Act and Policy Framework were the core basis of the investigation of the status quo and disaster risk reduction approach at the eThekweni Municipality as represented by the selected sectors and key informants.

The data from the eThekweni DM Practitioners and Management was respectively collected through questionnaires and interviews. The Disaster Management Practitioners and their respective managements are responsible for strategic and practical development and application of disaster management operations of the municipality and are well vested with Disaster Management issues involved in the disaster management continuum i.e. pre, during and post disaster activities.

This section therefore presented the analysis of eThekweni DRR situation. This section was subdivided into six (6) thematic areas viz. Respondents Demographics, Integrated Institutional capacity for Disaster Risk Management, Disaster Risk Assessment, Disaster Risk Reduction, Public Awareness and Research.

The respondent's demographics are essential to the validity, integrity and dependability of the information gathered, mainly the work experience, education level and level of responsibility. As shown in Table 3 the work experience of the respondents ranged from 2 years to above 10 years. The level of education ranged from High School to Post Graduate qualification (Table 4). The current employment positions or level of responsibility ranged from officer to the head of department.

The investigation of the disaster management integrated institutional capacity at the eThekweni Municipality focused on structures such as Interdepartmental Disaster Management Committee, Disaster Management Advisory Forum and Ward structures. These institutional arrangement structures are essential in ensuring integrated and coordinated DRR.

These structures were identified but the major concern was their effectiveness to perform the expected responsibilities. The eThekweni Disaster Management Advisory Forum is unfortunately not yet instituted as recommended by the Disaster Management Act No. 57 of 2002.

The study investigated the mainstreaming of DRR programmes informed by DRA into municipal departmental plans. Since the municipality does not have a comprehensive DRA it is difficult to identify and mainstream DRR programmes into municipal departmental plans.

The public awareness campaigns and research are important components of the DRR. The assessment revealed that there was no formal or documented disaster management integrated public awareness strategy as well as no research agenda.

5.13.2 Councillor's Perspective

The councillor's basic demographics were recorded. That was basically done to understand the depth and richness of the data solicited. The demographic indicators in terms of gender, level of education, job experience and political party representation were recorded. The gender representation of the respondents was proportional, which is great from a balanced gender perspective. Level of education was also plausible as all respondents had been exposed to a particular level of formal education ranging from high school to post graduate. An issue of inclusiveness in terms of variety of political party representation was also factored-in to ensure balanced views. The respondent's experienced in local government ranged from 5 to 15 years; with this level of experience the assumption is that the respondents are well vested with local governance.

The assessment then moved on to core issues related to study objectives and questions. The assessment revealed that the DRA awareness of the interviewed councillors is limited and unfortunately that has negative implications on the role of politicians particularly in terms of DRR incorporation into IDP planning and implementation processes and most importantly on the oversight role. The unavailability of a comprehensive municipal Disaster Management Plan informed by DRA is a major

factor that could result in the lack of deliberate and pragmatic awareness of the municipal disaster risk profile.

A clear cut proactive disaster management political leadership is imperative if the ideals of DRR are to be achieved. The engagement with the councillors reveals that reactive measures tend to dominate the political disaster management approach. This is evident on the fact that humanitarian activities are still popular amongst the most the interviewed councillors and the interest on the disaster management is often very high in the aftermath of the disasters.

There is a strong view amongst the interviewed councillors that DRR must become a political priority to deal with fundamental service delivery issues, wellbeing and safety of communities. The respondents highlighted the lack of DRR awareness and focus on other pressing service delivery and developmental issues as one of the factors that undermine foremost attention to DRR. Disaster management workshops for councillors and strengthening of MDMC capacity and authority were recommended by the respondents.

5.13.3 Municipal Departments

There seems to be a general lack of awareness of the plans and frameworks that departments are expected to compile. Even though some departments claimed to have developed specific disaster management plans but the evidence was not available as these plans were not submitted to the MDMC.

Since the municipality does not have a comprehensive disaster risk assessment, it is difficult to ascertain conclusively that disaster risk profiles is considered in the planning and execution of programmes and service delivery. The unavailability of deliberate disaster risk reduction has a potential to undermine disaster risk reduction and entrench reactive disaster management culture.

All the assessed departments confirmed the existence and their participation in the municipal disaster management interdepartmental committee. However, the lack of disaster management plans informed by the comprehensive disaster risk assessment

poses lot of questions and doubts about the deliberate efforts implement and adopt proactive disaster management paradigm aimed at reducing disaster risk and vulnerability thus ensuring the improvement of the quality of life for the households and communities at risk.

The unavailability of an ideal municipal disaster management advisory forum also robs the municipal department of an opportunity to interact and plan with external stakeholders the progressive disaster risk reduction programmes.

The findings and observations in this chapter are furthermore explored in theory development chapter to purposely develop a model for mainstreaming disaster risk reduction at local government level as a deliverable of this study.

5.14 CONCLUSION

The data collected from various sources revealed that there is steady progress in the implementation of disaster management at the eThekweni Municipality. However, the approach seems to be more reactive than proactive. The deliberate planning and implementation of disaster risk reduction seems to be inadequate and fragmented, which is signified by the lack of, or incomplete, disaster management plans and policy frameworks coupled with the lack of coordinating structures such as the municipal disaster management advisory forum to engage with relevant internal and external stakeholders.

CHAPTER 6

THEORY DEVELOPMENT: TOWARDS A MODEL FOR DISASTER RISK REDUCTION IN MUNICIPALITIES

6.1 INTRODUCTION

The aim of this chapter is to develop a sound disaster risk reduction mechanism for integrating DDR in the core business of local government. The proposed mechanism will primarily be developed by drawing from the lessons and findings of the study. Furthermore, a thorough analysis of the South African legislative and policy documents as well as global frameworks dealing with disaster risk reduction will be incorporated. The envisaged mechanism seeks to consider all the important elements and role-players required to ensure successful mainstreaming of disaster risk reduction, including the simple illustrative implementation process within a local government environment.

The research findings give an examination of the prevailing practice of disaster risk reduction at the eThekweni Municipality (as represented by the respondents) and document analysis. Hence, the proposed disaster risk reduction mechanism for local government is influenced by essential principles and lessons observed during the course of the research. The proposed mechanism takes cognisance the fact that measures pertaining to reduction of disaster risk and vulnerability are the core business of government in partnership with relevant stakeholders. Therefore, local government must play a meaningful role in eradicating disaster risk, mainly because local government is the closest sphere of government to communities.

The disaster management paradigm adopted by government must be strictly and directly informed by the Disaster Management legislation and policies as well as the best local and international practices pertaining to reduction of disaster risk. This section seeks to ensure that the research objectives as stated in Chapter One are shown to have been operationalized and that they were prudently and purposefully investigated within this research to establish a practical model for institutional mainstreaming of measures aimed at reducing disaster risk and vulnerability at a local government level.

As mentioned above, the first section of the chapter begins by discussing important legislative and policy expectation, function and modality concerning disaster risk reduction at a local government level. Issues of integrated institutional capacity and arrangement as well the key components of disaster risk reduction are extensively dealt with in the first section of this chapter. The final section of the chapter presents the proposed model for ensuring that disaster risk reduction is appropriately factored into the IDP and other plans of the municipal department and entities.

6.2 DISCUSSION OF THE KEY FINDINGS AND CORE COMPONENTS OF DISASTER RISK REDUCTION IN LOCAL GOVERNMENT

The literature review and findings of this study have an immense impact on the proposed model. The National Disaster Management legislation and policies are extensively referred to specifically to ensure that the produced model is in line with broader objectives of the already existing guiding statutes and also the practice on the ground.

6.2.1 Disaster Risk Reduction Approach in South Africa

The South African disaster management legislation and policy encourages a disaster risk reduction approach through suitable methods of ensuring disaster readiness and where possible averting or lessening the impact of disasters. The disaster management legislation is also very emphatic on issues of cooperative governance since disaster risk reduction cuts across many sectors and disciplines. The concept of sustainable development is closely linked to disaster risk reduction. It is therefore imperative to note that the foremost aim of the South African disaster management legislation is to prevent loss of life and property as well as protection of the environment through robust and effective mechanisms. The clarity on the legal imperatives of disaster risk reduction paves a way for more precise necessities pertinent to municipalities to ensure sustainable solutions to the challenges posed by disasters.

6.3 INTEGRATED INSTITUTIONAL CAPACITY AND ARRANGEMENTS FOR DISASTER RISK REDUCTION

For municipalities to achieve disaster risk reduction they must develop and maintain integrated institutional capacity and arrangements within their organizations, as such capacity is required to ensure the effective planning and implementation of the practical measures aimed at reducing disaster risk and vulnerability as articulated in the comprehensive disaster risk assessment. The implemented interventions ought to form an integral part of the broader developmental agenda of the municipality.

The Disaster Management Act, No. 57 of 2002 gives directives to municipalities to establish disaster management with their administration, and most importantly the establishment of the municipal disaster management institution solely responsible for disaster management. It is worth noting that the eThekweni Municipality has developed its disaster management centre. The municipal disaster management authorities are tasked with advocating for a cohesive approach to management of disasters, and emphasis is largely put on proactive disaster management interventions. The disaster management policy framework of the eThekweni Municipality was adopted by its Executive Committee in 2009 and is still the basic framework even if it lacks comprehensive details (eThekweni Disaster Management Plan, 2012).

The Disaster Management Act gives unequivocal importance and an uncompromising attitude towards adherence to the core principles of cooperative governance. A high degree of cooperation is required to move disaster risk reduction forward, as disaster risk reduction can be better implemented if the activities of the various stakeholders are well coordinated and synchronised. The involvement of all stakeholders in strengthening the capacity of the municipality to efficiently plan and implement disaster risk reduction can be better managed through a well capacitated municipal disaster management centre. The National Disaster Management Framework (2005:35) strongly recommends municipalities to build a structure within its establishment to facilitate disaster management issues with internal departments and agencies of the municipality, mainly to ensure internal integration and coordination of the disaster management function. The following section discusses the establishment and operation of the critical

mechanisms for ensuring cohesion in the implementation of coordinated disaster risk reduction.

