An assessment of the integration of food security and disaster risk reduction policies: A case from South Africa.

A Zembe

25743198

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Supervisor: Dr. C Coetzee

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ABSTRACT

Disasters have historically had a devastating effect on efforts to achieve food security, globally, regionally (Africa) and locally (South Africa). Therefore, the central motivation of this study was to determine the degree of integration between food security and disaster risk reduction policy areas as a crucial first step in addressing the impact of disasters on food security. The idea of policy integration between disaster risk reduction and food security has been advocated and promoted by most influential international organisations, which includes World Food Programme, IFARD, Food Agricultural Organisations (FAO), as well as governments, academia, and Civil Society groups. The study worked from the rational that South Africa as a country is facing recurrent disasters that are adversely affecting the nation's food security through devastating impacts on the agricultural sector. As such policy integration between DRR and food security policies will be of great importance to solve this problem. However, through a cursory literature review it surfaced that, disaster risk reduction has not always been integrated in the development initiatives that deals with food security and the result of ignoring the interdependencies between these discourses have caused sub-optimisation problems where by the desired outcome of a safe and food secure nation is being hampered. The study therefore focused on identifying the current policy gaps in integration and possible areas of synergy between policies that addresses food security and disaster risk reduction in South Africa. This process was done through policy analysis among policies and programmes that addresses food security and DRR internationally and in South Africa. A qualitative research design was followed with the use of semi-structured interviews as the primary data collection tool applied to interviews with policy makers within these two policy areas. Policy makers where purposefully sampled from officials that work with policy development for food security and DRR within the National Department of Agriculture, Forestry and Fisheries (DAFF) and the National Disaster Management Centre (NDMC).

The literature review and empirical research conducted in the study found that, the developmental policy areas of disaster risk reduction and food security in South Africa are mostly working in parallel or are sometimes treated as separate developmental issues, thereby leaving the problem of food security unresolved. A very specific issue that emerged from the study is that very often policy documents which includes (IFSS, ZHP, FSNP, DMA and NDMF) in both areas would allude to either the impact of disasters on food security, or the need to integrate DRR into related developmental projects. However, this initial identification of integrated policy concerns are not translated into guidance on concrete policy integration interventions between the two areas. The study also found that the lack of clear policy direction to drive the policy integration process, is amplified due to institutional mechanism (i.e. forums and committees) that are intended to facilitate the coordinated governance and policy formulation between the areas, are functioning sub-optimally or are not ensuring the involvement of crucial stakeholders for the integration process. Another crucial aspect discovered to be hindering policy integration between the two areas was found to be related resource and power dynamics between government departments. To this end, respondents identified that integration efforts between the two policy areas is hampered due to a fear by officials that if policies are integrated, they could lose their jobs, financial or human resources.

The study finds that going forward DAFF and the NDMC should develop integrated plans that are cross-cutting and integrated thus avoiding duplication of work and waste of resources. It should also be considered that, though DRR and food security come from different backgrounds, they share the overarching objective to improve the well-being of people in South Africa. Consequently, policy integration should be prioritised.

Key words:

Disaster risk reduction, food security, policy integration, policy analysis

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ACRONYMS

DMA	Disaster Management Act
FAO	Food Agricultural Organisation
FSNP	Food Security and Nutrition Policy
GSF	Global Strategic Framework for Food and Nutrition
HFA	Hyogo Framework for Action
IDNDR	International Decade for Natural Disaster Reduction
IFAD	International Fund for Agricultural Development
IFSS	Integrated Food Security Strategy
ISDR	International Strategy for Disaster Reduction
MDGs	Millennium Development Goals
NDMF	National Disaster Management Centre
RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
SFDRR	Sendai Framework for disaster risk reduction
WFP	World Food Programme
WFS	World Food Summit
YSPA	Yokohama strategy and Plan of Action
ZHP	Zero Hunger Programme

CHAPTER 1

ORIENTATION, PROBLEM STATEMENT AND METHODOLOGY

1. Introduction and orientation of the study

Disasters are increasing in frequency and intensity globally (Stanley & Williams, 2000). This is of major humanitarian concern and has posed a threat to the achievement of the Millennium Development Goals (MDGs), especially the goal of halving hunger by 2015 (Mudavanhu, 2014:1; UNCRD, 2009). Disasters undermine development progress, constrain economic growth and threaten food production (Kelman, 2006:4). Disasters could have a positive impact on food security whereby hazards such as floods and typhoons might improve food security if people not affected negatively (Israel & Briones, 2013:2). Specifically, floods can improve soil fertility as they deliver nutrients from upland areas to lowland areas. In addition, floods temporarily create a larger water habitat for inland fish and other aquatic animals. Muyen (2007: 6) even called the flooding years "beautiful" during Vietnam floods that occurred in the Mekong River Delta in 2007/2008 because these floods brought in a positive change to food security such as provision of fresh water for irrigation and natural fertiliser. However, Hallegatte and Przyluski (2010) argued that, the impact of floods and other hazards such as droughts and typhoons have negative impact on food security such as the potential to reduce farm productivity; damage farm inputs, facilities and infrastructure, and can limit farm planting options thereby threatening people's livelihoods. Skees (2000: 365) concluded that, the ultimate assumption of the impact of disasters on food security or any development endeavour is mostly negative.

Over the centuries, disasters have claimed human lives, destroyed infrastructure, led to diseases and have threatened food security including in South Africa (Wisner, Blaikie, Cannon & Davis, 1994: 3). Table 1 below summarises the statistics of major disasters that have happened globally since the 1800s that had a significant impact on food security. The purpose of this table is to illustrate the impact of disasters on food security. This reinforces the idea that disasters and food security are linked issues and should be addressed accordingly.

Table 1: Disasters and Food Security: Global context

Disaster Type	Year	Country	Loss of Life	Knock on effects
Famine	1845-1852	Ireland	1 to 2 million -	1 .5 to 2 million people migrated
				Farming structures were altered leading to food shortages and malnutrition
				30% of the population was wholly dependent on potatoes for their food.
				There was almost a million tons of grain imported from Leinster during 1844 & 1845.
				More people died of malnutrition related diseases such as dysentery and scurvy as well as cholera that swept through the famine.
				Imported food benefited people in cites but could not reach rural areas leading to severe starvation especially in Connaught region
Source:				**(Grada and O'Grada, 1995:1; Woodman-Smith, 1991).**
Famine	1899-1900	India	Between 1 million to 4,5 million	It affected an area of 476 000 square miles
				59.5 million people affected
				Large crop failures in the rest of India and led to hunger and starvation
				The mean average rainfall was 45 inches (1,100mm) in 1900
				Inter-regional trade could not be relied upon to stabilize food prices
				Migration of people from drought stricken areas in search of jobs

				Epidemics such as malaria, cholera and fever killed a lot of people during the famine
				The mortality was very high - 37.0 persons per 1000
				Shortage of fodder for livestock led to million deaths of livestock
Source				**(Dyson, 2002: 97-101; Meena, 2015: 37)**
Drought	2006	Australia		Annual rainfall was between 40-60% below normal rainfall expected due to EL Nino.
				Failure of crops accounted to 85% Australia's irrigated land
				Caused the price of dairy, fruit and vegetables to rise sharply and people could not afford to buy food
				Inflation climbed to 3.5% in 2006
				A sharp drop in agriculture output which reduced farm GDP by 30%
				Farmers reduced their herds by selling them and slaughtering for consumption
Source				**(Pearson, Rodrigues and Toth, 2006: 3-6)**
Famine	1959-1961	China	16,5-45 million	Unequal food availability and access especially in the rural areas
				Grain output dropped by 15% in 1959 and 1960 consecutively leading to prevalence of maternal malnutrition and deaths of people
Source				**(Almond, Edlund and Zhang, 2007: 3-5; Meng, Qian and Yared, 2015: 1)**

With regard to the above table, it has been shown that disasters and food security are inseparable issues hence policy integration would be of great significance when addressing these issues in order to create a safe and food secure planet. Apart from the Global perspective, the African continent has also been affected by various disasters that have threatened food security (African Union (AU), 2006:2). Disasters have affected almost every African country resulting in food insecurity among populations who mostly depend on farming activities for their livelihoods. Drought and floods (as seen in Table 2 below) are the major disasters that occur in Africa and they usually lead to socio- economic crises. Such disasters have forced the International community, UN, World Food Programme and other bodies to divert funds for food aid-supported development projects to famine and floods emergencies in Africa (Denis, 1994). Examples of floods and drought risks will be presented in Table 2 below, focusing on the people affected, loss of lives and knock on effects.

Table 2: Disasters and Food Security: African Context

Disaster Type	**Year**	**Region**	**Loss of life**	**Knock on Effects**
Drought	1985/6	Ethiopia	300 000 people died.	More than 10 million people were affected.
				Displacement of populations through migration,
				An infestation of rinderpest killed almost 90% of cattle.
				An influx of swarms of locust and caterpillars that destroyed most of the agriculture crops.
				Malnutrition was also realized among children between the ages of 0-5 years due to poor diet and lack of food.
Source				**(Kiros, 1991: 184; Kumar, 1987: 34-35; Lindtjorn, 1990: 1124)**

Drought	1992/3	Zimbabwe		1.03 million Cattle died that is 23% of the national cattle herd.
				Staple food (maize 9% and cereal 22%) production was low leading to poor harvest and price increase.
				56% of the farmer's staple food stocks were widely consumed due to lack of food availability.
				Indigenous food had dried up due to lack of water.
Source				**(Mutasa, 2010: 23; Thompson, 1993)**
Floods (Cyclone Favio**)**	2007	Mozambique	40 people died	Between 300 000 – 500 000 were affected.
				More than 100 000 people were evacuated
				More than 700 cases of diseases were reported among flood victims.
				There was limited supply of food to the poorer population especially in the rural areas and WFP distributed food aid to 33,500 food victims
				Agricultural production was affected leading to poor harvests.
Source				**(Foley, 2007: 1; Sasin, 2008: 208)**

As can be seen from Table 2 above, all the identified disasters had a dramatic impact on the affected communities, especially on food security. The negative impact of disasters experienced in African communities including South Africa and their food security can be correlated to the high dependency on agriculture for food security and livelihoods income within the African context (Unganai, 1994:1). With the escalation of disasters in Africa, more people are being adversely affected by food insecurity (AU, 2006: 2). The negative impact of disaster on food security is also applicable to South Africa's historical experience of disaster as presented in Table 3 below.

Table 3: Disasters and Food Security: South African Context

Disaster Type	**Year and region**	**Impact on food security**	**Loss of livestock**	**Knock on effects**	**Donor Food Aid Received**
Drought **Source: (Ngaka, 2012: 6)**	2007/2008 in Eastern Cape and Free State	R285 Million was spent on drought relief	Average livestock loss ranged from 1.2-14.6 million for small farmers	Crime rate and unemployment increased	R40 million and R25 million was allocated to Eastern Cape and Free State Provinces respectively by the government
		Production expenditure increased by 25% for both small and medium farmers and 22% for large-scale farmers.			
		The drought reduced the availability of locally produced food in the 2 provinces.			
Floods	February 2000 in Limpopo Province	84 people died	20% of the population reported to have lost all or half of their livestock.	Outbreak of diseases like, Diarrhoea, influenza, malaria and asthma.	Aid came from the government in the form of food parcels, tents etc.
		Destruction of road and infrastructure was worth more than R1 billion ($US 165m).			Aid also came from local businesspersons who reduced the price of bread by 25% until July 2000.

