

The drought relief scheme in the Northern Cape Province (2013/2014): An analysis of the intergovernmental communication approach

N.C Tsepe
22392807

Mini-thesis submitted in fulfillment of the requirements for the degree *Masters in Development and Management* at the Potchefstroom Campus of the North-West University

Supervisor: Dr LD Nemaconde
Co-supervisor: Mr LB Shoroma

April 2016

ACKNOWLEDGEMENTS

First and foremost, I would like to thank the Almighty God for guiding me throughout my studies. For the necessary strengths and courage that He has provided me with.

Jeremiah 29:11 "For I know the plans I have for you, declares the Lord, plans to prosper you and not to harm you, plans to give you hope and a future"

I would like to express my deepest gratitude to the following people for their assistance with the completion of this dissertation:

Dr Livhuwani NemaKonde (Supervisor) and Lesego B Shoroma (Co-supervisor), the successful completion of my dissertation owes its existence to the help, support, encouragements, inspirations and criticism from both of you. I am grateful and no words can describe how thankful I am for all the advice and comments you gave me. Let it not only be me, but do so to others as well.

To Prof Dewald Van Niekerk, thank for the opportunity you gave me at the centre. You have been a constant source of encouragement, during the masters program.

A special thank you to my family, especially Charlotte Dikeledi Tsepe (my mother) and John Tsepe (my father) for all your love, support and prayers. I wouldn't be where I am today without a praying family.

Kea leboha Bataung! Le Bahlakwana

Thank you to the rest of my family and friends whose names I did not all include, those who gave me support and faith, means a lot to me and I will cherish always.

ABSTRACT

The main objective of this study was to assess whether poor or lack thereof of intergovernmental communication contributed to the delay of the implementation of the 2013/2014-drought relief scheme in the Northern Cape Province, in order to recommend mechanisms for effective implementation of future drought relief schemes in the province. Droughts are the result of reduced amounts of rain received in an area over a long period of time. For the purpose of this study, agricultural drought received attention. Agricultural drought focuses on soil water shortage, reduction of ground water, reservoirs water needed for irrigation systems and lack of rain. Agricultural droughts have impacts of reducing agricultural production to an extent that the livelihoods of the farming communities are threatened. Drought impacts often result in direct and indirect impacts. Direct impacts involve reduced forests and crop production, decreased water levels and increase the livestock mortality rate. Furthermore the direct impacts create indirect impacts that affect the community. Indirect impacts include lower income for farmers, labour associated with agricultural production decreases and an increase in food prices and unemployment as a result of reduced crop production.

Effective response and recovery operations require collaborations and trust between government departments at all levels. Effective communication amongst government departments is an essential prerequisite for actions on problems that affect those departments. This includes problems such as where decisions are made amongst departments and where actions must be taken across departmental boundaries. In this study intergovernmental communication is viewed as the process through which a department sends a message across a channel to another part of the department or to another department in the network.

The study focused on all government departments (local, provincial and national) that were involved as role-players during the implementation of the drought relief scheme. The study used face-to-face and telephonic interviews to collect qualitative primary data. Furthermore this was complemented by the screening of available documentation and reports. Secondary data sources included reviews of published reports, books, journals and academic dissertation to identify the existing knowledge on drought as well as intergovernmental communication. Empirical findings were concluded from the interviews. The analysis revealed that drought relief scheme implementation was characterised by a myriad of challenges. One of the main challenges was the confusion regarding the process to be followed for the declaration of the state of disaster. Furthermore, poor or lack of communication and coordination between all the relevant role-players exacerbated this problem. The study recommends a review of the reporting structure between the local, provincial and national role players during the implementation of relief schemes as this has shown to be complicated.

Key words: drought, drought relief scheme, disaster response, disaster risk management, intergovernmental communication, Northern Cape Province, implementation.

LIST OF ABBREVIATIONS

AFASA	African Farmers Association
Agri NK	Agriculture Northern Cape
ARC	Agriculture Research Council
COGTA	Department of Cooperative and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DALRRD	Department of Agriculture, Land Reform and Rural Development
DDMC	District Disaster Management Centre
DMA	Disaster management Act
DRM	Disaster Risk Management
EWCs	Early warning committees
FAO	Food Agricultural Organisation
ISDR	International Strategy of Disaster Reduction
JTG	John Taolo Gaetsewe
NAFU	National African Farmers Union of South Africa
NAC	National Agro-Meteorological Committee
NDMC	National Disaster Management Centre
NDMF	National Disaster Management Framework
NGOs	Non-governmental Organisations
MDMC	Municipal Disaster Management Centre
PDA	Provincial Department of Agriculture
PDMC	Provincial Disaster Management Centre
OA	Organised Agriculture
SAWS	South African Weather Services
SLP	Sea Level Pressure
TAC	Technical Advisory Committee
UNEP	United Nations Environment Programme
UNISDR	United Nations International Strategy for Disaster Reduction

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	I
ABSTRACT	II
KEYWORDS	III
LIST OF ABBREVIATIONS	IV
CHAPTER 1 INTRODUCTION AND BACKGROUND	1
1.1 Introduction and orientation	1
1.1.1 Demarcation of study area	3
1.2 Problem statement	4
1.3 Research questions	6
1.4 Research objectives	6
1.5 Central theoretical statement	6
1.6 Research methodology	7
1.6.1 Literature review	7
1.6.2 Empirical investigation	8
1.6.2.1 Research design	8
1.6.2.2 Sampling	8
1.6.3 Data gathering	9
1.6.3.1 Face-to-face interviews	9
1.6.3.2 Telephonic interviews	10
1.6.4 Data analysis	10
1.7 Ethical considerations	10
1.8 Chapter outline	11

CHAPTER 2	A THEORETICAL PERSPECTIVE	13
2.1	Introduction	13
2.2	Conceptualising drought	14
2.2.1	Defining drought	15
2.3	Causes of drought	17
2.4	Types of drought	18
2.4.1	Meteorological drought	18
2.4.2	Hydrological drought	19
2.4.3	Agricultural drought	19
2.4.4	Socio economic drought	20
2.5	Impacts of drought	22
2.5.1	Environmental impacts	22
2.5.2	Economic impacts	23
2.5.3	Social impacts	23
2.6	Drought coping mechanisms	24
2.6.1	Ex-ante drought coping strategies	25
2.6.2	Ex-post drought coping strategies	25
2.7	Drought preparedness and mitigation measures	26
2.8	Implementation of drought relief schemes in South Africa	28
2.8.1	Drought assessment	30
2.9	Intergovernmental coordination and communication to reduce the impacts of drought	31
2.9.1	Importance of intergovernmental communication during drought disasters	35

2.10	Conclusion	37
CHAPTER 3 INTERGOVERNMENTAL COMMUNICATION ANALYSIS OF THE NORTHERN CAPE DROUGHT RELIEF SCHEME IMPLEMENTATION OF 2013/2014		38
	Jamba Journal for Disaster Studies requirements	38
	Article	42
CHAPTER 4 RECOMMENDATIONS AND CONCLUSION		64
4.1	Introduction	64
4.2	Overview chapter 1,2 and 3	64
4.3	Achievement of overall objective of study	65
4.4	Achievement of individual research objectives	66
4.5	Summary of findings	68
4.6	Recommendations	69
4.7	Conclusion	70
BIBLIOGRAPHY		71
ANNEXURE A		87
ANNEXURE B		90
ANNEXURE C		91
ANNEXURE D		94
ANNEXURE E		95
LIST OF TABLES		
Table 2.1:	Flow of information in government spheres	35
LIST OF FIGURES		
Figure 1.1:	Northern Cape Province districts	4

Figure 2.1:	Relationship between different drought types	21
Figure 2.2:	The disaster Management Cycle	27
Figure 2.3:	Theoretical framework of bowtie for information within disaster management	33
Figure 3.1:	Districts of the Northern Cape Province	47
Figure 3.2:	South African rainfall map of 2013	47

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1. Introduction and orientation

Droughts affect every part of the world and have severe impacts on the livelihoods of communities, damage the economy, property and environment (Tadesse *et al.*, 2008:265). Similarly, Batisani (2011:803) and Wu *et al.* (2001:745) state that drought has an impact on a large number of people worldwide as it causes economic losses, environmental damages and social hardships. Particularly Africa has faced some of the most severe droughts, which shows that drought has been a problem on the continent of Africa (Sena and Michael, 2006:29). Tadesse *et al.* (2008:267) indicate that throughout the history of Africa, drought has occurred in varying degrees of intensity and frequency. However, the frequency and intensity of weather and climate related disasters have increased in the Sahel since 1970. During the same period, the Southern African region has become drier (Lukumba, 2010:480). As a result, predictions hold that drought will be a major concern for many African communities (ISDR, 2008:4). Vogel (1995:18) adds that drought is common in Africa, and this problem will probably occur frequently in future (IPCC, 2007).

Over Southern Africa, and in particular South Africa, drought has been a recurrent feature (Rouault & Richard, 2003:1; Ngaka, 2012). The most recent and notable occurrences of drought that have affected this region and have been reported include the droughts of the periods 1982 to 1984, 1991 to 1992 and 1994 to 1995, all of which were reported as severe (Kandji *et al.*, 2006:6). Leonard (2000:219) states that the 1991 to 1992 drought was the worst drought to be recorded in Southern Africa, as 18 million people in the region were at risk of famine. In a similar vein, Glantz *et al.* (1997:18) indicates that the 1991 to 1992 drought was one of the worst because the impact was felt throughout all sectors of society. According to Ngaka (2012:23), drought has become an increasingly common disaster type and is a major hazard in South Africa in terms of people affected and local economic loss. As a result, the drought occurrences of the 1980s and 1990s brought the South African local drought policy under scrutiny. This has revealed weaknesses in the South African Government's ability to respond effectively and timely to droughts as a disaster (Department of Agriculture, 2005:5).

Drought differs from other natural hazards because its impacts may extend over a long period even after the wet season, and it is also a slow-onset hazard (Batisani, 2011:803). The impacts of drought on communities are different as it affects individuals in different ways. As a result, drought is conceptualised differently, leading to variations in the definition of the term. For the conceptualisation of the different definitions of drought **see** chapter 2 of the study. Drought affects individuals in different ways depending on their vulnerability (NOAA, 2008:1; Wilhite & Svoboda,

2000:3). The report of the Department of Agriculture (2005:5) indicates that the root causes of drought in South Africa are low average rainfall and a lack of development.

However, there are four different types of droughts, namely agricultural, hydrological, meteorological and socio-economic drought (NDMC, 2015:1). A brief explanation of the differences between the types of droughts follows, though this study's main focus and interest falls on agricultural drought. Agricultural drought occurs when there is not enough soil moisture to meet the needs of particular crops at a particular time (Van Zyl, 2006:29). Hydrological drought strikes after periods of extended precipitation shortfalls that impact water supply, which results in societal impacts (NOAA, 2008:2). Meteorological drought is based on the dryness and the duration of dry period due to deficiency in precipitation (Wilhite & Svoboda, 2000:4), while Glantz *et al.* (1997:18) defines socio-economic drought as associated with supply and demand of economic goods or services and impacts on human activities.

Droughts are events that cause physical and social disorders and therefore communities should strengthen drought preparedness and response. The Hyogo Framework for Action (2005) indicates that strengthening disaster preparedness and effective response at all levels helps with the reduction of losses to individuals and communities in prone areas during times of disasters. Furthermore, it ensures that the areas are prepared and ready to act on relieving drought impacts (UNISDR, 2005:3). The Hyogo Framework for Action (2005) also prioritises knowledge, innovation and education to build a culture of safety and resilience at all levels (UNISDR, 2005:3). It is anticipated that disasters and their impacts can be reduced if people are well informed about disaster prevention in communities, which, in turn requires the collection and sharing of knowledge and information. In this regard, communication plays a pivotal role in imparting this knowledge and sharing information. Kapucu (2006:208) points out that valid and timely information sharing is critical in disaster response operations.

Communication is important in disaster management in that it helps provide the necessary information to all relevant stakeholders, more specifically in providing rescue and relief for disaster-affected communities (UNISDR, 2008:28). Bhattacharjee (2011:1) states that communication has played a role in disaster management since the early days, citing an example of what had happened during the sinking of the Titanic on 14 April 1912. In this instance, communication was instrumental in soliciting aid from the nearby vessels, which were able to assist with the rescue of some passengers.

The conceptualisation of communication in this study draws from Kapucu (2006:209), who views communication as a process through which a government department sends a message across a channel to certain parts of the government departments or to other departments in the network. For the purpose of this study, intergovernmental communication is of interest. Intergovernmental

communication serves the purpose of strengthening the systems of government communication (Department of Governmental Communication and Information System, 2015:1). Intergovernmental communication represents a function of governance as it is considered to be a vital tool in binding government departments. Furthermore, intergovernmental communication is responsible for improving three principal elements of government: effectiveness; responsiveness; and accountability (Layman, 2003). Intergovernmental communication serves to strengthen relations with other government departments and public services, which are integral to successful and effective government (IPSOS, 2009:3).

The focus of this study is on the importance of intergovernmental communication in the implementation of drought relief schemes by the Northern Cape Department of Agriculture, Land Reform and Rural Development (DALRRD) during the 2013/2014 financial year. This is necessitated by the delays in rolling out relief (**see** Annexure E, the timeline for the implementation of the relief scheme).

1.1.1 Demarcation of the study area

The Northern Cape Province is located in the western part of South Africa. It consists of five district municipalities and 26 local municipalities (Mukheibir & Sparks, 2005:4). Three of these five districts are of interest for the purpose of this study, namely Namakwa, Frances Baard and John Taolo Gaetsewe district municipalities. The farmers in the Northern Cape Province, as shown in the map above (**see** Figure 1.1), are constantly affected by dry periods and had requested government support during dry periods (Jordaan *et al.*, 2013:3). The province is semi-arid and experiences fluctuating temperatures and varying topographies. Dry conditions are part of the climate of the Northern Cape Province (Jordaan *et al.*, 2011:2) with the annual rainfall varying between 50 to 400mm per annum (Anon, 1999:1). The climate in the province is harsh with minimal rainfall and prolonged droughts (Mukheibir & Sparks, 2005:11). As the IPCC (2012:322) indicates, the Northern Cape Province has been exposed to drought due to these extreme dry conditions.

The Northern Cape Province experienced drought in 2013/2014, which affected three of the five district municipalities, namely Namakwa, Frances Baard and John Taolo Gaetsewe. This event forms the basis of the case investigated in this study. A technical team of officials was set up to evaluate the drought situation in the affected areas by the department, and a disaster was declared (Department of Agriculture, Land Reform & Rural Development, 2015:2).

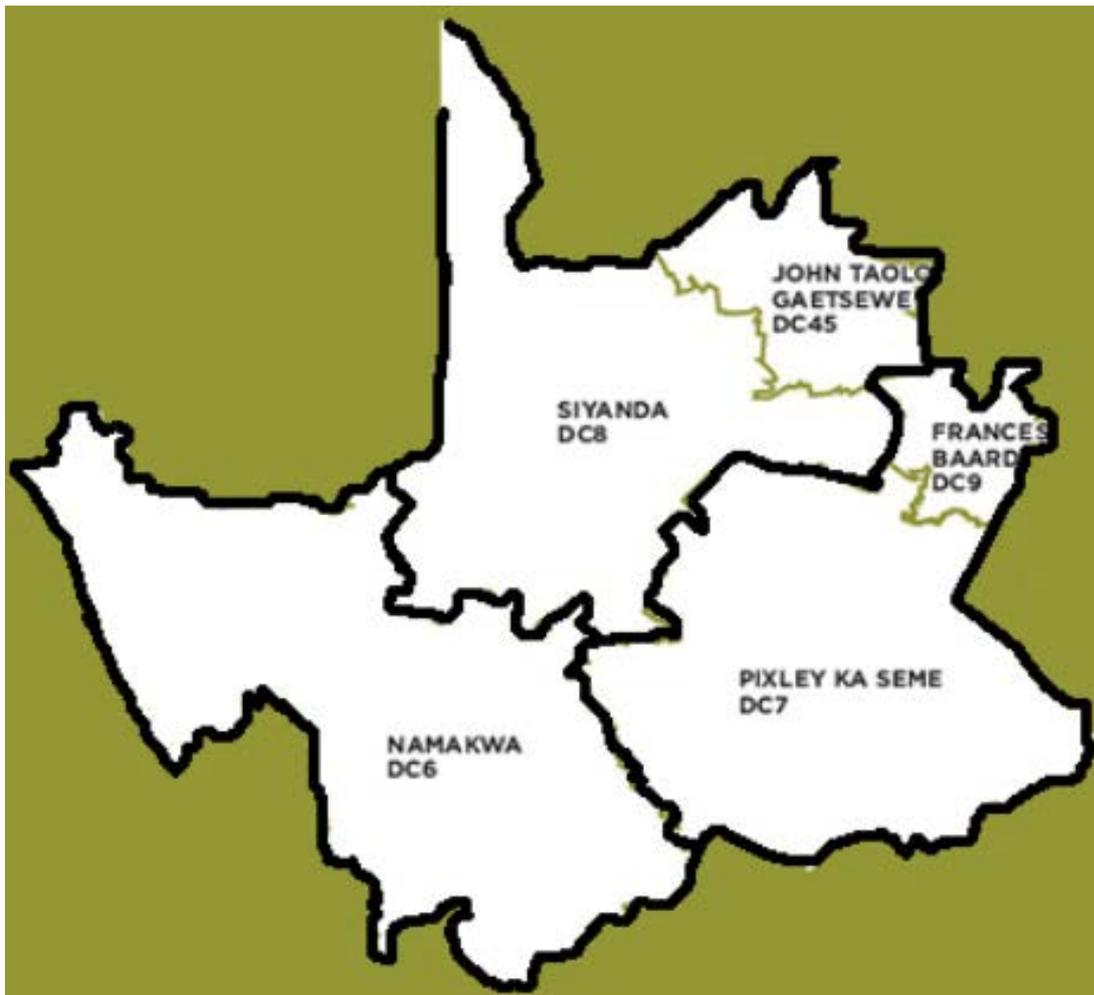


Figure 1.1: Northern Cape Province districts (Source: Institute of Environmental and recreation Management, 2016).

During the drought episode of 2013/14, the Department of Agriculture, Land Reform and Rural Development (DALRRD) decided to implement a relief scheme with the aim of mitigating the effects of drought in the Province. The process took over nine months from the time drought was reported until funding was secured, and it took a further six months to distribute fodder to the livestock farmers (DALRRD, 2015:5). With the background of the study provided, the next section outlines the study problem under investigation.

1.2. Problem statement

The preceding section introduced the study, conceptualised drought as an insidious, and slow on-set hazard that affects people's livelihoods. In demarcating the study area, the previous section highlighted that the process to address the 2013/2014 drought by DALRRD took over fifteen months. Amongst other things, these delays are attributed to the poor communication between the government departments and entities with the responsibility of assisting communities during disasters. Effective flow of information across governmental levels is critical for

government's ability to remain effective in a disaster environment (Kapucu, 2006:209). As Peng and Littlejohn (2001:362) suggest, effective communication is a primary requirement for effective implementation of policies.

Amongst government departments, effective communication is an essential prerequisite for actions on problems that jointly affect those departments (Alesh, 1972:5). This includes problems where decisions must be made among departments and where actions must be taken across departmental boundaries (Alesh, 1972:6). As such, inadequate communication patterns, such as disjointed information flows, prohibit intergovernmental communication and coordination. If those involved are not in contact with each other and if information does not flow properly, it is hard to envision successful disaster management. As Comfort (1999) indicates, the communication of the current status of a community and of the actions of participating organisations allow stakeholders to make informed decisions on how to proceed in concord with others in the networks to achieve the overall goal of protecting the community and of restoring its functionality.

For the 2013/2014 drought situation in the Northern Cape, the involvement of different government departments in the assessments which leads to the declaration and the implementation of a drought relief scheme had particular implications for communication. The role-players included the Provincial Department of Agriculture, Land Reform and Rural Development (DALRRD), the Department of Agriculture Forestry and Fisheries (DAFF), the Department of Cooperative Governance and Traditional Affairs (COGTA), National Disaster Management Centre (NDMC), National Treasury, Provincial Treasury, the Provincial Disaster Management Centre (PDMC) and the Municipality Disaster Management Centres (MDMC). Given the multiplicity, diversity and interrelatedness of these government departments in addressing the drought situation, intergovernmental communication is a subject of vital importance. Being part of the bigger study to evaluate the implementation of the relief scheme, the basis and assumption in this study was that poor or lack thereof of communication between the different governmental departments and entities contributed to delays in implementing the drought relief scheme. For instance, two different assessments had to be conducted before the declaration of the state of disaster, and after the declaration a third assessment was conducted for the purpose of classification of the drought disaster that had been declared. Also, some departments were not part of the initiation of the assessment, the implementations and declaration of the drought disaster.

In light of the above, the problem under investigation in this study is to assess whether poor or lack of intergovernmental communication contributed to the delay in the implementation of the 2013/14 drought relief scheme by the Northern Cape Department of Agriculture, Land Reform and Rural Development. The problem under study will be explored by addressing the research questions as outlined below.

1.3. Research questions

This study aims to answer the following questions:

- What are the theoretical perspectives on drought disasters?
- What are the theoretical perspectives for intergovernmental communication?
- How did communication affect the implementation of the Northern Cape drought relief scheme?
- What are the recommendations and conclusions related to communication during the implementation of a drought relief scheme?

Addressing these study questions will assist in achieving the study objectives as outlined in the next section.

1.4. Research objectives

In order to achieve the aims of the study as outlined in section 1.2 above, the following study objectives will be addressed.

- To provide theoretical perspectives/ conceptualisation of drought disasters;
- To provide theoretical perspectives for intergovernmental communication;
- To evaluate the role of communication in the implementation of the Northern Cape drought relief scheme;
- To provide recommendations and conclusions related to communication during the implementation of a drought relief scheme;

1.5. Central theoretical statement

This study is grounded in the following theoretical statements:

- Drought is a condition of climate dryness that is severe enough to reduce soil moisture and water levels below the minimum necessary for sustainable and economic systems (NDMC, 2010:1). For the purpose of this study, agricultural drought relates to a shortage of available water for plant growth, and is assessed as insufficient soil moisture to replace evapo-transpirative losses (Keyantash & Dracup, 2002:1168).

- The effective flow of information across governmental departments and levels is critical for government's ability to remain effective in a dynamic disaster environment. If responders are not in contact with each other and if information does not flow properly, it is hard to envision successful crisis and disaster management (Kapucu, 2006:209).
- The implementation of the scheme assists the affected farmers in coping with the drought. A drought relief scheme is a relief measure to mitigate the negative impacts of droughts on agriculture and communities. Therefore, relief assistance should be prompt and readily available during cases of severe drought (Van Zyl 2006:32).

The objectives of the study were achieved within the context of the theoretical statements outlined above and through the application of research methods as outlined in the next section.

1.6. Research methodology

This study was conducted using the qualitative research approach. Qualitative research is concerned with developing explanations of social phenomena (Joubish *et al.*, 2001:2083). It mainly helps to understand the social world and also to seek to answer questions about it (Hancock *et al.*, 2009:7). The following sections set out the research method applied in the study to address the research objectives.

1.6.1. Literature review

A literature review helps the researcher to provide a theoretical background to the study (Maynard, 2006:13). Boote and Baeile (2005:1) have indicated that a literature review is necessary in the study as it helps to show the context of the research. Moreover, a literature review helps ensure that the study focuses on the relevant problems and uncovers what can be learned from previous studies (Knopf, 2006:127). It is a critical review of knowledge, including findings, theoretical and methodological contributions. Furthermore, it reviews past research and relies on articles published in well-established research journals, research reports and journal articles (O'Leary, 2014:89). In this study a literature review was conducted to provide an academic overview, and to identify the relation between the literature that is provided and the field of the research. It focused on theoretical perspectives on drought and inter-governmental communication.