6.3.1 The Development and Adoption of Integrated Disaster Risk Reduction Policy

The Disaster Management Act No. 57 of 2002 requires municipal disaster management authorities to advocate a well-coordinated, cohesive approach that is consistent or in line with the objectives of the national disaster management policy framework. The directives of the policy framework include the development and implementation of suitable methodologies for disaster risk reduction, contingency plans as well as emergency readiness plans.

To attain these goals and to encourage interdepartmental cooperation, a platform for special engagements must be developed to ensure that all relevant municipal department and entities within the municipal administration are given a chance and a structure to pay attention to matters related to disaster management and to jointly participate and interact with other relevant counterparts.

To ensure that sustained and formal internal engagements take place, a Municipal Interdepartmental Disaster Risk Management Committee (MIDRMC) must be established as recommended by the National Disaster Management Framework and preferably its must meet quarterly and it must adopt clearly defined terms of reference.

In the case of the eThekweni Municipality, the MIDRMC is established but deals mainly with response and recovery issues and the disaster management plan from which they operates lacks a comprehensive disaster risk assessment profile and thus clearly defined disaster risk reduction plans .

6.3.2 The Integrated Direction and Implementation of Disaster Risk Reduction

The location of the disaster risk reduction function and planning within the municipalities has positive or negative effects. The placement of the disaster management function within the municipal organogram requires a careful consideration to ensure effectiveness and administrative authority of the disaster management institution.

Amongst other requirements, disaster management centres must be robust, highly technically well-resourced to optimally perform their important duties of saving lives, protecting property and the environment.

Municipal Disaster Management function must be in a suitable institutional location and authority to discharge its responsibilities within the municipality and must be in a better position to relate and cut across all relevant departments and entities of the municipality (NDMF, 2005:18). The NDMF (2005:45) holds the view that the municipal disaster management centres should be situated in the Office of the Mayor or Executive Mayor. Other studies recommend placement in the office of the Municipal Manager (NDMC, 2009:19).

The eThekweni Disaster Management Centre is referred to as Disaster Management and Emergency Control and is located under the Community and Emergency Services Cluster. The Head of the Disaster Management Centre is accountable to the Head of the Community and Emergency Services Cluster who is the Deputy City Manager. The placement of the disaster management function with the eThekweni Municipality is contrary to the recommendations of the National Disaster Management Framework.

It must be noted that a disaster management centre is not an emergency service institution or a line function department. However, it is an institution responsible for coordination and integration of disaster management services holistically. The disaster management centres must be regarded as management institutions. The eThekweni Disaster Management Centre has for many years to date operated without a comprehensive policy framework and risk assessment informed plan and has been unable to institute an ideal disaster management interdepartmental and advisory forum committees. It could be because of the incorrect approach and lack of technical capacity. The placement of the disaster management centre could also have led to slow progress including other underlying factors. Without these requirements it is difficult to effectively implement the objectives of the South African disaster management legislation and policy.

6.3.3 The participation of stakeholders in disaster risk reduction planning and operations

It is essential to achieve an active involvement and participation of all stakeholders relevant to disaster management. Such stakeholders include NGOs, traditional leaders, and institutions of higher learning, technical experts, private sector, communities, and volunteers. The appropriate structures must be established to see to it that involvement of role players is achieved, to obtain expert knowledge and to spearhead the comprehensive approach to the implementation of disaster risk management legislation and policy.

The findings of the study revealed that the eThekweni Municipality does not have a functional Disaster Management Advisory Forum as suggested by the disaster management legislation and policy of South Africa. In view of that situation, it is challenging to imagine how the eThekweni Municipality practice cooperative governance principles and stakeholder participation in its jurisdiction. It is equally problematic to imagine how disaster risk reduction planning and implementation would be considered without the suitable institutional arrangements.

One of the most important stakeholders is the community, mainly because they are the one affected by disasters, and interventions must not be developed without their involvement. It is in the community where disaster risk reduction projects and programmes are implemented. Therefore, all the initiatives and the distribution of tasks must be originated on the wishes and priorities of the recipients or affected communities. Disaster risk reduction must always remain a community-orientated process. Communities must from the initial stages be involved in the process of disaster risk assessment, this is done to ensure that they take ownership of the disaster risk reduction initiatives and therefore the IDP priority projects aimed at reducing disaster risk and vulnerabilities. Mechanism must be developed to facilitate community participation in training such as preparedness and awareness campaigns.

The eThekweni Disaster Management Centre uses already existing community structures such as ward committees, Masakhane and Operation Sukuma Sakhe to

facilitate disaster management issues particularly in terms of awareness campaigns and disaster risk assessment. The information gathered indicated that the engagement of these structures is not sufficient due to some being dysfunctional and also the limited staff capacity of the eThekweni Disaster Management Centre.

It is also encouraging to note that the Centre has more than 300 disaster management volunteers drawn from all wards. However, the involvement of these volunteers is mostly on disaster reporting. A clear programme which covers all aspect of disaster managements must be developed.

6.3.4 Co-Operation for Disaster Risk Reduction

The Disaster Management Amendment Act No. 16. Of 2015 put emphasis on the development of municipal disaster management capacity. The required disaster management capacity can also be enhanced through involvement and partnerships with external stakeholders operating within the municipal area, particularly in areas of humanitarian assistance. Hence, the study also investigated the involvement and relationship of the NGOs with the eThekweni Disaster Management Centre.

The research findings established that there are no formal agreements in place between the NGOs and the Centre and the fact that work done is mainly on disaster response not disaster risk reduction measures. Again, the lack of Disaster Management Advisory Forum has negative impact on the collective planning and coordination of external stakeholders such as NGOS.

6.4 SCRUTINY OF THE DISASTER RISK REDUCTION REQUIREMENTS FOR LOCAL GOVERNMENT IN SOUTH AFRICA

The disaster risk reduction activities are well articulated in chapter 3 of the National Disaster Management Policy Framework of 2005. The policy framework requires all relevant organs of state to play a meaningful role in a fight against disaster risk. Disaster risk reduction responsibility is primarily a government responsibility delegated to relevant sectors and entities.

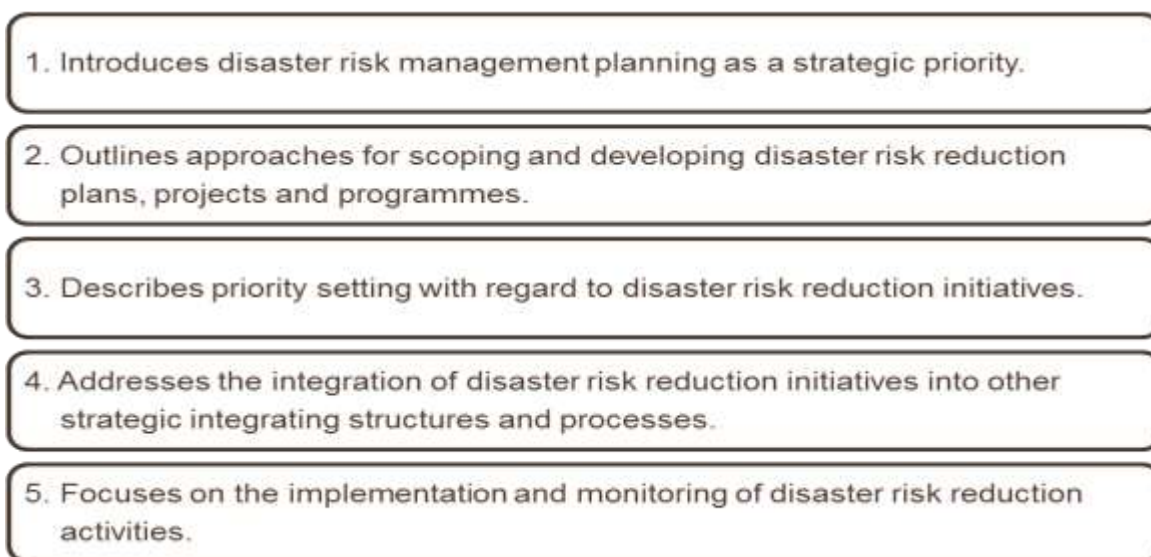
The municipalities are legally mandated to effectively plan and implement disaster risk reduction programmes that are informed by the outcomes of the comprehensive disaster risk assessment.

The objective of the South African disaster management legislation is to reduce disaster risk and respond rapidly to threatening or occurring disasters, to achieve that the legislation calls for development and implementation of appropriate disaster management plans by all relevant stakeholders. The successful implementation of disaster risk reduction programmes lies in proper planning and coordination of collective approach.

The preparation of disaster management frameworks and plans is a legislative requirement well-articulated in disaster management legislation and policy

The NDMF (2005:29) outlines five (5) principles essential for the appropriate and successful strategic planning of disaster risk reduction programmes. The principles are compatible with the development phases outlined in the IDP planning processes and will be further discussed towards the end of this chapter.

Figure 6.1: Principles essential for strategic disaster risk reduction planning and alignment (NDMPF, 2005: 46).

- 
1. Introduces disaster risk management planning as a strategic priority.
 2. Outlines approaches for scoping and developing disaster risk reduction plans, projects and programmes.
 3. Describes priority setting with regard to disaster risk reduction initiatives.
 4. Addresses the integration of disaster risk reduction initiatives into other strategic integrating structures and processes.
 5. Focuses on the implementation and monitoring of disaster risk reduction activities.

6.4.1 Disaster risk management planning

Planning for a comprehensive and successful Disaster Risk Reduction programme requires a consultative planning and determination of risk reduction priorities. There must be a proper planning and thorough understanding of disaster risks, vulnerability and capacity levels. The disaster management authorities must lead the process of disaster management planning and where possible support other organs of states to realize adequate planning and consolidation of competent plans.

Municipal disaster management centres are legally empowered to effectively coordinate disaster management issues in their respective jurisdictions. However such legal authority is not fully utilised to improve the state and quality of disaster management services.