Source: (Khandlhela and May, 2006: 275)		45000 dwellings were destroyed			
		300 people were left homeless			
		Communities were confronted with severe shortage of food and water.			
		Failure to harvest green crops for immediate consumption and for storage.			
		Scarcity of water for gardening purposes led to a rise in malnutrition			
Veld fire	August 2011 in North West Province	Crops, livestock, property were burnt and people were injured.	1000+ cattle burnt to death	It caused soil erosion and land degradation in the following farming season.	The government donated R150 000 to the farmers.
		Some farmers declared bankruptcy and could not buy inputs to farm for the following season.			Tlokwe municipality helped farmers with R500 000 to compensate for damaged equipment.
		There was food shortage leading to hunger and starvation			

Source: Van Ruuyen, (2014)		Indigenous fruits destroyed and some animals eradicated such as microorganisms that help with soil fertility.			
		Loss of jobs and income was reduced thereby reducing food availability among people			
Floods **Source: (FAO, 2011: 3; The Guardian, 2011, January 24**)	2011 in 7 provinces of South Africa	100 people were killed, 88 of them from KwaZulu Natal province.	Outbreak of Rift Valley Fever on livestock	20000 people or 500 families were affected.	The government and Red Cross gave aid to the affected population in the form of food parcels and tents.
		At least 8400 people evacuated from their homes.		There were disease outbreaks such as diarrhoea and malaria	
		The infrastructural damage was estimated to be R160 billion.			
		424, 150 hectors of land was affected			
		Crop damage was estimated at more than R1billion.			

		More than 5973 workers couldn't go to work and this resulted in low harvest and unemployment			
Drought **Source: (DAFF, 2013; Sello, 2013).**	2012/2013 in North west province	Less than 75% of rainfall received below the expected and was declared a provincial disaster.	Grazing land for livestock dried up.	The crime rate increased.	Government and agriculture department assisted the farmers with R45 million for fodder for livestock.
		There was shortage of water for both human consumption and for agricultural purposes.	R1, 5 billion was required to feed livestock in 4 months	Malnutrition was realised especially among children under the age of 5.	Fodder was worth R4000 per ton for 120 days.
		The reservoirs dried up and crop yields were very low leading to food insecurity.		Job losses in the agricultural sector	

As shown in Table 3 above, South Africa's risk profile is dominated by the risk of drought and flooding, both of which provide a threat to the country's food security. Van Zyl (2013:8) specifically highlights that South Africa lies within a drought belt with an average annual rainfall of 44mm, compared to a world average of 857mm.The rainfall pattern in South Africa is typically unreliable and unpredictable (Van Zyl, 2013: 8). South Africa's climate is characterised by periods of wet spells also called La Niña (years receiving above-normal

rainfall) and dry spells also called El Niño (years receiving below-normal rainfall). Scientific analysis of rainfall data has shown that South Africa experiences spells of either predominantly wet years or spells of predominantly dry years, and these spells have not affected regions of South Africa exactly the same or equally. For instance, in 2009 to 2011 the Southern Cape Region was devastated by a severe drought while the rest of the country generally received above normal rainfall. The same scenario can also be seen in the current drought in South Africa. The 2015/2016 drought situation in South Africa has been predicted to be worse than that of 1991/1992 which was generally regarded as the worst drought in South Africa in the 20th century in terms of scale, intensity and severity (Water Research Community (WRC), 2015: 1). It has been projected by the WRC, (2015) that "drying" is projected to increase in the future with approximately 90% in the year 2100 per drought area. The speech by the Minister of Agriculture, Fisheries and Forestry, Senzeni Zokwana on 30 November 2015 stated that five provinces which include KwaZulu-Natal, Mpumalanga, North West, Limpopo and Free State have been severely affected by 2015/2016 drought and have been declared disaster stricken areas. All these drought incidents in South Africa have shown how persistent and recurrent the issue of drought is in the country which calls for urgent mitigation strategies to combat its impact on food security (Solomon, 2007).

The outcomes of drought or floods as shown in table 3 above have a severe impact on all aspects of society, including food security. To address the potential impact of disasters on food security, the South African Government has to make a conscious effort to address the potential food security risk through appropriate policies and programmes (South Africa, 1996). The following section is going to conceptualise food security and its aspects.

1.1 Food security

Food security has become a major concern worldwide and the ability of nations to support the growing population has been a concern for generations and continues to be high on the global policy agenda (Rosegrant &Cline, 2003:1917). Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 2002; 1996; Israel and Briones, 2013: 3). Food security is identified mainly by four dimensions which are availability, accessibility, affordability or stability and absorbability or safety (Christoplos, 2001: 543; Israel & Briones, 2013; Kurien, 2004). Food availability refers to food supply or productive capacity (which is sometimes measured by a tally of aggregate national agro-food output (Coates *et al.* 2006). However, the indication of

food availability does not offer information on food quality and nutrient intake (Haddad et al., 1997). Israel and Briones (2013: 3) stated that food should not only be in sufficient quantity, but it must also be actually accessible to people of all economic classes and in all locations. Webb *et al.* (2006) stated that access is embedded in the markets, prices and legal systems. Food supply should also be stable so that it is affordable in both short and long term. Finally, food should be absorbable and safe for people to consume (Israel and Briones, 2013).

Christoplos, (2001: 543) argued that globally including South Africa, the four dimensions of food security (highlighted above), are deteriorating due to a lot of uncertainties for example, food availability is decreasing due to scarcity arising from land degradation and decreasing yields, increasing cost of agricultural inputs, population pressure, worsening climatic conditions and shifts from food to bio fuel production. Christoplos (2001) also went on to say that food access is declining due to worsening of trade terms between wages and food costs as well as shortage of land to rural subsistence farmers. The increase of disasters, climatic conditions and uncertainties regarding food prices and national protectionism is also threatening the stability of food. Lastly, the fact that most people are landless, they opt to switch to monotonous diets, which lack essential micronutrients thereby affecting the metabolism of food and cause diseases (Wisner, Gaillard and Kelman, 2012: 543).

Most countries both developed and developing including South Africa are working together to end hunger and disasters and this has become an integral part of the political rhetoric of statesmen of diverse ideological backgrounds in the 21st Century (Kinealy, 1994: 1-2). International Organisations such as the United Nations and its sister bodies have set up Millennium Development Goals (MDGs) in 2000 that targeted to halve the number of people who are suffering from hunger between 1990 and 2015 (UNDP Report on Human Development 2010). However, Earl, (2010: 14) argued that the Millennium Development Goals report of 2010 acknowledges that overall progress to reduce hunger has not been sufficient to reduce the number of undernourished people in the world. Earl (2011) went on to state that this situation was exacerbated by the increasing food prices and market instability globally. In a Sub-Saharan context, Unganai, (1994: 1) argued that drought and floods are a recurrent feature that threaten food security and hamper efforts to ensure food security. In spite of the measures that were put in place to improve food security and address the MDGs (halving hunger by 2015) by several governments including the South African Government, food security is still a critical issue that needs urgent attention globally and locally (FAO, IFAD and WFP, 2006).The continued focus is necessitated by the fact that by the end of 2015, the MDGs had not yet been achieved, in fact hunger is increasing

especially in the Sub Saharan countries where disasters, weather shocks and vagaries of nature are undermining food security mostly in agricultural dependent populations.

South Africa has also struggled to achieve this MDG. According to Statistics SA General Households survey (2009) more than 2.8 million households (approximately 11.5 million individuals) are vulnerable to food insecurity. Additionally, 72% of those vulnerable to food insecurity reside in rural areas. Koch, (2011) highlights the oddity of this statistic in light of the favourable food security indicators experienced by South Africa. These positive indicators include the absence of tight foreign exchange constraints, being an exporter of agricultural commodities and having high per capita income, not being a land-locked country (suited for import and export) and having an innovative constitution (see section 27 and 28) that enhances the right to food. Considering the indicators above, the assumption would be that food should be accessible and available at all times to all South Africans. However, the reality is different due to various factors, including the impact of disasters. As was shown in Table 3 above, disasters are undermining the achievement of a food secure South Africa both at national, household and individual level (Van Zyl, 2013). Although initiatives in the form of policies and programmes (IFSS and the FSNP) were put in place to improve food security, these strategies have often not placed an emphasis on integrating disaster risk reduction legislation (DMA and NDMF) as a key supporting consideration in ensuring the disaster risk to food security is reduced. As will be displayed below in the central research question, policies are often not developed in an integrated fashion (addressing disaster risk and food security as separate issues), which in turn causes problems in addressing food security issues in a holistic manner.

1.2 Policy Integration

Agranoff, (1991: 533) expressed that interest in service integration dates back to the middle of the 1960s when social programmes expanded and a wide range of professionals and advocates in the field of Public Administration recognized the efficacy of dealing with multiple causes and responses to problems. This became an interesting subject to Public Administration scientists, scholars, academics, commentators and researchers in trying to manage and finding solutions for the best results. Underdal, (1980: 162) defined integrated policy as one "*where all significant consequences of policy decisions are recognized as decision premises, where policy options are evaluated on the basis of their effects on some aggregate measure of utility, and where the different policy elements are in accord with each other*". Underdal (1980) stated the above definition can be used for any type of policy integration though value-hierarchy to guide the actual integration is lacking (Lafferty and

Hovden, 2003). In the case of this study, the main aim is to assess if DRR and food security policies are integrated, hence the definition of policy integration will help the study in seeing what this policy integration mean and how it is done and its characteristics in order to see if the policy elements are in accord with each other thereby identifying gaps and synergies between the policy areas.

Whilst the term 'integrated policy-making' is rather uncommon in theoretical literature, a number of better known and more or less synonymous concepts can be found: coherent policy making (OECD, 1996), cross-cutting policy-making (Cabinet Office, 2000), policy co-ordination (Alter and Hage, 1993; Challis et al, 1988), concerted decision-making (Warren et al, 1974) and holistic government, also known as joined-up policy (Wilkinson and Appelbee, 1999) or joined-up government (Ling, 2002). Meijers and Stead (2004: 2) also stated that policy integration refers both to horizontal sectoral integration (between different departments and / or professions in public authorities) and vertical intergovernmental integration in policy making (between different tiers of government) or combination of both. This study will follow a horizontal integration between two departments, which are food security and disaster risk management in order to mainstream them (PEER, 2009).

1.2.1 Characteristics of policy integration

Meijers and Stead, (2004: 6) gave the characteristics of policy integration, which are as follows:

- requires more interaction, accessibility and compatibility,
- leads to more interdependence regarding the issue at stake,
- needs more formal institutional arrangements,
- involves more resources,
- requires stakeholders to give up more autonomy and
- Is more comprehensive in terms of time and actors.
- Involves coordination and cooperation.

The above characteristics will be used to investigate the problems that are being faced by policy makers or government departments in integrating DRR and food security in South Africa.

Policy integration has potential benefits such as the following: it might help to convey the "big picture for strategic issues, it can help to realise synergies and maximise effectiveness of policy and /or service delivery, improving service delivery for particular groups and it can

provide a framework for resolving potential conflicts and making trade –offs (Cabinet office, 2000; Meijers and Stead, 2004: 6). However, there can be costs that can be accompanied by integrating policies such as less clear lines of accountability for policy and service delivery, difficult to measure the effectiveness and impact because of the need to develop and maintain one sophisticated performance measurement systems. Though there might be shortfalls or cost encountered the need to integrate food security and disaster risk reduction policies is still of great importance due to a social need and human life that is at stake (Cabinet office, 2000).The following section will elaborate on the problem statement.