Secondary data included screening of all existing documentation and reports related to the implementation of the relief scheme as well as scholarly articles, books and internet sources including:

- The Department of Agriculture, Land Reform and Rural Development;

- The National Disaster Management Centre (NDMC);
- The Provincial Disaster Management Centre (PDMC);
- The Department of Agriculture, Forestry and Fisheries (DAAF);
- The District Disaster Management Centre (DDMC) in the three district municipalities: John Taolo Gaetsewe, Frances Baard and Namakwa; and
- National and Provincial Treasury.
- Internet search engines; Ebscohost, SA Publishers, Science Direct, SABINET, Emerald, books, academic dissertations, articles and journals, etc.

1.6.2. Empirical investigation

For the purpose of this study a qualitative research design was followed. This research design will be briefly described below.

1.6.2.1. Research design

Qualitative research design is concerned with understanding the problem rather than providing an explanation (De Vos *et al.*, 2011:308). Qualitative research was deemed appropriate for this study as it is based on data that is derived in pursuit of understanding the problem. According to Creswell (2009:18) qualitative researchers collect data in the field, participate and experience the problem under investigation first-hand. The qualitative approach is neutral in the sense that it is based on an ability to experience and know things as they are without involving personal judgment and emotions (De Vos *et al.*, 2011:309) in the study. Furthermore, using the qualitative approach makes the study interpretive because it aims to reach an understanding of the problem as the research comes from a real world observation and the researcher's direct experience. Qualitative research is effective for obtaining culturally specific information about the values, opinions and behaviours of a population (Mack *et al.*, 2005:1). The advantage of using qualitative methods in explanatory research is that it allows for open-ended questions and provides the participants with an opportunity to respond in their own words (Mack *et al.*, 2005:4).

1.6.2.2. Sampling

According to Mugo, (2002:1) sampling is the process or technique of selecting a suitable sample or a representative part of a population for the purpose of determining characteristics of the whole population. Furthermore, its purpose is to draw a conclusion about populations from samples. The sampling methods that were used in this study were purposive sampling and quota sampling.

Purposive sampling was applied to select participants purposefully. This method was selected because the type of sampling has to do with the selection of units (which may be people, organisations, documents, departments) with a direct reference to the research question (Bryman, 2012:416). Quota sampling is a method used to select groups based on profession, gender, age and race to name a few. Thus, respondents are selected on the basis of their known proportion to the population (Frey *et al.*, 2000 in Latham, 2007:11).

The targeted population for this study included: the National and Provincial Treasury; the Department of Agriculture, Land Reform and Rural Development (DALRRD); the National Disaster Management Centre (NDMC); the Provincial Disaster Management Centre (PDMC); the District Disaster Management Centre (DDMC) in the three district municipalities of John Taolo Gaetsewe, Frances Baard and Namakwa; as well as the Department of Agriculture, Forestry and Fisheries (DAFF). A total number of 23 participants were interviewed for the study. Purposive sampling was applied to the governmental department's officials who were part of the relief scheme. Quota sampling was used on the population that was selected based on their disaster management profession.

1.6.3. Data gathering

In qualitative research, data gathering involves the means of obtaining permission, identifying a good sampling strategy, developing means for recording information (both digital and on paper) storing the data and anticipating ethical issues that may arise (Creswell, 2013:145). This study applied semi-structured, face-to-face interviews and telephonic interviews to collect data.

1.6.3.1. Face-to-face interviews

Interviews were conducted because the research is concerned with a subjective experience of the roles the different South African Governments levels have to play when communicating during the implementation of the drought relief scheme. Face-to-face interviews mainly involved the officials from all three Government levels that were involved in the implementation of the specific drought scheme. The reason for using a face-to-face interview is that it helps to gain a detailed picture or perception on the topic under discussion. The use of such a structure allows for flexibility for follow-up questions and allows the researcher to adapt the approach to each participants interview needs (Maartens, 2011:11). In support, De Vos *et al.* (2011:351) states that this type of data gathering method gives the researcher and participant more flexibility, as the questions are always open-ended. It also helps to give more understanding of the topic and provide opportunity for solutions and new ideas.

1.6.3.2. Telephonic interviews

Telephonic interviews were used to collect data particularly for participants who could not be reached during the face-to-face interviews. In qualitative research, telephonic interviews offer the advantage of removing the need to travel, reducing both time and cost for the researcher (Irvine, 2010:1). Furthermore, telephonic interviews in research, presupposes that the obtained diagnostic information is valid as that obtained in person (Rohde *et al.*, 1997:1593. Most importantly, telephonic interviews provide the opportunity to obtain data from potential participants, who are reluctant to participate in face-to-face interviews (Sturges & Hanrahan, 2004:109).

1.6.4 Data analysis

In this study the qualitative research approach was used to analyse and interpret the data that was collected from face-to-face interviews and telephonic interviews (**see** Chapter 3). De Vos *et al.* (2011:80) states that when qualitative data is analysed, the researcher must view particular elements separately and then in relation to one another. Data was analysed and statements that were relevant to the research questions were linked together and meanings were created. Conceptual (thematic) analysis was applied to derive meaning from the qualitative data gathered from the face-to-face and telephonic interviews. Thematic analysis was done to construct themes and subthemes from the data as they recurred as topics and ideas in the text. The themes are the product of thorough reading and rereading of the transcripts or field notes that make up the data (Bryman, 2012:579). The aim of the analysis is to transform data in the form of facts and findings to the phenomena under consideration. Data was collected in the form of available documents such as texts, graphs and audio material and observation of behaviour and interview materials. From there data was transcribed, which brings the collected material into writing. Thereafter data was categorised into themes of categories relevant to the research problem. Creswell (2013:179) adds that the process of analysis involves organising data, coding data and organising themes, representing the data and forming an interpretation of them. Thus, finally an interpretation was made after linking and organising relevant themes.

1.7. Ethical considerations

Ethical considerations are the practices that the researcher follows to distinguish between acceptable and unacceptable behaviour (Resnik, 2011:1). Research should be based on joint agreement, conventions and the accepted expectations of all participants in the research before any information is elicited from the participants (De Vos *et al.*, 2011:114).

These considerations were provided to the participants before they became involved in the research (**see** the informed consent letter attached as Annexure A). The following ethical considerations were taken into account for this research study:

- **Integrity and openness**

The researcher acted with sincerity towards the participants during the research and strived for consistency of thought and action. There will also be a form of openness, where the researcher will share the data collected and the results with the participants.

- **Confidentiality and Anonymity**

The researcher protected the confidentiality of the data that was collected. Confidentiality means that information may have names attached to it, but the researcher holds it in confidence or keeps it secret from the public (Neuman, 2006:139). With regard to anonymity the researcher worked towards protecting the privacy of the participants by not disclosing the identity after information had been gathered. It means that the participants will remain nameless and anonymous (Neuman, 2006:139).

- **Informed consent**

Before data was collected, participants were informed about the study, the reason the research is being done and what the information will be used for once the study is complete. Informed consent was ensured as a safeguarding of individuals' rights to freely participate or not to participate in a research study (Grinnel & Unrau, 2011:91)

1.8. Chapter outline

The study layout is as follows:

Chapter 1: Overview of the study

This chapter provides an introduction and orientation to the study. The chapter includes the problem statement and justification for investigating the topic. Furthermore, describing the research objectives and questions, research methodology and the contribution of the study.

Chapter 2: Drought- A theoretical perspective

This chapter presents the literature study on drought. The chapter discusses the theoretical orientation of drought, conceptualised drought, impacts of drought, and provided drought coping mechanisms implemented to reduce the impacts. The chapter further offers a theoretical orientation on intergovernmental communication with reference to intergovernmental relations.

The chapter also highlights the importance of communication in disaster management or disaster risk reduction.

Chapter 3:

Chapter 3 of the study will be in a form of an article to be published in the Jamba Journal and a copy of the article is provided in the chapter. The chapter presents the empirical findings, which consisted of qualitative data found during the research. The findings of the study are based on the analysis from the literature review.

Chapter 4: Conclusions and recommendations

Based on the findings described in the previous chapter, Chapter 4 provides solutions to the problem statement. Recommendations are highlighted. These recommendations are generated from the data analysis and stakeholders may consider these for future application in their disaster schemes. The chapter concludes with a discussion on the results found.

CHAPTER 2: DROUGHT - A THEORETICAL PERSPECTIVE

2.1. Introduction

Chapter 1 provided an overview of the study and conceptualised drought as a complex hazard. It further conceptualised the problem under investigation of how poor or lack of intergovernmental communication between the different government departments involved contributed to the delay of the 2013/2014-drought relief scheme in the Northern Cape Province. This was done to create an understanding of the underlying drought issues that were experienced during the implementation of the relief scheme. The purpose of this chapter is to firstly present, discuss and synthesise the existing body of knowledge and assumptions on drought. Secondly it is to highlight the importance of effective intergovernmental communication in addressing drought disasters and the communication processes that should be followed within government departments when addressing drought disasters. This is done to provide a solid literature foundation for the analysis and discussion on the implementation of the drought relief scheme by the Northern Cape Department of Agriculture Land Reform and Rural Development of the Republic of South Africa. Therefore, this chapter addresses the first and second objectives of the study, which are; to provide theoretical perspectives on drought disaster, and to provide theoretical perspectives for intergovernmental communication, with focus on drought relief schemes.

Drought affects all climatic zones, and has significant consequences in both developing and developed countries (Hayes *et al.*, 2004). Furthermore, droughts vary from region to region, and least developed countries (LDC's) have become the worst affected by the impacts due to physical, social and economic as well as knowledge and skill differences (Miyan, 2015:8). Drought is considered as Africa's principal type of natural disaster (Benson & Clay, 1998:287), further challenging and threatening sustainable development in Africa, as it has impacts on the economy, environment and social environment (UN, 2007:3). Additionally, drought occurs in high and low rainfall areas, but is extremely felt in countries that are located in arid and semi-arid areas such as the following African countries namely; Namibia, Malawi, Kenya, Botswana, Sudan, Morocco, Ethiopia and Somalia (Hosseini *et al.*, 2009:195; Wilhite, 2000:7; UNICEF, 2015). Approximately 60% of sub-Saharan Africa is considered to be susceptible to drought, with about 10 million people in the region facing hunger and starvation because of drought (Bahta *et al.*, 2016:39).

As part of the sub-Saharan Africa, communities in the southern African region face similar impacts of drought as the rest of the continent, where drought impacts on the biological, social and economic livelihoods of populations mostly living in rural areas (Vogel, 1995:190). In particular, drought impacts water resources, food security, health, infrastructure as well as the ecosystem services in southern Africa (Ziervogel *et al.*, 2014:606). Drought impacts are discussed in general

terms in section 2.5. Viewed as one of southern Africa's most frequent hazards, it is becoming unusual for drought not to occur somewhere in southern Africa each year (Unganai, 1994:1). With climate change drought will continue to challenge vulnerable people, becomes more frequent, rain more inconsistent, and high temperatures will increase the evaporation soil moisture (Mbilinyi *et al*, 2013:2). Particularly, in South Africa, communal livestock farmers are the most vulnerable to drought due to (i) lack of resources, (ii) lack of access to financial institutions and insurance, (iii) imperfect market systems, (iv) over grazed and highly degraded land, (v) lack of knowledge and managerial skills, and (vi) poor extension support (Batha *et al.*, 2016:40).

This chapter is structured as follows: section one serves as an introductory; in section two droughts is conceptualised in definitional terms and further provides the causes of drought and describes the different types of drought. Then follows section three which discusses drought impacts and drought coping mechanisms, which involves drought preparedness. Furthermore, drought relief schemes are discussed which involve assessments, implementation, coordination and its declaration. Finally, the last section discusses communication and in particular intergovernmental communication and the importance of addressing drought disasters.

2.2. Conceptualising drought

The preceding section introduced drought as a hazard as well as the chapter structure. This section provides drought definitions in order to provide an understanding of the concept, followed by the causes of drought and the different types. Hisdal and Tallaksen (2000), are of the opinion that drought is by no means unusual or unnatural further concluding that drought is by far the most costly to society in comparison to all the natural hazards and resultant natural disasters. It kills more people and animals than the combined effects of hurricanes, floods, tornadoes and wildfires (Olaleye, 2010:8). Moreover, unlike other hazards that quickly come and go, drought as a slow onset hazard evolves slowly, is uncertain and not readily perceptible (Zamani *et al.*, 2006:679).

Most notably, drought differs from other hazards, because it does not have a universal definition (Wilhite, 2000:4; Hayes *et al.*, 2004). There are a multitude of definitions as drought is defined according to the characteristics of each climatic regime and specific impact sector or application to which the definition is being applied (Wilhite *et al.*, 2007). Misha and Singh (2012) are of the opinion that for drought not to have a precise definition is based on the differences in hydro-meteorological variables and socio-economic factors as well as the stochastic nature of water demands in different regions around the world.

Drought affects practically all climatic regions and more than half of the earth is prone to drought each year (Kogan, 1997; Wilhite, 2000). According to Hisdal and Tallaksen (2000) drought is

considered to be extreme rainfall deficits and the resulting periods of low flow of water, which can have severe effects on water management in terms of river pollution, reservoirs design and management, irrigation and drinking water supply.

Tannehill (1947), summarises in three ways in which drought differs from other hazards; first, that it is a “creeping phenomenon”, which makes its onset and end difficult to determine. Wilhite (2000:3) states that although Tannehill used this terminology over fifty years ago, climatologists continue to struggle with recognising the onset of drought and scientist and policy makers continue to debate the basis for declaring an end to a drought. Secondly, the damage due to drought does not involve damage to infrastructure (unlike flooding and earthquakes). For example, drought may have impacts that result in heavy crop and livestock losses, whereas floods can cause extensive damage to both infrastructure and other productive capacity and can wipe out agricultural yields, depending on the agricultural cycle (Benson & Clay, 2000). Thirdly, the absence of a precise, common definition adds to the confusion about the occurrence and severity of drought. It is presented in the literature that definitions of drought should be region and impact specific for decision makers to be able to apply in a useful manner (Austin, 2008). The next section focuses on the different ways in which drought is defined.

2.2.1. Defining drought

Drought is a multifaceted phenomenon, which defies attempts to precisely, and objectively define (Thurow & Taylor, 1999:413). A survey of the literature reveals multiple and competing meanings of the term (Wilhite *et al.*, 2014:5). Much of the confusion to drought results from various perspectives of how to define drought, as most drought definitions are based on meteorological observations, agricultural problems, hydrological conditions and or socioeconomic considerations (Thurow & Taylor, 1999:414; Shah *et al.*, 2001:1095). Besides, there is a need to properly conceptualise the concept. A number of arguments are presented in the literature on how drought can be defined. Some scholars distinguish between conceptual and operational definitions when defining drought (Wilhite & Glantz, 1987, 2000; Mishra and Singh, 2012). Conceptual definitions refer to relative terms (e.g. a drought is a long, dry period). Furthermore, conceptualisation of drought is devised in general terms to help people understand the concept of drought as well as its effects (Olaleye, 2010:9), whereas operational definitions attempt to identify the onset, severity and termination of drought periods and are used to determine drought frequency, severity, and duration for a given return period. Below is a snapshot of some conceptual and operational definitions.

Conceptual definitions of drought:

Tannehill (1947:2) provides a description of drought as...

“the first rainless day in a spell of fine weather contributes as much to the drought as the last day, but no one knows precisely how seriously it will be until the last day has gone and the rains have come again...we are not sure about it until the crops withered and died”.

Wilhite's (2000:3) conceptual definition of drought is:

“as a hazard that results from deficiency of precipitation from expected or normal periods of rainfall, such as when it is extended over a season or longer period of times, and the amount of precipitation is insufficient to meet the demands of human activities and the environment”.

According to McKee *et al.*, 2000 in Monacelli (2005:7) drought is

“...shortage of water, usually associated with a deficiency of precipitation”. In this regard drought occurs when a demand for water exceeds the supply of water.

According to Wisner *et al.* (2004) drought is conceptualised as...

“a trigger event that causes damage by exploiting underlying social vulnerabilities within population exposed to its effects”.

On the other hand, operational definitions of drought attempt to “identify the precise characteristics and thresholds that define the onset, continuation and termination of drought” (Wilhite, 2000:9). An operational definition of drought specifies the degree of departure from average of the precipitation or some climatic variables over a period (NDMC, 2006)”.

According to Hazelton *et al.* (1994:3) drought is a:

“condition resulting in a reduction of the utilisable water resource in a region or specific to the extent that the community do not have sufficient or enough access to water resources”.

Additionally, Jacques (1996:35) defines drought as:

“a period of low rainfall availability which is below the requirements of the communities in a specific geographical extent and below the community's ability to sustain the deficit without damage to their agricultural production (livestock and crops) and excessive costs to recover”.

According to Folger *et al.* (2012:4) drought is considered relative to some long-term average condition, or balance, between precipitation, evaporation, and transpiration by plants (evaporation and transpiration are typically combined into one term: evapotranspiration).

The understanding of drought depends on an individual's understanding and or perception of it. Drought also depends on the area, which is affected as well as the environment and economy of the affected area (Olaleye, 2010:9). Therefore, for this study, the following characteristics of the operational and conceptual definitions form part of the drought definition: drought is defined as a climatic event, which occurs due to shortage of rainfall or rainfall below expected levels, causing dryness in a specific area and restricting some type of activity (Wilhite *et al.*, 2006:764). It does not have a precise beginning and end as it affects the water demand of the area for agriculture or human use.

Drought is an insidious hazard of nature, which, originates from a deficiency of precipitation over an extended period of time, which is usually a season or more (Hosseini *et al.*, 2009:190; Lupu *et al.*, 2010:102). The lack of rainfall or precipitation extends over a certain rain period or season, which causes insufficient water resources in the area to meet the needs of the community and the environment (Wilhite & Buvhaman-Smith, 2005:86). The ambiguity associated with definitions of drought causes confusion and indecision, which results in either inaction or ad hoc responses (Thurow & Taylor, 1999:413; Wilhite & Glantz, 1985). The following section discusses and explains the causes of drought briefly.

2.3. Causes of drought

The preceding section presented the different definitions of drought and observed that the lack of precipitation is common to all types. The section concluded with highlighting that drought is mainly a result of the lack of precipitation. In agreement, Vogel *et al.* (2000:108) argue that the primary cause of drought is the deficiency of water and rainfall. Incidentally, if dry periods persist and water supply problems develop, the dry period can become a drought (USGS, 2015:1). Water deficiency can result in a shortage of water necessary for the functioning of natural or human activities, which may cause economic and social stress throughout the affected areas. (WFD, 2006:13). In the same way, lack of precipitation or deficiency of water, which is a meteorological phenomenon, may be referred to as natural drought (Van Loon, 2015). According to Van Zyl (2006:13), a natural drought can be traced to anomalies in general atmospheric circulation. This shows that drought may occur in all climatic zones and is a normal, recurring aspect of the climate.

As such, drought results from anomalies in large-scale circulation of the atmosphere which results in El Nino South Oscillation phenomenon (McNab & Karl, 2013:1). The El Nino phenomenon is a pattern that describes the unusual warming of surface water. El Nino is the warming of the tropical pacific which is estimated to occur on average every three to seven years and lasts for 12 to 18 months (McPhanden, 2001:1). Furthermore, as it affects the climatically state of the tropical

ocean, it has characteristics in temperature, pressure and precipitation, which are usually, present in the ocean and continental regions (Gamarra, 2007:1). In addition, during an El Nino episode, the normal patterns of tropical precipitation and atmospheric circulation are disrupted, which then triggers extreme climate events around the globe such as drought (FAO 2014:1).

The El Nino conditions are known to shift rainfall patterns across the pacific region. These may differ from one El Nino to another, but the strongest shifts remain consistent in terms of location and season (UN, 2015:2). Furthermore, the main threat comes from reduced rainfall and drought in some regions (Economic and Social Commission for Asia and the Pacific, 2015:3). El Nino events change the likelihood of particular climate patterns around the globe, but the outcomes of each event are never exactly the same. The following section discusses the different drought types. The subsequent paragraph pays attention to the literature available on this matter.

2.4. Types of drought

As reflected in the discussion of the definitions in section 2.2, Wilhite and Glantz (1985); Thurow and Taylor (1999:414) indicate that most definitions of drought are based on meteorological observations, hydrological conditions, agricultural problem and socio-economic considerations. Bang and Sitango (2003:64) explains that the four types of drought (meteorological, hydrological, agricultural and socio-economic) correspond to levels of severity and as a result, this classification is mainly used when measuring the severity of a drought in a geographical area. Furthermore, perceptions of drought depend on how the nuances of the four classes are blended (Thurow & Taylor, 1999:415). Each of these types is briefly discussed in the following sub-section.

2.4.1. Meteorological drought

Meteorological drought perspective refers to the significant decrease from the climatologically expected precipitation (Thurow & Taylor, 1999). These expectations vary with location and are often cite specific. Thus, Wilhite (2000:11) posits that meteorological drought definitions should be considered as region specific because the atmospheric conditions that result in deficiencies of precipitation are climate regime dependent. Moreover, Hisdal and Tallaksen (2000:3) states that meteorological drought is expressed or described as precipitations negative departure from normal over some period of time. A meteorological drought can develop rapidly and end abruptly as the transition can occur over night (Heim, 2009:1149). Moreover, meteorological drought occurs when there is reduction in rainfall for a certain period (day, month, season or year) and causes dryness in the surface layers, which occur at a time during the growing season and may result in agricultural impacts such as reduces crop yields (Ramamasy & Baas, 2007:11; Heim, 2009:1149). For instance, in some areas a period of six months without rain will be considered drought while in another area the period might extend to two years. The next sub-section

discussed hydrological drought, which are usually noticed after some time after meteorological drought; first, precipitation decreases and after a certain time those water levels in the rivers and lakes drop (Department of Environment, Climate Change and Water, 2006:1).

2.4.2. Hydrological drought

Hydrological drought perspectives focus on drying of streams and rivers, depletion of water stored in surface reservoirs and lakes, lower than normal snow packs in mountains and the decline of ground water levels (Thurrow & Taylor, 1999). Ramamasy and Baas (2007:11) and Austin, (2008:7) view hydrological drought as deficiencies in surface and sub-surface water supplies, which is determined by measuring stream flow, lake reservoirs and groundwater. Van Loon (2015:363) states that hydrological droughts do not only depend on the atmosphere, but also on the hydrological processes that feed moisture to the atmosphere and cause shortage of water and runoff to streams. According to Wilhite (2000:11), the frequency and severity of hydrological drought is defined at the river basin scale. Hydrological drought phenomena's have a great impact on the areas with restricted water resources and adverse structure of water balance. Factors whose activity is considerably stretched in time also determine water shortage (Tomaszewski, 2014:278). Drawing from Linsley *et al.* (1975) in Thurrow and Taylor (1999), hydrological drought can be summarised as a period when surface water and ground water availability is inadequate to supply established uses. Drought impacts on both surface and ground water resources can lead to reduced water supply, deteriorated water supply and crop failure (Mishra & Singh, 2010: 203). Wilhite (2000:1) further maintains that the main impacts on the water resource systems, can lead to a loss of agricultural production in farming regions.

2.4.3. Agricultural drought

Ramamasy and Baas (2007:12) defines agricultural drought which is the main focus of this study, as the lack of soil moisture to meet the needs of a particular crop at a particular time. According to Thurrow and Taylor (1999:414), drought from an agricultural perspective occurs when low soil moisture causes extreme plants stress and wilt, lower grain yield or results in lower than expected forage production. Definitions of drought in this perspective integrate the timing and amount of precipitation with plant water demand and available soil water. "An operational definition might compare to the daily precipitation values to evaporation rates in order to determine the rate of soil moisture depletion, or measure soil moisture directly. In the same way it can express the relationships in terms of drought effects on plant behaviour (i.e. growth and yield) at various stages of crop development" (Wilhite & Glantz, 1985:6; WFD, 2006:15).

Notably human activities contribute to this type of drought (Bruwer, 1993:199). One consequence of human activities has been soil erosion, as cultivation spreads into drier areas, formerly used

for livestock (Bruwer 1993:199). In turn the rangelands become overgrazed with degradation of the resource base (Van Zyl, 2006:32). Typically, agricultural drought is evident after meteorological drought (when rainfall decreases) but before hydrological drought (when the level of rivers, lakes decreases) (WFD, 2006:15). Agricultural drought links meteorological to agricultural impacts such as soil moisture and crop yields, and the impacts are crop specific, for example with maize there is impaired growth and reduced yields (Austin, 2008:7).