The vital and strategic role of municipal disaster management centres is to raise disaster risk awareness amongst relevant disaster management stakeholders by ensuring that an updated disaster risk profile is available and disseminated to all relevant stakeholders for the purpose of planning. Furthermore, the municipal disaster management centre must ensure the integration of various plans submitted by stakeholders.

To achieve appropriate integration, the municipality must see to it that certain legislative requirements are complied with. These include the development of disaster management plans, contingencies, policy frameworks and standard operating procedures for each hazard.

As a legal requirement, the Disaster Management Policy Framework of the municipality must be ratified by the municipal council and be presented to all stakeholders. The disaster management plan is also a fundamental requirement that the municipality must have as legally required. Without a disaster management plan the municipality is doomed to fail in its mandate of rendering disaster management services. The disaster management centre must ensure that at all times the disaster management plan forms an integral part of the municipal IDP, not as an annexure but identifiable disaster risk

reduction programmes must be visible throughout the IDP. Consultation with other relevant stakeholders and institutions is essential to maximize the impact.

6.4.2 Setting priorities for disaster risk management planning

Although municipalities face an array of disaster risks, it is impossible, given limited resources, to deal with all possible risks instantly. The optimal disaster risk reduction performance requires municipalities and stakeholders to considerably identify and prioritize disaster risk areas and specific intervention thereof.

The development of disaster risk reduction programme must be preceded by a thorough disaster risk assessment process. The level of disaster and vulnerability prevailing in a particular community or households is not homogeneous there better and worse cases.

A comprehensive and updated disaster risk assessment profile is very much instrumental in determining priority areas and specific type of necessary interventions. Institutions dealing with disaster management and risk reduction issues ought to conduct thorough vulnerability and risk assessment studies and integrate the outcomes with their disaster management plans.

6.4.3 Scoping and development of disaster risk reduction plans, projects and programmes

The NDMPF (2005:19) identifies planning points recommended to institutions responsible for disaster management. The eight planning points are as follows:

Figure 6.2: Key planning points for disaster risk reduction (NDMPF, 2005:46).



These eight (8) key planning points enhances the development of strategies for disaster risk reduction projects and programmes.

6.4.4 Inclusion of disaster risk reduction efforts in other structures and processes

One of the methods that can be effectively used to ensure that disaster risk reduction programmes are combined with the municipal IDP is to align with the municipal Spatial Development Framework (SDF). The SDF is essential because hazards, disaster risk and vulnerability occur in a particular geographic space. Hence, the SDF is an important instrument to ensure visible integration and prioritization of disaster risk reduction projects and programmes. Vulnerability indicators that could be easily shown on the SD together with the findings of disaster risk assessment as well as the ongoing monitoring

data on disaster occurrence are relevant to disaster risk mapping and spatial development planning. It is that reasoning that municipalities must see to it that pertinent spatial disaster risk data is used when compiling the municipal SDF,

The integration of programmes aimed at reducing vulnerability and disaster risk into processes of development of the municipal IDP is imperative. Mainly such programmes are medium to long-term interventions, and requires the attention of line function sectors such as Housing, Transport, Water and Sanitation. Hence, the inclusion of such projects and programmes into mainstream planning processes are of great importance.

Other than structural or physical measures for disaster risk reduction, there are vital mechanisms of efficient disaster risk reduction such as regulations, standards, bylaws and other legal enforcement methods that prevent and mitigate disaster risk.

6.4.5 Implementation and monitoring of disaster risk reduction programmes and initiatives

The monitoring practices and assessment of the effectiveness of the disaster risk reduction projects and programmes ought to involve qualitative and quantitative methods, to assess if there is any reduction in disaster risk and vulnerability. Monitoring plays a vital role in identifying and strengthening of the effective initiatives. Hence, it is imperative that such projects and programmes are monitored and evaluated appropriately. Furthermore, as a legislative requirement, the annual report of the municipal disaster management centre must report on disaster risk reduction initiatives undertaken.

As a standard practice the municipal disaster management centres are expected to periodically report comprehensively the disaster or incidents that occur in their jurisdictions. The reporting of disastrous events is mainly done to monitor the frequency, severity and scale of disastrous events, especially those that are occurring in locations evaluated as being exposed to a particular hazard of concern must be monitored and prevented or their impact mitigated. The disaster report must include key indicators such as date of occurrence, frequency, severity, type, location and impact thereof in terms of fatalities, injuries and damage to property.

The reduction in the requirement for social relief in areas of high disaster risk is another logical and systematic method of assessing success or failure of the disaster risk reduction interventions, particularly if a demand change is recorded in social relief assistance. Although emergency humanitarian assistance is an important element of disaster response and must be budgeted for, the disaster management legislation and policies unequivocally provide primacy to a proactive disaster management paradigm, especially in poor households and communities highly vulnerable to disaster risks.

6.5 THE PROPOSED DISASTER RISK REDUCTION MODEL FOR MUNICIPALITIES

The planning and application of disaster risk reduction must be in line with the processes of municipal IDP planning and implementation. Such alignment will ensure solid mainstreaming and inclusion of measures aimed at reducing households and community vulnerability and disaster risk in the core business of local government. Practical practice has shown that initiatives pertinent to disaster risk reduction cannot be successful if they are conducted outside mainstream government programmes and processes (UNISDR, 2004:19).

Fragmented planning and implementation of activities related to disaster risk reduction by various municipal departments and entities result in repetition and the wasteful use of limited municipal resources whereas proper coordination can maximize the impact, save precious resources and can be directed to other priority projects and programmes. In the case of the eThekweni Municipality it is difficult to achieve such synergy without a comprehensive disaster management policy framework and plan as well as the ideal institutional arrangement for stakeholder engagement such as the municipal disaster management advisory forum.

The Local Government Municipal Systems Act No 32 of 2000 (Section 26 (g)) gives a directive that all municipalities must develop an applicable disaster management plan and such plans must be the core component of the entire municipal IDP. Therefore, the municipal integrated development planning framework provides for an efficient platform to mainstream disaster risk reduction programmes. This is very important and appropriate because the disaster risk reduction ought to be aligned and included into

already existing mandate and activities of the municipal departments and entities including the external stakeholders.

However, this cannot happen automatically. Municipal disaster management centres must develop the required disaster management technical capacity, to ensure that municipal disaster management plans and policy frameworks are developed and coordinated through relevant internal institutional arrangements and platforms to engage with all stakeholders inside and outside the municipality. They must be developed and maintained.

The IDP is a five-year municipal strategic development document that is updated every year as legislatively required. The review of the IDP must follow robust public and stakeholder participation. The IDP is a municipal blueprint from which all planning, budgeting, management and decision-making takes place. The IDP encourages and enhances the integrated municipal planning of all municipal development and service delivery programmes. It is therefore logical for municipalities to align disaster risk reduction planning with IDP coordination processes, mainly because the IDP seeks to organise activities within whilst including external stakeholders.

Similarly to disaster risk assessment, the process of preparing disaster risk reduction plan and the municipal integrated development plan is a consultative and participatory exercise which demands the cooperation of all relevant stakeholders. It is those similar characteristics that make alignment between IDP and DRR a logical process. Most importantly the IDP planning process is aligned with municipal budgeting programmes so that financial resources are well-matched.

Dynamism of disaster risk and vulnerability requires a regular review of disaster risk management plans; the same practice is required of the IDP. The IDP is looked at every year to see to it that it is relevant and it addresses pertinent issues of community development and service delivery. The municipal disaster management centres must purposefully take these processes very seriously if they are to be relevant in addressing and coordinating disaster risk reduction. In most cases municipalities have out-dated disaster management plans or none at all. A fundamental question that immediately

arises is how municipalities ensure disaster risk reduction and cooperative governance if they do not have disaster management policy frameworks and plans applicable to their respective jurisdictions.

6.5.1 The Nexus between the Municipal IDP Planning Process and DRR Planning

The IDP Guide Pack published by the Department of Cooperative Governance and Traditional Affairs (COGTA) identifies five (5) core components that guide the IDP planning methodology (South Africa, 2002:10). The IDP Planning methodology consists of the following phases:

6.5.1.1 Phase 1: Analysis

The analysis phase of the IDP development includes the investigation of prevailing conditions in the municipal area, particularly in terms of progress and back-log in development and delivery of services. The analysis is people or community oriented as public participation is also an important aspect of analysis. Some of the common things assessed during this phase are related to socioeconomic issues such as the level of unemployment and HIV/AIDS. The challenges pinpointed are prioritized according to their prominence.

The Analysis Phase of the IDP resembles Disaster risk assessment is the essential first stage of planning comprehensive disaster risk reduction. Disaster risk assessment assist with proper identification of the level of disaster risk and vulnerability of areas, communities and households and thus the identification of relevant intervention measures whether structural or non-structural. The disaster risk analysis (conditions of hazards, vulnerability and capacity) is of great importance when it comes to the process of identification of priority disaster risk that the interventions can aim to urgently address.

6.5.1.2 Phase 2: Strategies

At this stage the municipality must devise strategies to overcome problems identified in the analysis phase which include the setting of vision, priorities and objectives. It is this phase in which the fundamental and concrete choices on the direction and future of the municipality are made. Upon the clear analysis and understanding of the developmental and service delivery issues pertinent to communities of the municipal area, and solutions must then be contemplated to address them. The municipal vision, priorities and objectives must take cognisance of the issues such as:

- Spatial dynamics
- Poverty
- Gender
- Environmental
- Economic
- Institutional Development
- Vulnerable groups

At this stage of the IDP planning process, the Municipal Disaster Management Centre must contemplate and decide on how to incorporate disaster risk reduction principles of disaster prevention, mitigation and preparedness in the identified problems. This phase also presents the opportunity to think and decide the medium to long term disaster risk reduction interventions. Once the community disaster risk is known and its underlying factors understood, the Municipal Disaster Management Centre must develop disaster risk reduction strategies to ensure disaster risk prevention, mitigation and preparedness. This phase must mainly articulate the vision, priorities, objectives and strategies of the Municipal Disaster Management Centre.