1.3 Problem statement

The prevalence of disasters that are affecting food security around the world, including South Africa, have prompted the need for the integration of disaster risk reduction into development practices to ensure the future of agricultural production and access to food for the world's most vulnerable people (FAO, IFAD & WFP, 2004). Yodmani (2001: 1) argued that, traditionally, disaster risk management has not been a priority for development agendas, because it was regarded as a concept that can be responded to whenever it happens. In other words, disaster risk management was regarded as a reactive measure that was not included in developmental planning and initiatives seeking to address food security. This lack of policy integration has interrupted the achievement of the desired goals of food security because disasters would interrupt and undermine existing achievements. Traditionally, when disasters occur in many countries, they had to wait for the international community in the form of the United Nations (UN) and its associated agencies to step in with relief services such as food aid. The dependency on food aid was due to the fact that most countries pre-1980s were still focusing on disaster response and did not have internal policies that address Disaster Risk Reduction (DRR) as an integral part of development and food security programs (Yodmani, 2001:1). The paradigm shift from disaster response to disaster risk management has necessitated the need for the establishment of policies and programmes by governments (including South Africa), to reduce the risk of vulnerable people. Among other things, the South African government should reduce the vulnerability of affected communities to food insecurity before and following disasters through the formulation of integrated policy mechanism and programmes.

However, the problem faced by many nations, including South Africa, is that the developmental policy areas of disaster risk reduction and food security are working in parallel or are treated as separate developmental issues, thereby leaving the problem of food security unresolved (Becker, 2009:1). Although it should be stressed that South Africa

has taken the issue of food security and disaster risk reduction seriously and has enshrined them in the Bill of Rights, in practice these two fields have largely worked in separation without any policy synergy. Van Zyl (2013:27) suggests that, the integration of policies of food security and disaster risk reduction in South Africa has been long overdue, and the need for a holistic approach to address this issue to solve food security problems is needed. A cursory reading of the Constitution of South Africa, 1996 gives some insight into the constitutional mandate to ensure food security for all South Africans.

The Constitution of the Republic of South Africa, 1996 provides under Section 27 (1) (b) that everyone has the right to have access to sufficient food and water (South Africa, 1996). Section 28 (1) (c) also provides that every child has the right to basic nutrition, shelter, basic health care services and social services (FAO, 1996; Mohlabi, 2012: 3; Pinstrup-Andersen, 2009:5; RSA, 1996). However, this right is usually disturbed by the occurrence of disasters around the country (Van Zyl, 2013).

Apart from the constitutional rights, the South African Government has developed initiatives in the form of policy frameworks and programmes to execute the right to food. This dissertation will mainly focus on three major food security initiatives, which are:

- The Zero Hunger Programme (ZHP) of 2002, which has a strategic goal of improving South Africa's adequacy and stability of access to safe and nutritious food at both national and household level.(RSA, 2002: 2);
- The Integrated Food Security Strategy (IFSS) of 2003 which had a goal to eradicate hunger, malnutrition and food insecurity over 2015 (RSA, 2003:13);and
- Food Security and Nutrition Policy for South Africa (FSNP) of 2014, which has a goal of ensuring availability, accessibility and affordability of safe and nutritional food at national and household levels – aligned to the NDP vision 2030 (RSA, 2014).

Through the objectives of the above-mentioned initiatives, the South African Government is targeting to improve food security by addressing factors that are seen as barriers to agricultural development and food security since 1994. However, a cursory reading of all the policies and programmes of food security makes little or no mention of the need to address disaster risk as a possible barrier to food security (RSA, 2014) in spite of the historical impact of disasters on food security in South Africa (see Table 3). Therefore, secure access to food by all South Africans is still not guaranteed because disasters are still undermining the achievement of the policies and programmes that have been put in place (Love, 2003: 1). The lack of policy integration can also be observed when reviewing disaster risk

reduction policy areas. The study will also focus on Disaster Management Act (DMA) No. 57 of 2002 and National Disaster Management Framework (NDMF) of 2005. A cursory review of these two documents also reveals that little is being mentioned of food security within their policy initiatives. Seeing as food insecurity is a major disaster risk that can have a major impact on vulnerable communities, this current lack of consideration for food security issues is alarming.

The Constitution of the Republic of South Africa, 1996 places a legal obligation on the Government of South Africa to ensure health (personal and environment) and safety of its citizens (RSA, 1996). In terms of Section 41(1) (b) of the Constitution, 1996, all spheres of government are required to 'secure the well-being of the people of the Republic" (RSA, 1996). Section 152(1) (d) also requires that local government should "ensure a safe and healthy environment for communities under their jurisdiction". Therefore, to adhere to the provision of the constitution of ensuring a safe and healthy environment in South Africa, the Disaster Management Act, No. 57 of 2002 was promulgated. The DMA has the objective of providing an integrated and coordinated disaster management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post recovery (RSA, 2005: 1; Van Niekerk, 2006). In conjunction with the DMA, a National Disaster Management Framework (NDMF) was established in 2005 to address issues for consistency and transparency across multiple interest groups (Section 7 (1) of the DMA No 57 of 2002). The NDMF gives priority to developmental measures that are aimed at reducing vulnerability to disaster prone areas, communities and households thereby putting more emphasis on disaster risk reduction in the form of mitigation and prevention to make South Africa a safe place to live (RSA, 2005:2).

The Disaster Management Act, No.57 of 2002 indicates that the integration of DRM in development activities should be done by all South African government departments and State-owned enterprises, following the review of policies, legislation, regulations and plans falling within their jurisdictions to ensure full alignment with the NDMF. However, a review of the DMA and Framework does not reveal clear linkages to the integration with government policies on the strategic issues of food security, before and after disasters. This confirms the assertion by Becker (2009) that these two crucial developmental issues are being addressed as separate focus points for government interventions. Israel and Briones, (2013: 5) support the view of Becker (2009), by stating that although the two policy areas (food security and disaster risk management) and their respective areas of concern seem to interrelate in practice, they appear to work as separate entities. The result of ignoring the

interdependencies between these policies will hinder the achievement of the desired outcome, which is a safe, and food secure South Africa. South Africa (1996) and Schipper and Pelling, (2006: 20) argue that both policies (food security and disaster risk reduction) have to learn from and strengthen each other by consolidating efforts to reduce the impact of disasters on food security.

Considering the information discussed above, the problem that will be investigated is why policy associated with disaster risk management and food security policies do not address and integrate mutual concerns considering the impact disasters have had on food security in South Africa historically. The lack of integration results in a situation where problems of food security remain largely unresolved. The study will therefore focus on identifying the current policy gaps in integration and possible areas of synergy between food security and disaster risk reduction policies in South Africa.

1.4 Research questions

Derived from the problem statement, the following research questions can be posed:

1. What does food security and disaster risk reduction entail?
2. Describe the relationship between food security and disaster risk reduction as governance areas?
3. What legislation or policies in South Africa address food security and disaster risk reduction as integrated policy areas?
4. What are the gaps in integration of the current policies and legislation that can be identified in food security and disaster risk reduction?
5. What recommendations can be made for more effective food security and disaster risk reduction integration in policy and legislation?

1.5 Research objectives

The research objectives of the study would be:

1. To describe what food security and disaster risk reduction entail.
2. To describe the synergy between food security and disaster risk reduction.
3. To analyse the legislations and policies that address food security and disaster risk reduction in South Africa, (DMA, NDMF, IFSS & FSNP and ZHP).

4. To identify the gaps in integration that is found between the policies of food security and disaster risk reduction (DMA, NDMF, IFSS, FSNP and ZHP).
5. To make sound recommendations on how food security and disaster risk reduction policies can be integrated.

1.6 Central theoretical statement

In light of the above problem statement, the study focused on the extent to which food security and disaster risk reduction policies are integrated. A policy analysis perspective within the broader public policy discourse was used to compare the policy gaps in relation to food security and disaster risk reduction. Policy advocacy and policy evaluation perspectives within the broader public policy discourse are relevant but not utilised in this study, since the study is of limited scope.

The word "analysis" originates from the Greek word *analusis*, meaning an attempt to break down something (the whole) into specific components or parts (Weimer and Vinning, 1989:182). Hanekom, Rowland and Bain (1998:30), argue that it is an endeavour directed through applied research to inquire an in-depth understanding on policies about social, economic, political and technological issues. The goal is to bring about solutions to existing problems and ensure that a specific policy is implemented successfully such is the case with integrating food security and disaster risk management policies.

Public policy analysis is an applied social science discourse that employs multitudes of methods of inquiry in the context of argumentation and public debate to establish whether a policy is implemented correctly and to communicate the results to the implementers (Dunn, 1989: 416). According to Quade (1989:45), the three major reasons for public policy analysis are: to help the decision-maker to determine whether a policy has been implemented according to plan; to identify specific actions that went wrong and that hampered the successful implementation of a public policy; and to identify possible actions to rectify what went wrong during policy implementation. In the case of this study, the reason for the policy analysis is to identify gaps and synergies, if any, between food security and disaster risk reduction policies.

1.7 Methodology

Methodology describes details of procedures and steps that will be used to collect and process information in the study. The main focus of this section will be on describing the

literature review, research design empirical study, sampling, data collection techniques, data analysis, and significance of the study, ethical consideration and limitations of the study. This section is only a brief description of methodologies selected with a more in-depth discussion of the methodology to follow in Chapter 4 of the study.

1.7.1 Literature review

A literature review is a summary of different types of sources that support the research study such as academic and professional journal articles, books, web-based resources (Rowley and Slack, 2004:31). The literature study was used to investigate the integration of food security and disaster risk reduction policies to identify synergies if any. A thorough scrutiny of literature was also used to review the history, origin and scope of the research problem, thereby demonstrating familiarity with knowledge of theories, accepted definitions and the key concepts in the field of study (Grinnell and Unrau, 2005:47). The results of literature review are presented in chapter 2 and 3 of the study. The main focus of the literature review is to establish a broad understanding of the two policy areas of DRR and food security whilst also identifying the synergies and gaps between them. The main scholars and institutions that contributed to the study were FAO, IFAD & WFP, Israel and Briones, Van Zyl and Yodmani, who raised issues of the possibility of policy integration and described disasters as major threats to food security. South African policy and legal frameworks were also examined in this study including: the Disaster Management Act, No. 57 of 2002, The Disaster Management Framework of 2005, Food Security and Nutrition Policy of 2014, Integrated Food Security Strategy of 2003, and the Zero Hunger Programme of 2002 .

The North-West University (NWU) (Potchefstroom Campus) Ferdinand Postma Library also availed sufficient material to conduct a research on the topic. The following databases were consulted to ascertain the availability of study material for the purpose of this research:

- Catalogue of books: Ferdinand Postma Library NWU
- Index of South African Periodicals
- Internet searches (Politea, Journal of Public Administration, JSTOR, SA epublications, Google scholar and Sabinet legal).
- Catalogue of theses and dissertations of South African Universities NFR: Nexus

1.7.2 Empirical study

The choice of research style for a particular project depends upon the overarching aim of the research, the specific analysis, goal and its associated research question, the preferred

paradigm, the degree of desired research control, the level of investigator intervention, the available resources and the time frame (Brewer and Hunter, 1989; Diers, 1979; Miller and Crabtree, 1999:3). The empirical study followed a qualitative research design.