Moreover, to a farmer or agricultural producer, drought is a period of moisture deficiency that affects the crops under cultivation; even two weeks without rainfall can stress many crops during their period of the growing cycle (US Geological Survey's (USGS), 2015:1). From the above definition, agricultural drought may be summarised as the unavailability or insufficiency of water for particular crops to grow in an expected time. With a low amount of rainfall, crop production as well as livestock production is affected. Agricultural droughts lead to socio-economic droughts due to the recurrent impacts on the harvest crops that provide food security in households (Wilhite, 2000). The next sub-section discusses socio-economic drought.

2.4.4. Socio economic drought

This type of drought is based on the impacts of meteorological, hydrological and agricultural droughts on the supply and demand of economic goods or services (Wilhite, 2000:12; NOAA, 2015:2). Socio-economic drought differs from other drought types, as this type of drought is concerned with the relationship between supply and demand for economic goods, which are dependent on precipitation. In most cases, water demands increase as a result of increasing population and per capita consumption (Olayeye, 2010:13). Ramamasy and Baas (2007:11) states that socio-economic drought occurs when physical water shortage starts to affect people, which serve as unity between drought and human activities. Thurow and Taylor (1999:414) shares similar views and indicates that socio-economic drought perspective recognise drought only when it tangibly affects people's lives in terms of their behaviour and options such as water rationing and increased water pricing.

According to UNISDR (2007:6) agricultural, hydrological and socio economic drought occur less frequently than meteorological drought, because the impacts in these sectors are related to the availability of surface and subsurface water supplies. Furthermore, meteorological drought is a more a natural event resulting from multiple causes. Agriculture, hydrological and socio-economic droughts, however place greater emphasis on the human or social aspects of drought, highlighting the interaction or interplay between the natural characteristics of meteorological drought and human activities that depend on precipitation to provide adequate water supplies to meet societal and environmental demands (WMO, 2006:8). Figure 2.1 below shows the relationship between the different drought types.

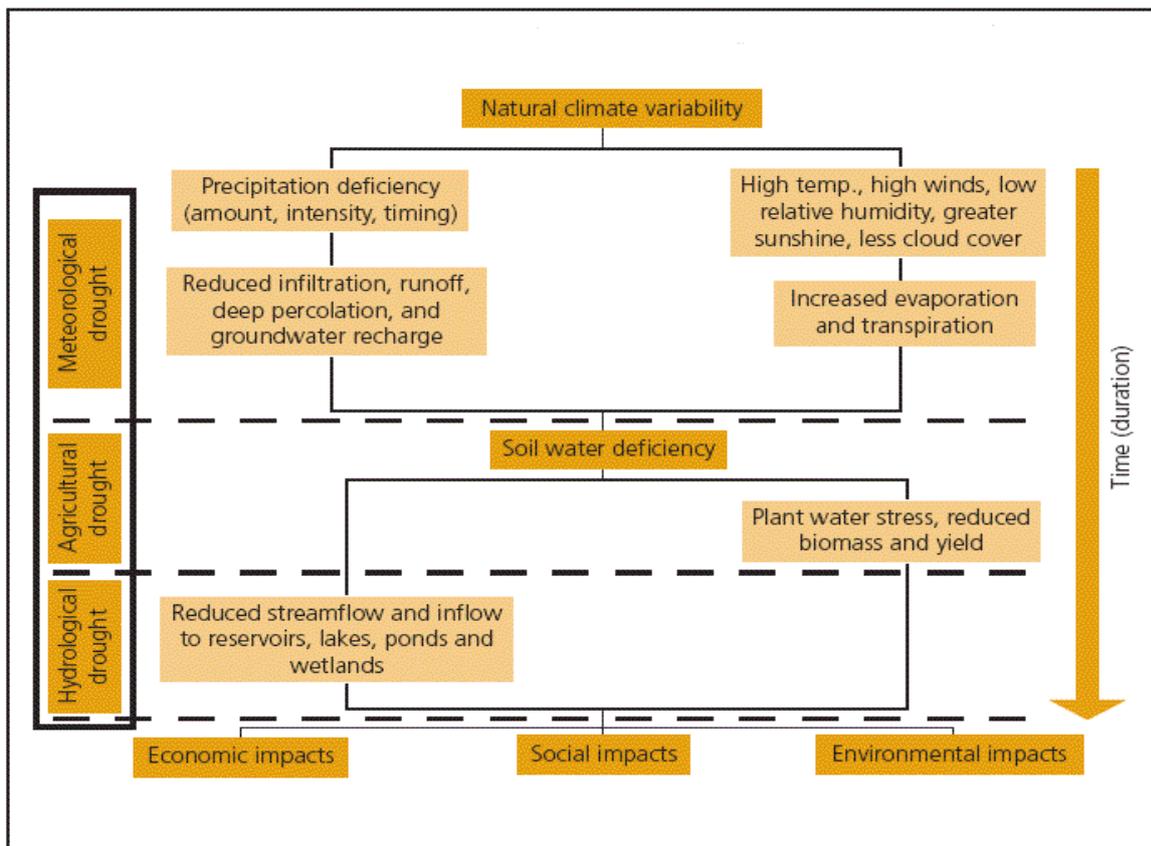


Figure 2.1: Relationship between different drought types (Source: National Drought Management Centre, 2006)

Agricultural drought links various characteristics of meteorological or hydrological drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evaporation, reduced groundwater and so forth. Furthermore, hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural drought (National Drought Mitigation Center (2016:1) The direct linkage between the types of drought and precipitation deficiencies is reduced over time because the way these systems are managed affects water availability in surface and subsurface systems (WMO, 2006:9). When drought occurs in different sectors, such as the agricultural sector is usually the first to be affected. Even when meteorological drought is over, the adverse economic impacts may persist for several years, depending on the nature of the drought. In addition, time and intensity aggregate impacts of drought and depends on spatial covariance (regional or local) (Pandey & Bhandari, 2009:14).

Each region or watershed is unique, and the societal characteristics for that area or basin are dynamic in response to numerous factors, and the impacts of drought is expected to differ markedly because of the changes in social characteristics (Wilhite, *et al.*, 2007:766; Wilhite, 2008:24). The impacts that occur from drought are the result of interplay between a natural event (precipitation deficiencies because of natural climatic variability) and the demand that human-use

systems places on water and other natural resources (Wilhite *et al.*, 2007:766). The next section focuses the discussion on the impacts of drought.

2.5. Impacts of drought

Droughts have significant impacts in both developed and developing countries. The level of development, government policies and institutional capacity, technology and the political systems determines the magnitude of these impacts (Eriyagama *et al.*, 2009:1). In the 415 plus drought events experienced between the 1970 and 2003, almost 1.5 billion people were affected worldwide which resulted in economic damages and food insecurity. (Kellett & Sparks, 2012:23). Drought impacts extend to areas beyond the area that is physically experiencing drought and linger for a certain period of time after the drought has ended (Vogel *et al.*, 2000:350). The impacts of drought can be classified as direct or indirect. Reduced crop, increased fire hazards, reduced water levels, increased livestock and wildlife mortality rates and damage to wildlife are examples of direct impacts of which the consequences of these result to indirect impacts (Wilhite & Vanyarkho, 2000: 248). An example of indirect impacts would be that the reduction in crop may result in reduced income for farmers, increased price for food, foreclosure on bank loans to farmers and businesses, mitigation and disaster relief programmes, loss of income, occupational displacement, rural-urban migration, social and political conflict (Wilhite & Vanyarkho, 2000:247; Smucker, 2012:259).

The slow pace and long duration of drought makes it difficult to quantify the overall impacts (Ding *et al.*, 2010). Drought impacts are the result of exposure to the drought hazard (i.e., probability of occurrence) and a combination of economic, environmental and social factors (Wilhite, 2000:13). Knowledge on drought impacts is important in order to reduce these exposures. Furthermore, drought in itself is not a disaster, however, for drought to become a disaster depends on the impacts on society, economy, the environment and a community's ability to cope and recover from drought (Wilhite, 2009:5). Consequently, drought becomes a disaster when both natural and human environment becomes highly vulnerable to the adverse impacts and severe effects as a result of the drought hazard (UNEP, 2004). The impacts of drought are diverse and Wilhite and Vanyarkho (2000) classifies it as: economic; environmental; and social.

2.5.1. Environmental impacts

The Environmental impacts of drought involve environmental degradation, which mainly result from damages to plants and animal species, wildlife, habitat and air quality. Furthermore, the impacts can be short term as the conditions may return back to normal following the end of a drought (Wilhite & Vanyarkho, 2000:247). Vogel *et al.* (2000:349) emphasizes that the impacts of drought on the environment vary with each drought. However, other impacts may last a long

period, into a post-drought. Fafchamps *et al.* (1998:274) explains that the impacts may be so severe that they become permanent even after drought coping mechanisms. Furthermore, drought acts as a stimulant of land degradation, through reduction of soil moisture and water retention capacity (FAO, 2016:1). As a result, land degradation is enhanced during periods of drought because of the drying out of topsoil and the effective loss of soil structure. It is therefore important to note that dry topsoil gets easily blown away, and wind and rainfall leads to further erosion (Habiba *et al.*, 2011:39).

Severe drought may cause land degradation and this can destroy biological productivity in the areas, which will decrease agricultural and economic production in an area that is dependent on those productions for several years (Vogel *et al.*, 2000:357).

2.5.2. Economic impacts

Drought is a hazard that causes economic hardship in a country (Lupu *et al.*, 2010:108). The Economic impacts of drought spread throughout the economy of a region with links between markets of primary products, whose production relies on water availability and the economic activities that process them (Gil *et al.*, 2012:2680). As such economic impacts are primarily felt in the agricultural sector (Wilhite, 1993:10). For instance, agricultural dependent businesses conduct less business and lose capital, thereby increasing their potential for bankruptcy (Knutson *et al.*, 1998:6). As a result, banks are then reluctant to loan more funds, extend loans to farmers and agriculture businesses. Other economic impacts include more unemployment, increase in food prices and overall distribution of food supply (Wilhite, 1993:10). Olaleye (2010:16) states that in a society where agriculture is the primary economic activity, the direct or the first order impact of a drought is detected in the form of a reduction in food production and forest productivity, which affects the society. Examples of drought impacts on the society include anxiety or depression about economic losses, conflicts when there is not enough water and higher incidents of heat stroke, and even loss of life (NOAA, 2015:1).

2.5.3. Social impacts

Drought has social impacts on all affected societies. In addition, drought affects human health both physically and emotionally, in both rural and urban areas (Vogel *et al.*, 2000:357; Knutson *et al.*, 1998:20). Subsequently, some emotional social impacts include the potential of family distress and conflict, divorce and may even lead to suicide (Lupu *et al.*, 2010: 109). Physical impacts would be conflicts over water between neighbours or with government officers, which then raises a public safety concern (Knutson *et al.*, 1998:20). Social impacts of drought increase environmental and economic impacts when assessed and analysed (Wilhite & Glantz, 1998:112).

Furthermore, social droughts may cause migration, where women or men have to go to other places for work as drought may cause financial strain on families.

After drought disasters, communities respond to drought impacts. However, it is important to know how sustainable such responses are. Ouma (2011:20) states that drought impacts depend on the severity, the history of drought events and the underlying resilience of the pastoral system. Therefore, the correct diagnosis of the origin of drought impacts is essential for effective planning. The following section will discuss drought preparedness and mitigation measures as activities used in order to respond to the drought impacts.

2.6. Drought coping mechanisms

During droughts, communities around the world adopt strategies to help reduce their risk and other are used to deal with losses that do occur (Pandey & Bhandari, 2009:13). Coping is an elaboration of short-term strategies adopted in response to crises or events but it depends on whether they help to reduce risk or reduce the impacts after the production shortfall has occurred (Adams *et al.*, 1998; Pandey *et al.*, 2006:5). Coping mechanisms are remedial actions within an existing structure that people undertake when their survival and livelihoods are compromised or threatened (Olaleye, 2010:18; WHO, 1999:5; Eriksen *et al.*, 2005). Furthermore, drought coping mechanisms are made up of a number of drought mitigation measures such as ecological, social, environmental and technological measures which are aimed at alleviating drought impacts and equalise losses (Hazelton *et al.*, 1994:31; Holm & Morgan 1985:468).

Communities are the first to suffer and experience drought consequences (Habiba *et al.*, 201:40). Communities that are faced or have been faced with drought situations for many generations develop strategies to lessen the impacts of drought (Masendeke & Shoko, 2013:138). Furthermore, communities adopt drought coping strategies that are appropriate for the area they live in and in most cases are those, which have been used before. This is normally based on experience and knowledge of drought and understanding the impacts. For instance, farmers who are exposed to drought, develop strategies over time, which are incorporated into the nature of farming systems. Farmer's strategies are guided by the assumption that the drought event will follow a familiar pattern and that their earlier actions will be reasonable guide for similar events (Ndlovu, 2011:38). The classification of drought coping strategies depends on whether the strategies can help reduce the risk or alleviate the impacts on the shortfall in the production in a certain period. As such, drought coping strategies can be classified into ex-ante (before) and ex-post (after) strategies (Hazelton *et al.*, 1994:31).

2.6.1. Ex-ante drought coping strategies

Ex-ante strategies can be grouped into two categories; those that reduce risk by diversification (the principle of simply not putting all eggs in one basket) and those that do so by imparting greater flexibility in decision making (Pandey & Bhandari, 2009:16). Furthermore, *ex-ante* strategies help reduce fluctuations in income and are referred to as income-smoothing strategies (Hazelton *et al.*, 1994:31). The income smoothing strategies are ways in which farmers use to protect themselves against income shock before it actually happens. This is achieved through adopting conservative production choices and diversifying economic activities (Lekprichakul, 2009: 115). For instance, the reduction of income fluctuation can be reduced by growing several crops that have negative or weak correlated returns (Pandey, 2007:16).

Additionally, communities respond to drought through migration strategies. When peoples' abilities to acquire food is minimised, they tend to move out to other areas to source food or seek temporary or permanent employment (Masendeke & Shoko, 2013:138). According to Lekprichakul (2009:115) this strategy is a form of risk avoidance. Furthermore, some farmers like the rice framers in southern China, plants sesame and soybeans in place of rice when drought occurs, during the rice-planting season. This helps as loss reducing and income compensating strategies (Ding *et al.*, 2007:171). These are strategies that the community has adopted and implemented which are effective in their regions.

Government strategies as Willhite *et al.* (2014: 8) outlines, involves the development of pre-impacts programmes that are intended to reduce vulnerability and impacts of drought. These are referred to as mitigation measures. According to Wilhite (2014) mitigation measures may include: establishing early warning systems; improving seasonal forecast; constructing reservoirs; connecting water suppliers between neighbouring communities; drought planning; awareness building and education. The last strategy is the development and implementation of preparedness plans and policies, which include organisational frameworks and operational arrangements that government or other entities developed in advance of drought and maintained in between drought episodes (Wilhite *et al.*, 2014:9). One way of reducing the impacts of drought is through preparedness. For instance, preparedness plans are helpful in dealing with the extended periods of water shortage in a timely manner as they evolve (Wilhite *et al.*, 2005:96).

2.6.2 Ex-post drought coping strategies

According to Heltberg *et al.* (2009:95) *ex-post* drought coping strategies are actions taken to make up for losses after realising the impacts of a drought event. Furthermore, *ex post* strategies are then designed to prevent shortfall in consumption when income drops below what is necessary for maintaining consumption at its normal level (Pandey & Bhandari, 2009: 14). One of the

strategies that farmers in most communities have increasingly applied, is the disposal of livestock. Ndlovu (2010:40) conducted a study in Zimbabwe and observed how community members sold livestock to buy supplementary feed to save other cattle during drought years (Ndlovu, 2011:40). Davies (1996) shares similar views and indicates that buying and selling livestock is a recognised strategy to cope with income fluctuations due to drought in many rural communities.

Government adopts strategies to help communities cope with drought. Common practices, which are followed by both developing and developed countries, are post-impacts government or non-government interventions (Wilhite *et al.*, 2014). These interventions are relief measures in the form of emergency assistance programmes, and are aimed at providing money or other specific types of assistance (e.g. livestock feed, water and food) to victims of drought (Wilhite *et al.*, 2014:8). For instance, in Maharashtra state, India the government undertook relief measures, which include provision of employment, supply of drinking water and distribution of fodder to farmers affected by the 2012 drought event (Udmale *et al.*, 2014:261). In addition, governments assist with agricultural loans, crop insurance schemes and waived electricity bills depending on the intensity of the drought (Udmale *et al.*, 2014:261). Governments also provide assistance or relief to support losses due to drought as a mitigation strategy. Wilhite and Buchanan-Smith (2005:16), adds that government policies come into place in ways such as developing programmes targeted to the poorest, in order to strengthen their asset base.

Kesharvaz *et al.* (2010) indicates that efforts to address droughts at a government level cannot be successful without effective involvement of the farmers in carrying out their response strategies. The intervention of government is to provide relief for the affected producers with regard to both the individual farmer's needs and the impact nationally of low return from a drought-affected sector (Robinson, 1982:67).

2.7. Drought preparedness and mitigation measures

The coping capacity of individuals and communities to deal with drought events can be increased through the application of preparedness measures (Hosseini *et al.*, 2009; Sivakumar & Wilhite, 2002: 276; Wilhite *et al.*, 2005:97). In the absence of mitigation or preparedness measures, the impacts of drought may wear down the resources or assets of a community, leaving them even more vulnerable to future drought events (Wilhite & Buchanan, 2005:15). The UNISDR (2007:43) reported that the goal of preparedness and mitigation is to reduce vulnerability and to foster an adaptive drought resilient society. Wilhite *et al.* (2005:97) states that drought preparedness involves monitoring and forecasting, vulnerability/resilience and impact assessments, and mitigation, response planning measures. Preparedness looks at the pre-drought activities, which are designed to increase the level of readiness or to improve operational and institutional capabilities for responding to a drought episode (Gupta *et al.*, 2011:1802; Wilhite, 2002: 276).

The drought preparedness, prevention and mitigation phases in the disaster management cycle are depicted in figure 2.2 below.

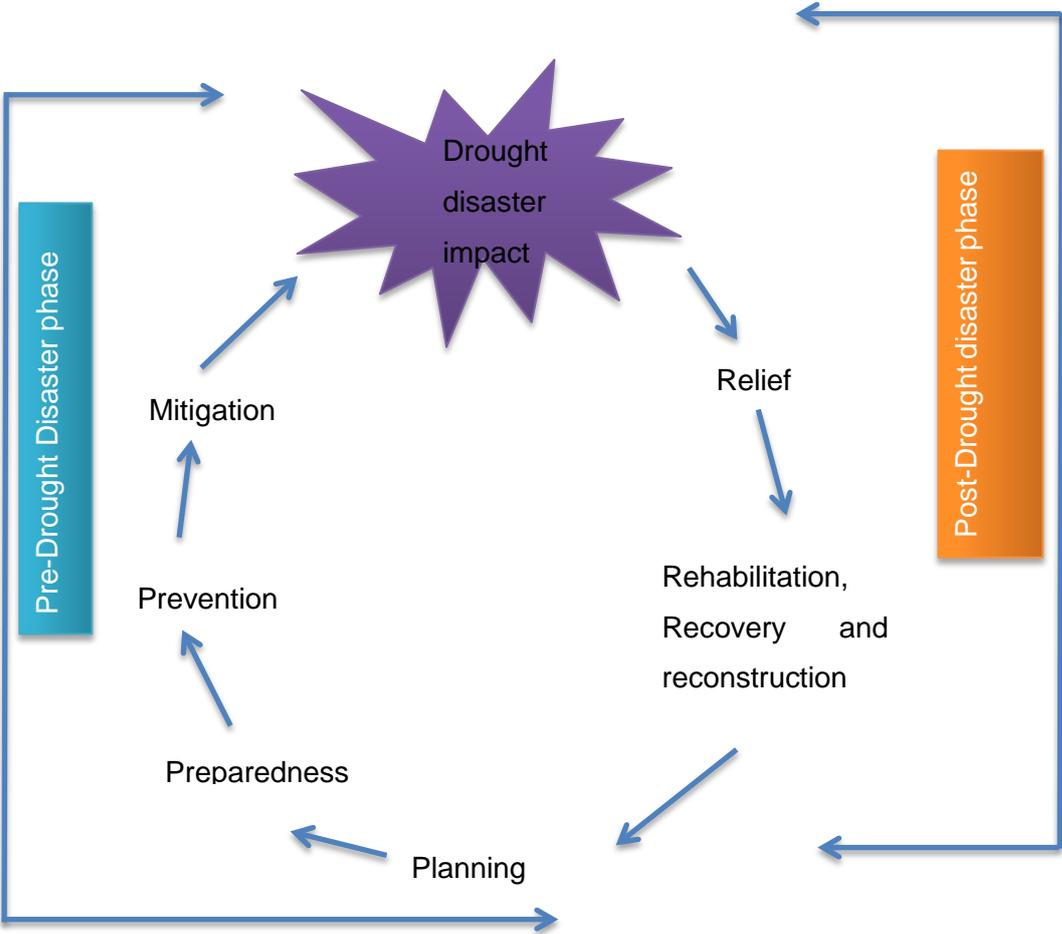


Figure 2.2: The Disaster Management cycle (Adapted from Van Niekerk, 2005)

In this study, drought preparedness is defined as the knowledge and capacities that government's professionals, response and recovery organisations, communities and individuals have developed to effectively anticipate, respond to and recover from the impacts of drought (UNISDR, 2009). Like with all other hazards, environmental, social and economic impacts of drought can be reduced through mitigation and preparedness (Wilhite *et al.*, 2005:98). According to Solh and Ginkel (2014:63), although drought is an event that cannot be prevented, intentions can be made to (a) better prepare for drought; (b) develop more resilience ecosystems to recover from drought; and (c) to mitigate the impacts of drought. Drought preparedness measures are similar to the concept of disaster management which mostly deals with pre-events or pre-disaster phase actions that can be taken in order to reduce human, environmental and economic impacts (Paula *et al.*, 2014:96; Van Niekerk, 2005:49). Hamdy (2010:318), supports that drought preparedness helps provide an opportunity for decision makers to identify sectors that are vulnerable to drought and also investigate management options before a crisis can occur and thereby decide on and implement the appropriate cost effective strategies in a systematic and strategic manner. Drought

preparedness measures ensure the organised mobilisation of personnel, funds, equipment and suppliers within a safe environment for effective relief (Sena & Micheal, 2006:4).

Drought mitigation focuses on short-term and long-term actions, programmes and/or policies implemented in advance of drought or at its early stages, to reduce the degree of risk to people, property and productive capacity (Knutson *et al.*, 1998:11). In the context of this study, mitigation is viewed as future orientated actions, which are taken prior to or during drought disasters, which are focused on reducing any potential impacts of drought (as demonstrated in Figure 2.2). Drought mitigation entails putting plans in place that will ensure that the community survives the adverse impacts of drought (Mhambi-Musimwa, 2009:7). Farmers use strategies such as; changing crop calendars, using low water consuming crops, no sowing, using improved irrigation practices and reducing water wastage during drought (Udmale *et al.*, 2014:260).

2.8 Implementation of drought relief schemes in South Africa

Droughts are certain to occur; and therefore, droughts should be expected (Thurow & Taylor, 1999:417). Agricultural communities and farmers are regularly faced with drought impacts, which destroys and has devastating effects on agriculture (IFRC, 2013:1). Agriculture suffers first from prolonged, abnormal dry periods of insufficient water for users' normal needs (Maifo, 2011:11). Drought disasters are events waited for and only after disaster has struck, would remedial action be taken to ensure speedy return to normality (Moore, 1956:733). Figure 2.2 provides a graphical representation of the Disaster Management Cycle. In the cycle, drought relief is used as a response to drought that has affected a certain population (Maifo, 2011:11). Drought relief forms part of the post-disaster phase which focuses on assisting communities that are affected by drought and work towards rehabilitation and recovery from the drought situation. Furthermore, Munemo (2012:7) explains that drought relief is a government initiated and government funded scheme, which intends to provide segments of the population with temporary assistance for the duration of drought.