6.5.1.3 Phase 3: Projects

For each identified problem a project must be developed so that strategies stated in phase two (2) could be executed accordingly. Therefore, phase 3 is concerned with the development of specific projects and programmes. The municipality has a responsibility to ensure that the identified initiatives are in line with its vision, objectives and priorities. The custodian, recipients and projects location as well as the timeframe must be clearly

defined from the onset. The resources to implement the identified initiatives must be known. The monitoring of the implementation and impact evaluation of the projects is of utmost importance.

As for disaster risk reduction planning, having conducted disaster risk analysis and disaster risk reduction strategies in phase 1 and 2 respectively, the municipality must now identify and design specific projects and programmes to eliminate or reduce disaster risk. The identified interventions must directly address priority disaster risk and vulnerability in specific areas or locations of the municipality, the time frame must also be determined as to when these interventions are to be delivered. Most importantly the funding source, cost and implementing department must be clearly defined. The interventions may come from internal municipal departments or from other departments of the provincial or national government or other entity including the private sector.

6.5.1.4 Phase 4: Integration

The integration phase provides the municipality with a chance to synchronise the programmes in order to produce a holistic and consolidated municipal IDP. The integration phase seeks to guarantee that programmes are blended into a rational set of ideas and accurate execution methods, whilst ensuring compliance with the limited resources base. The following important supplementary plans are instrumental in reinforcing integration:

- Human Settlement Plan
- Water and Sanitation Plan
- Municipal Spatial Development Framework
- Municipal Disaster Profile
- Municipal Integrated Financial Plan
- Road Infrastructure and Maintenance

The integration is important to give assurance that programmes are consistent with the municipal disaster risk reduction strategies and overall municipal strategic objectives.

The integration phase provides the Disaster Management Centres with the opportunity to ensure that the identified interventions are synchronised into the core business of the municipality. The Disaster Management Centres must take advantage of the municipal SDF by including scientific disaster risk profiles of their respective municipalities indicating areas of vulnerabilities and relevant interventions. By doing so, disaster reduction will be mainstreamed and incorporated into municipal developmental and service delivery agendas.

6.5.1.5 Phase 5: Approval

As a legal requirement, when the development of the IDP has been finalised it must be handed to the council of the municipality for consideration and ratification. The municipal council satisfy itself in terms of the sufficiency of the IDP and the alignment with the municipal priorities and objectives and its ability to address the identified challenges related to development and service delivery. The ratification of the IDP by the municipal council signifies an ultimate political approval, ownership and responsibility for the content of the IDP.

The benefits of aligning the disaster risk reduction planning process with those of the IDP are vital. The alignment brings credibility and transparency to the process of disaster risk reduction planning. The development of the IDP by the municipal senior management and approval by the council ensures that the disaster risk reduction projects and programmes receive the highest attention in terms of implementation, and the fact that the municipality takes responsibility and ownership of the disaster risk reduction plan.

6.5.2 Diagrammatic Illustration of the Proposed Disaster Risk Reduction Model for Municipalities

Figure 6.1 illustrates the framework in which the municipal disaster risk reduction projects and programmes must be included and engrained into all features of the municipal integrated development planning and implementation process. The proposed framework considers the fact that Disaster Management Centres have specific

institutional requirements and arrangements outside the IDP planning processes. The required disaster management institutional capacities and structures will also be reflected.

The developed framework seek to reflect all that has been discussed above, particularly in terms of the requirements of the disaster management legislation and policies as well as the Local Government Municipal Systems Act No. 32 of 2002, further guided by National Municipal IDP Guide Pack, and most importantly by the study findings.

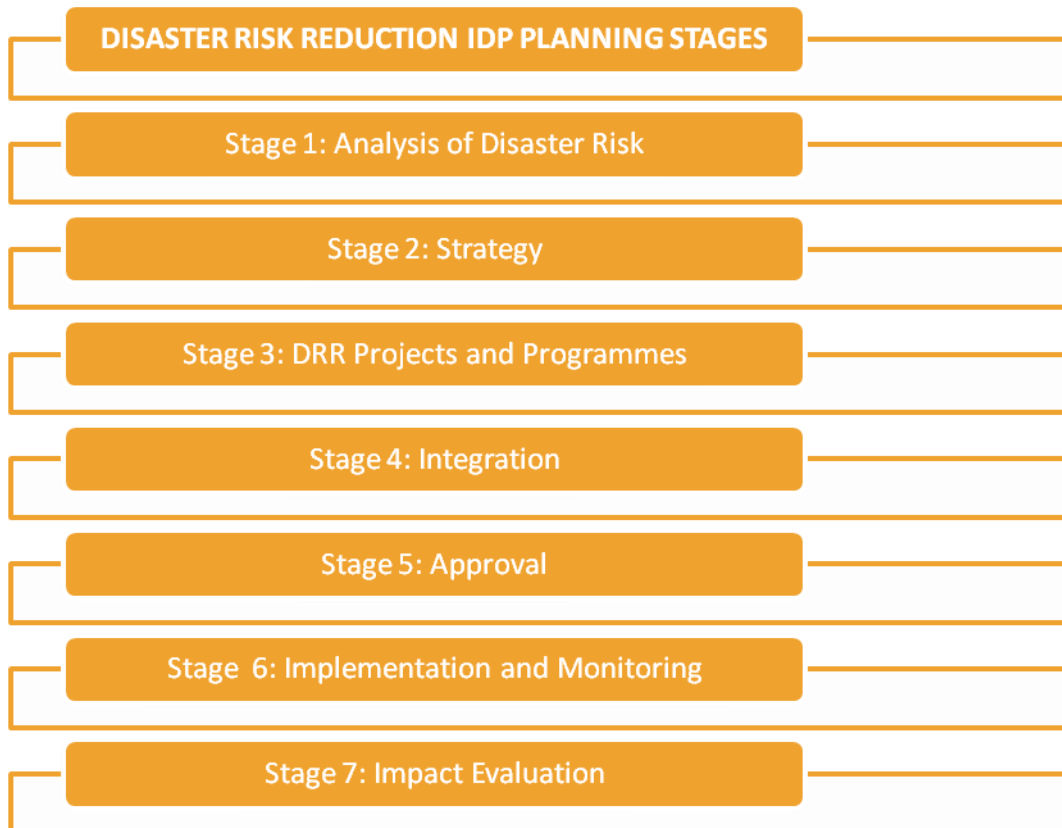
Figure 6.3: Required Integrated institutional capacity and arrangements for disaster risk reduction (NDMPF, 2005).



The municipalities require strong and well capacitated disaster management institutions to effectively deliver on disaster management mandate as expected by law. Figure 6.1 outlines the specific disaster management institutional arrangements necessary to plan and implement municipal disaster management responsibilities. Without these arrangements comprehensive and optimal disaster risk reduction cannot be achieved.

These arrangements are a fundamental foundation for integrated and coordinated municipal disaster risk reduction.

Figure 6.4: Municipal disaster risk reduction IDP Planning Stages (UNISDR, 2004:27)



The basic stages outlined in figure 6.2 are extracted and modified from the normal IDP development process. Systematic application of these stages will ensure formal inclusion of disaster risk reduction programmes within the municipality. It is important to note that alignment with these stages requires proactive planning and adherence to specific timelines as provided in the annual IDP process plan.

Figure 6.5: Detailed municipal disaster risk reduction IDP Planning Stages



Specific action or activity ought to be conducted in each stage of the IDP development process. Figure 6.5 gives detailed information and guidance on specific action

necessary to effectively incorporate disaster risk reduction into mainstream municipal programmes.

6.6 CONCLUSION

The municipal integrated disaster risk reduction can be effectively and systematically achieved through the alignment between mainstream IDP planning processes with disaster risk reduction planning processes. However such undertaking requires a Municipal Disaster Management Centre with sufficient technical capacity and functioning disaster management institutional structures to engage internal and external stakeholders. The appropriate placement of the Municipal Disaster Management Centre plays a major role in its ability to coordinate and ensure its custodianship of disaster management in its area of jurisdiction. Therefore, the correct placement is essential to ensure required authority and capacity of the Municipal Disaster Management Centres.

CHAPTER 7

GENERAL CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This conclusions and recommendations chapter intends to consolidate the reasoning in terms of observations and proposed solutions developed through the study assessment and findings. The closing reasoning is aimed at promoting systematic and effective disaster risk reduction at a local sphere of government.

Municipal Disaster Management Centres (MDMCs) are legislatively mandated to ensure coordination and integration of disaster management as a whole which includes proactive and post-disaster interventions. Municipalities must have sufficient technical and human resource capacity to effectively deliver on this legislative imperative. There are specific and generic expectations that MDMCs ought to achieve such as preparation of comprehensive disaster management policy frameworks and plans including the contingency and seasonal plans as natural hazards are dynamic and weather specific, as well as the imperative disaster management institutional arrangement such as the Municipal Interdepartmental committee dealing with internal disaster management planning and implementation. Furthermore, the MDMCs are expected to establish critical intergovernmental structures such as the Disaster Management Advisory Forum (DMAF) ensure coordination and integration of disaster management issues within the municipality with both internal and external stakeholders.

The focus of this study was to develop a simplified model of ensuring mainstreaming of disaster risk reduction into core functions and developmental agenda of the municipalities. This is to be achieved through alignment between the IDP planning, budgeting, implementation and monitoring processes with a disaster risk reduction planning mechanism. The lessons and recommendations from the literature were also drawn to highlight how the relevant activities of disaster risk reduction can be mainstreamed as a core business of local government.

7.2 GENERAL CONCLUSIONS

The effective implementation of disaster risk reduction requires robust and integrated institutional development and arrangements. Hence, the study mainly focused on the assessment of practice and approaches in the eThekweni Municipality when it comes to disaster risk reduction issues.