1.7.2.1 Qualitative research

According to Ghauri and Gronhaug (2002:86), qualitative research gives the researcher an important role in the analysis of data, using skills and experience. This approach is mainly used in social and behavioural sciences where organisations, groups and individuals are studied (Ghauri and Gronhaug, 2002: 87).

The study followed a qualitative research, based on the identification, description, explanation and content analysis as a scientific inquiry. Qualitative research seeks to understand, explain, explore, discover and clarify situations, feelings, perceptions, attitudes, values, beliefs and experiences of a group of people (Kumar, 2014:132). Qualitative research is also flexible in terms of information gathering methods whereas quantitative research is more structured and rigid that the researcher is tied to follow a method prescribed and produce expected results that is reliable and can be validated (Kumar, 2014:133).The study incorporated qualitative research based on its flexibility in gathering information, thereby giving the researcher an opportunity to gather as much information as possible to answer all research questions.

The study also followed a qualitative research based on the fact that the researcher wanted to seek agreement with the respondents using own interpretation, presentation of the situations, experiences, perceptions and conclusions. In quantitative research, this distinguishing feature is not seen, because the researcher's perceptions and interpretations do not occupy an important place in the study (Maxwell, 2012:3). The fact that the sample is small also made it easier to use qualitative research whereby interviews were done with the targeted population that were selected purposively. The population were government officials (technocrats) from DAFF and NDMC who are responsible for formulating policies in South Africa. Sampling methods employed in the study are alluded to below.

1.7.2.2 Sampling

De Vos *et al.* 2012:224) state that a sample is a selected small representative portion of the population. Purposive and snowball sampling were applied in this study. According to Blaikie (2007:205) and De Vos *et al.* (2012:232), purposive sampling is performed when the sample population (representing the population's attributes best) is drawn according to the judgment of the researcher.

1.7.2.2.1 Purposive Sampling

According to Rubin and Babbie, (2005: 247) purposive sampling can be called judgmental sampling because it is mainly based on the judgment of the researcher whereby the sample is composed of elements that contain the most characteristics and are representative of the population that best serve the purpose of the study (Monette,*et al*. 2005:148). Purposive sampling was used in this study whereby the selection of relevant individuals was done based on choosing people with relevant information. Purposive sampling was used to gather important information from the technocrats in government departments, which are; Department of Agriculture, Forestry and Fisheries (DAFF) and the National Disaster Management Centre (NDMC).The researcher targeted a sample size of 8 people, which is four (4) from DAFF specifically, from directorate of Climate Change and Disaster Management, Forestry and Natural Resources Management, the branch of food security which constitute the directorate of Subsistence Farming. The other four (4) respondents from NDMC were specifically from the Chief Directorate of Legislation Policy and Compliance Management focusing on the senior managers from Fire Services Coordination and Policy Legislation and Compliance Management**.** Purposive sampling was used in this research because the sample size was small as well as the people involved in policy formulation at national sphere (technocrats) are few. However, there was the realisation that some role-players might be involved in the creation of policy of which the researcher is unaware. Therefore, snowball sampling was employed to augment the sample size.

1.7.2.2.2 Snowball Sampling

Snowball sampling largely assists the study where there is limited access to the appropriate participants of the study (Alston and Bowles, 2003:90) hence, a single case or an individual will be interviewed in order to get information from other similar people which are not known by the researcher. This process was done repeatedly on different persons until enough data was gathered (Sarantakos, 2000:153). The snowball sampling was convenient especially when dealing with technocrats that the researcher was unaware of. The researcher identified respondents especially those who occupy the most senior positions such as the Chief directors and directors on websites, but bearing in mind that these are the busiest people in the organisations, snowball sampling helped the researcher to identify some technocrats with relevant information through reference. The researcher was referred to one respondent within the Directorate of Subsistence Farming and to two respondents within the Directorate of Climate Change and Disaster Management. Therefore, snowball sampling was used on

three respondents. In addition, the other reason why snowball sampling was used in this research was due to the fact that governments do not often give free information about personnel and their actual tasks hence the researcher was given a note of reference so that the person referred to would avail him/herself for the interviews usually out of respect but others availed themselves out of interest in the study. Finally, some technocrats who had dual tasks in the departments helped the researcher with all the information they had that was relevant to the study. To get information from the sampled population, various research tools were employed which included semi-structured interviews and document reviewing.

1.7.2.3 Research tools

Thomas (2011:162) posits that research tools entail the searching for evidence that supports (or does not support) a critical theoretical statement. Schutte (2006:158) postulates that various research tools can be used in a single case study, thus the study will use semi-structured interviews and documents.

1.7.2.3.1 Semi-structured interviews

Semi-structured interviews are guided, concentrated, focused, and open-ended communication events that are created by the investigator and the interviewee and occur outside the stream of everyday life (Crabtree and Miller, 1999:19). The questions are flexible and can be written in the form of an interview guide. The main strength of semi-structured interviews is that, there is freedom in terms of structure, contents, question wording and order; therefore, any question can be asked that is relevant to the situation (Kumar, 2014:177). However, other types of interviews such as structured and unstructured interviews restrict the measure of freedom that the researcher has in probing answers that are provided by the respondent and in the unstructured interviews the conversation is directed by the respondent and not the researcher and therefore, might divert the aim of the research (Thomas, 2011:163).

The researcher carried out one on one and telephonic interviews after receiving consent letter from the interviewees with the aim of providing in-depth information about the topic. A total number of ten people were interviewed, three from the NDMC and seven from DAFF. These technocrats occupied the most senior management positions in the chief directorates and directorate. Privacy, anonymity and confidentiality regarding information gathered during the study were considered. Focus group interviews were relevant but the fact that the study required an in-depth information from one on one interviews rather than generating a lot of

information that is on the surface was going to limit the information needed for the study (O'Connor, Crabtree, and Yanoshik, 1997). The study used semi-structured interviews to explore the problem of the study intensively and also to identify diversity and a variety of key concepts that are being investigated (food security and disaster risk reduction policies).

1.7.2.3.2 Document Reviews

According to Blaikie (2004:185) and Gillham (2004:21), documents are a secondary data source and may comprise of procedure manuals, policy directives, regulations, guidelines and archival information. Documents provide a formal framework within which the researcher has to relate the problem of the study (Gillham, 2004:21). According to Scott, (1990:6) documents should be authentic, credible, representative and comprehensible. Therefore, the study will follow such criteria. Documents represent a specific version of realities constructed for specific purposes. They should be analysed to construct a version of events rather than using them as information containers (Flick, 2014:357). In the case of the study, documents were selected purposively in order to get relevant information for the study. Most documents used were in the form of frameworks, Acts, policies, strategies and programmes that address food security and disaster risk reduction both internationally and in South Africa.

1.7.2.4 Data analysis

According to Flick, (2014:370) qualitative data analysis is the interpretation and classification of material collected with the aim of making meaning of data and what is represented in it. The analysis of qualitative data can be oriented to various aims which are: to describe a phenomenon; on comparing several cases, it aims to identify conditions on which differences are based and thereby explaining such differences; and to develop a theory of the phenomenon under study from the analysis of empirical material. This study mainly focused on identifying gaps and synergies between two policy areas (food security and disaster risk reduction) in order to see if they work together or as separate entities.

Data collected by the researcher, by means of semi-structured interviews was audio recorded and written notes were taken after permission had been sought from the interviewees. All data gathered for the purpose of this study was analysed by means of thematic analysis. In doing this, themes and categories were established basing the topics on the research questions of the study. Policy analysis was used as a tool to solve practical

problems by way of identifying gaps and synergies between food security and DRR in South Africa.

1.7.3 Significance of the study

A central motivation of this study was of the impression that, a policy analysis between two variables or more has received too little attention in South Africa and internationally. Most of the formulated policies and the officials implementing them appear to focus only on the policy directly related to their field of work. This is problematic as disaster risk and food security is inextricably linked. This study therefore puts a focus on the current policy gaps and possible areas of synergy between food security and disaster risk reduction policy. This could be of value in improving government endeavours to have greater integration between integrating disaster risk reduction and food security policies.

1.7.4 Limitations of the study

Identifying the responsible (for the task of policy integration) technocrats from both DAFF and NDMC was difficult as some of these persons are very busy and could not always find an appropriate time to schedule meetings. Eventually, researcher managed to get hold of these respondents via several follow up emails and phone calls. The use of the academic supervisor and other lecturers from the ACDS helped the researcher to interview all the respondents targeted. Snowball sampling also helped the researcher to get information from people that she was not aware of thereby augmenting those people she could not get hold of. Taking someone who is familiar with all South African languages helped the researcher to understand everything the respondents said though it increased the expenses of the data collection budget. Fortunately, all respondents used English language during the interviews except after the interview when they would ask the researcher's colleague about her completed research.

1.7.5 Ethical considerations

It is of paramount importance to deal with the research subjects in an ethical and responsible manner. The following ethical considerations were taken into account while conducting the research (Babbie and Mouton, 2004:520):

1. Participants were assured of their privacy, anonymity and confidentiality regarding information gathered during the study.

2. Participants were informed about the aim, purpose and procedures of the study and were not deceived in any way.
3. No participant suffered any physical and/or psychological harm during the interviews
4. No participant was forced to take part in the research and the participants were free to withdraw from the research at any moment in time.
5. Research was conducted in a gender and culturally sensitive way.
6. Analysis and reporting of data was done on an ethical level research method and techniques were revealed and participants and sources consulted were acknowledged.

1.7.6 Chapter layout

Chapter 1: Orientation and problem statement of the study

This is the introductory chapter of the study. It provides a broad introduction of the study including a discussion of disaster risk reduction and food security policy areas focusing on their relationship both in theory and in practice. Chapter 1 also discussed the problem that gave rise to this research study which is lack of policy integration and corporative governance between policies that address disaster risk reduction and food security in South Africa. Research questions and objectives were also discussed in the study. The research methodology was discussed as well showing the research design, the sampling methods, research tools and data analysis. Lastly, the significance of the study and the limitation of the study were discussed mainly to show the worthiness of the study and challenges faced during the research study and how the researcher succeeded in dealing with those challenges.

Chapter 2: Food security

This chapter comprises of a theoretical discussion of the food security policies and programmes both internationally and in South Africa. Chapter 2 firstly defines the concept of food security and four different dimensions that it is associated with. It also discusses legislations that address food security internationally mainly focusing on sections where they talk to DRR issues. Within the South African context, legislations and programmes that address food security are discussed which include IFSS, ZHP, and FSNP also citing synergies and gaps of DRR in their practices. Authors that represent the dominant “voice” in the area of study were identified as well as issues raised by them.

Chapter 3: Disaster risk reduction

This chapter presented a literature review of the policy area of disaster risk reduction. Firstly, the chapter discusses the evolution of the concept of disasters from the concepts of "Acts of God" up to disaster risk management and disaster risk reduction. Following that discussion, international policy developments that address DRR are presented mainly focusing on the context that promotes policy integration with developmental policies that address food security. Synergies and gaps are also cited during policy analysis of the DMA and NDMF with regard to how they take into account the issue of cooperative governance and food security in their operations.

Chapter 4: Methodology

The chapter presents the methods of investigation used in the study, which includes the research design, sampling methods, research tool, data analysis and ethical considerations. Unlike in chapter 1 where a brief overview of the methodology was given, chapter 4 gives an in-depth discussion on how the research was carried out.