In South Africa, relief schemes as are provided for in the Drought Management Plan of 2005, and are developed to compensate farmers in the event of losses resulting from veld fires, floods, and drought. Vogel *et al.* (2009:16), states that drought schemes have evolved since the 1980's in South Africa. Assessments prior to and during the drought event are used as a basis to declare the state of drought disaster (Samra, 2004:6). This declaration is important because it helps government to make provision for and distribution of drought relief (South African Green Paper on Disaster Management, 1998). The declaration must be initiated at local level and escalated to provincial and national level in cases the local and provincial governments may not have the necessary resources and capacity to cope with drought (Bhandari *et al.*, 2007:104; South African Green paper on Disaster Management, 1998:21).

In the event of a local drought disaster, the council of a municipality having primary responsibility for the co-ordination and management of the disaster, may by notice in the *Provincial Gazette*, declare a local state of disaster in terms of section 55(1) of Disaster Management Act 57 of 2002. If local state of disaster has been declared, the municipal council can institute by-laws or issue directions to prevent an escalation of the disaster, or to alleviate, contain and minimise the effects of the disaster amongst others. A municipal state of disaster that has been duly declared lapses three months after it has so been declared, together with any by-laws attached thereto. It may also be extended one month at a time by notice in the *Provincial Gazette*. In the event of a provincial disaster, the Premier of the province, after consultation with the Members of Executive Council (MEC) or Cabinet may by notice of the *Provincial Gazette* declare a provincial state of disaster (section 41 (1) of Disaster Management Act 57 of 2002). If a provincial state of disaster has been declared, the Premier may make regulations or authorise the issue of directions concerning the release of resources or other steps that may be necessary to prevent an escalation of the disaster, or to alleviate, contain and minimise the effects of the disaster amongst others (Disaster Management Act, 2002). In the event of a national disaster, the Minister may in the *Gazette* declare a national state of disaster (section 27(1) of the Disaster Management Act 57 of 2002).

If a national state of disaster has been declared in terms of subsection (1), the Minister may after consulting the responsible Cabinet member, establish regulations or issue direction or authorise the issue of direction concerning a) the release of any available resources of the national government, b) the release of national organs and personnel of state for the rendering of emergency services and c) the implementation of the provisions of a national disaster management plan that are applicable in the circumstances. The South African National Disaster Management Framework of 2005 (Key Performance Area 4-section 4.2) and Disaster Management Act of 2002 (section 41 and 55) makes provision for the declaration of a state of disaster at local, provincial and national level. Research by Van Niekerk (2014) indicates that the process and procedures for declaring a state of disaster are unclear and cumbersome. Both the NDMF and DMA call for the development of uniform standards and guidelines, however these standards are yet to be developed. It therefore stands to reason that the declaration of state of disaster (all levels) will remain ambiguous.

Besides, drought relief schemes are set to help farmers manage crops and livestock during drought and help in the restoration of that resource after drought. The provision of drought relief schemes highlights the growing need for capacity and expertise to respond in a timely and effective manner to drought across the various farming communities (Vogel *et al.*, 2009:16). An important element in the provision of drought relief is the conduct of drought assessments (Wisner

& Adams, 2002:42; IFRC, 2000:8). The following section explores drought disaster assessments for a deeper insight into what it entails as well as the drought assessment processes.

2.8.1. Drought Assessment

Recurring droughts have resulted in the development of drought assessment indices (Wilhite, 1994; United Nations, 2005). The assessments are conducted before, during and after droughts. Drought assessment is defined as the assessment on both the probability on natural disaster occurrence and the degree of damage that the natural disaster has caused (Zhang *et al.*, 2002 in Zhang, 2004:134). Skavdal (2003:95) defines drought disaster assessment as the survey and information collection activities carried out to determine the effects of disaster victims, the stricken community and the society in general. Moreover, drought assessments are an integral part of response mechanism and a planning tool. Generally, a drought assessment is a part of the disaster information work.

Drought assessment is further explored as the process of determining the impacts which a disaster or hazard has had on a society; the needs and priorities for immediate emergency measures to save and sustain the lives of survivors; the resources available and the possibilities for facilitating and expediting longer term recovery and development (UN, 1991:1). Drought assessment is an interdisciplinary process involving on-site surveys and the collation, evaluation and interpretation of information from various sources. In this regard, Carter and Janzen, (2012) indicates that numerous indicators of drought should be monitored to determine the onset and progression of drought. Drought indicators are those variable that describes the magnitude, duration, severity and spatial extent of drought (Steinemann, *et al.* 2005). According to Mishra and Singh, (2012) a drought index is a prime variable for assessing the effect of a drought and defining different drought parameters, which include intensity, duration, severity and spatial extent. Several indicators for drought monitoring and assessment have been developed over the years (Mishra and Singh, 2012).

Most of these indicators are based on meteorological and hydrological variables such as precipitation, stream flows, soil moisture, reservoir storage and ground-water levels. This include such indicators as satellite derived indicators such as the Normalised Difference Vegetation Index (NDVI), Vegetation Condition Index (VCI) and Temperature Condition index (TCI) and remote sensing and Geographic Information System (GIS) techniques such as Standardised Precipitation Index (SPI) (**see** Gupta, et al. 2011; Mishra and Singh, 2010 and Steinemann *et al.* 2005 for a detailed discussion of the drought indices). It should however be noted that every indicator has its limitations and successes in drought detection (Mishra and Singh, 2012; Murad and Islam, 2011). For instance, in their study, Jordaan *et al.* (2011) uses the SPI to conduct their assessment and it left them with certain unanswered questions.

Thus it proves quite difficult to choose the index to use for assessment and thus if time and resources permits, it is recommended that several indices can be used in combination. As Carter and Janzen, (2012) indicates an effective drought early warning system must integrate precipitation data with other data such as stream-flow, ground-water levels, snowpack, reservoirs and dam levels. This might not answer all the questions regarding the perceived drought but it will rather improve the understanding of the emanating drought situation. Thus as Wilhite, (2007) indicates, developing a more comprehensive and integrated drought monitoring and early warning systems is an essential component of a more proactive, risk based management system.

Drought indicators are essential to drought preparation and response (Steinemann *et al.* 2005). According to Hayes *et al.* (2005) timely and accurate assessments must be conducted to determine the severity of the drought in order to develop appropriate responses. Risk management uses the information obtained through risk assessments to provide better ways for individuals and groups to reduce hazards or cope with their effects (Swaney 1996). Similarly, Jordaan *et al.* (2011) indicates that drought disaster risk assessment is the base for drought risk reduction planning. Most importantly, success in reducing drought risk largely depends on the openness with which the government cooperates with other stakeholders (Aklilu & Wekesa, 2006:32). Vogel *et al.* (2009) indicates that in order to work towards the reduction of drought disaster, capacity is needed in the sense that stakeholders or government departments have to work together and effectively in order to respond or to manage the event before it causes more impacts, which may lead to a community not being able to recover from. Therefore, all the stakeholders in drought management should co-ordinate their efforts in order to effectively reduce the impacts (Maifo, 2011:47). The next section conceptualises coordination and communication in the face of drought disasters with specific focus on South Africa.

2.9 Intergovernmental coordination and communication to reduce the impacts of drought

Effective communications amongst government departments is an essential prerequisite for actions on problems that affect those departments (Alesch, 1972:5). This includes such problems where decisions must be made among departments and where actions must be taken across departmental boundaries (Aleshc, 1972:6). As a result, public management is increasingly taking place in settings of networked actors who necessarily rely on each other (Kapucu, 2005:33). It has long been recognised that disasters represent occasions in which the boundaries between organisational and collective behavior are blurred (Comfort, 1999 in Kapucu, 2005). This as the emergent threats from disasters require more cooperation between various governmental agencies (Reynolds and Seeger, 2005:45). According to Kapucu, (2006), emergency situations and the dynamic disaster environment require that there is an effective flow of information across organisational boundaries. Thus for crisis and disaster management to be successful all involved must keep in contact with each other to allow information to flow (Kapucu, 2006). This makes

communication and coordination central issues for organisations involved in management of disaster risk (Haddow & Bullock, 2003 in Kapucu, 2006).

Reindrop and Wiles (2001:5) defines coordination as the systematic use of policy instruments to deliver relief in a cohesive and effective manner. For instance, in South Africa national government usually provide funding and requests a mechanism to ensure that provincial government and local government use the funding for proper purposes and in a proper way, thus, this is done through coordinated structure (Mastracco *et al.*, 1994:388). Therefore, according to Smith (1985:130) coordination of relief schemes should rather remain entirely the responsibility of all government level. Moreover, Comfort (2007:194) discusses that coordination as aligning one department's actions with actions of other department and/or organisations to achieve a shared goal. However, the capacity of coordination depends on communication. For instance, if the communication process does not evoke sufficient shared understanding amongst the stakeholders to align their priorities for action, the likelihood of achieving a mutual and stronger action will be seriously diminished.

On the other hand effective communication creates a shared understanding and trust between all stakeholders in intergovernmental settings (Illes & Mathews, 2015:13). Lunenburg (2010:1) suggests that communication is important as every administrative function and activity involves some sort of direct or indirect communication. Communication is inevitable for disaster risk management (DRM) and disaster risk reduction (DRR). The process of communication is not as easy as we would want it to be in both DRR and DRM. This is due to communication problems experienced in daily interactions, for instance poor work production or breakdown in political conversation as a result of either misunderstandings or a lack of communication. More seriously, nations have gone into war due to a breakdown in or lack of communication (Snoer, 2011:8). The following section examines disaster risk communication in order to prepare for a disaster, and the importance of communication amongst governmental departments during drought disasters.

One model used to achieve the task of communicating critical information to focused audiences is the bowtie architecture for decision support (Comfort, 2005 in Comfort, 2007:195). Figure 4 illustrates this model. The model identifies key sources of data that "fan in" simultaneously to a central processing unit, where the data are integrated, analysed and interpreted from the perspective and performance of the whole system. The new information is then "fanned out" to the relevant actors or operating units, which use information to make adjustments in their specific operations informed by the global perspective (Comfort, 2007:195). According to Comfort *et al.* (2010:62) the framework indicates that rapid mobilisation of dynamic intergovernmental systems that moves from individuals to governmental departments to system levels of action, analysis and aggregation of information is required to manage disasters.

Figure 2.3 illustrates how information should flow. Information is collected or “fanned in” from external sources, for instance when the South African Weather Services (SAWS) report that certain areas might be affected by low rainfall. Another example is when information from farmers flow to the local government, informing officials that they (the farmers) are experiencing low rainfall. Data is then integrated and stored in a knowledge base relevant to the community. In the case of the farmers, the data / knowledge would be: the number of farmers that are affected by low rainfall. Further data is analysed in terms of the potential impacts the low rainfall might have on the whole community and a report is then ‘fanned out”. This means that a report is sent out to the relevant stakeholders for a situation assessment to be conducted. Figure 2.3 focuses on real time communication to all relevant stakeholders.

The challenge remains to not only respond with accurate, understandable and complete information as quickly as possible during a disaster, but to also communicate in an effective and proactive way that involves members of communities or government officials to reduce the potential risk of disaster (Nyondo, 2006). Abarques and Murshed (2004:97), points out that the communication process is a continuous process of coding, decoding and interpretation and a way of sharing objectives, attitudes, knowledge, information and opinions, and it takes place in a social context where people take the roles of both source and recipient.

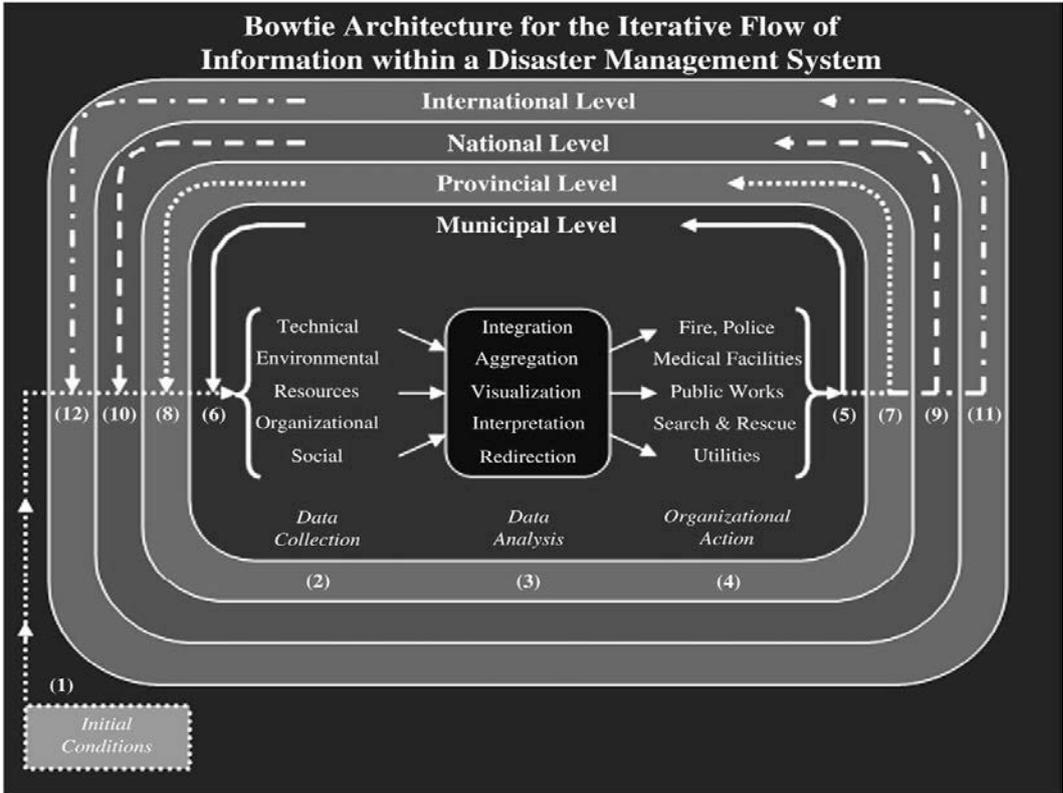


Figure 2.3: Theoretical framework of Bowtie for information within disaster management systems (Source: Comfort, 2007:196)

In communication for DRM or DRR the context in which the disaster takes place as well as the whole scenario of communication occurs, is extremely important and has a key role. For instance, the socio-cultural context of the society and scale of community (rural, small or mega) will determine how communication will be implemented. Moreover, communication takes place in a context of risk assessments, risk evaluation and risk intervention, making it a strategy to be executed as part of DRM (Snoer, 2011:9; Sagala, 2007:3; Abarquez & Murshed, 2004:96). Abarquez and Murrshed (2004) explains that risk communication is when different stakeholders listen to each other and form a common understanding about risks, their acceptability and actions to reduce those risks. Furthermore, the aim of risk communication is to ensure effective communication and agreement between stakeholders on different risk management measures and to improve transparency of decisions and increase the potential acceptance of the outcome.

Therefore, communication in disasters is the process of preparing for disasters and working towards the reduction thereof. It is important that all role players in the process are able to hear, confirm and understand the risk and then act upon it. This requires collaborations and trust between government agencies at all levels, the public and non-profit organisation in order to effectively respond and recover from disasters (Kapucu, 2005). The roles and responsibility of governmental agencies or bodies before and after disasters have an influence on communication and communication may be necessary to rebuild the trust of the community or citizens Snoer, 2011: 12). Kapucu (2005) further states that the success and failure of disaster risk management can be determined by communication between the organisations intending to address the situation. Therefore, communication amongst governmental departments is an essential prerequisite for actions on problems that affect those departments and the community (Alsech, 1972:5).

Particularly in South Africa, cooperation and intergovernmental relations between the three spheres of government is provided for in the Constitution of the Republic of South Africa, 1996. This Constitution envisages a state that supports interaction and co-operation among the three spheres of government on a continuous basis and therefore provides a set of principles to direct the manner and quality of those interactions (Malan, 2005:227). These institutions and organs of state must coordinate their actions and participate in an appropriate manner in cases where they have to exercise a statutory power or implement a policy that requires the undertaking of joint work or implementing concurrent functions, those organs of state (Malan 2012:115). Section 41(1) (h) (iii) stipulates that the three spheres of government must inform each other and consult with one another when matters of common interest are at stake. This makes information sharing an important aspect of the cooperation between the three spheres of government. Information sharing refers to the exchange of information between governmental institutions by, for example, attending conferences, congresses, seminars or making use of any other medium of

communication (Malan, 2005). This may be informed by telephone, e- mail and through informal meetings, or formal, for example meetings of the various intergovernmental relations structures (Malan, 2005).

As Kapucu, (2006:208) indicates acting effectively in disaster situations requires sharing and using information effectively. Given the multiplicity, diversity and interrelatedness of departments in addressing drought situation, makes intergovernmental communication a subject of vital importance. Communications is embedded in the process of organising, thus affecting the effectiveness and efficiency of the process and in turn the process of strategy implementation (Peng and Littlejohn, 2001:362). Peng and Littlejohn, (2001:362) further indicates that effective communication is a primary requirement of effective implementation of projects and programmes even though this effectiveness is not guaranteed.

2.9.1 Importance of intergovernmental communication during drought disasters

The previous section pointed out that communication amongst governmental departments or bodies is essential. Governments need to be aware of the intergovernmental communication importance. Governments may not always realise that communication is part of their job and is necessary in their functioning. Intergovernmental communication represents an important function of governance as it is considered to be a vital tool in binding government departments (see Table 2.1). It is also responsible for improving three principle elements of government: effectiveness (building broad support and legitimacy for programs); responsiveness (knowing citizens needs and responding to them); and accountability (explaining governments stewardship and providing mechanisms to hold government accountable) (Layman, 2003).

Table 2.1: Flow of information in government spheres (Adapted from Bornman *et al.*, 2009)

Level of government	Mandate
National Level (Head of departments)	Strategy development and decision-making: evaluation of information received and decision making of assistance to be given and determination of its format. Disseminate information on decisions taken through relevant channels
Provincial Level	Tactical level: Assess information received; compile reports with recommendations and forward to higher level.

District/ Local level

Operational level: Gather information and forward to the higher level

Alesch (1972:5) further gives three reasons for the importance of intergovernmental communication. Firstly, intergovernmental communication is important for dealing with clear-cut problems at a local level, such as getting a traffic signal at an intersection. Therefore, it is necessary for dealing with activities at the boundaries between local governments. Secondly, governments in a region face similar problems, problems within the boundaries of other local governments. He further explains that these could be problems as from sewer design to the developing of social programmes to function as intended. Alesch (1972) illustrates that communication is needed amongst governmental levels to share innovations, as what was learned at one level can be reproduced at another level. Thirdly intergovernmental communication is necessary as an action for problems that are regional in nature. These problems do not fit within the boundaries of local or even provincial governments. These problems refer to decisions need to be made amongst government spheres and for actions to be taken across governmental boundaries. Lastly, communication between governments is essential in routine matters, especially if there is more than one level of government. For instance, local government must report their financial transactions to provincial governments. Provincial governments inform local governments of changes in laws that affect their operations, and inform on changes of aid and relief programmes that change local revenues.

Comfort 1999 in (Kapucu, 2005) states that disasters represent occasions that lead to the blurring of boundaries between departments and results in collective behaviours. This then requires more cooperation between various government agencies (Reynolds & Seeger, 2005:45). Each disaster serves as a learning opportunity for the way in which to communicate during the next disaster (Medford-Davis & Kapur, 2014:2). With poor or lack of communication, departments may not be able to function effectively under their stress of drought disasters. In most cases individuals may be left to make their best guesses about the risk and safety; rumours spread widely; and available resources and skills are overlooked as personnel search hurriedly for workable strategies for action (Comfort & Haase, 2006:2), which leads to the delay in preparedness measures, mitigation measures and relief assistance.

Joshi (2011:1) states that before drought disasters occur, it is important to be prepared. The preparedness phase is concerned with all resources; their types and strengths are worked out, identified and are placed on call should a drought occur. This phase requires a high degree of dedication and cooperation from all governmental departments and thorough communication. Once drought has occurred, it is required that facts be conveyed without creating any panic. Even

minor delay caused due to incomplete or incorrect communication will add to the drought problem. The intimation of the drought disaster is to be given in the laid down priority to the government officials, the affected community and all news media. In the absence of communication, chaos may prevail, disturbing the smooth response at all the required government levels. It is gathered above that only the correct and effective communication amongst governmental levels can: a) prevent the occurrence of drought disasters or reduce its impacts; b) reduce vital delays after a drought disaster; and c) in general decide the success of disaster management efforts. Furthermore, intergovernmental communication and coordination are found to be major criterions for effective systems of government, which consists of decentralised units (Malan, 2005). No sphere of government can function effectively without cooperation and accountability (De Villiers, 1994:430 in Malan, 2005). This makes communication and the coordination thereof central for government agencies involved in disaster situations (Haddow & Bullock, 2003 in Kapucu, 2006).

2.10. Conclusion

This chapter explored various literatures that focus on drought. It looked at conceptualising and defining drought to provide an understanding of drought from scholars. Further defining drought as an event, which occurs due to shortages in rainfall in a specific area, which does not have a beginning and an end, as it may be hard to recognise. Four types of droughts were discussed to further explore the concept of drought. These were followed by the impacts that droughts have on the different sectors of a country. Drought impacts communities and governments both in developing and developed countries. As a result of that, countries adopt strategies to cope with, mitigate and respond to these impacts, such as implementation of drought relief schemes. Drought assessments, declaration, coordination and implementations are discussed as these components build up to a drought relief scheme being implemented in order to assist affected communities. The success of effective drought response lies in effective and efficient communication. During drought disasters, departments have to cooperate towards mitigating and responding to the impacts of drought. All spheres of government (local, provincial and national) must work together during this time, because the drought disasters are not only for communities to deal with. Communication and the flow of information is vital as a number of role players may be involved in the process of reacting to drought, which may lead to confusion, hence it is necessary to communicate with the different government departments and those who are affected. According to Brown (2016:1), when disasters occur, bad communication can cause more damage than an act of God.

CHAPTER 3: ARTICLE - THE DROUGHT RELIEF SCHEME IN THE NORTHERN CAPE PROVINCE (2013/2014): AN ANALYSIS OF THE INTERGOVERNMENTAL COMMUNICATION APPROACH

JAMBA JOURNAL FOR DISASTER STUDIES REQUIREMENTS

- **Structure and style of your original research article**

The page provides an overview of the structure and style of your original research article to be submitted to the *Jàmbá: Journal of Disaster Risk Studies*. The original article provides an overview of innovative research in a particular field within or related to the focus and scope of the journal presented according to a clear and well-structured format (between 3500 and 7000 words with a maximum of 60 references).

- **Language:** Manuscripts must be written in British English.
- **Font:**
 - **Font type:** Palatino
 - **Symbols font type:** Times New Roman
 - **General font size:** 12pt
- **Line spacing:** 1.5
- **Headings:** Ensure that formatting for headings is consistent in the manuscript.
 - First headings: normal case, bold and 14pt
 - Second headings: normal case, underlined and 14pt
 - Third headings: normal case, bold and 12pt
 - Fourth headings: normal case, bold, running-in text and separated by a colon.

Title: The article's full title should contain a maximum of 95 characters (including spaces).

Abstract: The abstract, written in English, should be no longer than 250 words and must be written in the past tense. The abstract should give a succinct account of the objectives, methods, results and significance of the matter. The structured abstract for an original research article should consist of five paragraphs that are **unlabelled**. **These unlabelled paragraphs should** deal with the background, objectives, method, results and conclusion.

- (Background): *Why do we care about the problem?* State the context and purpose of the study. (What practical, scientific or theoretical gap is your research filling?)
- (Objectives): *What problem are you trying to solve?* What is the scope of your work (e.g. is it a generalised approach or for a specific situation)? Be careful not to use too much jargon.
- (Method): *How did you go about solving or making progress on the problem?* State how the study was performed and which statistical tests were used. (What did you actually do to get the results?) Clearly express the basic design of the study; name or briefly describe the basic methodology used without going into excessive detail. Be sure to indicate the key techniques used.
- (Results): *What is the answer?* Present the main findings (that is, as a result of completing the procedure or study, state what you have learnt, invented or created). Identify trends, relative change or differences on answers to questions.