7.2.1 Municipal Disaster Management Policy Framework

First and foremost, as a legislative requirement, municipalities must develop specific disaster risk management policy frameworks that articulate the appropriate manner and fashion in which they want to deal with disaster risk management functions in their respective municipalities. These policy frameworks must be developed in a most consultative method possible. Most importantly such policy frameworks must be in line with the respective Provincial, National and Global objectives, and ultimately be ratified by the municipal councils. The lack of a coherent and integrated disaster risk management policy framework could somehow be blamed for the absence of desirable disaster management synchronisation in the study area. A clear policy direction understood by all role-players is essential to facilitate compliance issues.

7.2.2 Municipal Disaster Risk Assessment (Profile)

Amongst other fundamental discoveries of the research was the absence of a comprehensive disaster risk profile of the municipality such a profile ought to guide the multi-sectoral disaster risk reduction planning. However, there was an indication that it was still being developed. The recommendation to this effect is that municipalities must commission an all-inclusive ward based scientific disaster risk assessment guided by sound procedures. Disaster risk assessment is a vital mechanism to achieve the ideals set out in the legislation on matter of disaster risk reduction. It is also important to note that the South African Disaster Management legislation and policy were developed more than a decade ago; the reasonable expectation is that significant progress would have been made in this regard.

The disaster risk assessment is a prerequisite and primary step required to achieve planning of credible disaster risk reduction programmes, as without disaster risk assessment there can be no logical planning and implementation of disaster risk reduction interventions. Basically without disaster risk assessment there can be no disaster risk reduction plan. Municipalities are therefore mandated to comply with long established disaster management legislation to develop comprehensive disaster risk reduction plans in consultation with role players and communities.

7.2.3 Municipal Interdepartmental Committee on Disaster Management

Municipalities must develop and strengthen their internal institutional structures and mechanisms for disaster risk management. The NDMF (2005:17) recommends the establishment of Municipal Interdepartmental Disaster Management Committee to facilitate and coordinate matters of disaster risk reduction within the municipality. It is of great importance that such structures be developed and operationalized with clear and specific Terms of References like the one provided by the South African National Disaster Management Centre. The lack of such fundamental internal institutional arrangement undermines disaster risk reduction integration and result in fragmented approach. As observed in the study area, municipal departments and entities are doing lot of activities related to disaster risk reduction but more can still be achieved with a focused and deliberately coordinated approach informed by the disaster risk assessment and disaster risk reduction plans.

7.2.4 Municipal Disaster Management Advisory Forum

This study established that the eThekweni Municipality does not have a Municipal Disaster Management Advisory Forum (MDMAF). The MDMAF is a structure recommended by the South African disaster management legislation and policy framework. The MDMAF is recommended mainly because of the multi-sectoral and multidisciplinary nature of disaster risk reduction. One of the viable methods to solicit

stakeholder participation is to establish a MDMAF to effect appropriate coordination and integration. For this reason, municipalities are encouraged to establish MDMAFs to facilitate and coordinated disaster risk reduction with all relevant stakeholders. It is difficult to envision how municipalities can integrate the principles of cooperative governance without such an important disaster management Inter-Governmental Relations structure.

7.2.5 Municipal Disaster Management Capacity

The Municipal Disaster Management Centres must be capacitated to deliver their mandate, more especially in terms of technical capacity, human resources and funding. Planning, coordination and implementation of disaster risk reduction necessitates a robust Municipal Disaster Management Centre. The senior management and political commitment and support is of great importance in the successful implementation of disaster risk reduction. Skills and awareness raising is of great essence, therefore Capacity building programmes such as workshops must be continuously implemented to engage decision makers and political principals. The executives of the eThekweni Disaster Management Centre mentioned that the lack of sufficient disaster management staff hindered the efficiency in terms of the overall operations of the centre particularly the focus and execution of a robust disaster risk reduction agenda.

7.2.6 Political Commitment and Support

Proactive disaster management political leadership paradigm is imperative to achieve the objectives of disaster risk reduction. The engagement with the councillors revealed that reactive measures tend to dominate the political disaster management approach. This is evident in the fact that humanitarian activities are still popular amongst the most interviewed councillors and they highlighted that the interest on the disaster management is often very high in the aftermath of disasters. There is a strong view amongst the interviewed councillors that DRR must become a political priority to deal

with fundamental service delivery issues, wellbeing and safety of communities. The respondents highlighted the lack of DRR awareness and focus on other pressing service delivery and developmental issues as one of the things that undermine foremost attention to disaster risk reduction. Disaster management workshops for councillors and strengthening of MDMC capacity and authority were recommended by the councillors.

7.2.7 Methodology for Integrating Disaster Risk Reduction

The study proposes a simplified method of guaranteeing that disaster risk reduction becomes an integral part of the integrated development process of the municipality. There are, however, preconditions that must be fulfilled first to guarantee that disaster risk reduction mainstreaming and facilitation are sustained. The preconditions include the deliberate development of an integrated disaster management institutional capacity (technical expertise, staff, disaster management structures and other resources). The model is derived from an already existing method of developing municipal IDP.

7.3 RECOMMENDATIONS

The recommendations of this study are grouped into three sections. The first section focuses on disaster management policy, plan and implementation, the second section deals with municipal disaster risk reduction facilitation and synchronisation with the municipality and the third section deliberates on the recommendations of the literature, and recommends further research.

7.3.1 Disaster Management Policy, Plan and Implementation

The lack or partial compliance with disaster management legislation and policies undermines the progress of deliberate and systematic planning and implementation of the disaster risk reduction programmes. The authorities responsible for the

implementation disaster risk reduction will find it difficult or rather impossible to perform optimally if there is persistence of the absence of disaster risk assessment profiles and applicable disaster risk reduction plans. Effective preparation and coordination of disaster risk reduction measures must be supported with functional and well capacitated institutional arrangement structures to engage internal and external stakeholders.

The proposed disaster reduction model pursued in this study serves as reminder and contribution on how municipalities can ensure effecting mainstreaming of disaster management issues into normal planning and implementation processes of the municipality. The proposed model places importance on the advancement of municipal capacity particularly in terms of institutional arrangement, disaster management policies and plans as well as the technical capacity and resources to implement the developed policies and plans.

The proposed mechanism acknowledges that disaster risk assessment is central and pivotal to credible preparation and implementation of the pragmatic disaster risk reduction interventions. As highlighted in chapter 5, disaster risk reduction can be achieved through integrated planning. Hence, it is highly recommended that municipal disaster risk reduction planning be aligned with IDP planning process and forums. This approach will automatically mainstream disaster risk reduction approach into the mainstream activities of the municipal developmental programmes and service delivery and thus stands an equal chance of being budgeted and implemented just like any other municipal activities.

7.3.2 Municipal Disaster Risk Reduction Coordination and Integration

It is highly recommended for municipalities to develop disaster management coordinating structures within the municipality, mainly because the disaster risk reduction function cuts across various relevant departments and entities of the municipality. A structure involving the external stakeholders is also a must; such structure ought to allow participation of other government departments and entities from all spheres of government including the NGOs, formal business structures, faith-based

organizations, academic institutions and other relevant institutions. The main objective of disaster management function is to ensure proper coordination and integrations of disaster management activities. Hence, Municipal Disaster Management institutional arrangements including disaster management IGR structures play a fundamental role in ensuring synergy and a holistic approach.

7.3.3 Recommendations drawn from the Literature Review

The following recommendations were drawn from the analysis of the literature review and are intended to focus disaster risk reduction activities.

7.3.3.1 Increased focus on poor and urban areas in addition to chronically risk prone areas

The rapid development in urban areas has made both informal and formal settlements vulnerable to hazards including the rural areas. Disaster risk reduction efforts must therefore focus on both urban and rural areas.

7.3.3.2 Standardize definitions, tools, and methodologies

It is also essential to have definitions, tools, as well as methodologies that are agreed upon as a standard. This will ensure that the gaps and confusion that exists between different disaster risk reduction initiatives are averted. There is a need to implement a cross-sectional framework to show how lives, assets, and livelihoods would be preserved as well as allow for implementation of a criterion that is globally accepted and standardized in measuring effectiveness of DRR. This would guide all actions taken as well as offer mechanisms to enable monitoring.

7.3.3.3 Focus on reducing vulnerability

Moving forward, there is a need to integrate development planning and vulnerability analysis. Having a good set of vulnerability analyses enhances linking development and humanitarian responses to align such responses with approaches to sustainable livelihoods.

7.3.3.4 Incorporate DRR in development, climate adaptation, and humanitarian programming

Most often, DRR has been approached in a programmatic manner as a lone or sole activity. There is a need to incorporate humanitarian, development, and climate initiatives with DRR programs to have a comprehensive outlook of the programs. The major challenge and essence of incorporation is to address risk indicators in all households and areas. Incorporation of poverty reduction, climate change, as well as risk reduction will be essential in bringing all involved sectors and players to the mainstream in DRR programs.

7.3.3.5 Increase monitoring, impact evaluation, and cost-benefit analysis

There is a strong urge and need to emphasize monitoring and impact evaluations as well as cost-benefit analysis of DRR programs; this will enhance the evaluation of the efficiency of the program. Quantitative analysis of costs and benefits provides clear evidence that can be used in making the case against or for DRR programmes and interventions.

7.3.3.6 Understand and incorporate the project cycle

The project cycle is critical in DRR's main objective of averting or mitigating loss after risks. Nevertheless, most of the funding on such projects goes to disaster response operations and incentives. There is a need to recognize the entire cycle in a broader and more comprehensive manner; meaning that aspects such as preparedness, mitigation, recovery, and response should all be factored in during planning and funding.

7.4 RECOMMENDATIONS FOR FURTHER RESEARCH

The researcher identified two possible areas that require thorough investigation, these research areas are listed as follows:

- It is imperative to assess the impact and implication of the institutional location of the disaster management function in the municipal organogram. The coordination and integration of disaster management cannot be efficiently achieved if such function is wrongly placed particularly in terms of its capacity and authority.
- The other area is to investigate various technical skills required to provide efficient and effective disaster risk reduction.