Chapter 5: Data presentation and analysis

The policy analysis perspective within the broader public policy discourse was used to identify the policy gaps and synergies in relation to food security and disaster risk management. This chapter includes the collation and analysis of the research findings from interviews and the documents used for the purpose of the study. The study used thematic analysis through establishment of themes and categories in the study with topics that seek to answer research questions of the study. The results found from findings were then linked to theory from chapter 2 and 3 in order to create a consistent line of argument.

Chapter 6: Conclusions and recommendations

This last chapter of the study gives a brief summary of chapters and their focus. Secondly, this chapter summarises the key research findings of the study and conveys the conclusions of the study in reference to the research questions and objectives formulated for the study in chapter 1. Chapter 6 also identifies the recommendations made by the study as well as topics for further research.

CHAPTER 2

FOOD SECURITY: A LITERATURE REVIEW

2. Introduction

The previous chapter focused on the problem statement, objectives and the general background of the study. This chapter will focus on the literature review for the purpose of establishing a theoretical framework for the research as well as to enable the researcher to examine the latest developments in the area of research, to identify gaps in the knowledge and weaknesses in previous studies as well as providing the researcher's own perspective of the study (Bless and Higson-Smith, 2000:20; Struwig, 2000:38). Specifically, chapter 2 will review the relevant literature on the policy areas that address food security both internationally and in South Africa. The chapter will first address the concept of food security and how it has been affected by the impact of disasters around the world including South Africa. In doing this, an investigation of these issues will help with making it easier to understand the importance of integration between the policy of disaster risk reduction and food security from global and South African perspectives. Secondly, this chapter will address the evolution of the meaning of food security and it will also include a discussion on aspects related to food security which are availability, accessibility, affordability and stability. The third section will address the global developments that were put forward to promote food security. These developments will include the World Food Summit of 1996, the Millennium Development Goal (1c) of 2000 and the Global Strategic Framework for Food and Nutrition of 2015. Following these developments the chapter will also describe initiatives that were put forward by the South African government in order to promote food security. The study will mainly focus on three major policy areas, which include the Integrated Food Security Strategy of 2003, the Zero Hunger Programme of 2002 and the Food Security and Nutrition Policy of 2014.The purpose of bringing up these policy developments from the global and the South African perspective is to try to determine the possible integration of food security and disaster risk reduction policies. The chapter will try to pinpoint where in these food security policies mention is made of the inclusion of disaster risk reduction in their activities. If nothing is mentioned then that will be addressed as an area of concern or a gap that needs attention.

2.1 The concept of food security and disaster risk reduction

Food security and the ability of nations to support their growing population has become a major concern worldwide and continue to be high on the global policy agendas (Rosegrant & Cline, 2003:1917). About 900 million people are suffering from acute food security globally (FAO 2011; Todaro & Smith 2011). Dreze and Sen (1989: 122) claim that hunger is the most urgent need of today's generation, more so than any social or economic problems that are being faced. Along similar lines, Pingali, Alinovi and Sutton, (2005: S5) elaborates on Dreze and Sen, (1989)'s claim when describing food insecurity as an aspect that breeds desperation and a climate for other social ills such as crime, terror and civil wars.

Though food insecurity is a critical matter that needs urgent remedy globally, much attention is focused on the African continent due to its overlapping and interacting human-environmental factors such as abnormal rainfall patterns, severe drought, floods, civil war, and oil price hikes (Africa Insight, 1994; Huq *et al.* 2007; Lukamba, 2010). The combinations of these factors undermine the achievement of a food secure continent. According to a report of the Food and Agriculture Organization (FAO) on the State of Food Insecurity (2015), hunger remains an everyday challenge for almost 795 million people worldwide, including 780 million in the developing regions. Hence, hunger eradication should remain a key commitment of decision-makers at all government levels (FAO, 2015).

The existence of natural and man-made hazards has often exacerbated issues of food security in Africa (Israel & Briones, 2013). In this instance, drought and floods have had a recurrent impact on food security on the African continent including South Africa. Though there are various hazards that affect the African continent, drought is known to be a recurrent phenomenon in the semi-arid region of Africa (Glantz, 1987: 8; Rouault and Richard, 2003: 1). Drought impacts most heavily on the region's agriculture sector, which in turn has, negative consequences for the economy of the sub-region (Africa insight, 1994). For example, the International Red Cross Crescent (2006:1) states that millions of people are affected by drought in the wider horn of the African region. Additionally, droughts in the western to the eastern parts of Sudan from 1960- to 1986 affected at least 900 000 people of which 600 000 were at the risk of famine. Ethiopia is another African country that has been chronically affected by droughts. Drought incidents in Ethiopia have killed scores of people due to starvation and malnutrition especially during the 1985-1986 droughts. This drought led to the reduction in farm productivity (Israel & Briones, 2013). Lukamba, (2010) argues that, though the Ethiopian government has established policies on disaster

prevention and management to deal with the problem of disasters, the country still faces natural hazards every year that are affecting food security badly. Apart from drought disasters, flood disasters have also been experienced in some parts of Africa; for example, floods in Mozambique in 2000 displaced approximately 4000 people in Maputo alone and destroyed a lot of crops as well as road networks, which linked the city with other provinces (Christie and Hanlon, 2001). Floods in Algeria in 2001 killed around 900 people and adversely affected approximately 45000 through destruction of crops and property. In Eastern Africa in 2002, heavy rain brought floods and mudslides that forced people to evacuate their homes and lose their source of livelihoods from farms in Tanzania, Uganda, Kenya, Burundi and Rwanda (Haq *et al.* 2007). The same situation that happened in Ethiopia was also realised in Mozambique by Chilundo, (2010:18) where disaster risk reduction measures that were put in place after the 2000 and 2001 flood disasters could not reduce subsequent floods that occurred in 2010. In fact, the 2010 floods in Mozambique caused extensive damage and brought a major setback to the economy as well as leaving approximately 26000 households left at risk of food insecurity (International Federation of Red Cross and Red Crescent Societies, 2010:1).

Disasters also impact South Africa. Specifically, droughts and floods are considered to be the country's most prevalent hazards. In this instance droughts generate greater economic losses and affect more people (in terms of livelihoods lost) whereas floods have greater impact in terms of number of mortalities (Ngaka, 2012). Van Zyl, Mackenzie & Kirsten, (1996: 250) estimated that 65% of South Africa receives less than 500mm rain per year. Wilhite (1993b) also claims that most of the farming is done under arid and semi-arid conditions in South Africa (Ngaka, 2012). Therefore the lack of rainfall and the prevalence of drought present a significant hazard to farmers who depend on rain for farming activities. People living in the rural areas and resource-poor farmers are often cited as most vulnerable to the impact of disasters, including drought (Akpalu, 2005:58; Austin, 2008; Benson & Clay, 1994:35; Pelser, *et al.* 2005:20). Apart from drought, South Africa also experience floods. Specifically, the cyclone Eline which hit Southern Africa in 2000 also affected the Limpopo basin in South Africa from 1999-2000 by destroying a lot of crops, houses and infrastructure and this was also experienced in the 2005-2006 floods as well (Lukamba, 2010: 485; Southern Africa Environment Outlook, 2008). Currently, floods have been reported in Johannesburg on 13 November 2016, which has killed at least six people, destroyed properties and infrastructure, including crops in nearby farms. The Johannesburg Disaster Management Centre has been activated for assistance and co-effort to investigate the damage (Chaffin, 2016). In this case, there is need for effective investigation by the DMC in order to check the vulnerabilities of the affected populations.

Austin, (2008) suggested that resource poor farmers' vulnerability is often exacerbated by a lack of progress in effective disaster management. In addition, some scholars such as Kreimer, Arnold & Carlin (2003: 12) suggested that the reason countries including South Africa are failing to prevent or reduce the impact of disasters on agriculture is due to governance failure whereby most governments are still focusing on disaster relief rather than disaster prevention and mitigation. In doing this, funds are diverted from disaster risk reduction programmes to disaster relief (Ghaus-Pasha, 2007: IV). As a result, if a disaster strikes again in the following year the severity of damages caused will further intensify from the previous year, as risk has not been adequately reduced.

In order to reduce the impact of disasters on food security, Van Zyl, (2013) suggested that there is a need for the integration of disaster risk reduction and food security policies. It is crucial that these two policy domains share the overarching objective to improve the wellbeing of a country's inhabitants, including communities in South Africa (RDP, 1994; RSA, 1996). FAO, WFP& IFAD, (2006) claim that the integration of disaster risk reduction and food security policies will assure a future of agriculture production and access to food and water by the world's most vulnerable people. The integration of these policies will help with the realisation of synergies and maximise effectiveness of policy and service delivery. It will also help to convey the "big picture" for strategic issues which can help policy makers to have an entire perspective on DRR and food security during policy making as well as exploiting economies of scale. An additional benefit of policy integration is also the provision of a framework for resolving potential conflicts about funding or jurisdiction, thus creating user friendliness of services (Meijers and Stead, 2004:6).

A prevalent challenge is to mainstream disaster risk management effectively into the development policies and programmes related to food and agriculture (FAO, WFP & IFAD, 2006; UNISDR, 2006:4). Some limitations that can hinder policy integration process include the need for more resources and time to carry out the process and the need for more formal institutional arrangements. This challenge of integration of policies (disaster risk reduction and food security) presents a complex challenge for governments in their attempt to provide for the socio-economic welfare of their communities (Sayeed and Pillay, 2011: 5). The integration of food security and disaster risk reduction policies is also being advocated by some international organisations, which includes FAO, WFP, IFAD and governments around the world including South Africa (FAO, WFP& IFAD, 2006). For a better understanding of the discussion above, it is appropriate to first conceptualise the concepts that form the core of

the study. The first concept to be elaborated on is food security and the aspects associated with it.

2.2 Food security concept

Food security has been described as a complex issue by Maxwell and Smith (1992). Smith *et al.* (1993) elaborates on this point by stating that more than 200 definitions of food security can be identified. Definitions over the years reflected the different thinking by various scholars and have provided signposts to policy analysts to understand food security as a problem that requires both international and national attention. The issue of food security was recognised as a critical issue worldwide during the Proceedings of the 1974 World Food Summit. This conference was the genesis of Food Conferences trying to find a definition of food security. The World Food Summit of 1974 defined food security as:

'Availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices' (UN, 1975).

In 1981 Amartya Sen's seminal work '*Poverty and Famines*' questioned the theory that food insecurity was mainly a result of lack of availability of foodstuffs, by defining food security as the ability of community to access food as well as their 'ability to establish entitlement to enough food' either through production-based, labour-based, trade-based, transfer-based, or other entitlement relationships (Sen, 1981). Following this, in 1983 Food Agricultural Organisation (FAO) expanded its food security concept to include: 'Ensuring that all people at all times have both physical and economic access to the basic food that they need' (FAO, 1983). This was implying that attention should be balanced between the demand and supply side of the food security equation.

In an influential World Bank (1986) report, *Poverty and Hunger*, the concept of food security was further elaborated in terms of: 'access of all people at all times to enough food for an active, healthy life.' This was to highlight the temporal dynamics of food insecurity. It introduced the widely accepted distinction between chronic food insecurity, associated with problems of continuing or structural poverty and low incomes, and transitory food insecurity, which involved periods of intensified pressure caused by natural disasters, economic collapse or conflict.

A more complex definition of food insecurity was adopted in the 1996 World Food Summit (WFS) Plan of Action. The WFS 1996 proposed that 'food security, at the individual, household, national, regional and global levels is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life' (FAO, 1996a).