- (Conclusion): *What are the implications of your answer?* Briefly summarise any potential implications. (What are the larger implications of your findings, especially for the problem or gap identified in your motivation?)

Do not cite references in the abstract and do not use abbreviations excessively in the abstract.

The following headings serve as a guide for presenting your research in a well-structure format. As an author you should include all first level headings but subsequent headings (second and third level headings) can be changed.

Introduction (first-level heading): The introduction contains two subsections, namely the background section and the literature review.

- **Problem statement (second-level heading):** The problem statement, also referred to as the setting section, should be written from the viewpoint of readers, that is, without specialist knowledge in that area. This statement must clearly state and illustrate the introduction to the research and its aims in the context of previous work bearing directly on the subject. The setting section to the article normally contains the following five elements:
 - **Key focus (third-level heading):** A thought-provoking introductory statement on the broad theme or topic of the research.
 - **Background (third-level heading):** Background or the context to the study (explaining the role of other relevant key variables in this study).
 - **Objectives (third-level heading):** Indicate the most important controversies, gaps and inconsistencies in the literature that will be addressed by this study. State the core research problem and specific research objectives that will be addressed in this study and provide the reader with an outline of what to expect in the rest of the article.
 - **Contribution to field (third-level heading):** Explanation of the study's academic (theoretical and methodological) or practical merit and/or importance (provide the value-add and/or rationale for the study).

Literature review (second-level heading): The literature review is the second subsection under the Introduction and provides a brief and concise overview of the literature under a separate second-level heading, e.g. literature review. A synthesis and critical evaluation of the literature (not a compilation of citations and references) should at least include or address the following elements (ensure these are in the literature review):

- definitions of all conceptual (theoretical) key concepts
- a critical review and summary of previous research findings (theories, models, frameworks, etc.) on the topic
- a clear indication of the gap in the literature and for the necessity to address this void
- a clearly established link that exists between formulated research objectives and theoretical support from the relevant literature.

Research method and design (first-level heading): The methods should include:

- **Materials (second-level heading):** Describe the type of organism(s) or material(s) involved in the study.
- **Setting (second-level heading):** Describe the site and setting where your field study was conducted.
- **Design (second-level heading):** Describe your experimental design clearly, including a power calculation, if appropriate. Note: additional details can be placed as an online supplementary addendum.

- **Procedure (second-level heading):** Describe the protocol for your study in sufficient detail (with a clear description of all interventions and comparisons) so that other scientists could repeat your work to verify your findings.
- **Analyses (second-level heading):** Describe how the data were summarised and analysed, with additional details placed in the online supplementary information.

Results (first-level heading): This section provides a synthesis of the obtained literature grouped or categorised according to an organising or analysis principle.

Tables may be used or models may be drafted to indicate key components of the results of the study.

- Organise the results based on the sequence of tables and figures that you will include in the manuscript.
- The body of the Results section is a text presentation of the key findings, which includes references to each of the tables and figures.
- Statistical test summaries (test name, p-value) are usually reported parenthetically (that is, inserted as a parenthesis in brackets) together with the biological results they support; use SI unit.
- Present the results of your experiment(s)/research data in a sequence that will logically support (or provide evidence against) the hypothesis or answer the question that was stated in the Introduction.

All units should conform to the **SI convention** and be abbreviated accordingly. Metric units and their international symbols are used throughout, as is the decimal point (not the decimal comma).

Ethical considerations (first-level heading): Articles based on the involvement of humans have been conducted in accordance with relevant national and international guidelines. Approval must have been obtained for all protocols from the author's institutional or other relevant ethics committee and the institution's name and permit numbers should be provided at submission.

Potential benefits and hazards (second-level heading): What risks to the subject are entailed in involvement in the research? Are there any potential physical, psychological or disclosure dangers that can be anticipated? What is the possible benefit or harm to the subject or society as a result of their participation or from the project as a whole? What procedures have been established for the care and protection of subjects (e.g. insurance, medical cover) and the control of any information gained from them or about them?

Recruitment procedures (second-level heading): Was there any sense in subjects being obliged to participate – as in the case of students, prisoners, learners or patients – or were volunteers being recruited? If participation was compulsory, the potential consequences of non-compliance must be indicated to subjects; if voluntary, entitlement to withdraw consent must be indicated as well as when that entitlement lapses.

Informed consent (second-level heading): Authors must include how informed consent was handled in the study.

Trustworthiness (first-level heading): This refers to the findings of the study being based on the discovery of human experience as it was experienced and observed by the participants.

Discussion (first-level heading): This section normally contains the following four elements. It is suggested that subheadings are used in this section:

- **Outline of the results (second-level heading):** Restate the main objective of the study and reaffirm the importance of the study by restating its main contributions; summarise the results in relation to each stated research objective or research hypothesis; link the findings back to the literature and to the results reported by other researchers; provide explanations for unexpected results.
- **Practical implications (second-level heading):** Reaffirm the importance of the study by restating its main contributions and provide the implications for the practical implementation your research.
- **Recommendations (second-level heading):** Provide the recommendations emerging out of the current research.

Conclusion (first-level heading): This should state clearly the main conclusions of the research and give a clear explanation of their importance and relevance, with a recommendation for future research (implications for practice). Provide a brief conclusion that restates the objectives, the research design, the results and their meaning or significance.

Acknowledgements (first-level heading): If, through your study, you received any significant help in conceiving, designing, or carrying out the work, or received materials from someone who did you a favour by supplying them, you must acknowledge their assistance and the service or material provided. **Authors should always acknowledge outside reviewers of their drafts and any sources of funding that supported the research.**

- **Competing interests (second-level heading):** A competing interest exists when your interpretation of data or presentation of information may be influenced by your personal or financial relationship with other people or organisations that can potentially prevent you from executing and publishing unbiased research. Authors should disclose any financial competing interests but also any non-financial competing interests that may cause them embarrassment were they to become public after the publication of the manuscript. **Where an author gives no competing interests, the listing will read:**

'The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.'

References (first-level heading): Begin the reference list on a separate page with no more than 60 references. The *Jàmbá: Journal of Disaster Risk Studies* uses the Harvard referencing style, details of which can be downloaded from the journal website. **Note: no other style will be permitted.**

Abstract

The South African agricultural sector operates in a stressed environment with 80 – 90% of the country classified as semi-arid, thus susceptible to droughts. As a result, drought has become a permanent feature of the South African agricultural sector. Whereas it is difficult to manage drought hazards due to its slow onset nature, it has been argued that the focus should be on improving the coping capacity of those affected. However, if the severity and the magnitude of the drought surpass the coping capacity of those affected, the Disaster Management Act, (Act 57 of 2002 as Amended) makes provision for the declaration of the state of disaster, which often lead to the implementation of the disaster assistance schemes. However, the implementation of relief schemes are characterised by a myriad of challenges. The main purpose of this study was to assess whether poor or lack thereof of intergovernmental communication contributed to the delays of the implementation of the 2013/2014-drought relief scheme in the Northern Cape Province, by the Department of Agriculture, Land Reform and Rural Development. Data was collected through face-to-face and telephonic interviews with representatives of government departments that were involved in the roll out of the relief scheme. The findings show that poor or lack of intergovernmental communication and coordination between different governmental departments at local, provincial and national level, and contributed to delays in the implementation of the relief scheme. . The study recommends that an interdepartmental drought coordination mechanism be established to coordinate efforts to assist farmers during future droughts.

Key words: Drought, drought relief, Disaster response, Disaster risk management, Intergovernmental relations, Intergovernmental communication, Northern Cape Province

Introduction

Drought is a normal part of climate that affects all countries. However, it is mostly experienced in countries that are located in arid and semi-arid areas (Hosseini *et al.*, 2009; Vogel *et al.*, 2009). Although drought affects all climatic zones, it has particular consequences in developing countries (Hayes, *et al.*, 2004). In Africa, drought is classified as a principal type of natural hazard, as it challenges and threatens sustainable development (Calow *et al.*, 2010; Benson & Clay, 1998). Natural hazards are defined as a natural process that may cause loss of life, injury or health impacts, property damage, loss of livelihoods and services, social and economic disruption or environmental damage (UNISDR, 2007). Mogotsi *et al.* (2012) points out that the impacts of drought in Africa differ from community to community and the extent of the effects depend on the livelihood cycle of the community.

Communities across southern Africa face similar impacts as those on the rest of the continent, with drought impacting biological, social and economic livelihoods of communities (Vogel, 2005). Furthermore, drought's impacts on the southern African region threaten water resources, food security, health, infrastructure, and ecosystem services (Ziervogel *et al.*, 2014). In southern Africa, drought has been a recurrent feature (Rouault & Richard, 2003). Unganai (1994) states that it is becoming unusual for drought not to be experienced somewhere in southern Africa each year. Impacts of drought in this region are severe enough to reduce soil moisture and water levels below the minimum necessary for sustainable use (NDMC, 2010). Reduction of soil moisture can be observed in the agricultural sector as drought has a long lasting impact on stressors such as food security (Austin, 2004). Particularly, South Africa is vulnerable to drought due to low average rainfall. In addition, approximately ninety percent (and even more) of South Africa is either arid or semi-arid (Olaleye, 2012; Hoffman *et al.*, 2009).

Conceptualisation of drought

Drought differs from other hazards, firstly because it is a slow onset hazard and secondly due to the absence of a precise, common universal definition (Hayes *et al.*, 2004). Van Zyl (2006) indicates that worldwide environmental changes, especially climate change, will

exacerbate the probability of natural hazards such as drought. Droughts are conceptualised in different communities in different ways. As such, there are a number of definitions largely because drought should be defined according to the characteristics of each climatic regime and the specific impacts or application to which the definition is being applied (Wilhite *et al.*, 2007). In most instances drought is caused by deficiency of precipitation over an extended period of time, which is usually a season or more (Mniki, 2009). Bang & Sitango (2003) presents four types of drought, namely meteorological, hydrological, socio-economic and agricultural droughts. The conceptualisation in the above mentioned is based on the severity of a drought in a geographic area. The deficit in precipitation, soil moisture and stream flow, reservoir storage leads to meteorological, agricultural and hydrological droughts (Maity *et al.*, 2016). Agricultural drought, the focus of this study is evident after meteorological drought (when rain decreases) but before hydrological drought (when the level of rivers, lakes decreases) (Wilhite, 2000).

Drought is not a disaster but a natural hazard and whether drought becomes a disaster depends on the ability of the affected community to cope with drought and recover from its impacts (Wilhite *et al.*, 2014). Therefore, drought becomes a disaster when both natural and human environment becomes highly vulnerable to adverse impacts and severe effects (UNEP, 2004). The phenomenon of drought disasters should be successfully responded to, however the effectiveness of the response lies in the openness with which the government works in partnership with other stakeholders (Akililu & Wekesa, 2006). Drought disaster response is the provision of emergency services and public assistance during or immediately after a drought disaster in order to save lives, save livestock and crop, reduce health impacts, ensure public safety and meet needs of the people affected (UNISDR, 2007). Drought disaster response should be targeted at the local level and follows a series of pre-specified steps through the province and ultimately to the national government (Schneider, 2008).

The stakeholders who are involved in drought response should be made aware of drought risks, confirm and understand the risk of the drought disaster and act upon it. The success and failure of disaster management can also be affected by the communication between departments intending to address the drought situation

(Kapucu, 2005). Therefore, communication amongst those involved for joint problem solving is vital (Alesch, 1972).

During drought episodes, government initiates funded programs like drought relief schemes, which intend to provide affected communities with temporary assistance for the duration of drought (Munemo, 2012). Drought relief schemes are used as a response to drought that has affected a certain population (Maifo, 2011). During drought episodes and the implementation of drought relief schemes, effective flow of information across departmental boundaries is crucial for the departments to remain effective in disaster risk management: as response and recovery is being accomplished (Kapucu, 2005).

The importance of intergovernmental communication during drought disasters

Effective response and recovery operations in disaster situations require communication between the government departments intending to address drought situation and can partly determine the success or failure of a drought disaster response (Kapucu, 2005). Therefore, effective communications amongst government departments is an essential prerequisite for actions on problems that affect those departments (Alesch, 1972). According to Kapucu (2006) disastrous environments require effective flow of disaster risk communication across all governmental departments. Therefore, in order for disaster risk management to be successful, all involved stakeholders should be in contact with each other in order to allow flow of information. Furthermore, the improving of communication and information sharing across organisations, departments and different sectors have to be a priority at all levels of government (Kapucu, 2006).

According to Malan (2012) intergovernmental relations are important interactions occurring among governmental departments in all spheres. Intergovernmental relations encompass all the complex and interdependent relations between various spheres of government. It also involves the coordination of public policies (including policies on sustainable development) between national, provincial and local governments through programme reporting requirements, grants-in-aid, the planning and budgetary process and informal communication with officials (Fox & Meyer 1995 in Malan, 2005).

In relation to communication, coordination can be understood as the degree to which there are adequate networks among government agencies for intergovernmental communication to accomplish set goals (Kapucu, 2006 citing Dynes & Quarantelli, 1977). According to Malan, (2005), coordination can become an adversarial issue of governance whenever functions are formally shared between various spheres of government (with each having a specific responsibility), or when exercising a function in one sphere has consequences for the functions of another.

Therefore, the study aims to assess how intergovernmental communication, or lack thereof contributed to the delay in the implementation of the drought relief scheme in the Northern Cape Province, South Africa.

Study area and background

The Northern Cape Province is located in the north-western part of South Africa (Mukheibir and Sparks, 2005). The province is bordered by Namibia and Botswana in the North. Other borders include South African Provinces namely the North West, Free State, Eastern Cape and Western (South African Government, 2016). Being the largest province in South Africa (although most sparsely populated), the province takes up nearly a third of the country's land area (Department of Environmental affairs, 2012).

A large portion of the economy of the Northern Cape Province depends on the agricultural sector (Jordaan *et al.*, 2013). Eighty percent of the province is classified as farmland with 67% used for extensive grazing, however only suitable for extensive sheep and goat farming (Agriculture Statistics, 2000). Moreover, the province is very dry compared to the rest of South Africa, but has fertile soil, several rivers, and produces some of the country's large agricultural products (Visser & Ferrer, 2015).

The Northern Cape Province is divided into five district municipalities (*see* Figure 3.1). The study was conducted in three of the five districts: Frances Baard, John Taolo Gaetsewe, and Namakwa district as the 2013/2014-drought episode severely affected these three districts.



Figure 3.1: Districts of Northern Cape Province (Source: [Municipalities.co.za](http://www.municipalities.co.za), 2015)

During the 2013/2014 financial year the Northern Cape was amongst the provinces in South Africa that was the most affected by drought episodes during this season (*see* Figure 3.2). This is mainly due to low rainfall and lack of precipitation (Department of Water Affairs, 2014).

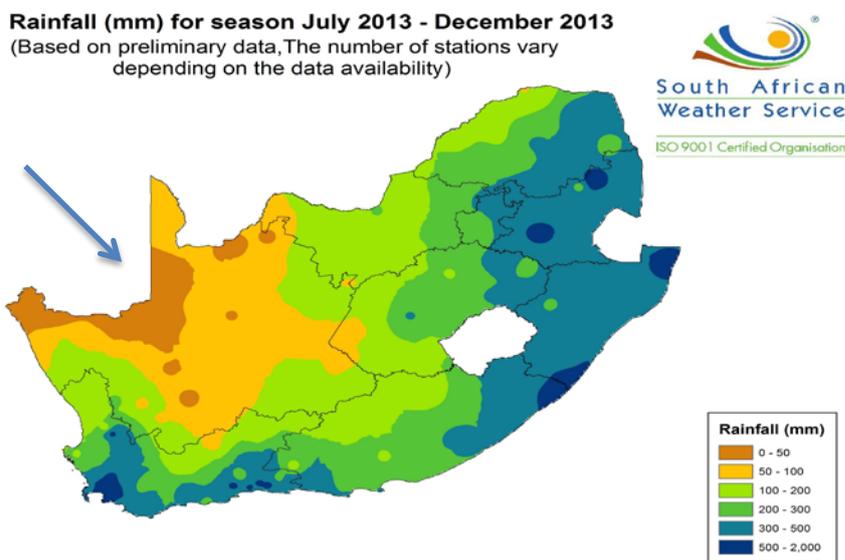


Figure 3.2: South African rainfall map of 2013 (Source: South African Weather Services, 2013)

The above map shows the low rainfall of the Northern Cape Province in the year 2013. Rainfall in most parts of the province ranged between 0-50 mm, and 50- 100 mm (areas covered in yellow and orange). Poor spatial distribution of rainfall has had an impact on

the natural availability of water resources in the Province. According to the Department of Water Affairs (2014), the Northern Cape experienced less rainfall during 2013, resulting in very dry conditions during this period and the highest temperature of 45.5 degree Celsius was recorded in the province.

Problem statement

During the drought episode of 2013/2014, the Department of Agriculture, Land Reform and Rural Development (DALRRD) decided to implement a relief scheme. Two assessments were conducted on the affected farms, the first from 10-21 June 2013 by officials from DALRRD and delegates from organised agriculture. The second assessment from 28-31 October 2013, which was carried out by the Department of Agriculture, Forestry and Fisheries (DAFF) as part of their mandate. After the first assessment, the conclusion was that a disaster should be declared, but drought was declared on the 9th of December 2013.

The aim of the scheme was to provide relief to the affected farmers and reduce any and further impacts of drought in the Province. A relief scheme was planned and the implementation plan was further drafted and approved. The implementation process took over nine months before any funding was secured, and a further six months to complete distribution of feed to farmers. Due to the time taken to assist farmers, the drought had already affected a large number of farmers severely and caused great losses for these farmers (DALRRD, 2015).

The stakeholders who were involved in the 2013/2014 drought relief scheme were from all the spheres of government which included: national, provincial and local including the National Department of Agriculture, Forestry and Fisheries (DAFF), the National Department of Cooperative Governance and Traditional Affairs (CoGTA), National Disaster Management Centre (NDMC), National treasury, the provincial Department of Agriculture, Land Reform and Rural Development (DALRRD), Provincial Treasury, Provincial Disaster Management Centre (PDMC), District Disaster Management Centre (DDMC), Municipality Disaster Management Centre (MDMC).

The involvement of different government departments in the declaration and implementation process within the drought relief scheme had communication implications. Prior to the declaration of the state of disaster, two assessments were conducted, the implementation of the relief scheme was on hold until all relevant stakeholders were involved in the assessment of the drought, which contributed to the delay on the scheme implementation.

In January 2014, a task team led by the NDMC conducted further assessments of the drought situation for the purpose of classifying the drought as a disaster, which happened in February 2014. It was only after classification that the national treasury, through NDMC, made funding of R50 million available for the drought relief scheme. The funds were transferred from the national treasury to the Northern Cape provincial treasury in March 2014. Only then were funds transferred to the provincial DALRRD for the implementation of the relief scheme. Funds were supposed to be spent within a period of three months from April 2014 to June 2014, but the implementation of the scheme was delayed and only began in June 2014 and continued until the end of November 2014.

Methodology applied during the study

Data was qualitatively collected using face-to-face and telephonic interviews. These research techniques allowed for an open discussion and was flexible enough to allow probing until data saturation was reached (De Vos *et al.*, 2011). Questions centred on how the intergovernmental communication affected the implementation of the drought relief scheme. The advantage of using these methods is that it offers the researcher the opportunity to explain the questions that the participants may not understand (Monette *et al.* (2002) in Mnisi (2015) and provides a platform for the participants to speak out as much as possible about the topic (Neuman, 2000).

Purposive sampling was used select participants relevant to particular research questions. The sampling criteria included only participants who actively participated in the implementation of the drought relief scheme. This included a combined total of 23 participants, which represented DAFF, CoGTA, NDMC, National treasury, DALRRD,

provincial treasury, PDMC, DDMC and MDMC. The collected data was analysed thematically and quoted verbatim.

Findings and discussion

Four major themes and sub-themes emerged from the findings and these are presented and discussed below.

Declaration of the provincial state of disaster

The South African Disaster Management Act 57 of 2002, section (23, 26, 27, 41 and 55) outlines the process and procedures for declaration and classification of state of disaster. A large majority of respondents were able to outline the process that should be followed to declare a state of disaster. Agricultural managers in the DALRRD, the PDMC and managers from DDMC's were familiar with and outlined the process that should be followed for declaring a state of disaster. According to DALRRD respondents the declaration process should start at municipal level. The Namakwa DDMC added that their municipality does not declare in their areas in most cases due to financial constraints. Furthermore, if the magnitude of a disaster is beyond the capabilities of the municipality, then the declaration request can be up scaled to the PDMC. Within the PDMC, the request is forwarded to the HOD and MEC for recommendations. After the recommendations has been made, the MEC will formally request the Premier's office to announce the declaration and the declaration document will be published in the Provincial Gazette for transparency to the public.

However, some respondents argued that during the process, the DDMC is required to develop a business plan that will be combined with the comprehensive assessment report, and then be forwarded to the PDMC for further assistance. DDMC managers and officers from the John Taolo Gaetswe district stated that during the 2013/2014 drought episode, their main responsibility was to forward the local assessment reports to the PDMC, of which they did. Furthermore, the PDMC has to conduct their own verification assessment if the situation warrants declaration. In the final stage of the process of declaring, the PDMC will prepare a copy of declaration and attach to the combined

business plan and report, to be signed off by the HOD and the MEC. After receiving the signature, the documents are forwarded to the Premier's office for announcement.

To other respondents several steps were followed in regard to the declaration of a state of disaster in the province. From the office of the agriculture chief director of DAFF respondents, indicated that their sector department's role in the declaration of a state of disaster was minimal. They however noted steps had to be followed, referring to the DMA 57 of 2002, but were not clear on the outlined procedures. From the office of the chief director DAFF respondents highlighted that they had no role to play and they were only informed about the declaration of a state of disaster by DALRRD, PDMC and NDMC. Agricultural respondents from DAFF also indicated that they were not sure whether the second assessment report they compiled was used to inform the declaration, because DAFF submit their report to the NDMC for classification purposes, and DALRRD submitted their report to PDMC for declaration.

Officials from NDMC noted that a drought event was declared and classified in the province. However, they made it clear that NDMC does not declare a state of disaster, but rather a state of disaster should be declared by the Premier in consultation with the relevant MEC following a recommendation from the PDMC. Furthermore, NDMC respondents argues that the delays in declaring a state of disaster in the province could only be explained by the PDMC and DALRRD.

"A declaration for a state of disaster is an acknowledgement that the province needs assistance from the NDMC or other sectors in the province. This declaration has to be announced for the affected areas. The explanation regarding the delays in declaration therefore lies with the DALRRD and the PDMC".

Therefore, if the PDMC does not make any recommendation in time, the process of declaration will take longer. During the 2013/14 drought episodes, several respondents highlighted that there was confusion as to the roles and responsibilities of different role-players. This confusion to them was the main cause of delays in declaring the state of disaster in the affected areas. It therefore took six months from the initial assessment until the declaration of the state of disaster. Some respondents were of the opinion that the political offices contributed to the delay. The politicians took longer than anticipated to

declare the state of disaster, and this was subsequently followed by processes going back and forth before the declaration was announced.

“The reports submitted to the MEC and Premier’s office took longer because the political appointees were not available for a long periods of time”.

Apart from other governmental departments, the district based extension workers indicated that they were not aware of the steps that needed to be followed for the declaration of a state of disaster. Some respondents viewed the process of declaration as the PDMC’s responsibility, although the inputs by the extension services are needed for such a declaration. A number of respondents shared the view that there is a general confusion as to the exact process and the role of all stakeholders in the declaration process. Furthermore, in the 2013/14 drought, DALRRD prompted the extension services to conduct a technical assessment which provided the impetus for initiating the declaration process.