7.5 CONCLUSION

Though the South African disaster management legislation is explicit in terms of what each sphere of government is ought to be doing to realize systematic mainstreaming of disaster risk reduction, there appears to be lack of adequate and deliberate planning and implementation of disaster risk reduction. Such unfortunate phenomenon can be largely attributed to lack of technical capacity and prioritization of disaster risk reduction issues politically and administratively especially at a local government level.

The institutional placement of disaster management function within a municipal organogram is of great concern, because such placement determines the level of the municipal disaster management resourcing, capacity and authority to execute its mandate. The South African Disaster Management legislation was promulgated more than a decade ago so one would have expected significant progress in the planning and implementation of municipal disaster risk reduction agenda.

The integrated and coordinated approach to disaster risk reduction is of utmost importance at a local government level, since most of the disaster risk reduction activities are effective and implementable at that level of government. This study

highlights the importance and need for systematic planning, execution and evaluation of disaster risk reduction interventions. There is nevertheless a lot of work being undertaken relevant to disaster risk reduction. The major challenge is that the planning and implementation of such activities appear to be fragmented and requires deliberate coordination and synchronization. That can be achieved through building efficient disaster management institutional coordinating structures, policy frameworks, plans and involvement of all relevant stakeholders. Comprehensive disaster risk assessment will greatly assist to develop effective and relevant interventions informed by the reality of disaster risk and vulnerability on the ground.

Integral to the theory development phase, the study proposed a practice framework and also offered a number of recommendations that can assist local government to improve and enhance mainstreaming of disaster risk reduction into their core business. The framework proposes the streamlining of disaster risk reduction programme planning with the Integrated Development Planning (IDP) processes of the municipality in a way that will ensure that disaster reduction initiatives are included in the legal, financial and sound planning mechanisms of the municipalities and thus their implementation will be binding. This will begin by building and strengthening of municipal disaster management capacity and important disaster management institutional arrangements such as the interdepartmental committee and the advisory forum to facilitate engagement with all relevant stakeholders.

The proposed disaster risk reduction model in this study should be a deliberate undertaking that must holistically and comprehensively address the various discrepancies and inadequacies impeding the implementation of municipal disaster risk reduction. In this regard, the model focused on critical aspects which include the proper and proactive planning and streamlining of disaster risk reduction initiatives into core business of the municipality by aligning with IDP development and funding processes, and also to ensure the multi-disciplinary and multi-sectoral approach to disaster risk reduction planning and implementation by establishing necessary institutional arrangements. The study also acknowledges the importance of soliciting political and senior management will and commitment.

REFERENCES

BOOKS

- Adelman, S. Giligan, D., and Lehrer K. (2010). ***Childhood Interrupted: How conflict-induced shocks shape human capital formation in Northern Uganda***. Mimeo.
- Akresh, R., Verwimp, P. and Bundervoet, T. (2010) "Civil war, crop failure and child studying in Rwanda". ***Economic Development and Cultural Change***. 22(5), 331-338.
- Alexander, D., (2002). ***Principles of emergency planning and management***. Harpenden, Terra Publishing.
- Anderson, M (1995), ***Disaster prevention for sustainable development: Economic and policy***. London. Sage.
- Blaikie, N. (2000). ***Designing Social Research***. London: Polity.
- Blaikie, P. Cannon, T. Davis, I. and Wisner, B., (1994). ***At Risk - natural hazards, people's vulnerability and disasters***. London and New York: Routledge.
- Borkhuu, B. (2008). "Indigenous Knowledge for Disaster-Risk Reduction of the Shiver Herder Community". "Indigenous Knowledge for Disaster-Risk Reduction: ***Good Practices and Lessons Learned from Experiences in the Asia-Pacific Region***". United Nations ISDR (pgs. 27-29).
- Bryman, H., and Burgess, R. (1999). ***Qualitative research methodology: A review***. Routledge. London:
- Bulkeley H and Betsill M.M (2005), ***Cities and climate change: urban sustainability and global environmental governance***, Routledge, Oxon.
- Charles, C. M. and Mertler, C. A. (2002). ***Introduction to educational research (4th Ed.)***. Boston, MA: Allyn and Bacon.
- Creswell, J. W. (1998). ***Qualitative Inquiry and Research Design: Choosing Among the Five Traditions***. Thousand Oaks, CA: Sage Publications.
- Creswell, J. W. (2003). ***Research design: Qualitative and quantitative approaches***. Thousand Oaks, CA: Sage.

- Creswell, J. W. (2003). **Research design: Qualitative, quantitative, and mixed methods approaches**. Thousand Oaks, CA: Sage Publications.
- Guba, E.G., and Lincoln, Y. S. (1981). **Effective evaluation: Improving the usefulness of Guide**. London: Macmillan.
- Handmer, J., and Dovers, S. (2007). **The handbook of disasters and emergency policies and institutions**. Sterling, VA USA: Earthscan.
- Harding, J. (2003). **Community Coping Strategies: Integrating all of the factors of disaster-risk**. Delhi: United Nations Inter-Agency Secretariat.
- Lincoln, Y. S., and Guba, E. G. (1985). **Naturalistic inquiry**. London: Sage.
- Manyena, S.B. (2006) "Rural local authorities and disaster resilience in Zimbabwe", **Disaster Prevention and Management**, Vol 15 No. 5, pp. 810-820.
- Merriam, S. B. (1998). **Qualitative Research and Case Study Application in Education: Thousand Oaks**, CA: Sage Publications.
- Miles, M. B., and Huberman, A. M. (1994). **Qualitative data analysis**. Thousand Oaks, CA: Sage
- Mogale, T.M. 2003. Developmental local government and decentralised service delivery in the democratic South Africa. In Mhone, G. and Edigheji, O. (eds.) **Governance in the New South Africa**. Lansdowne: UCT Press.
- Mohapatra, S., Joseph, G., and Ratha, D. (2009). **Remittances and natural disasters: Ex-post response and contribution to ex-ante preparedness**. New York, NY: The World Bank.
- Mouton, J. (1996). **Understanding social research**. Pretoria: Van Schaik Publishers.
- Myers, M. D. (2009). **Qualitative Research in Business and Management**. London: Sage Publications
- O'Donnell, I., Smart, K., and Ramalingam, B. (2009). "**Responding to Urban Disasters: Learning from Previous Relief and Recovery Operations**". ALNAP Lessons, 15-16. Oaks, CA: Sage.

- Eade, D. and Williams, S. (2009). ***The Oxfam Handbook of Development and Relief. Oxford:*** Oxfam Publishing.
- Patton, M. Q. (1990). ***Qualitative evaluation and research methods.*** Newbury Park, CA: Sage.
- Patton, M. Q. (2002). ***Qualitative research and evaluation methods.*** Thousand Oaks, CA: Sage Publications.
- Pelling, M. and Holloway A (2006), ***Legislation for mainstreaming disaster risk reduction,*** Tearfund, Teddington.
- Reddy, P.S and de Vries M.S. (Ed), (2015).***Quo Vadis? Local Governance and Development in South Africa post 1994.***Edition. Brussels: Bruylant. Chapter .2.
- Shneiderman, B., and Plaisant, C. (2005).***Designing the User Interface: Strategies for Effective Human-Computer Interaction.*** New York: Addison-Wesley.
- Smith, K (2001), ***Environmental hazards: Assessing risk and reducing disasters, 3rd Ed,*** Routledge, and London.
- Smith, K. (2009). ***Environmental Hazards: Assessing Risk and Reducing Disaster. 5th Ed.*** New York:
- Stake, R. E. (1995).***The art of case studies research.*** Thousand, Oaks CA: Sage.
- Stake, R.E. (1993).***Case Studies. In Handbook of Qualitative Research:*** 236-24, edited by N.K. Denzin and Y.S. Lincoln, Sage Publication, London, England.
- Stephen, I., Chowdhury, R.D., Nath, D. (2008). ***“Soil and Water Conservation through Bamboo Plantation: A Disaster Management Technique Adopted by the People of Nandeswar, Assam. Indigenous Knowledge for Disaster-Risk Reduction: Good Practices and Lessons Learned from Experiences in the Asia-Pacific Region”.*** United Nations ISDR (pgs. 14-16).
- Strauss, A., and Corbin, J. (1990).***Basics of qualitative research: Grounded theory procedures and techniques.*** Newbury Park, CA: Sage.

- Tashakkori, A., and Teddlie, C. (Eds.). (2003). ***Handbook on mixed methods in the behavioural and social sciences***. Thousand Oaks, CA: Sage Publications.
- Thomalla, F., Downing, T., Spanger-Siegfried, E., Han, G., and Rockstrom, J. (2006). "Reducing Hazard Vulnerability: Towards a Common Approach between Disaster-Risk Reduction and Climate Adaptation". ***Disasters***, 30(1): 39-48.
- Tran, P., Shaw, R., Chantry, G., and Norton, J. (2007). ***GIS and Local Knowledge in Disaster Management: A Case Study of Flood Risk Mapping in Vietnam***. Thousand Oaks, CA.
- Twigg, J. (2004). ***Indigenous Knowledge and Coping Strategies***". In J. Twigg, ***Good Practice Review: Disaster-Risk Reduction: Mitigation and Preparedness in Development and Emergency Programming***" (pp. 131-145). London: Overseas Development Institute.
- UN (United Nations) (2004) ***Living with Risk: A Global Review of Disaster Reduction Initiatives***". New York and Geneva: United Nations Publications.
- Van Niekerk, D., (2015). *Local government disaster risk management*. In: G. Van der Waldt, ed. (2015). ***Municipal Management- serving the people***. Claremont. Juta.Ch.13
- Wisner, B., Blaikie, P., Cannon, T., Davies, I. (2004). ***At risk: Natural hazards, people's vulnerability and disasters***. London: Routledge
- Wisner, B., Blaikie, P., Cannon, T., Davies, I., (2004). ***At risk: Natural hazards, people's vulnerability and disasters***, London: Routledge.
- Yin, R. K. (1994). *Applications of Case Study Research*. In L. Bickman and D.J. Rog, ***Applied Social Research Methods Series***. London: Sage Publications.
- Yin, R. K. (2003). ***Case study research: Design and methods (3rd Ed.)***. Thousand Oaks: Sage Publications.