Finally, the definition of food security was again refined in The State of Food Insecurity (SFI) 2001: 'Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life' (FAO, 2002). From the looks of things, it can be realized that from all the definitions given above, food security evolved from a mere issue of access to food to a more comprehensive quantity and quality issue.

Based on the definitions mentioned above, food security relates to the availability of nutritious food, to all people, at affordable prices at all times including during disaster periods. This operational definition will be used in this study because the study is mainly focused on the vulnerable people that are affected by disasters which compromise their food security. Apart from definitions of food security, there are aspects or dimensions which food security is identified with.

2.3 Dimensions of food security

Food security is mainly identified with four major features, which are availability, accessibility, utilisation and stability (Israel & Briones, 2013 & Kurien, 2004). However, the issues of food security tend to revolve around two essential themes, which are availability and access (FAO, 1983). Nevertheless, that does not mean that utilisation and stability are not important because they play a different role in the food security discourse (Maunder and Wiggins, 2007; Webb and Rodgers, 2003). As a point of departure, food availability is first to be discussed.

2.3.1. Food availability

Food availability depends largely on domestic food production and generally implies sufficient quantities of appropriate, necessary types of food from domestic production, commercial imports or other donors (USAID, 1992). It can sometimes but not always be measured by a tally of aggregate national agro-food output (Coates *et al.* 2006). However, the indication of food availability does not offer information on food quality and nutrient

intake (Haddad *et al.*1997). The assumption of food availability is purely production oriented with the idea that increasing the amount of food available will reduce levels of malnutrition and food insecurity (Young, 2004: 13). However, Earl, (2011) argued that, producing more food does not necessarily lead to better access to food, or to an improved nutritional status of those who need it most. There are a multitude of issues that are mentioned by Christoplos, (2001:543) which affect food availability in different countries including South Africa. For instance, it is suggested by Christoplos, (2001) that, food availability is decreasing due to scarcity arising from land degradation and decreasing yields, increasing cost of agricultural inputs, population pressure, worsening climatic conditions and shifts from food to bio fuel production. Food availability affects South African provinces differently as noticed by Labadarios *et al*. (2011:894). In all provinces, other than the Western Cape, food variety is lower in poorer and rural households than in higher-income and urban households (average of 5 in other 8 provinces) versus 14 different food items (in the Western Cape). The Western Cape recorded the greatest food variety (average of 15 food items) across households of all income levels and both rural and urban settings (Labadarios *et al.* 2011:894). Tradition and agricultural practices heavily influence the type of diet consumed by South Africans. However, the 1999 National Food Composition Survey, South Africa highlights income and access to food as the most important determinants of food availability (Labadarios *et al.* 2011).

2.3.2 Food accessibility

Israel and Briones (2013) suggested that, food should be accessible to people of all economic classes and in all locations in sufficient quantities. The concept of food accessibility implies an ability of households to secure food in the market place by growing it, or from other sources such as transfers, gifts or grants (Woods, 2006). Access to food can be affected by gender, age or illness (RSA 2003:23). This is illustrated by Frayne et al (2009:16) who stated that, nearly one third of the South African households are female-headed and they are considerably poorer and more food insecure than non-female headed household. This is mainly because the family duties and child care preclude them from having jobs or growing crops for thereby decreasing food access. However, Kalibwani, (2005:7) argued that, food accessibility is a complex issue. Specifically, the argument is put forth that, even though food is grown in the same country, households may not be food secure due to the fact that food can be grown and the produce may be sold on the international market. The profits from these produce sales might be spent on other developmental needs, thereby not benefitting the intended population.

In the South African context, the main factors that can inhibit food accessibility are food prices, the lack of variety and poor quality of food that is available in the food retail environment. Specifically, research that was carried out by Roos *et al. (*2013:119) in Avian Park in the Western Cape Province discovered that, most people in that area are limited to variety and quality of available food in the markets as well as lack of local food distribution. Food access is also declining in South Africa due to the worsening of trade terms between wages and food cost as well as shortage of land to rural subsistence farmers (Christoplos, 2001: 543; Davids, 2006).

2.3.3. Food utilisation

Nutritional wellbeing is a factor of not only access and availability of food, but also its quality and final utilisation within the household (Food Security Working Group 1997; Pelletier, 2002; Young, 2001). Utilisation refers to the eventual use of food by individuals at a household level and their household practices, which include preservation, storage, selection, preparation, and the final consumption of food (Food Security Working Group 1997). Utilisation depends on a lot of things such as health education and necessary infrastructure such as good storage, clean water, sanitation and a host of related needs. For instance dietary intakes of energy and a large number of micronutrients are low in the South African Children aged 1-9 years as reported by 1999 National Food Consumption Survey (NFCS). The data from NFCS also showed that 17% of the children and adults from different ages are overweight and obese (Steyn *et al.* 2005; Department of Health, 2004). Thus although food is available, it is not utilised in a way to be nutritious and build health communities. An additional example of utilisation refers to the fact that the majority of South Africans are landless and cannot grow their own food to feed their households. The inability to plant their own crops cause them to opt to switch to monotonous diets (eating one type of food over and over again; lacking in variety), which lack essential micronutrients in order to survive. The monotonous diet often causes stunted growth and other dietary diseases (Frayne *et al.* 2009:6; Labadarios *et al.* 2011:894; Wisner, Gaillard and Kelman, 2012: 543). The need for a combination of education and legislation on food quality standards is needed to improve food utilisation in South Africa.

2.3.4 Food stability

The fourth central concept in the food security discourse is food stability (FAO, 2005; FAO, 2007; Food Security Working Group, 1997; Swindale and Bilinsky, 2005; Webb and Rodgers, 2003). Stability refers to food security being maintained over time and in the face

of variety of natural, economic, social and policy shocks and stresses. The increase of disasters, climatic conditions and uncertainties regarding food prices and national protectionism also threatens the stability of food (Christoplos, 2001: 543). In South Africa, drought and floods are natural hazards that mainly affect the stability of food. In addition, inflation that has hampered the economy has led to a rise in food prices thereby affecting the stability of food. These challenges need to be addressed by means of policies and programmes that aim at improving food security from global to local levels.

2.4 The International food security policy context

Food security has become the concern of both developed and developing countries as it possess significant challenges to both the present and future generation (FAO 2011; Todaro & Smith 2011). Due to the magnitude of the problem, food security requires a global and integrated solution. To this end, governments and international organisations have formulated different developmental policies and strategies through the World food conferences and food security policy dialogues at global, regional and local levels (ODI, 1977). A plethora of global policies and strategies that have been established worldwide to improve food security can be identified. These are summarised briefly in the table below:

2.4.1 Table 1: Summary of International food security policy developments

Legislation	**Policy Application**	**Content**
World Food Summit (WFS)	Global	The World food summit held in 1996, delivered the Rome Declaration. It reaffirms the right of everyone to have access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger. This declaration advocated for political will and national commitment to eradicate hunger in all countries (FAO, 1996).
Millennium Development Goal (MDG 1c)	Global	The United Nations members established the MDG 1 in 2000. The main objective was to halve the number of people who suffer from hunger by 2015. This MDG urged all countries to work towards that goal. Updates on the progress towards achieving this goal were given in the State of Food Insecurity documents that were produced on yearly basis (FAO, 2000).

The Global Strategic Framework for Food and Nutrition	Global	The GSF emphasises policy coherence and is addressed to decision- and policy-makers responsible for policy areas with a direct or indirect impact on food security and nutrition, such as trade, agriculture, health, environment, and natural resources and economic or investment policies. These guidelines and recommendations should be interpreted and applied in accordance with national policies, legal systems and institutions (Committee on World Food Security, 2013: 6).

2.4.2 World Food Summit (WFS) 1996

The members' states of the United Nations instigated most of the global policies, strategies and dialogues mentioned above. Since the World Food Summit of 1974 these member states have made two major commitments to tackle world hunger. The first was at the World Food Summit (WFS), in Rome in 1996, when 182 governments committed "... to eradicate hunger in all countries, with an immediate view to reduce the number of undernourished people to half their present level no later than 2015" (FAO, 1996 http://www.fao.org/WFS/). This commitment was supported by implementation plans in order to achieve the set target. One of the plans ensured an enabling political, social, and economic environment designed to create the best conditions for the eradication of poverty and for durable peace, based on full and equal participation of women and men, which is most conducive to achieving sustainable food security for all." In addition, some plans were designed to be integrated into developmental policies that combat pests, drought and desertification, considering the multifunctional character of agriculture. Finally, some plans were supposed to prevent and be prepared for natural disasters and man-made emergencies and to meet transitory and emergency food requirements in ways that encourage recovery, rehabilitation, development and a capacity to satisfy future needs." (FAO, 1996).These Plans of Action were supposed to be implemented and monitored in cooperation with the international community. As the WFS of 1996 was designed to examine realistic approaches to food security, and to address long term challenges of global food security (Shaw, 2007: 348). The WFS has shown its commitment to address the issue of disasters in its practices thereby creating a foundation for the possibility of the integration of the DRR issues into food security policy area

2.4.3 Millennium development goals (MDGs) 2000

The second noteworthy commitment by the member states of the United Nations was the formulation of the First Millennium Development Goal (MDG 1), established in 2000, which includes among its targets “cutting by half the proportion of people who suffer from hunger by 2015”. This commitment has been almost met at global level where the number of people living in extreme poverty has declined by more than half, falling from 1.9 billion in 1990 to 836 million in 2015. Most progress has occurred since 2000 (FAO, 2015: 4). However, some countries that are in the developing world have struggled to achieve the set target as the proportion of undernourished people has fallen by almost half since 1990, from 23.3 per cent in 1990–1992 to 12.9 per cent in 2014–2015 (FAO, 2015: 4). For most Sub-Saharan African countries that have failed to reach the international hunger targets, such failure was caused by natural and human-induced disasters or political instability that have generated a status of protracted crisis, which has prevented the protection of vulnerable population groups and the promotion of income opportunities for all. It has been described that, in the medium and the long term, hunger eradication can only be pursued if all stakeholders contribute to designing and enacting integrated policies for improving economic opportunities, the protection of vulnerable groups and disaster preparedness (The State of Food Security Report 2015:18). Action undertaken at the global and regional levels should take into account country specificities and exposure to natural and human-induced disasters, especially those of Small Islands and developing states and try to integrate them with food security policies (The State of Food Security Report 2015).

2.4.4 The Global Strategic Framework (GSF) 2015

Another global food security initiative that was put forward was the Global Strategic Framework of 2015. This policy highlighted that to current date, attempts to address food security has not been comprehensive enough as issues such as disasters and their impact on food security and disaster preparedness and response for food security have not been well developed (FAO, 2015). It further describes that most food insecure people live in marginal areas, are disproportionately exposed to natural hazards and are the least able to cope with its effects. In addition, it mentioned the impact of climate change on agriculture, including land degradation, increasing uncertainty about crop yields and the intensification of floods and droughts; and also its effects on the most vulnerable as another cause of food insecurity worldwide (FAO, 2015: 9).