Based on the evidence and response provided above, it is evident that majority of the governmental departments were familiar with the processes outline in the Disaster Management Act of 2002, as to how a state of disaster should be declared, but notably these departments were not in communication with one another during this period; in term of assisting and ensuring that the drought declaration process is not lengthy and slow. Furthermore, it seemed as if different governmental departments waited on one another and expected other departments to know and be clear with the process, highlighting that intergovernmental communication and relations were minimal during this period.

Delays during the process of classification and declaration

The time between the declaration of a state of disaster and the allocation of relief funds to beneficiaries was lengthy. The process requires the DDMC to inform the PDMC, thereafter the process escalated to the NDMC for approval. In the instance of 2013/14 drought episode, the declaration was made on the 09th December 201, but classification was only made mid-February 2014. Additionally, the funds were approved during March 2014, but DALRRD only received funds during June 2014. As a result, DALRRD ended

up making some funds available to assist the farmers during April 2014. However, some respondents felt that the process took too long because it was the first time all stakeholders were involved in the process of declaration. Some respondents felt that the PDMC did not have the needed capacities or expertise in the agricultural sector that could assist them in a short period of time.

The classification of the state of disaster was done two months after the declaration process. The respondents strongly argued that there were no delays in the classification process. Classification was not a prerequisite for declaration, and classification simply meant that the NDMC validates the level of classification based on the assessments. However, it does seem that the political process needed for the declaration of a state of disaster, and the period in which relief was needed, were not aligned. Therefore, political decision-making in this instance severely hampered the process of relief provision and added to unnecessary delays.

Communication and relationship management

In this section the focus was on how information was communicated to the different stakeholders, specifically during the assessment process, the declaration of the disaster as well as the information regarding the drought relief scheme implementation. Respondent groups involved in this section included district officials of both agriculture as well as district disaster managers and provincial and national officials again from both agriculture and disaster management.

As indicated by literature, successful response and recovery activities depend heavily on effective communication to create a shared understanding and trust between all of the departments involved in these activities. It is therefore important that critical attention is given to communication strategies and information distribution in a situation like the 2013/2014-drought. If this is not done, poor communication activities or inadequate information distribution can create immense confusion and mistrust. Communication strategies and how to communicate the correct information, fast and efficiently amongst various role players are usually overlooked. This is because departments are usually so busy with the response activities in such a situation that no thought is given to communication and what information to be communicated.

Intra-departmental Communication and information flow

The focus was on how information flows between departments at different levels of government and how the information flows from government to farmers. However, by implication it clearly surfaced that there were internal communication problems within DALRRD. This came to light in areas such as supply chain management and organising the launch of events. In the case of supply chain management and particularly the appointment of service providers, officials responsible for disaster risk management received approval of certain service providers from the Head of Department (HOD). However, officials from procurement and supply chain management went and changed the approved list in consultation with district managers but leaving out officials responsible for disaster risk management. Respondents from disaster risk management are certain that these changes affected and delayed the implementation of the relief scheme as the new service providers appointed could not deliver as was agreed in the Service Level Agreement (SLA).

Lack or poor communication between officials within the DALRRD was also vivid in the arrangements of the drought disaster relief launch of events which were organised, where again officials responsible for Disaster Risk Management (DRM) were not informed and not involved. Officials responsible for DRM indicated that they knew about the launch of the event by default after reading a letter seeking approval for the event from the director responsible for disaster risk management. However, some respondents justified this exclusion by indicating that one of the officials was still new in the department and therefore there was no need for her involvement. The arrangements of these events were done from the MEC's office, thus bringing the issue of political interference into the picture.

At the same time the reporting lines within the departments were sometimes confusing. For instance, extension officers played a pivotal role in the implementation of the drought relief scheme, but when it comes to reporting, they report to their district managers, who report to a different director from the one responsible for DRM. In this regard when things go wrong in the implementation of the relief scheme, officials responsible for DRM within the department cannot hold these extension officers responsible for their actions.

The issue of the non-availability of some extension officers during the distribution of feed came up a number of times from the respondents. As a result, there was nothing that officials responsible for DRM could do about the situation.

However, on other matters such as the early warning information and advisory, the DRM unit with DALRRD send the information directly to district managers who disseminate the information through the extension officers. Similarly, the extension officers would send monthly reports on vegetation, rainfall in their area, dam levels and water information to the Disaster Risk Management Unit at provincial level. These reports are then combined and compared to information that researchers generate in the department and a report is then compiled and sent to DAFF. At national level information from all the provinces are combined with information from the SAWS and ARC. A report for the entire country is sent back to the provincial officials and they then distribute it to the district managers. This information from DAFF is also forwarded to organised agriculture and the communications section in DALRRD for further distribution. Different modes of communications were used including workshops, meetings and via telephone.

Gondal and Shahbaz (2012) argues that lack of inter coherence and proper communication systems among various departments in government renders departments to fail to attain their goals. According to Verma, (2013), communication is one of the most important variables, held responsible for the rise and fall, success and failure, progress and regression of any government department. Drawing from Hindi *et al.* (2004), Gondal and Shahbaz, (2012) indicates that an internal communication system amongst different functions of the department allows the organisation to attain the set organisational goals. It is therefore important for the DALRRD to improve their internal communications for effective and efficient implementation of assistance schemes.

Inter-departmental communication

The drought relief scheme, which the DALRRD had developed, was characterised by confusion from initial assessment until the declaration of a state of disaster. This confusion was as a result of the lack and/or poor communications between the role players in disaster risk management. This made it important to ascertain in the study

how interdepartmental communications affected the development and the implementation of the drought relief scheme.

Section 41(1) of the Constitution of the Republic of South Africa clearly stipulates how the spheres of government should deal with a matter of common interest, it states that mechanisms put in place on how departments should interact during a disaster are somewhat confusing and can lead to delays in case of emergencies. For instance a sector department in the Province like the DALRRD cannot communicate directly to the NDMC when facing a disastrous situation. Rather they must communicate with the PDMC and their national counterpart in this case DAFF to channel their information to the NDMC. This means that the NDMC will receive the same information from two different departments. To some respondents, this indicates that the NDMC does not trust the sector departments at provincial level.

Although the DALRRD participates in the provincial disaster management forum it appears as if there was lack or poor communication between the DALRRD and the PDMC regarding the eminent drought situation. This is evidenced when DALRRD conducted their initial assessments without the involvement of the PDMC and the other relevant stakeholders. It was only in November 2013, four months after the initial assessment, that the PDMC got involved to address the drought situation. Similarly, DAFF was also informed about the drought situations in September and therefore they conducted their assessment in October 2013. In terms of the drought situation of 2013 respondents from DAFF indicated that they communicated with provincial departments about the drought situation using letters and their first interaction was when DAFF responded to the DALRRD's request for assistance. They also communicated information through drafting a submission to the Director General regarding the drought situation and drafting reports of the drought.

Respondents from DAFF indicated that they receive, on a regular basis, weather and climate data from the SAWS, ARC and the NAC. This information is then communicated firstly to officials in the province and provinces are then responsible to distribute information to the district offices and to farmers. Respondents indicated that the information sent to the provincial department is then monitored and followed up

through telephonic contact or via emails. If this was the case, DAFF should have picked up earlier that there is drought in the Northern Cape and should have informed the DALRRD even before the request for assistance from farmers were submitted. Similarly, respondents from the PDMC and the DALRRD indicated that when the provincial disaster management forum meets the SAWS presents the warning information. The proper communication about the developing drought could have assisted in proper planning to address the drought situation sooner.

To the question of what modes of communication DAFF uses to communicate to farmers, the respondents indicated that various forum meetings, quarterly reports and reports that farmers submit to be the known communication channels. Furthermore, respondents indicated that they communicate most of the time to the Province by means of workshops, meetings, telephonically, emails and faxes. Stakeholders indicated by DAFF that they communicate mainly with the DALRRD, organised agriculture as well as famers and members of the communities.

Conclusion and recommendations

It is evident from the findings that a number of challenges characterised the implementation of the drought relief scheme by DALRRD. Major challenges included confusion amongst different stakeholders/departments involved, with regards to processes to be followed during the declaration of the state of disaster. The study showed that this was mainly due to poor or lack of communication between the different stakeholders and mainly the government entities. It is therefore concluded here that the implementation of a drought assistance scheme must take into consideration of the slow onset and creeping in nature of drought. This is so because if an area is identified to be affected by drought today, in two to three months' time the area affected would have increased substantially and therefore identifying affected farmers should be an ongoing process and not once off. As a result, the administration of an emergency grant for drought disasters should also be different from that of other disasters. In this regard the implementation of the drought assistance scheme must be properly planned, coordinated and well-targeted.

It has come out clearly in the study that the implementation of the drought relief scheme was characterised by many challenges. One of the main challenges was the confusion regarding the processes to be followed for the declaration of a state of disaster. This problem was exacerbated by poor or lack of coordination and communication between all the relevant stakeholders. As the literature in this study indicated, the implementation of assistance schemes requires regular interactions and communication between the relevant stakeholders.

On the basis of the findings, it is therefore recommended that the reporting structure in the implementation of relief schemes is complicated and needs to be reviewed. For instance, the provincial sector communicates with the NDMC through the PDMC and their National counterparts. In this regard the NDMC will receive the same information that they received from the PDMC from DAFF.

Distribution of early warning and advisory information is an important component of disaster risk reduction strategies. It is therefore recommended that DAFF review their process of distribution of early warning and advisory information and determine if this information reaches the intended recipients, namely the farmers. This information must also be evaluated to check if it is user-friendly to the farmers.

The process between the initial assessment of the drought in June 2013 and the declaration of a state of disaster in December 2013 took more than five months. There was a great deal of confusion regarding the process for the declaration of a state of disaster until the PDMC intervened in November 2013. It is recommended that the DDMCs and PDMC must take the leading role when it comes to the declaration of a state of disaster in the province.

The DALRRD (and all other stakeholders on the PDMAF) must familiarise themselves with the processes for a declaration and classification of a state of disaster and the requirements of the grant framework. To this end the PDMC must develop a guideline stipulating the generic process for the classification and declaration of a state of disaster in the Province. This should be communicated to all stakeholders and an awareness of this process must be created with the political role-players. It is therefore recommended that communication be improved. Communications between

the DALRRD and the farmers was found to be the impediment in the proper implementation of the drought relief scheme. Respondents indicated that a number of affected farmers were not assisted during the implementation of the drought relief scheme, as they could not register on time. Additionally, there is a perception, mainly amongst commercial farmers, that extension officers from the DALRRD only assist emerging and communal farmers.

It is also recommended that officials of the DALRRD communicate with farmers in a frequent and consistent manner and not only when a disaster is the concern. Proactive rather than reactive communication is required. This communication must be extended to all relevant stakeholders. This must include the development of documentation and communication to be sent out to all stakeholders that are involved in all the processes to explain each group's role and responsibility.

References

- Aklilu, Y. & Wekesa, M. 2006. Drought, livestock and livelihoods: lessons from the 1999 – 2001 in Kenya. Humanitarian Practice Network paper, London.
- Austin, W.D. 2008. Drought in South Africa: lessons lost and/or learnt from 1990 to 2005. University of Witwatersrand, Johannesburg (MA-dissertation).
- Alesch, D.J. 1972. Intergovernmental Communication in the New York-New Jersey Connecticut Metropolitan Region. Report prepared for the Metropolitan Regional Council under a grant to the Council from the National Science Foundation, The Rand Corporation.
- Bang, S.K. & Sitango, K. 2003. Indigenous Drought Coping Strategies and Risk Management against EL Nino in Papua New Guinea: CGPRT Centre Working Paper No.74. <http://ageconsearch.umn.edu/handle/32687> Date of access: 16 February 2016.
- Benson, C. & Clay, E. 1998. The impacts of Drought on Sub-Saharan Africa Economies: A Preliminary Examination. As cited (In Mniki, S. 2009. Socio-economic impacts of drought induced disasters on farm owners of Nkonkobe local Municipality. Free State: UFS. (Dissertation - MA)).
- Bryman, A. 2012. Social research methods 4th ed. New York, NY :Oxford University press.
- Calow, R.C., MacDonal, A.M., Nicol, A.L. & Robins, N.S. 2010. Ground water security and drought in Africa: linking availability, access and demand. *Ground Water*, 48(2): 246-256.
- De Vos, A.S., Strydom, H., Fouche, C.B. & Delpont, C.S.L. 2011. Research at Grass Roots: For the social sciences and human service professions. 4th ed. Pretoria: Van Schaik Publishers.
- Dynes, R.R. & Quarantelli, E.L. 1977. Organisational communications and decision making in crisis. As cited (In Kapucu, N. 2006. Interagency communication networks

during emergencies boundary spanners in multiagency coordination, *The American Review of Public Administration*, 36(2): 207-225.

Fox, W. & Meyer, I.H. 1995. Public administration dictionary. As cited (In Malan, L. 2005. Intergovernmental relations and co-operative government in South Africa: The ten-year review. *Politeia*, 24(2):226-243).

Gondal, U.H. & Shahbaz, M. 2012. Interdepartmental communication increases organizational performance keeping HRM as a mediating variable. *Journal of Asian Business Strategy*, 2(6):127-141.

Hayes, M. J., Wilhelmi, O.V. & Knutson, C. L. 2004. Reducing drought risk: bridging theory and practice. *Natural Hazards Review*, 5(2): 106-113.

Hindi, N.M., Miller, D.S. & Catt, S.E. 2004. Communication and miscommunication in corporate America: evidence from fortune 200 firms. *Journal of organisational culture, communication and conflict*, 8(2): 13-26.

Hoffman, M.T., Carrick, P.J., Gillson, L. & West, A.G. 2009. Drought, climate change and vegetation response in the succulent karoo, South Africa. *South African Journal of Science*, 106:54- 60.

Hosseini, S.M., Sharfzadeh, A. & Akbari, M. 2009. Cause effect and management mechanisms of drought crisis in rural and nomadic communities in southeastern Iran as perceived by agricultural/rural managers and specialist. *Journal of Human Ecology*, 27(2): 189-200.

Jacques, G. 1996. Drought in Botswana: intervention as fact and paradigm. *Pula: Botswana Journal of African Studies*, 9(1): 34-57.

Kapucu, N. 2005. Interorganizational coordination in dynamic context: Networks in emergency response management. *Connections*, 26(2): 33-48.

Kapucu, N. 2006. Interagency communication networks during emergencies boundary spanners in multiagency coordination, *The American Review of Public Administration*, 36(2): 207-225.

- Maifo, M.C. 2011. Stock fodder drought relief scheme: a case of the department of agriculture in Polokwane municipality. Free State: UFS. (Dissertation - MA).
- Malan, L. 2005. Intergovernmental relations and co-operative government in South Africa: The ten-year review. *Politeia*, 24(2): 226.
- Mniki, S. 2009. Socio-economic impacts of drought induced disasters on farm owners of Nkonkobe local Municipality. Free State: UFS. (Dissertation - MA).
- Mogotsi, K., Nyangito, M.M & Nyariki, D.M. 2012. The role of drought amongst Agro-Pastoral communities in semi-arid environment: The case of Botswana. *Journal of arid environments*, 91:38-44.
- Monette, D.R., Sullivan, C.R. & De Jong, C.R. 2002. Applied social research. As cited (In Mnisi, T. 2015. Digital storytelling: creating participatory space, addressing stigma and enabling agency. Bloemfontein: UFS).
- Munemo, N. 2012. Domestic politics and drought relief in Africa: explaining choices. Boulder, CO: Lynne Rienner Publishers.
- Neuman, W.L. 2000. Social research methods: qualitative and quantitative approaches. Boston: Allyn and Bacon.
- Rouault, M., and Richard, Y. 2003. Intensity and spatial extension of drought in South Africa at different time scales. *Water Research Commission*, 29(4): 489-500.
- Schneider, S. 2008. Who's to blame? (Mis) perceptions of the intergovernmental response to disasters. *The Journal of Federalism*, 38(4): 715-738.
- Unganai, L.S. 1994. Drought and southern Africa: A note from the Harare Regional drought monitoring centre.
- UNISDR (United Nations International Strategy for Disaster Reduction). 2007. UNISDR terminology on disaster risk reduction. Retrieved from <https://www.unisdr.org/we/inform/terminology>. Accessed on 13 February 2016.

UNISDR (United Nations International Strategy for Disaster Reduction). 2009. UNISDR terminology on disaster risk reduction.

Van Niekerk, D. 2014. A critical analysis of the South African Disaster Risk Management policy and legislation. *Disasters*. pp. 858-877.

Visser, M. & Ferrer, S. 2015. Farm workers' living and working conditions in South Africa: key trends, emergent issues, and underlying and structural problems.

Vogel, C. 2005. "Seven fat years and seven lean years?" Climate change and agriculture in Africa. *IDS Bulletin*, 26:30-35.

Vogel, C., Koch, I. & Van Zyl, K. 2009. "A persistent truth"- reflections on drought risk management in Southern Africa. *Weather, Climate and Society*, 2: 9-22.

Wilhite, D.A., 2000. Drought as a natural hazard: Concepts and definitions. (In Wilhite, D.A. ed. *Drought: A Global Assessment*, Routledge, London. p.3-18).

Wilhite, D.A., Svoboda, M.D. & Hayes, M.J. 2007. Understanding the complex impact of drought: a key to enhancing drought mitigation and preparedness. *Water Resource Management*, 21:763-774.

Ziervogel, G., New, M., Van Garderen, E.A., Midgley, G., Taylor, A., Hamann, R., Stuart-Hill, S., Myers, J. & Warburton, M. 2014. Climate change impacts and adaptation in South Africa. *WIREs Climate Change*, 5:605-620.

CHAPTER 4 RECOMMENDATION AND CONCLUSION

4.1. Introduction

The main purpose of this study was to assess whether poor or lack thereof of intergovernmental communication contributed to the delays of the implementation of the 2013/2014-drought relief scheme in the Northern Cape Province, by the Department of Agriculture, Land Reform and Rural Development. The implementation of the drought relief scheme took over 15 months from the date the farmers reported the drought to the distribution of relief aid. This was longer than anticipated, which necessitated an evaluation of the processes that were followed. Poor or a lack of communication between the different government entities involved was found to have played a major role in the delays of implementing the relief scheme.

This chapter provides conclusions of the study by providing a brief summary of Chapters 1, 2 and 3. Furthermore, it revisits the research objectives as outlined in Chapter 1 and gives an overview of how each objective was achieved. The chapter also provides a summary of the research findings as discussed in Chapter 3 with some recommendations to consider for future intergovernmental communication during the implementation of relief schemes in the Northern Cape Province.

4.2. Overview of Chapters 1, 2 and 3

Chapter 1 provided an overview of the study. This was first done by providing an orientation and background of the study. The chapter went further and conceptualised the problem under investigation in the study. Chapter 1 also highlighted the research questions which informed the study objectives, which are: (i) what are the theoretical perspectives on drought disasters? (ii) what are the theoretical perspectives for intergovernmental communication? (iii) how did communication affect the implementation of the Northern Cape drought relief scheme and (iv) what are the recommendations and conclusions related to the communication during the implementation of a drought relief scheme?. After providing the central theoretical statement in which the study is grounded, the chapter outlined the research methodology to be used in the study. Furthermore, Chapter 1 proposed some ethical considerations, which were used during the data collection stage. Chapter 1 concluded with the limitation and significance of the study and the study layout.

Chapter 2 reviewed the theoretical perspectives of drought. Drought was theoretically conceptualised and different definitions were provided to explore the complex meaning of the drought concept. Chapter 2 also reflected on the causes of drought, types of drought, drought impacts and proposed some coping strategies for drought impacts already familiar in the farming

community. Strategies to cope with the impacts of drought that government implemented were also presented to obtain a broader perspective and holistic spectrum of strategic approaches available. One of the strategies that government applies to assist farmers affected by drought to cope with or mitigate drought was found to be the implementation of a drought relief schemes. Procedures for rolling out a drought relief scheme from the initial phase as in conducting drought assessments to the implementation of the scheme were outline. Primarily the success of drought response remains in the openness with which the government works with other stakeholders as well as the effective and efficient intergovernmental communication during the period of relief implementation (Department of Health and Human Services, United States, 2012). Drought relief is used in order to respond to drought, and therefore it is important that government officials or departments communicate effectively and efficiently in order to address drought events. Chapter 2 also outlined the importance of intergovernmental communication. Communication in the context of disaster risk management and disaster risk reduction was described as well as intergovernmental relations. Literature, in this case confirmed that intergovernmental communication has a pivotal role during drought disaster.

Chapter 3 of this study, in form of an article, was formulated with the purpose of reaching a wider academic audience. Chapter 3 provided background of the study and briefly discussed the study area as well as existing literature on drought and intergovernmental communication. The chapter further provided an in-depth discussion of the methodology that was chosen for sampling, data collection and analysis. Data was collected during a field study for the implementation of the 2013/2014 drought relief scheme in the Northern Cape Province. The results of the study were analysed, summarised and grouped under thematically. In this regard, the Chapter presented the results as obtained from the stakeholders that dealt with the drought relief scheme in the Northern Cape Province. Lastly, the chapter provides some recommendations pertaining to intergovernmental communication as it relates to the implementation of drought relief schemes in future.

4.3. Achievement of the overall objective of the study

The main objective of the study was to assess whether poor or lack thereof of intergovernmental communication contributed to the delays of the implementation of the 2013/2014-drought relief scheme in the Northern Cape Province, by the Department of Agriculture, Land Reform and Rural Development. By addressing the individual objectives of the study and answering each study question this main objective of the study was addressed in full. This was done through a study of the literature as evidenced in chapters 2 & 3 and empirical research, whose findings are outlined and discussed in chapter 3.

The literature on drought disasters and how its impacts can be reduced through the implementation of governmental coping strategies such as relief schemes was particularly the focus in chapters 2 & 3. Government adopted such a strategy in order to help communities cope with drought. The aid or relief scheme has been established in order to provide funding or other specific types of assistance to victims of drought (Wilhite, *et al.*, 2014:8). In order to work towards the reduction of drought disaster, capacity is needed in the sense that stakeholders or government departments have to work together and effectively if they wish to respond to or manage the event before it causes more impacts, which may lead to a community not being able to recover at all (Vogel *et al.*, 2009).

It was further highlighted in the study that during drought disasters, intergovernmental communication is vital as intergovernmental communication during this period involves multiple messages with regard to the nature of the drought. The importance of this communication is also embedded in the content as the messages expresses concerns, opinions and reactions to drought as well as governmental arrangements for drought disaster management (Snoer, 2011:10). If communication is poor or ineffective amongst governmental departments, chaos may prevail, which may disturb the smooth response to drought disaster at all the government levels. Further literature review revealed that the correct and effective communication between governmental levels can prevent a) the occurrence of drought disaster or reduce its impacts, b) reduce vital delays after drought disaster and c) in general decide the success of disaster management efforts.

The objective was further achieved through collection and analysis of the data from officials of government departments and entities such as municipalities. Data was collected through face-to-face and telephonic interviews. Some of the key issues emanating from the analysis are that intergovernmental communication during the implementation of the drought relief did not take place as it should have been and a number of government officials were confused about what were expected from them with regard to communication during the process. Moreover, stakeholders such as disaster risk management officials were only informed and involved in the process at a later stage.

This study contributed to the knowledge regarding implementation of a drought relief scheme and intergovernmental communication during drought disasters. Below, the chapter demonstrates how each of the individual objectives was addressed.

4.4. Achievement of individual research objectives

The achievement of each individual objective as set out in Chapter 1 of the study is described separately below.

Objective 1: To provide theoretical perspectives on drought disaster.

The first objective was achieved in the literature review in Chapter 2 and in the article in Chapter 3. Chapter 2 presented a theoretical perspective on drought, including the types of drought, causes and impacts of the event. The Chapter discussed and synthesised the existing knowledge and assumptions on drought. The literature review illustrated that droughts are the result of reduced amounts of rainfall over a long period of time, but includes delays at the beginning of the precipitation season that affect crops that depend on rain. Additionally, the literature discussion analysed drought coping mechanisms, with the focus on drought relief schemes that are used to respond to, reduce or mitigate the impacts of drought.

Objective 2: To provide theoretical perspectives for intergovernmental communication.