JOURNAL ARTICLES

- Ahrens J and Rudolph P (2006), 'The importance of governance in risk reduction and disaster management', *Journal of Contingencies and Crisis Management* 14(4), 207–220.
- Amirthalingam, K., and Lakshman, R. W. D. (2009). "Displaced livelihoods in Sri Lanka: An economic analysis". *Journal of Refugee Studies*, 22(4), 502-524
- Blattman, C. (2009) "From Violence to Voting: War and Political participation in Uganda". *American Political Science Review* 103 (2) 231-247
- Bundervoet (2009) "Livestock, land, and political power: the 1993 killings in Burundi". *Journal of Peace and Research* 46 (3): 357-376.
- Carter, M. R., Little, P. D., Mogue, T., and Negatu, W. (2007) "Poverty traps and natural disasters in Ethiopia and Honduras". *World Development*, 35(5), 835-856.
- Gaillard, J.C. (2007). "Resilience of Traditional Societies in Facing Natural Hazards". *Disaster Prevention and Management*, Vol. 16 No. 4, PP 123-135
- Giné, X., and Yang, D. (2009). "Insurance, credit, and technology adoption: Field experimental evidence from Malawi". *Journal of Development Economics*, 89(1), 1-11.
- Hill, A. (2004). "Protection versus promotion of IDP livelihoods in Colombia". *Forced Migration Review*, 20, 21-23.
- Hunter, L. (2005). 'Migration and environmental hazards. *Population and Environment*, 26(4), 273-302.
- Kelman, I. (2003). *Beyond Disasters, Beyond Diplomacy*. Natural Disasters and Development in a Globalising World: 110-123.
- Kim, S. J., Kim, C. H., Shin, S. Do, Lee, S. C., Park, J. O., & Sung, J. (2013). Incidence and Mortality Rates of Disasters and Mass Casualty Incidents in Korea: A Population-Based Cross-Sectional Study, 2000-2009. *Journal of Korean Medical Science*, 28(5), 658–666.

- Krefting, L. 1991. "Rigor in qualitative research. The assessment of trustworthiness". *American Journal of Occupational Therapy*, 45(3), 214-222.
- Manyena, S.B. (2006) "Rural local authorities and disaster resilience in Zimbabwe", *Disaster Prevention and Management*, Vol 15 No. 5, pp. 810-820.
- Mercer, J., Kelman, I., Taranis, L., and Suchet-Pearson, S. (2009). "Framework for integrating indigenous and scientific knowledge for disaster-risk reduction". *Disasters*, Vol. 34, No. 1; 214-239.
- Nakagawa, Y., and Shaw, R. (2004). "Social Capital: A Missing Link to Disaster Recovery". *International Journal of Mass Emergencies and Disasters*", Vol.22, No. 1; 5-34.
- Nirupama, N. (2013). Disaster risk management. In *Encyclopedia of Natural Hazards* (pp. 164-170). Springer: Netherlands.
- Noy, I. (2009). 'The macroeconomic consequences of disasters'. *Journal of Development Economics*, 88(2), 221–231.
<http://doi.org/10.1016/j.jdeveco.2008.02.005>
- Osei, P.D. (2007) "Policy responses, institutional networks management and post hurricane Ivan reconstruction in Jamaica", *Disaster Prevention and Management*, Vol 16 No. 2, pp. 217-234.
- Scandura, T. A., and Williams, E. A. (2000). Research Methodology in Management: Current Practices, Trends, and Implications for Future Research. *Academy of Management Journal*, 43, 1248–64.
- Twigg, J. (2013). *Risk Perception, Public Education and Disaster Risk Management. In Cities at Risk* (pp. 171-182). Springer: Netherlands.
- Van Niekerk D (2006) 'Disaster. Risk management in South Africa: the function and the activity – towards an integrated approach', *Politeia* 25(2), 96–116.
- Vermaak J and Van Niekerk D (2004), 'Disaster risk reduction initiatives in South Africa', *Development Southern Africa* 21(3), 555–574.

Walsham, G. (1993). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems*, 4, 74-81.

Walsham, G. (1995). The Emergence of Interpretivism in IS Research. *Information Systems Research*, 6(4): 376-394.

CONFERENCE PAPERS

Cavallo, E. and Noy, I. (2009) “*The Economics of Natural Disasters*”. A survey, IDP Working Paper 124.

United Nations Development Programme (UNDP) (2004) *Decentralised Governance for Development: A Combined Practice Note on Decentralisation, Local Governance and Urban/Rural Development*. UNDP, 2004.

United Nations Inter-Agency Secretariat Of The International Strategy For Disaster Reduction (UNISDR). (2005). “*Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*”, *Proceedings of the World Conference on Disaster Reduction*, 18-22 January 2005, Kobe, Hyogo, Japan.

United Nations Inter-Agency Secretariat of the International Strategy For Disaster Reduction (UNISDR). (2005). “*Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*”. *Proceedings of the World Conference on Disaster Reduction*, 18-22 January 2005, Kobe, Hyogo, japan.

United Nations International Strategy for Disaster Reduction (UNISDR) (2009). “*Building a Local Government Alliance for Disaster-Risk Reduction: The Incheon Declaration*”, summary from the 11-13 August 2009 Conference. Incheon, South Korea, UNISDR, 2009.

MASTER, DISSERTATIONS AND DOCTORAL THESIS

Ndlazi, M (2011). *Assessment of Drought Management in the province of KwaZulu-Natal, in South Africa*. Master’s Thesis. University of the Free State.

Reddy, M., (2011). ***An Integrated Disaster Risk Assessment Model for Local Government in South Africa***. PHD. University of North West.

Reid, P.M., (2005), ***a model for an incident management system for South Africa***, *Masters Dissertation*, North West University, Potchefstroom.

Van Niekerk., D. (2005), ***a comprehensive framework for multi-sphere disaster risk reduction in South Africa*** doctoral thesis, North West University, Potchefstroom.

LEGISLATION AND POLICIES

Republic of South Africa (1996). ***The Constitution of the Republic of South Africa Act 108 of 1996***, Government Printer, Pretoria.

Republic of South Africa (1998). ***Green Paper on Disaster Management***. Pretoria: Government Printer.

Republic of South Africa (1998). ***The Local Government White Paper of 1998*** Pretoria: Government Printer.

Republic of South Africa (1998b). ***Municipal Structures Act 117 of 1998***. Pretoria: Government Printer

Republic of South Africa (2000). ***Local Government Municipal Systems Act No. 32 of 2000***. Pretoria: Government Printer.

Republic of South Africa (2002). ***Disaster Management Act No. 57 of 2002***. Pretoria: Government Printer.

Republic of South Africa (2003). ***Disaster Management Act No 57 of 2002***. Pretoria: Government Printer.

Republic of South Africa (2005), ***National Disaster Management Policy Framework***, *Government Printer*, Pretoria.

Republic of South Africa (2005). ***National Disaster Management Policy Framework***. Pretoria: Government Printer.

Republic of South Africa (2013). ***Disaster Management Amendment Bill. Government Gazette. No. 36580.*** Pretoria: Government Printer.

Republic of South Africa (2015). ***Disaster Management Amendment Act No. 16 of 2015.*** Pretoria: Government Printer.

OFFICIAL PUBLICATIONS BY INSTITUTIONS

Adamo, S. B. (2009). ***Environmentally-induced population displacements.*** No. IHDP Update International Human Dimensions Programme on Global Environmental Change Update.

Brockman, R (2009). ***Slum Upgrading Facility Mid-Term Review.*** United Nation Habitat. Geneva: United Nations Publications

Collins, G. (2008). ***Technical Guidance Sheet: Urban Food Security and Nutrition Assessments. Strengthening Emergency Needs Assessment Capacity (SENAC).*** World Food Programme

Department for International Development (DFID) (2005), '***Natural disasters and disaster risk reduction measures: A desk review of costs and benefits – Draft Final Report***', DFID, London.

Department for International Development (DFID) (2006) "***Reducing the Risk of Disasters – Helping to Achieve Sustainable Poverty Reduction in a Vulnerable World: A DFID policy paper***", DFID, London.

Dilley, M., and Boudreau, T. (2001). "***Coming to terms with vulnerability: A critique of the food security definition***". ***Food Policy***, 26, 229-247

German Committee for Disaster Reduction (2007). "***Integrating Disaster-Risk Reduction in European Humanitarian Assistance***". Working Draft, 30th March, 2007.

International Strategy for Disaster Reduction (UNISDR) (2007). ***Words into Action: A Guide for Implementing the Hyogo Framework.*** Switzerland: United Nations Secretariat of ISDR.

- Komino, T. (2008). “**Indigenous Coping Mechanisms for Disaster Management in Mansehra and Battagram Districts, North West Frontier Province (NWFP), Pakistan**”. *Indigenous Knowledge for Disaster-Risk Reduction: Good Practices and Lessons Learned from Experiences in the Asia-Pacific Region*. United Nations ISDR (pgs. 41-45). Experiencing
- Kulipossa F, Duran L. **Support Elements for the Decentralization Process of the Integrated Disaster Risk Management**, Maputo, UNDP Mozambique, 2009 (unpublished).
- Mahul, O., and Skees, J. (2007). “**Managing agricultural risk at the country level: The case of index-based livestock insurance in Mongolia**” .Elibrary. World Bank group.
- Messer, N. (2008).**The Role of Local Institutions and their Interaction in Disaster-Risk Mitigation: a Literature Review**. Rome, FAO.
- Odendaal, A. and R. Olivier (2008).**Local Peace Committees: some reflections and lessons learned**. Kathmandu, Academy for Educational Development.
- Savage, K., and Harvey, P. (2007). “**Remittances during crises: Implications for humanitarian response**” .Briefing Paper 26) Overseas Development Institute.
- Schwoebel, M. H., and Menon, G. (2004). “**Mainstreaming Gender in Disaster Management Support Project: A Report for the Women in Development IQC Task Order: New and expanded opportunities for vulnerable groups in India**”. *Centre for Development and Population Activities and Chemonics International Inc.*: Chemonics International Inc.
- United Nations (UN) (2009). “**Global Assessment Report on Disaster-Risk Reduction: Risk and Poverty in a Changing Climate: Invest Today for a Safer Tomorrow**”. Geneva: The United Nations.
- United Nations (UN). (1987). **General Assembly Resolution 421169.The international Decade for Natural Disaster Reduction**. 3 February. Geneva: UN.