The GSF also highlights a reduction of the number of undernourished people in developing countries from 994.1 million in the period 1990-92 to 790.7 million in 2012-2014, although this constitute some progress in eradicating hunger, it is far from the World Food Summit (WFS) of 1996 target to reduce the number to 498 million by 2015. This highlights the need for a more effective focus by all actors on the most pressing challenges, a process the GSF is designed to support. All stakeholders need to draw on lessons learned and glean insights that may be taken into account in devising more effective strategies for food security and nutrition. In responding to this call by member states of the United Nations, the GSF in chapter V urges core actions at country level including South Africa to follow an example of Brazil's success story in institutionalizing multi-ministerial coordination and civil society participation to address food insecurity and promote the right to food (FAO, 2015: 53). Following this call by GSF, the South African government adopted the ZHP, but this was done without wide consultation to determine if the Programme will suite in their country's context as factors that affect food security in various countries differ from one country to another.

It can be concluded that, the global policies, and frameworks mentioned above were initiatives to promote food security to meet each and every consumption need of human beings. However, though the impact of disasters was highlighted as issues threatening food security, little is mentioned with regard to the need for policy integration of DRR issues when addressing food security at national level within countries whose food security is severely affected by disasters. The discussion below will discuss how South Africa responded to the above global policy call basing on its food security context.

2.5 The South African food security policy context

South Africa is one of the countries that have maintained undernourishment below or close to 5% since 1990-92 (FAO, 2015:13). In conformity with the international obligations formulated by the Food and Agriculture Organisation of the United Nations (FAO), which stipulate that, every member state should consider the enactment of legislation on the right to access to food, the South African government has established various policy and legislative directives to promote food security. The primary legislative intervention to promote food security can be found within the Constitution of the Republic of South Africa. Specifically, the Constitution of the Republic of South Africa, 1996 provides under section 27 (1) (b) that everyone has the right to have access to sufficient food and water. Section 28 (1) (c) also provides that every child has the right to basic nutrition, shelter, basic health care services and social services (FAO, 1996; Mohlabi, 2012: 3; Pinstrup-Andersen, 2009: 5;

RSA, 1996). This constitutional right to food is usually threatened by the occurrence of disasters throughout the country (Israel & Briones, 2013: 3; Van Aalst, 2006). Hence the need to prioritise the integration between food security and disaster management policy, in order to ensure adherence to the constitution of the country is critical.

Apart from the Constitutional Right to food security, the South African government has identified policy initiatives since the dawn of democracy with the aim of improving food security. An example of this is the strategic framework for action to achieve food security, which was first outlined in the Reconstruction and Development Programme (RDP, 1994). It identified food security as a basic human need. It also recognised poverty and food insecurity as the legacy of the apartheid socio-economic and political order. The RDP food security framework was later used as a basis document to formulate subsequent policy papers, such as the Agriculture White Paper (1995), Agricultural Policy Discussion Document (1999) and the BATAT, (1996). The policies outlined in these documents were consolidated and updated in the Integrated Rural Development Programme (IRDP, 1999), which is one of the key food security policies of the Government of South Africa. Out of the base documents mentioned above the South African government has formulated a multitude of documents, frameworks, policies and strategies to promote food security. The study will focus only on the policy interventions mentioned below as they are the most up to date and relevant policy interventions in terms of content as they encompass all food security issues (programmes and projects) that are being undertaken by the South African government at the time of the research.

a) The Zero Hunger Programme (ZHP) of 2002, which has a strategic goal of improving South Africa's adequacy and stability of access to safe and nutritious food at both national and household level (RSA, 2002: 2);
b) Integrated Food Security Strategy (IFSS). Established and implemented under DAFF in 2003 in a bid to streamline, harmonise and integrate diverse food security programmes in different State departments that were operating in isolation (NDA, 2002: 5; RSA, 2003:13); and
c) Food Security and Nutrition Policy for South Africa (FSNP) of 2014, which has a goal to ensure availability, accessibility and affordability of safe and nutritional food at national and household levels – aligned to the NDP vision 2030 (RSA, 2014).

These food security policies are elaborated below starting with the IFSS of 2003.

2.5.1 Integrated Food Security Strategy (IFSS)

The Cabinet approved the Integrated Food Security Strategy (IFSS) in 2002 as a strategy that would integrate the many previously isolated policies tackling the challenge of food insecurity in South Africa. Important role-players from national and provincial governments, public agencies, universities, NGOs and community-based associations, were involved in the development of this food security strategy (RSA, 2003). The Ministry of Agriculture and Land Affairs (MALA) was the lead agency in formulating the strategy. The IFSS at its core had the goal to eradicate hunger, malnutrition and food security by 2015. To achieve the objectives, the IFSS would follow a developmental approach that would entrench public, private, and civil society partnerships focusing on household and national food security.

This IFSS approach had to operate on the basis that all food security interventions had to reach the targeted groups' needs. Specifically, one of the main objectives of the IFSS was to: increase safety nets and food emergency management systems. The emphasis of this objective is on instances where the food insecure population is unable to access sufficient food because of disability, extreme conditions of destitution. Consequently, food security interventions in the form of short-to-medium-term relief measures may be implemented on a sustained basis, depending on the nature of given interventions. These interventions therefore will need to provide a safety net for the most vulnerable population and the important task of managing them is given to Comprehensive Social Security Systems and Disaster Management (RSA, 2003: 8). Many of these programmes are at different levels of implementation, development and planning.

One of the main strategic issues of IFSS was to develop and implement appropriate Food Security Monitoring Systems at local, provincial and national level. These monitoring systems will be linked to other information systems, which include disaster management, poverty and health information systems. In addition, the formulation of a disaster management plan that is integrated in all food security programmes was also among strategic issues raised for the successful implementation of the IFSS (RSA, 2003). The concept of integration with other departments was mentioned in the IFSS but there is lack of legislation that clearly defines the responsibility and authority for the task of integration within the strategy especially with policies that address DRR. Therefore, an area of concern for the strategy is that, it does not place a clear burden on a specific focal point to drive the policy integration process. This means that integration could remain only a theoretical principle and not a practical reality in food security policy. Another area of concern is the lack of information among policy makers that clearly defines, who is food insecure? Where are they

located? What causes the insecurity, the information about the conditions of food demand and supply in different parts of South Africa? This lack of information can affect the outcome of policies to be shallow and might not address the actual risk that people are facing in the country. The IFSS also identified the lack of a structured system that deals with food security disasters. It clearly stated that, disasters that occur at regular intervals could substantially threaten the food security position of agriculture-based households who have few reserves to draw on if their crops and assets are negatively affected by disasters (RSA, 2003).

2.5.2 Zero Hunger Programme (ZHP)

The Zero Hunger Programme (ZHP) was conceptualised, derived from the Brazilian Zero Hunger model, which had proved to be an effective strategy in addressing and combating hunger (Rocha, 2009: 51). The ZHP was then implemented from 2002 to 2012. It was conceptualised to strengthen and assist in the actualisation of the Integrated Food Security Strategy (IFSS) for South Africa. The main thrust of the ZHP was to halve the approximately 11.5 million (Stats SA, 2010) individuals experiencing severe inadequate access to food by 2015 and to further work on eradicating hunger and contribute towards poverty alleviation in South Africa.

The Zero Hunger programme combined short-term responses to emergency situations with medium- and long-term responses that helped to create the necessary conditions for people to improve their food security. This was done through the recognition that, the needs of people living in rural and urban areas differ in terms of income and land. Therefore, a specific set of interventions for each case was offered. Overall, the Zero Hunger programme from a South African perspective is a strategy to reduce incidences of food insecurity through improving the capabilities of all South Africans to access nutritious food. To achieve its goals the Zero Hunger programme' endeavoured to bring together all three spheres of government and organs of the civil society as key stakeholders to aid in implementing government policies related to food security and this was done in exclusion of the line department of Disaster Management.

The Zero Hunger Programme had five key objectives and under these key objectives, programmes had to be devised that helped in the achievement of each objective (World Bank, 2000; RSA, 2002). One of the key objectives was to ensure access to food for the poor and vulnerable members of the society. This objective aimed at ensuring direct access to food by the neediest based on humanitarian consideration and protecting them from the violation of their constitutional right of having access to food. This was done by acquiring

information from the existing sources (for example, Department of Statistics of RSA) that identifies accurately who the hungry and vulnerable are and where they are located. Following this identification of the food insecure people, the Zero Hunger Programme ensured access to food through:

a) The provision of social safety nets such as social grants and food transfers.
b) The setting up of strategies by DSD and DAFF to ensure that people are able to use these resources to purchase nutritious food.
c) The use of the Reverse Logistics Model to stimulate changes to the production and consumption value chain through increasingly procuring food from small-scale producers and family farms through the Food Banks.
d) Macro-based strategies such as raising minimum wage levels across all sectors of the economy so that even the poorest will be able to buy nutritious food (RSA, 2002).

For the ZHP to achieve its strategic objectives of improving access to food by all, it required the cooperation of the following departments: the Department of Health; Social Development; Public Works; Water Affairs and Environment; Transport; Education; Housing; Co-operative Governance and Traditional Affairs, Rural Development and Land Reform; Science and Technology and Statistics South Africa. Apart from these, the lead Department on the co-ordination and implementation of the Zero Hunger Programme was the Department of Agriculture, Forestry and Fisheries with other sector Departments' collaboration. Bearing in mind the impacts of drought and floods and the disasters that disrupt progress towards food security, departments of disaster management (at levels of government) could have been included among the departments mentioned above for a better policy integration. Though it cannot be among the leading departments its appearance in food security policies would have shown the effort of addressing the impact of disasters on food security. The implementation of the ZHP was supposed to be undertaken by all spheres of government in all sectors, including the private sector, civil society and all South Africans following the institutional framework proposed by the IFSS and prescribed by the constitution. However, the only thing that was not copied by the ZHP from the IFSS was the inclusion of disaster risk management issues in its programmes and projects. The exclusion of the line department of disaster management in the ZHP might have delayed the achievement of its main objective of halving hunger by 2015 by failing to address the actual risks that are affecting vulnerable people who depend on agricultural activities for their livelihoods.

Taking into account the failures of the ZHP, the South African government has formulated a new Food Security and Nutrition policy with the aim of further promoting a food secure South Africa. The policy is outlined below.

2.5.3. Food Security and Nutrition Policy (FSNP)

The need for a Food Security Nutrition Policy (FSNP) arose as food insecurity remains a threat to the South Africans. FSNP was created as a means to promote "access to and control over the physical, social and economic means to ensure sufficient, safe and nutritious food at all times, for South Africans, in order to meet the dietary requirements for a healthy life" (Maxwell, 2006: 58 & RSA, 2014: 8). Firstly, the FSNP aims to serve as a key pillar in achieving the objectives set in the South African Governments' New Development Plan (NDP) which aims to eliminate poverty, reduce unemployment and inequality by 2030 (UNSCN, 2013: 7-8). Secondly, the National Policy on Food Security and Nutrition seeks to provide an overarching guiding framework to maximise synergy between the different food security strategies and programmes of government and civil society. Finally, FSNP creates a platform to understand the parameters and boundaries of the international obligations since South Africa is a member of the Southern African Development Community (SADC). The essence of this Policy is to build on existing initiatives and systems, and to put in place mechanisms that ensure stricter alignment, better coordination, and stronger oversight. Moreover, the Policy seeks to ensure that the response to food and nutrition insecurity is ambitious, rigorous and dynamic for it to achieve a food secure South Africa.