The second research objective was successfully achieved in the literature review in Chapter 2 and in the article in Chapter 3. Chapter 2 provided a theoretical orientation of intergovernmental relations and communication as it is used in the public sector with a focus of drought assistance. Intergovernmental relations refer to the relations within the governmental bodies, both vertical and horizontal. The discussion on intergovernmental relations provided the context and better understanding of the role of intergovernmental communication in disaster and service delivery. Chapter 2 further explained that intergovernmental communication is a vital tool, which links government departments and is also responsible for improving effectiveness, responsiveness and accountability of government.

During drought episodes it is important for all government spheres (national, provincial and local) to work together in order to work towards the reduction or mitigation of drought disasters. No sphere of government can function effectively without cooperation with and accountability towards each other. Therefore, communication and the coordination thereof are central for governmental departments that are involved in disaster situations.

Objective 3: To evaluate the role of communication in the implementation of the Northern Cape drought relief scheme.

The third research objective was achieved in the article, which forms Chapter 3. An empirical investigation was executed in three Districts namely; Namakwa, Frances Baard and John Taolo Gaetsewe in the Northern Cape Province. This was done in order to provide an understanding of the research question and to provide explanation thereof. The qualitative research approach was adopted which included two sampling methods, namely the purposive and snowball sampling methods. The purposive sampling method was applied to select participants that were directly linked to the research question. The snowball sampling method, was used to select participants that could recommend other participants who had the same experience as them. This mostly

resulted in participants from this sample being farmers (commercial, communal and emerging) who were part of the drought experience in terms of receiving or not receiving assistance.

Chapter 3 further presented the empirical findings according to the two main themes identified: drought relief schemes and intergovernmental communication. The objective was achieved through data analysis. Some of the key themes evident from the analysis included; a lack of understanding between the different departments on who had to do what and when. This was one of the contributions to the delay in the relief scheme. Another factor that was emphasised was a lack of or poor communication from the provincial department of Agriculture with farmers and with other stakeholders. The lack of effective and efficient flow of information was a major contributor to the delay of the drought relief implementation, which caused a number of farmers to be dissatisfied.

Objective 4: To provide recommendations and conclusions related to communication during the implementation of drought relief schemes.

The final chapter concludes the study and provides some recommendations in general and considers suggestions, which aim to improve intergovernmental communication for future drought relief schemes.

4.5. Summary of findings

Results of the study were discussed under the headings of intergovernmental communication and a drought relief scheme. A number of challenges were faced during the drought relief implementation. The following sections provide a summary of the findings:

- Challenges were noticed during the drought assessment. Officials from the provincial department of Agriculture, DALRRD conducted the initial assessment in June 2013, and compiled a report which recommended that a state of disaster should be declared. The National department of Agriculture, DAFF continued with a second assessment, which was conducted in October 2013 in three Districts in the North Cape Province. After struggling with the process of how to declare the drought as a disaster, the disaster was ultimately declared in December 2013. In January 2014, a NDMC task team conducted further assessments for the purpose of classifying the drought situation. In February 2014, the NDMC classified the drought disaster as a provincial state of disaster. The declaration and classification of the provincial state of disaster was important in order for government to make relief available to the affected farmers. It has come out clearly that conducting different assessment by the different role players instead of a combined assessment played an important role in delaying the assistance to farmers.

- When state of disaster was declared, the initial process, which was followed, was inaccurate. This led to DALRRD requesting assistance from PDMC and DDMC for this process, which was overdue. This was one of the reasons for the delay in the declaration process.
- Evidently communication or the lack thereof, contributed to the confusion regarding the development and implementation of the drought relief scheme. Different departments followed their own processes without considering the other role players.
- Lack of communication was also recognised between officials who were part of the drought relief's launch event arrangements. In this instance, responsible officials from Disaster Risk Management were not informed about the launch and did not know what their responsibilities regarding communication entailed.
- Proper communication and coordination amongst stakeholders regarding the developing drought could have assisted in proper planning to address the drought situation. Essential information, such as weather and climate data should have been communicated in the advisory forum meetings, because DAFF could have picked up earlier that there is drought in the Province.

4.6 Recommendations

Taking into consideration the literature consulted and the findings of the study, the following recommendations are made for future implementation of drought relief schemes:

- The reporting structure in the implementation of relief schemes is complicated and needs to be reviewed. For instance, the provincial sector communicates with the NDMC through the PDMC and their National counterparts. In this regards the NDMC will receive the same information that they receive from the PDMC from DAFF.
- An ad hoc interdepartmental drought coordination task team must be established to coordinate efforts to assist farmers during future droughts. It has been indicated in the literature that drought is a recurrent feature of the South African agricultural sector and therefore it must be planned for.
- DAFF should review their process of the distribution of early warning and advisory information and determine if the information reaches the intended recipients.
- Research recommends that the DDMC's and PDMC must take the leading role when it comes to the declaration of a state of disaster in the province.
- DALRRD (and all other stakeholders on the PDMAF) must familiarise themselves with the processes for declaration and classification of a state of disaster and the requirements of the grant framework. To this end the PDMC must develop a guideline stipulating the generic process for the classification and declaration of a state of disaster in the province.

This must be communicated to all stakeholders and an awareness of this process must be created with the political role players.

- It is recommended in this study that officials of the DALRRD frequently communicate with farmers and not only when there is disaster. Proactive rather than reactive communication is required.
- The PDMC, must take a leading role in all matters pertaining to disaster in the province and in doing so they must seek support from the sector department affected

4.7 Conclusion

Throughout the study it has been clear that the Northern Cape Province experienced a number of issues during the drought relief scheme implementation period. Some of these issues included the assessments that were conducted, the delay in the declaration of state of disaster, intergovernmental communication within the involved stakeholders and the implementation of the drought relief scheme itself. The study provided and conceptualised that the drought concept as a hazards is creeping and slow onset thus affecting efforts to address it. Furthermore, the study provided more understanding on intergovernmental communication and how it links to drought disaster. It further explained its importance during drought disaster in order for governmental spheres to act on drought disaster effectively and efficiently (*see* Chapter 2).

The entire study was summarised and analysed in Chapter 3, which provided the methodology used and the findings of the study. It also raised questions of the availability of a contingency plan, which the provincial department does not have in order to follow during the events of drought disasters. Furthermore, what is being communicated during quarterly disaster advisory forum meetings takes too long to reach the intended recipients, the farmers. This is evident from the national disaster communication through regular weather forecasts to the provincial departments. However, still the development and implementation of the drought relief scheme took too long to be implemented. Based on the findings, the study was able to conclude that intergovernmental communication was one of the factor, which contributed to the delays in implementation of the drought relief scheme in the Northern Cape Province in 2013/14 financial year.

In order to improve on the implementation of future drought relief schemes, it is important that the issues of intergovernmental communication and coordination be addressed. The PDMC, must take a leading role in all matters pertaining to disaster in the province and in doing so they must seek support from the sector department affected.

BIBLIOGRAPHY

- Aklilu, Y. & Wekesa, M. 2006. Drought, livestock and livelihoods: lessons from the 1999 – 2001 in Kenya. Humanitarian Practice Network paper, London.
- Alley, W.M. 1984. The palmer drought severity index: limitations and assumptions. *Journal of Climate and Applied Meteorology*, 23:1100-1109.
- Anon. 1999. SA Venues. The Northern Cape. Retrieved from <http://www.sa-venues.com/weather/northerncape.htm>. Accessed on 21 May 2015.
- Austin, W.D. 2008. Drought in South Africa: lessons lost and/or learnt from 1990 to 2005. Johannesburg: Wits. (Dissertation-MA).
- Benson, C. & Clay, E. 1998. The impacts of Drought on Sub-Saharan Africa Economies: A Preliminary Examination. As cited (*In* Mniki, S. 2009. Socio-economic impacts of drought induced disasters on farm owners of Nkonkobe local Municipality. Free State: UFS. (Dissertation - MA).
- Benson, C & Clay, E. 1998. The economic dimension of drought in Sub-Saharan Africa. (*In* Wilhite, D.A., ed. Drought: A Global Assessment. London, U.K: Routledge, London. p. 287-311).
- Bhandari, H., Pandey, S., Sharan, R., Naik, D., Hirway, I., Taunk, S.K. & Sastri, A.S.R.A.S. 2007. Economic costs of drought and rice farmers' drought-coping mechanisms in eastern India. (*In* Pandey, S., Bhandari, H. & Hardy, B., ed. Economic costs of drought and rice farmers' coping mechanisms: a cross-country comparative analysis. Makati City, Philippines: International Rice Research Institute. p. 43-112).
- Boote, D.N. & Beile, P. 2005. Purpose of literature review. Scholar before researchers: On the centrality of the dissertation literature review in research preparation. *Educational Researcher*, 34(6):3-15.
- Brown, A. 2016. Importance of communication in disaster management. Retrieved from http://www.ehow.com/about_6726625_importance-communication-disaster-management.html. Accessed on 27 January 2016.
- Bruwer, J.J. 1993. Drought policy in the Republic of South Africa. *Springer*, 2:199-22.
- Bryman, A. 2012. Social research methods 4th ed. New York, NY: Oxford University press.
- Carter, M. R., & Janzen, S. A. 2012. Coping with drought: Assessing the impacts of livestock insurance in Kenya, BASIS, Brief no. 2012/1

Comfort, L.K. 1999. Taking complexity seriously: Policy analysis, triangulation, and sustainable development. *Journal of Policy Analysis and Management*, 18(1): 181-184.

Comfort, L.K. & Haase, T.W. 2006. Communication, coherence, and collective action: the impact of Hurricane Katrina on communications infrastructure. *Public Works Management & Policy*, 11:1-19.

Comfort, L.K. 2007. Crisis management in Hindsight: cognition, communication, coordination and control. *Public Administration Review*, 67:189-197.

Comfort, L.K., Oh, N., Ertan, G. & Scheinert, S. 2010. Designing adaptive systems for disaster mitigation and response: the role of structure. (In Comfort, L.K., Boin, A. & Demchak, C.C., ed. 2010. *Designing Resilience: preparing for extreme events*. Pittsburgh, Pennsylvania: University of Pittsburgh Press. p. 33-61).

Creswell, J.W. 2009. *Research design: qualitative, quantitative and mixed methods approaches*. 2nd ed. Thousand Oaks, CA: Sage publications.

Creswell, J.W. 2013. *Qualitative inquiry and research design. Choosing among five approaches*. 3rd ed. Thousand Oaks, CA: Sage Publications.

Da Mata Martins, M.H. & Spink, M.J.P. 2015. Use of disaster risk communication technologies as a preventive healthcare practice. *Scientific Electronic Library online*, 19(54):503-514.

Department of Agriculture and Water Resources Australia. 2015. History of drought policy and programs. Retrieved from <http://www.agriculture.gov.au/ag-farm-food/drought/drought-policy/history>. Accessed on 04 April 2016.

Department of Food and Agriculture California. 2015. Drought resources for farmers, ranchers & farmworkers. Retrieved from <https://www.cdfa.ca.gov/drought/>. Accessed on 20 January 2016.

De Vos, A.S., Strydom, H., Fouché, C.B. & Delpont, C.S.L. 2011. *Research at grass roots: For the social sciences and human service professions*. 4th edition. Pretoria: Van Schaik.

Ding, S., Chen, C., Bhandari, H. & Pandey, S. 2007. Economic costs of drought and rice farmers' drought coping mechanisms in southern China. (In Pandey, S., Bhandari, H. & Hardy, B., ed. *Economic costs of drought and rice farmers' coping mechanisms: a cross-country comparative analysis*. Makati City, Philippines: International Rice Research Institute. P.149-184).

Ding, Y., Hayes, M.J., & Widhalm, M. 2010. Measuring economic impacts of drought: a review and discussion. *Papers in National Resources*.

Dynes, R.R. & Quarantelli, E.L. 1977. Organisational communications and decision making in crisis. As cited (*In Kapucu, N. 2006. Interagency communication networks during emergencies boundary spanners in multiagency coordination, *The American Review of Public Administration*, 36(2): 207-225).*

Economic and Social Commission for Asia and the Pacific. 2015. El Nino 2015/2016: Impact outlook and policy implications.

Retrieved from

<http://www.unescap.org/sites/default/files/El%20Nino%20Advisory%20Note%20Dec%202015%20Final.pdf>. Accessed on 15 February 2016.

Eriyagama, N., Smakhtin, V. & Gamage, N. 2009. Mapping drought patterns and impacts: a global perspective. Colombo, Sri Lanka: International Water Management Institute, Research Report 133.

Fafchamps, M., Udry, C. & Czukas, K. 1998. Drought and saving in West Africa: Are livestock a buffer stock? *Journal of Developmental Economics*, 55:273-305.

FAO (Food and Agricultural Organization). 2004. Drought impact mitigation and prevention in the Limpopo River Basin: A situational analysis. Land and Discussion Paper 4, Rome, Italy.

FAO (Food and Agriculture Organization). 2016. The state of food and agriculture: climate change, agriculture and food security. Rome, Italy.

Fixsen, D. L., Naoom, S.F., Blase, K.A., Friedman, R.M. & Wallace, F. 2005. Implementation research: a synthesis of the literature. Tampa, Florida: University of South Florida, Louis de la Parte Florida Mental Health Institute, The national Implementation Research Network (FMHI Publication 231).

Folger, P., Cody, B.A. & Carter, N.T. 2012. Drought in the United States: Causes and issues for congress.

Fox, W. & Meyer, I.H. 1995. Public administration dictionary. As cited (*In Malan, L. 2005. Intergovernmental relations and co-operative government in South Africa: The ten-year review. *Politeia*, 24(2):226-243).*

Gamarra, B. 2007. El Nino as a challenge for global climate models.

Glantz, M. H., Betsill, M & Crandall, K. 1997. Food security in Southern Africa: Assessing the use and value of ENSO information. NOAA Project report for the National Centre for Atmospheric Research. Boulder, Colorado.

Gondal, U.H. & Shahbaz, M. 2012. Interdepartmental communication increases organizational performance keeping HRM as a mediating variable. *Journal of Asian Business Strategy*, 2(6):127-141.

Grinnel, R.M & Unrau, Y.A. 2011. Social work research and Evaluation. Foundation of evidence based on practices. 9th ed. Madison Avenue, NY: Oxford University Press.

Gupta, A.K., Tyagi, P. & Sehgal, V.K. 2011. Drought disaster challenges and mitigation in India: strategic appraisal. *Current Science*, 100(12): 1795-1806.

Habiba, U., Shaw, R. & Takeuchi. 2011. Farmer's perception and adaptation practices to cope with drought: perspectives from Northwest Bangladesh. *International Journal for Disaster Risk Reduction*, 1:72-84.

Hamdy, A. 2010. Specific mitigation actions to reduce short and long-term drought risks. Mediterranean Agronomic Institute, 95:317-321.

Hayes, M. J., Wilhelmi, O.V., & Knutson, C. L. 2004. Reducing drought risk: bridging theory and practice. *Natural Hazards Review*, 5(2): 106-113.

Hazelton, D.G., Pearson, I. & Kariuki, A.W. 1994. Development of drought response policy options for cost-effective provision of water supply to rural communities subject to recurring droughts. Report to the Water Research Commission by the Development Services and Technology Programme Division of Water Technology CSIR. Germany: Inter-research.

Heim, R.R. 2009. A review of twentieth century drought indices used in the United States. *American Meteorological Society*, 83(8):1149-1165.

Heltberg, R., Siegel, P.B. & Jorgensen, S.L. 2009. Addressing human vulnerability to climate change: toward a 'no- regrets' approach. *Global Environmental Change*, 19(1):89-99.

Hindi, N.M., Miller, D.S. & Catt, S.E. 2004. Communication and miscommunication in corporate America: evidence from fortune 200 films. *Journal of organisational culture, communication and conflict*, 8(2): 13-26.

Hisdal, H. & Tallaksen, L.M. 2000. Drought events definition. Technical report NO. 6. University of Oslo: Department of Geophysics, (N-0315).

Hoffman, M.T., Carrick, P.J., Gillson, L. & West, A.G. 2009. Drought, climate change and vegetation response in the succulent Karoo, South Africa. *South African Journal of Science*, 106:54- 60.

Hosseini, S.M., Sharfzadeh, A. & Akbari, M. 2009. Cause effect and management mechanisms of drought crisis in rural and nomadic communities in South-eastern Iran as perceived by agricultural/rural managers and specialist. *J Hum Ecol*, 27(2):189-200.

Hoppner, C. & Buchecker, M. 2010. Risk communication and natural hazards.

Hyogo framework of action 2005-2015. 2005. Building the resilience of nations and communities to disasters. Presented at the world conference on disaster reduction conference, Hyogo, Japan 18-22 January.

IFRC (International Federation of Red Cross). 2013. Climatological hazards: drought. Retrieved from <https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/definition-of-hazard/drought/>. Accessed on 6 September 2015.

Illes, K. & Mathews, M. 2015. Leadership, trust and communication: building trust in companies through effective leadership communication. Retrieved from <http://top-b.com/wp-content/uploads/2015/02/Leadership-Trust-and-Communication-Report-February-2015-FINAL.pdf>. Accessed on 04 April 2016.

IPSOS. 2009. Understanding your stakeholders: a best practice guide for the public sector. Social research institute, London.

Irvine, A. 2010. Using phone interviews. Retrieved from <http://eprints.ncrm.ac.uk/1576/1/14-toolkit-phone-interviews.pdf>. Accessed on 15 April 2016.

Jacques, G. 1996. Drought in Botswana: intervention as fact and paradigm. *Pula: Botswana Journal of African Studies*, 9(1): 34-57.

Jordaan, A.J., Sakulski, D. & Jordaan, A.D. 2011. Drought risk assessment for extensive farming in the Northern Cape Province. Retrieved from

http://www.disaster.co.za/pics/PrAJJordaan_DSakulski_ADJordaanDMISA2011DroughtRiskAssmntNorthernCape.pdf. Accessed on 7 September 2015.

Jordaan, A.J., Sakulski, D. & Jordaan, A.D. 2013. Interdisciplinary drought assessment for agriculture: the case of communal farmers in the Northern Cape Province, South Africa. *South African Journal of Agricultural Extension*, 41(1):44-58.

Joshi, M. 2011. What is the importance of proper communication in disaster preparedness and mitigation?

Retrieved from <http://www.preservearticles.com/201101143264/importance-of-proper-communication-in-disaster-preparedness-and-mitigation.html>. Accessed on 04 April 2016.

Joubish, M.F., Kurram, M.A., Ahmed, A., Fatima, S.T. & Haider, K. 2001. Paradigms and characteristics of good qualitative research. *World Applied Science Journal*, 12(11):2082-2087.

Kandji, S.T., Verchot, L. & Mackensen, J. 2006. Climate change climate and variability in the Sahel Region: Impacts and Adaptation in the agricultural sector. Nairobi, Kenya: UNEP.

Kellet, J. & Sparks, D. 2012. Disaster risk reduction: spending where it should count. Briefing paper for Global Humanitarian Assistance, Somerset, UK.

Keyantash, J. & Dracup, J.A. 2002. The qualification of drought: an evaluation of drought indices. *American Meteorological Society*, 1167-1180.

Kogan, F.N. 1997. Global drought watch from space. *The Bulletin of the American Meteorological Society*, 78:621-636.

Knopf, J.W. 2006. Doing literature review. *American Political Science Association*, 1:127-132.

Knutson, C., Hayes, M. & Phillips, T. 1998. How to reduce drought risk. Western drought coordination council: preparedness and mitigation working group.

Kumar, A. 2006. Human development and natural resources. New Delhi, Delhi: Sarup & Sons.

Latham, B. 2007. Sampling: what is it? Qualitative research methods. Retrieved from [http://webpages.acs.ttu.edu/rlatham/Coursework/5377\(Quant\)\)/Sampling_Methodology_Paper.pdf](http://webpages.acs.ttu.edu/rlatham/Coursework/5377(Quant))/Sampling_Methodology_Paper.pdf). Accessed on 19 April 2016.

Layman, T. 2003. Intergovernmental relations and service delivery in South Africa.

Lekprichakul, T. 2009. Ex Ante and Ex Post Risk Coping Strategies: How do subsistence farmers in Southern and Eastern Province of Zambia cope?. Chieko Umetsu ed. Vulnerability and resilience of social –ecological systems project report, FY2008. Research Institute of Humanity and Nature, Kyoto, pp. 113-129.

Lupu, A.B., Ionescu, F.C. & Borza, I. 2010. The phenomenon of drought and its effects within Romania. *Research Journal of Agricultural Science*, 42(2):102-109.

Maartens Y. 2011. Development communication in disaster risk reduction: the G.I.R.R.L. (Girls in Risk Reduction Leadership) Project.

Mack, N., Woodsong, C., MacQueen, K.M., Guest, G & Namey, E. 2005. Qualitative research methods: a data collector's field guide. Research Triangle Park, North Carolina: USAID.

Maifo, M.C. 2011. Stock fodder drought relief scheme: a case of the department of agriculture in Polokwane municipality. Free State: UFS. (Dissertation - MA).

Masendeke, S. & Shoko, K. 2013. Drought coping strategies and their effectiveness: the case of ward 12 in Mberengwa District Zimbabwe. *International Journal of Social Science Studies*, 2(1): 137-152.

Maynard, S. 2006. Personal and professional coaching: a literature review. Tennessee: Walden University. (Thesis - PhD).

Mbilinyi, A., Saibul, G.O. & Kazi, V. 2013. Impacts of climate change to small-scale farmers: voice of farmers in village communities in Tanzania. ESRF Discussion paper No. 47

McCarthy, F.X. 2009. FEMA's disaster declaration process: A primer. CRS Report for congress. (RL34146).

McKee, T.B., Doesken, N.J., Kleist, J., Shrier, C.J. & Stanton, W.P. 2000. A history of drought in Colorado. Lessons learned and what lies ahead.

McNab, A.L. & Karl, T.R. 2013. Climate and droughts.

Retrieved from <http://geochange.er.usgs.gov/sw/changes/natural/drought/>. Accessed on 04 April 2016.

McPhanden, M.J. 2001. El Nino and La Nina: Causes and global consequences. *Encyclopaedia of Global Environment Change*, 1:353-370.

Medford-Davis, L.N. & Kupar, G.B. 2014. Preparing for effective communication during disasters: lessons from a World Health Organisation quality improvement project. *International Journal of Emergency Medicine*, 7(15):1-7.

Mhambi-Musimwa, K.N. 2009. The socio economic effects of conservation farming in drought mitigation: a case study of Mpima women in Kabwe, Zambia. Free State: UFS. (Dissertation - DA).

Mishra, A.K. & Singh, V.P. 2010. A review of drought concepts. *Journal of Hydrology*, 391(2):202-216.

Miyan, M.A. 2015. Drought in Asian Least developed countries: vulnerability and sustainability. *Weather and Climate Extremes*, 7:8-23.

Mogotsi, K., Nyangito, M.M & Nyariki, D.M. 2012. The role of drought amongst Agro-Pastoral communities in semi-arid environment: The case of Botswana. *Journal of arid environments*, 91:38-44.

Monacelli, G. 2005. Drought assessment and forecasting. Report for World Meteorological Organisation. Weather, Climate and Water.

Retrieved from <http://www.wmo.int/pages/prog/hwrp/documents/regions/DOC8.pdf>. Accessed on 16 February 2016.

Monette, D.R., Sullivan, C.R. & De Jong, C.R. 2002. Applied social research. As cited (*In* Mnisi, T. 2015. Digital storytelling: creating participatory space, addressing stigma and enabling agency. Bloemfontein: UFS).

Moore, H. 1956. Towards a theory of disaster. *American Sociological Review*, 21:734-737.

Mugo, F. W. 2002. Sampling in research. Retrieved from

https://www.uonbi.ac.ke/fridah_mugo/files/mugo02sampling.pdf. Accessed on 29 June 2015.

Mukheibir, P. & Sparks, D. 2005. Climate variability, climate change and water resource strategies for small municipalities: water resource management strategies in response to climate change in South Africa, drawing on the analysis of coping strategies adopted by vulnerable communities in the Northern Cape Province of South Africa in times of climate variability. Cape Town, University of Cape Town: Energy Research Centre.