- United Nations (UN). (2000). **General Assembly Resolution 541219. International Decade for Natural Disaster Reduction Successor Arrangements**. 3 February. Geneva: UN.
- United Nations (UN). (2002). **General Assembly Resolution 561195**. New York: United Nations Publications.
- United Nations Development Programme (UNDP) (1997) “**Governance for Sustainable Human Development: A UNDP Policy Document**”. New York, United Nations Publications.
- United Nations Development Programme (UNDP) (2002). **Gujarat Transition Recovery Team: A Synopsis**. New York: United Nations Development Programme.
- United Nations Development Programme (UNDP) (2004) **Decentralised Governance for Development: A Combined Practice Note on Decentralisation, Local Governance and Urban/Rural Development**. UNDP, 2004.
- United Nations Development Programme (UNDP) (2004). “**Decentralised Governance for Development: A Combined Practice Note on Decentralisation, Local Governance and Urban/Rural Development**”. UNDP, 2004.
- United Nations Development Programme (UNDP) (2004). “**Reducing Disaster-Risk: A Challenge for Development**”. **New York: United Nations Development Programme, Bureau for Crisis Prevention and Recovery UNEP**. (2007). Natural disasters and post-conflict response. New York, NY: UNEP.
- United Nations Inter-agency Secretariat of the International Strategy for Disaster Reduction (UNISDR). 2003. “**Living with Risk: Turning the tide on disasters towards sustainable development**”. Preliminary Version. Geneva: ISDR.
- United Nations International Strategy for Disaster Reduction (UNISDR) (2009) “**Global assessment report on disaster-risk reduction**”. United Nations International Strategy for Disaster Reduction Secretariat.

United Nations International Strategy for Disaster Reduction (UNISDR) (2002). “**Living with risk: A global review of disaster reduction initiatives**.” Preliminary version. Geneva: ISDR Secretariat.

United Nations International Strategy for Disaster Reduction (UNISDR) (2004), **Living with risk: A global review of disaster risk reduction initiatives**, Vol. 2, UN / ISDR, Kobe.

United Nations International Strategy for Disaster Reduction (UNISDR) (2004), **Living with Risk: A global review of disaster reduction initiatives, volume 1**. United Nations: New York and Geneva.

United Nations International Strategy for Disaster Reduction (UNISDR) (2005) **Hyogo Framework for Action: Building the Resilient of Nations and Communities**. United Nations: Geneva.

United Nations International Strategy for Disaster Reduction (UNISDR) (2009) “**Global Assessment Report on Disaster-Risk Reduction: Risk and Poverty in a Changing Climate**”. Geneva, UNISDR, 2009.

United Nations International Strategy for Disaster Reduction (UNISDR) (2009). **Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters**. Extract from the final report of the World Conference on Disaster Reduction. Geneva, UNISDR, 2009.

United Nations International Strategy for Disaster Reduction (UNISDR) (2010). “**Local Governments and Disaster-Risk Reduction: Good Practices and Lessons Learned**”. Geneva, UNISDR, 2010.

United Nations International Strategy for Disaster Reduction (UNISDR) (2010). **Local Governments and Disaster Risk Reduction: Good Practices and Lessons Learned**. Geneva, UNISDR, 2010.

WEBSITES

- Barakat, S. (2003). "**Housing Reconstruction after Conflict and Disaster**" [online]. London, Overseas Development Institute. Available from: <http://www.odihpn.org/documents/networkpaper043.pdf>
- Coppola, D. P. (2015). **Introduction to International Disaster Management**. *Introduction to International Disaster Management*. <http://doi.org/10.1016/B978-0-12-801477-6.00001-0>
- Department of Cooperative Governance and Traditional Affairs (COGTA) (2014), **KwaZulu-Natal Disaster Management Annual Report.**, in www.kznciogta.gov.za accessed on 05 July 2015.
- Genise, P. (2002). **Usability Evaluation: Methods and Techniques**. Retrieved April 10, 2016, from <http://www.cs.utexas.edu/users/almstrum.html>
- Gephart, R. (1999). **Paradigms and research methods**. Retrieved November 10, 2016, from http://www.aom.pace.edu/rmd/1999_RMD_Forum_Paradigms.html.
- Heyvaert, M., Maes, B., and Onghena, P. (2013). Mixed methods research synthesis: Definition, framework, and potential. **Quality and Quantity**, 47(2), 659–676. <http://doi.org/10.1007/s11135-011-9538-6>
- Integrated Development Plan (IDP) 2015, **eThekwini Metropolitan Municipality 2015/16 Integrated Development Plan** in <http://www.durban.gov.za> accessed on 20 June 2016.
- Khan, H., Khan, A., (2008). **Natural hazards and disaster management in Pakistan**, *Munich Personal RePEc Archive*, viewed 7 February 2012, from http://mpa.ub.uni-muenchen.de/11052/1/MPRA_paper_11052.pdf
- Ki-Moon, B. (2014). **Crisis in Syria: Civil war, global threat**. *United Nations*. Retrieved from <http://www.un.org/sg/articles/articleFull.asp?TID=140&Type=Op-Ed&h=0>
- Local Government Handbook (2015). **Local Government Handbook: eThekwini Metropolitan Municipality**, in <http://www.localgovernment.co.za> accessed on 20 August 2016.

- McLeman, R., and Smit, B. (2006). "Migration as an adaptation to climate change". *Climate Change*, 76, 31-53. Doi: 10.1007/s10584-005-9000-7
- Pearce L (2003), Disaster management and community planning and public participation: How to achieve sustainable hazard mitigation', *Natural Hazards* 28(2–3), 211–228, in <http://dx.doi.org> accessed on 20 August 2016.
- Pouliotte, J., Islam, N., Smit, B. and Islam, S. (2006). "Livelihoods in Rural Bangladesh". *Tiempo* (59). Available from: <http://www.adpc.net/infores/kobe.pdf> [Accessed 29 May 2016].
- Reid PM. and Van Niekerk D (2008). *A model for a multi-agency response management system (MARMS) for South Africa*, viewed 01 July 2015, from <http://dx.doi.org/10.1108/09653560810872541>.
- United Nations (UN) (2006). "*Exploring key changes and developments in post-disaster settlement, shelter and housing, 1982-2006*" [online]. United Nations. Available from: <http://ochaonline.un.org/GetBin.asp?DocID=4550>
- United Nations Development Programme (UNDP) (2004). *Reducing Disaster Risks* [online]. New York, UNDP. Available from: <http://www.undp.org/bcpr/disred/rdr.htm#contents> [Accessed 22 February 2016].
- United Nations International Strategy Disaster Reduction (2005), '*Hyogo Framework for Action: 2005– 2015: Building the Resilience of Nations and Communities to Disasters*, in <http://www.unisdr.org> accessed on 12 June 2016.
- United Nations International Strategy for Disaster Reduction (UNISDR) (2002). *World Disaster Reduction Campaign Disaster Reduction for Sustainable Mountain Development* [online]. International Strategy for Disaster Reduction – ISDR. Available from: http://www.unisdr.org/eng/public_aware/world_camp/2002/pa-camp02-announc-eng.htm [Accessed 1 April 2016].
- United Nations International Strategy for Disaster Reduction (UNISDR) (2004). *Africa regional strategy for disaster risk reduction* [online]. International Strategy for disaster risk reduction. UN: Geneva

United Nations International Strategy for Disaster Reduction (UNISDR) (2005). ***Hyogo framework for action 2005-2010: building the resilience of nations and communities to disasters*** [online]. International Strategy for Disaster Reduction – ISDR. Available from: <http://www.unisdr.org/eng/hfa/hfa.htm> [Accessed 1 April 2016].

United Nations International Strategy for Disaster Reduction (UNISDR) (2010). ***“Earthquakes caused the deadliest disasters in the past decade”*** [online]. ***International Strategy for Disaster Reduction – ISDR***. Available from: <http://www.unisdr.org/news/v.php?id=12470>

United Nations International Strategy for Disaster Reduction (UNISDR) (2010). ***Earthquakes caused the deadliest disasters in the past decade*** [online]. ***International Strategy for Disaster Reduction – ISDR***. Available from: <http://www.unisdr.org/news/v.php?id=12470> [Accessed 28 Feb 2016].

United Nations International Strategy for Disaster Reduction (UNISDR) (2010). ***Local governments and disaster risk reduction*** [online]. ***International Strategy for Disaster Reduction – ISDR***. Available from: <http://www.unisdr.org/eng/hfa/hfa.htm> [Accessed 1 March 2016].

United Nations International Strategy for Disaster Reduction (UNISDR) (2010). ***Strategy outline for the 2010-2011 ISDR world disaster reduction campaign on building resilient cities, addressing urban risk*** [online]... Available from: www.unisdr.org [Accessed 28 Feb 2016].

United Nations International Strategy for Disaster Reduction (UNISDR) (2010). ***Terminology: basic terms of disaster risk reduction*** [online]. ***International Strategy for Disaster Reduction – ISDR***. Available from: <http://www.unisdr.org/eng/library/lib-terminologyeng%20home.htm> [Accessed 28 Feb 2016].

World Bank (2010). ***What is decentralization*** [online]. World Bank. Available from: http://www.ciesin.columbia.edu/decentralization/English/General/Different_forms.html [Accessed 01 April 2010].