Munemo, N. 2012. Domestic politics and drought relief in Africa: explaining choices. Boulder, CO: Lynne Rienner Publishers.

National Disaster Management Authority of India. 2010. National disaster management guidelines: management of drought.

National Drought Management Centre (NDMC). 2015. Types of drought. Retrieved from <http://drought.unl.edu/DroughtBasics/TypesofDrought.aspx>. Accessed on 12 June 2015.

National Oceanic and Atmospheric Administration (NOAA). 2008. Drought. Retrieved from <http://www.nws.noaa.gov/os/brochures/climate/DroughtPublic2.pdf>. Accessed on 3 April 2015.

National Oceanic and Atmospheric Administration (NOAA). 2015. Drought: monitoring economic, environmental and social impacts. Retrieved from <https://www.ncdc.noaa.gov/news/drought-monitoring-economic-environmental-and-social-impacts>. Accessed on 15 February 2016

Ndlovu, S. 2010. Coping with drought: research findings from Bulilima and Mangwe Districts, Matabeleland South, Zimbabwe.

Ndlovu, B. 2011. Drought coping strategies at Mutasa District in Zimbabwe. Free State: UFS. (Dissertation- MA).

Neuman, W.L. 2000. Social research methods: qualitative and quantitative approaches. Boston: Allyn and Bacon.

Neuman, W.L. 2006. Social research methods: qualitative and quantitative approaches. New York: Pearson Allyn and Bacon.

Ngaka, M.J. 2012. Drought preparedness, impact and response: A case of Eastern Cape and Free State provinces of South Africa. *Journal for Disaster Risk Studies*, 4(1): 36-45.

Olaleye, O.L. 2010. Drought coping mechanisms: a case study of small-scale farmers in Moteo district of the Free State Province. Pretoria: UNISA (Dissertation- Msc).

O'leary, Z. 2014. The essential guide to doing research. London: Sage publications

Ouma, C.O. 2011. Assessment of the post drought recovery strategies among pastoralists in Turkana central district. Nairobi: Kenyatta University (Thesis- MA).

- Pandey, S., Bhandari, H., Ding, S., Prapertchob, P., Sharan, R., Naik, D., Taunk, S.K. & Sastri, A. 2006. Coping with drought in rice farming in Asia: insight from a cross-country comparative study. *Agricultural Economists*, 37(1): 213-224.
- Paul, B.K. 1998. Coping mechanisms practices by drought victims (1994/5) in North Bengal, Bangladesh. *Applied Geography*, 18(4):355-373.
- Paula, A., Gutierrez, A., Engle, N.L., De Nys, E., Molejon, C. & Martins, E.S. 2014. Drought Preparedness in Brazil. Weather and climate extremes. *Science Direct*, 3:95-106.
- Peng, W. & Littlejohn, D. 2001. Organisational communication and strategy implementation - a primary equity. *International Journal of Contemporary Hospitality Management*, 13(7): 360-363.
- Ramamasy, S. & Baas, S. 2007. Climate variability and change: adaptation to drought in Bangladesh. Rome: Food and agriculture organisation of the United Nations.
- Reindrop, N. & Wiles, P. 2001. Humanitarian coordination: lessons from recent field experience. A study commissioned by the office for the coordination of humanitarian affair.
- Resnik, D.B. 2011. What is Ethics in Research & why is it important? Retrieved from <http://www.niehs.nih.gov/research/resources/bioethics/whatis/>. Accessed on 15 May 2015.
- Robinson, I.B. 1982. Drought relief schemes for the 'pastoral zone'. *Australia Rangel Journal*, 4(2): 67-77.
- Rohde, P., Lewisohn, P.M. & Seeley, J.R. 1997. Comparability of telephone and face-to-face interviews in assessing axis I and II disorders. *The American Journal of Psychiatry*, 154:1593-1598.
- Rouault, M. & Richards, Y. 2003. Intensity and spatial extension of drought in South Africa at different time scales. *Water Research Commission*, 29(4):489-500.
- Sagala, S.A.H. 2007. Risk communication for disaster preparedness of earthquake and volcanic eruption. Discussion paper: PhD Summer Academy 22-28 July.
- Samra, J.S. 2004. Review and analysis of drought monitoring, declaration and management in India. Working paper 84. Colombo, Sri Lanka: International Water Management Institute.

Schneider, S. 2008. Who's to blame? (Mis) perceptions of the intergovernmental response to disasters. *The Journal of Federalism*, 38(4): 715-738.

Sena, L. & Michael, K.W. 2006. Disaster Prevention and Preparedness. Jimma University.

Shah, N.A., Afzal, M., Khair, S.M. & Khan, M.R. 2001. Effect of drought on the performance of major fruits during-2000, in Highland Balochistan. *Journal of Biological Sciences*, 1(11): 1095-1097.

Skavdal, T. 2003. Introduction to disaster assessment and assessment methodologies. International Training program on total disaster risk management, 10-13 June.

Smith, P.M. 1985. International humanitarian assistance: disaster relief actions in international law and organisation.

Snoer, E. 2011. Communication for disaster risk reduction.

Solh, M. and Van Ginkel, M. 2014. Drought preparedness and drought mitigation in the developing world's dry lands. *Weather and climate extremes. Science direct*, 3:62-66.

South Africa. 1998. Green Paper on Disaster Management. Government Printer, Pretoria.

South Africa. Department of Agriculture. 2005. Drought management plan. Pretoria: Government publishers.

South Africa. 2015. Department of Agriculture, Forestry and Fisheries: Sectoral cold spell management plan. *Government Gazette*, 38835: 495, 29 May.

South Africa. Department of Agriculture, Land Reform and Rural Development. 2015. Memorandum of the Head of Department: independent evaluation of the drought relief scheme. Government printer.

South Africa. Department of Government Communication and Information System. 2015. Pretoria: Government communication. Retrieved from <http://www.gcis.gov.za/content/about-us/chief-directorates/gov-stakeholder>. Accessed on 06 July 2015.

South Africa. 2014 Department of Water Affairs. Address to the seminar on climate service and early warning systems for water and agriculture. Seminar held 28 August, Stockholm: SE. Retrieved from <https://www.dwa.gov.za/Communications/MinisterSpeeches/2012/Seminar%20on%20Climate%20Service%20and%20Early%20Warning%20Systems%20for%20Water%20and%20Agriculture>

[20Services%20and%20Early%20Warning%20Systems%20for%20Water%20in%20Agriculture.pdf](#). Accessed on 10 June 2015.

Steinemann, A.C., Hayes, M.J. and Cavalcanti, L.F.N, 2005. Drought Indicators and Triggers, (In Wilhite, Drought and water crisis: science, technology, and management issues. Taylor and Francis Group, London).

Sturges, J.E. & Hanrahan, K.J. 2004. Comparing telephonic and face-to-face qualitative interviews: a research note. *Qualitative research*, 4:107-118)

Swaney, J. A. 1996. Comparative risk analysis: Limitations and opportunities. *Journal of Economic Issues*, 30(2): 463-473.

Tadesse, T., Haile, M., Senay G., Wardlow, B., & Knutson, C. 2008. The need for integration of drought monitoring tools for proactive food security management in Sub-Saharan Africa. *Natural Resource Forum*, 32:265-279.

Tannehill, I.R. 1947. Drought: Its causes and effects. Princeton University Press, New Jersey, NJ: Princeton.

Thurow, T.L. & Taylor, C.A. 1999. The role of drought in Range management. *Journal of Range Management*, 52(5): 413-419.

Tomaszowski, E. 2014. Seasonality level of hydrological drought in rivers and its variability. p. 278-284.

Udmale, P., Ichikawa, Y., Manandhar, S., Ishidaira, H. and Kiem, A.S. 2014. Farmers' perception of drought impacts, local adaptation and administrative mitigation measures in Maharashtra State, India. *International Journal of Disaster Risk Reduction*, 10:250-269.

United Nations Office for Disaster Risk Reduction (UNISDR). 2005. Hyogo framework for action 2005-2015: Building a resilience of nations and communities to disaster.

United Nations secretariat of the International Strategy for Disaster Reduction (UNISDR). 2007. Drought risk reduction framework and practices: contributing to the implementation of the Hyogo Framework of Action.

United Nations secretariat of the international strategy for disaster reduction (UNISDR). 2008. Disaster preparedness for effective response: Guidance and indicator package for implementing priority five of the Hyogo framework. Geneva, Switzerland: UNISDR.

United Nations (UN). 2005. Economic and Commission for Western Asia, Water development report 1: Vulnerability of the region to socio-economic drought. United Nations Publications.

Unganai, L.S. 1994. Drought and southern Africa: A note from the Harare Regional drought monitoring centre.

Urama, K.C., & Ozor, N. 2010. Impacts of climate change on water resources in Africa: the role of adaptation. African Technology Policy Network, 1-29.

US Geological Survey's (USGS). The USGS water science school: questions and answers about droughts. Retrieved from <http://water.usgs.gov/edu/qadroughts.html>. Accessed on 16 November 2015.

Van Loon, A.F. 2015. Hydrological drought explained. *Wires Online Library*, 2(4):359-392.

Van Zyl, K. 2006. A study on a disaster risk management plan for the South African agricultural sector.

Vogel, C.H., 1995. People and drought in South Africa: reaction and mitigation. (In Binns, T. ed. 1995. People and Environment in Africa. Wiley, West Sussex, 249-256).

Vogel, C., Laing, M., & Monnik, K. 2000. Drought in South Africa, with special reference to the 1980-94 period. (In Wilhite, D. A, ed. Drought: A Global Assessment, Routledge Publishers, London: 348-366).

Vogel, C. 2005. "Seven fat years and seven lean years?" Climate change and agriculture in Africa. *IDS BULL*, 36:30-35.

Vogel, C., Koch, I. & Van Zyl, K. 2009. "A persistent truth"- reflections on drought risk management in Southern Africa.

Wilhite, D.A. & Svoboda, D. 2000. Drought: Pervasive impacts of creeping phenomenon. In drought: A global assessment, 1:1-21.

Wilhite, D.A., Svoboda, M.D., & Hayes, M.J. 2006. Understanding the complex impacts of drought: A key to enhancing drought mitigation and preparedness. *Water Resource Management*, 21:764-774.

Wilhite, D.A. & M.H. Glantz. 1985. Understanding the Drought Phenomenon: The Role of Definitions. *Water International*, 10(3):1-16.

Wilhite, D.A., 1993. The enigma of drought. (*In Wilhite D.A., ed. Drought assessment, management and planning: theory and case studies. Springer, New York).*

Wilhite, D.A. 1994. Preparing for drought: a guide for developing countries. DIANE Publishing.

Wilhite, D.A. & Wood, D.A. 1994. Drought management in a changing west: new directions for water policy, IDIC Technical Series 94-1, International Drought Information Center, University of Nebraska- Lincoln, USA.

Wilhite, D.A. 1997. Improving drought management in the West. The role of mitigation and preparedness. National Drought Mitigation Center. University of Nebraska.

Wilhite, D.A., Svoboda, M.D. & Hayes, M.J. 2007. Understanding the complex impact of drought: a key to enhancing drought mitigation and preparedness. *Water resource management*. 21:763-774.

Wilhite, D.A., 2000. Drought as a natural hazard: Concepts and definitions. (*In Wilhite, D. A., ed. Drought: A Global Assessment, Routledge: London. p.3–18).*

Wilhite, D.A., 2002. Combating drought through preparedness. *Natural Resources Forum*, 26 (4): 275-285.

Wilhite, D.A. & Buchanan-Smith, M. 2005. Drought as Hazard: understanding the natural and social context. (*In Wilhite D. A., ed. Drought and Water Crises: Science, Technology, and Management Issues, Taylor & Francis Group, Boca Raton, Florida).*

Wilhite, D.A. 2005. Drought and water crises: science, technology, and management issues. CRC Press, Boca Raton, Florida

Wilhite, D.A. 2005. Reducing the impacts of drought: progress towards risk management. (*In Ribot, J.C., Magalhaes, A.R. and Panagides, S.S., ed. Climate variability, climate change and social vulnerability in the semi-arid tropics. Cambridge University Press, New York).*

Wilhite, D.A., Hayes, M.J., & Knutson, C.L. 2005. Drought preparedness planning: building institutional capacity. (93-135). (In Wilhite D. A., ed. *Drought and Water Crises: Science, Technology, and Management Issues*, Taylor & Francis Group, Boca Raton, Florida).

Wilhite, D.A., Svoboda, M.D. & Hayes, M.J. 2006. Understanding the complex impact of drought: a key to enhancing drought mitigation and preparedness. *Water resource management*. 21:763-774.

Wilhite, D.A. 2008. Preparedness and coping for agricultural drought risk management: recent progress and trends. (In Sivakumar, M.V.K. & Motha, R.P., ed. *Managing weather and climate risks in agriculture*.

Wilhite, D.A. 2012. *Drought assessments, management and planning: theory and case studies*. Kluwer Academic Publishers, New York.

Wilhite, D.A., Sivakumar, M.V.K. & Pulwarty, R. 2014. Managing drought risk in a changing climate: the role of national drought policy. *Weather and Climate Extremes*, 3:4-13.

Wisner, B. & Adams, J. 2002. *Environmental health in emergencies and disaster*. Geneva, Switzerland: World Health Organisation.

WHO (World Health Organisation). 1999. *Emergency health training programme for Africa-Coping Mechanisms*.

Retrieved from <http://www.who.int/disasters/repo/5517.pdf> accessed on 31 August 2015.

World Meteorological Organisation (WMO). 2006. *Drought monitoring and early warning: concept, progress and future challenges*. Retrieved from http://www.droughtmanagement.info/literature/WMO_drought_monitoring_early_warning_2006.pdf. Accessed on 04 April 2016.

Wu, H., Hayes, M.J., Weiss, A., & Hu, Q. 2001. An evaluation of the standardized precipitation index, the china-Z index and the statistical Z score. *International Journal of Climatology*, 21(1): 745-758.

Zamani, G.H., Gorgievski-Duijvesteijn, M.J. & Zarafshani K. 2006. Coping with drought: towards a multilevel understanding based on conservation of resources theory. *Hum Ecol, Springer*, 34:677-692.

Zhang, J. 2004. Risk assessment of drought disaster in the maize-growing region of Songliao Plain, China. *Agriculture, Ecosystems & Environment*, 102(2): 133-153.

Ziervogel, G., New, M., Van Garderen, E.A., Midgley, G., Taylor, A., Hamann, R., Stuart-Hill, S., Myers, J. & Warburton, M. 2014. Climate change impacts and adaptation in South Africa. *WIREs Climate Change*, 5:605-620.

ANNEXURES A

QUESTIONNAIRES



Evaluation of the Implementation the drought relief scheme for 2013/14-drought Northern Cape

Questionnaire Protocol

The implementation of the scheme took longer than anticipated and this led to the negative publicity of the department mainly from the farmers who were supposed to benefit from the scheme. The chain of events that took place provided an ideal opportunity to evaluate the processes that lead to the declaration of the state of disaster and the implementation of the scheme in order to identify the gaps and to provide recommendation for future implementation of the scheme. The participant(s), has been from all the stakeholders that were involved in the process have been identified as a key source of information, in order to address the research questions associated with the study. Different set of questions will be directed towards the different stakeholders to solicit their views on what transpired during the implementation of the scheme. The ACDS hereby thanks the participant(s), for availing their time and expertise to participate in the research study.

Some of the protocols for the questionnaire are as follows:

We would like to thank the participants for their inputs.

Kind Regards

PROVINCIAL DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT

As the main custodians of the implementation of the drought relief scheme, the department of Agriculture, Land Reform and Rural Development is in a good position to provide perspectives of what transpired during the implementation of the scheme. In this regard a number of questions have been identified to lead the discussion in order to gather the relevant information.

1. Planning and Assessment of the drought situation

- What prompted the government to develop a drought assistance scheme?
- What events took place prior this assessments?
- What prompted the assessment of the drought situation between 10 – 21 June 2013?
- When did you start preparing an action plan for these drought episodes?
- How was the drought relief scheme administered in the past?

2. Declaration of the state of disaster

- Which steps did you follow in declaring a state of disaster for this drought episode?
 - Which stakeholders were involved in the meetings that have led to the declaration of a state of disaster in Northern Cape?
 - What prompted the government to declare a state of disaster for the drought episode?
 - Did the report compiled after the assessments inform the declaration of the state of disaster?
- If so, why did it take so long to declare the state of disaster after the finalisation of the report?
- How long does it normally take between the declaration of the state of disaster and the disbursement of funds?
 - In future how can such delays be circumvented?

3. Communications with the farmers and the other stakeholders

- What did you do to inform the farmers regarding the drought during the 2013/14 drought episodes?
- How was the farmers informed regarding the declaration of a state of disaster
- What led to the announcement of the relief scheme to the farmers before the declaration of the state of disaster and the sourcing of necessary funding?
- How did the government correspond to negative media coverage of the drought relief scheme implementation?

4. Implementation of the scheme and Funding

- What procedures were followed to identify and register the affected farmers?
- Which legislative protocols and acts were followed in doing so?
- How are other schemes for disasters such as floods and fires administered by the department?
- Prior to this drought, did the department have a disaster risk management plan in place?

If so, is it funded?

- How long did the relief funds take before they were secured?
- How were the relief funds used to assist the farmers?
- Were the farmers satisfied with the assistance they received from the government?

If not why?

5. Challenges and recommendations for future schemes

- What were the major challenges implementing this drought relief scheme?
- Why did you experience these challenges?
- How were these challenges addressed?
- What recommendations can you make for the better management of the next episode of drought that may prevail?
- What were the challenges during the drought relief scheme implementation? Process?

ANNEXURE B

DEPARTMENT OF AGRICULTURE FORESTRY AND FISHERIES

As the main sector department affected by droughts, the Department Agriculture, Forestry and Fisheries played an important role during the implementation of the NC drought relief scheme, and therefore is in a good position to provide perspectives of what transpired during the implementation of the scheme. In this regard a number of questions have been identified to lead the discussion in order to gather the relevant information.

1. Planning and Assessment of the drought situation

- During the 2013/14-drought episode in the Northern Cape when were you informed regarding those drought episodes?
- What was DAFF's role in the 2013/14 Northern Cape droughts?
- Which legislative or policy framework did you follow to assist in the Northern Cape?
- Why did the department conduct their own assessment of the drought? (Of info: the provincial department of agriculture and the affected stakeholders conducted an assessment between 10 -21 June 2013 and the report made available in July).
- Why were these assessments conducted four months after the assessment by the Provincial stakeholders?
- Was there any assessment completed with the farmers from your department?
- Does the department have a disaster risk management sector plan in place?
- Does the department have contingency plans in place for specific disasters?
- Is the implementation of these plans funded?
- How did this assist in the case of the NC 2013/14 drought situation?
- In most cases, relief schemes take longer than anticipated, why is this?
- In future how can such delays be circumvented?

2. Declaration of the state of disaster

- What was the department's role in the declaration of the state of disaster?
- Did the report compiled after the assessments inform the declaration of the state of disaster?
- If so, why did it take so long to declare the state of disaster after the finalisation of the report?
- In future how can such delays be circumvented?

3. Communications with the farmers and the other stakeholders

How did you communicate with the Department of Agriculture in the Northern Cape?

How did the government respond to negative media coverage of the drought relief scheme implementation?

4. Implementation of the scheme and Funding

- What procedures were followed to identify and register the affected farmers?
- Which legislative protocols and acts were followed in doing so?
- How are other schemes for disasters such as floods and fires administered by the department?
- In your opinion, how should disaster relief scheme and particularly drought relief

scheme be administered?

- Did the department provide any funding for the NC drought?
- Was the department involved in the disbursement of funds?

5. Challenges and recommendations for future schemes

- What were the major challenges implementing this drought relief scheme?
- Why did you experience these challenges?
- How were these challenges addressed?
- What recommendations can you make for the better management of the next episode of drought that may prevail?
- What were the challenges during the drought relief scheme implementation? Process?

ANNEXURE C

NATIONAL DISASTER MANAGEMENT CENTRE

As the main custodians of the Legislation for addressing disaster risk situations, the National Disaster Management Centre was one of the stakeholders involved in the 2013/14 Northern Cape drought and therefore their perspectives on what transpired during the implementation of

The scheme becomes important. In this regard a number of questions have been identified to lead the discussion in order to gather the relevant information.

1. Planning and Assessment of the drought situation

During the 2013/14-drought in the Northern Cape when were you informed regarding those drought episodes?

What was your involvement in these drought episodes?

Were you able to assist?

2. Declaration of the state of disaster

- What are the procedures for declaring a provincial and district state of disaster?
- Are there certain protocols followed when declaring a state of disaster?
- What are the characteristics used to classify a state of disaster as national, provincial or local disaster?
- In the case of the 2013/14 NC drought disasters it is alleged that the NDMC advised that each affected municipality submit incident reports for the purpose of declaring a state of disaster. Is this the requirement of DMA?
 - Which sections of the DMA are applicable?
- It is also alleged that in the meeting that took place on 06 November 2013 in Upington, the NDMC advised that all affected farmers must make individual application so that their database can be used to compile a business plan for funding application. Is this a standard practice whenever there is a disaster?
- It took close to 6 month from the initial assessment of the conditions to the declaration of the state of disaster. What were the reasons for this?
 - Does it normally take this long?
- How can these delays be circumvented in future?
- The classification of the state of disaster was done two month after the declaration. What caused the delays?

3. Communications with the farmers and the other stakeholders

- How did you communicate with the Department of Agriculture in the Northern Cape?
- How did the government respond to negative media coverage of the drought relief scheme implementation?

4. Implementation of the scheme and Funding

- What informed the allocation of R50 million for the drought relief whereas the assessment done by the department costed the scheme at R360 million for a period of four month?
- How long did the relief funds take before they were secured?

- What channels are followed to secure funding?
 - Once funds are secured how are they transferred to the sector department?
- Who is accountable to make sure funds reaches the intended recipients?

5. Challenges and recommendations for future schemes

- What were the challenges experienced during your involvement in the Northern Cape drought episode?
- What recommendations can you make for the better management of the next episode of drought that may prevail?
- What were the challenges during the drought relief scheme implementation? Process?

ANNEXURE D

PROVINCIAL COGTA, PDMC AND DDMC

As the organs of state at local level to address disaster risk, COGTA, PDMC and NDMC played a certain role during the implementation of the drought relief scheme, and therefore are in a good position to provide perspectives of what transpired during the implementation of the scheme. In this regard a number of questions have been identified to lead the discussion in order to gather the relevant information.

1. Planning and Assessment of the drought situation

- During the 2013/14-drought episode in the Northern Cape when were you informed regarding those drought episodes?
- What was your involvement in these drought episodes?
- When did you start and finish rendering your services to the province?
- Was there any assessment completed with the farmers from your department?

2. Declaration of the state of disaster

- What are the procedures for declaring a provincial and district state of disaster?
- Are there certain protocols followed when declaring a state of disaster?
- What are the characteristics used to classify a state of disaster as national, provincial or local disaster?
- What was your role in the declaration of the state of disaster?

3. Communications with the farmers and the other stakeholders

- How did you communicate with the Department of Agriculture in the Northern Cape?
- What was your role in informing the farmers about the declaration?
- What led to the announcement of the relief scheme to the farmers before the declaration of the state of disaster and the sourcing of necessary funding?
- How were you affected by the negative media coverage of the drought relief scheme implementation?

4. Implementation of the scheme and Funding

- Where you involved in the identification and registration of the affected farmers?
- Which legislative protocols and acts were followed in doing so?
- What was the role of your institutions in securing funding for the affected farmers?
- After the declaration of state of disaster, what further role did your institution play?
- The scheme took longer than anticipated to implement, how can this be circumvented in future?

-

5. Challenges and recommendations for future schemes

- What were the major challenges implementing this drought relief scheme?
- How were these challenges addressed?
- What recommendations can you make for the better management of the next episode of drought that may prevail?
- What were the challenges during the drought relief scheme implementation? Process?

ANNEXURE E

TIMELINE