The strategic goal of the National Food and Nutrition Security Policy is to ensure the availability, accessibility and affordability of safe and nutritious food at national and household levels. This policy recognises that there are key food security challenges in South Africa that hamper a move to a more food secure society which include the lack of safety nets and food emergency management systems to provide for all those who are unable to meet their immediate food needs or to mitigate the impact of natural and non-natural disasters on food security; This assessment, together with the Report of the UN Special Rapporteur on the Right to Food in 2011, suggests that South Africa is faced with a situation where Food safety nets and food emergency management systems are not always in place to assist people who are unable to meet their food needs or to mitigate the impact of natural and human disasters (RSA, 2014).

Some of the challenges identified by the FSNP have been mentioned in previous policies (Integrated Food Security Strategy and Zero Hunger Programme) which includes,

inadequate safety nets and food emergency management systems to provide for all those who are unable to meet their immediate food needs or to mitigate the impact of natural and non-natural disasters on food security; inadequate access to knowledge and resources to make optimal choices for nutritious and safe diets; land available not always optimally used for food production; limited access to processing facilities or markets for small-scale primary producers, including farmers, fishers and foresters; the issue of climate change and altered patterns of land use which pose a threat to domestic production; and there is not adequate, timely and relevant information on food security (RSA, 2014). The continual existence of these challenges reflects the need by the South African Government to device some strategies and integrate all problems at national level when developing policies that addresses food security in order to solve these challenges.

Instead of integrating the problems threatening food security during policy formulation, the FSNP provides a policy platform to address some of the issues through strategies which are aimed at: increasing and targeting public spending in social programmes which impact on food security; to put extra efforts to increase food production and distribution, and increasing access to production inputs for the emerging agricultural sector. The FSNP also seeks to address the leveraging Government food procurement to support community-based food production initiatives and smallholders; and to also consider the strategic use of market interventions and trade measures, which will promote food security (RSA, 2014).

Food and Nutrition Security is a multifaceted and multidimensional issue that can be attained through various approaches. It requires a well-managed inter-sectoral co-ordination. It also requires a genuine integration of existing policies and programmes in health, education, environmental protection, agrarian reform and agricultural development. This integration can also be done in cooperation with the department of disaster management at all levels of government as disasters were mentioned as a major challenge to food security.

The approach of the FSNP can be achieved through the implementation of five pillars. These pillars constitute the foundations of the FSNP and they allow for the multi-sectoral initiatives and programmes to be undertaken. The pillars include:

a) **The availability of improved nutritional safety nets**: This will run through supported nutrition and feeding programmes, emergence food relief, as well as the Private sector, CBOs and NGO interventions;
b) **Improved nutrition education:** The focus of this outcome will be concentrated more at the district level. Households and communities will be assisted with consumer

literacy; food management and the knowledge of meal planning will be provided as well.

c) **Alignment of investment in agriculture:** The target population will be in the rural areas. The interventions will be applied through the subsidisation of agricultural inputs and services to increase food production. The government will involve all South Africans and private agencies for more effective food storage and distribution to ensure a better access to food.

d) **Improve market participation:** This pillar focuses more on the emerging agricultural sector. The focus will be to include public–private partnerships, take-offs and government food purchase programmes that support smallholder farmers. In addition, the inclusion of the Agri-Bee Charter will be of great significance, as it requires the agro-processing industries to broaden their supply base. Hence the emerging agricultural sector will be involved.

e) **Food and Nutrition Security Risk Management:** Investment will be increased in research and technology in order to respond to the production challenges currently facing South Africa, which include climate change and bio-energy. Information management systems would also be required with periodic scientific reviews of the state of food security in the country.

Each of the pillars will be pursued in line with an appropriate strategy document aligning the programme and activities, which will contribute to the attainment of food security**.** Although the strategy is rather extensive by nature it does not allude to programmes being integrated with the line department of disaster management at all levels of government. This is a concerning issue as one of the first challenges that was mentioned in the policy referring to disasters and their impact on food security. It can be argued that, if this gap is not addressed in policy making it might leave the first challenge unresolved.

2.6 Conclusion

Chapter 2 showed how food security has been regarded as a critical matter both in the global and South African perspective. This chapter went on to describe how food security is being affected by the occurrence of disasters especially in the African continent. Some overlapping challenges in different countries have been cited such as the drought, floods and civil wars. The chapter also showed how international organisations such the FAO, WFP and the UNDP are trying to advocate for the integration of policies and programmes that address food security and disaster risk management. Advantages of integrating these policies as well as challenges have also been explained in this chapter. Through this

chapter, the study tried to pinpoint some global policies and programmes that address food security such as the World Food Summit in 1996, the Millennium Development Goals of 2000 and the Global Strategic Framework of 2015. This was done in order to find if these policies and frameworks address disaster reduction as an integral part in their activities. It was found out that these legislations have cited disasters as the main problem that is undermining food security especially in the developing countries but strategies to combat this problem have not yet been developed. The same investigation of legislations that address food security was also done in the South African context. The documents reviewed include the Integrated Food Security Strategy of 2003, the Zero Hunger Programme of 2002 and Food Security and Nutrition Policy of 2014. These policy documents were used because they are the latest documents and they combine most of the programmes and projects that are being undertaken by the South African government to address the issue of food security. A thorough investigation was done on IFSS, ZHP and FSNP and it has been found out that only the IFSS and FSNP mentioned the need to involve the line department of disaster management in their activities though they did not specify the roles and responsibility of such department in practical application of the programmes. One concerning aspect that was observed was that the ZHP, which was the South African Governments' key Food Security strategy for the foreseeable future, did not even mention the inclusion of the disaster risk reduction in its activities thereby leaving the issue of integration between food security and disaster management policy and practice difficult to achieve. The following chapter will look at legislation that address disaster risk reduction from the global to the South African context and also check on how they involve the issue of food security in their activities.

CHAPTER 3

DISASTER RISK REDUCTION: LITERATURE REVIEW

3. Introduction

The previous chapter mainly focused on legislations and policies that address the issue of food security from the international perspective and South African context with the intention of finding legal or policy foundations that call for policy integration with policies that address disaster risk reduction. This chapter will mainly focus on policies and legislations that address the concept of disaster risk reduction and management. Firstly, the focus will be on the historical emergence of disaster management from a global perspective. Specifically, the section will discuss prominent international policy developments that were established in order to address disaster management which includes the International Decade for Natural Disaster Reduction from 1990-2000; the Yokohama strategy and Plan of Action (YSPA) of 1994, International Strategy for Disaster Reduction (ISDR), Hyogo Framework of Action (HFA) of 2005-2015 and finally the Sendai Framework for disaster risk reduction (SFDRR) of 2015-2030. The main focus on these legislations will be on their priority actions looking at how they emphasise the need for policy integration or co-operative governance between disaster risk reduction and food security policies.

Secondly, this chapter will also focus on how the South African government responded to international policy requirements for disaster risk management. In doing this, the chapter will look at the historical emergence of disaster risk management in South Africa up to 2016. All relevant legislations that addresses disaster risk management will be discussed including the Disaster Management Act No 57 of 2002 and the Disaster Management Amendment Act No 16 of 2015. Specifically, this chapter will be looking at the institutional structures for disaster risk management envisioned by the Disaster Management Act and National Disaster Management Framework. As this study will focus mostly on national government level the structures to be discussed will include the National Disaster Management Centre and the National Disaster Management Advisory Forum. The National Disaster Management Framework of 2005 will also be discussed with a particular focus on the four Key Performance Areas (KPAs). The main rational for discussing the legislation and structures that address disaster risk management in South Africa is to gather information that highlights issues of co-operative governance and policy integration and to take into consideration how these legislations propagate for the involvement of various government departments in carrying out disaster management function.

3.1 Historical emergence of disaster risk management globally

Disasters have been part of the human experience for 6000 years (Quarantelli, Lagadec and Boin, 2007: 16). According to Lenski, Lenski and Nolan (1991) and Balter (2005) disasters started to impact more on societies when humans gave up their nomadic life and settled in concentrated areas such as villages and cities. For much of the time that people have been affected by disasters, there was a notion that they were "Acts of God" but this changed in the 1980s after the realisation of the need to reduce disasters among people (Rosenthal, 1998; Rozario, 2005).The turning point from disaster relief (reactive approach) to disaster risk management (proactive planning and prevention) came with the UN General Assembly (UN/GA)'s recognition of ''the importance of reducing the impact of natural disasters for all people, and in particular for developing countries.'' (Housner, 1989:45-46; Lechat, 1990:2; Smith, 2002:348). By so doing, a transition occurred from a dominant disaster response paradigm to a disaster risk management and disaster risk reduction paradigm (Quarantelli, 1998; Perry and Quarantelli, 2005; Steinberg, 2000). From that time, various definitions of the term "disaster" were realised among scholars such as Britton, 1986b; Buckle, 2005; Kroll-Smith and Gunter, 1998; Quarantelli, 1987b; Shaluf, Ahmadun and Mustapha, 2003). These ideas that were put forward by various scholars, international policy makers and organisations were consolidated through the UNISDR definition of disaster. Accordingly a disaster is defined as:

"A *serious disruption of the functioning of a community or a society involving widespread human, material or environmental losses and impacts, which exceeds the ability of the affected community to cope using its own resources*" (UNISDR, 2009:2).

Crucially, this period (post 1980s) within disaster risk science established the human contribution to disaster risk and risk reduction. In other words it was established that humans are a significant contributor to their own disaster risk through bad management, planning and design. Consequently, since the realisation of the human contribution to disaster risk there was also a realisation that humans could play a pro-active role in reducing the risk they create (King *et al.* 2013: 1-2). Various terms such as disaster risk management (DRM), and disaster risk reduction (DRR) emerged as key theoretical and policy directives towards reducing disaster risk. Firstly, Disaster risk management is defined as:

"*A systematic process of using administrative decisions, organisational and operational skills, and capacities to implement policies, strategies and coping capacities to lessen the impacts of a hazard even*t" (UNISDR, 2009).

The major emphasis of DRM is to ensure that a hazard situation does not escalate into a disaster by putting in place interventions such as policies, legislation, and institutional arrangements to prevent, mitigate, prepare for, respond to and recover from the impact of an adverse event. In order to operationalise DRM the concept of disaster risk reduction was introduced into the field. The term disaster risk reduction was introduced in the late 1990s, as disaster losses were increasing worldwide and this highlighted the need to move beyond 'managing disaster events" to better address the risk process that drive them in the first place (Mileti, 1980; Reddy, 2010:22; Salter, 1998; UNDP, 2004; United Nations, 2005). Disaster risk reduction is defined as:

"A conceptual framework of elements that takes into account the possibilities for minimising vulnerabilities and disaster risks to avoid or limit the adverse impacts of hazards, within the broad context of sustainable development" (Mercer, 2010:248; UNISDR 2004:3; UNISDR 2009; UNICEF's DRR, 2011).

These terminologies were made part of disaster risk management practices through the introduction of various policies. Several landmark policies were developed in order to develop the agenda of disaster management and risk reduction (as illustrated below in figure 1). These policies will be elaborated in the sections to follow.

3.1.1 Policy development towards a disaster management agenda

Various policies were developed since 1989 up to 2015 with the aim of pursuing the agenda of disaster risk reduction. This section will discuss the transition of these policies from the International Decade for Natural Disaster Reduction (IDNDR) (1990-2000); Yokohama Strategy (1994); International Strategy for Disaster Reduction (ISDR) (1999); Hyogo Framework for Action 2005–2015; and Sendai Framework for Disaster Risk Reduction (2015-2030) in a diagrammatic format then explanation will be given below to show if these policy frameworks seek to integrate the issue of food security in their practices.

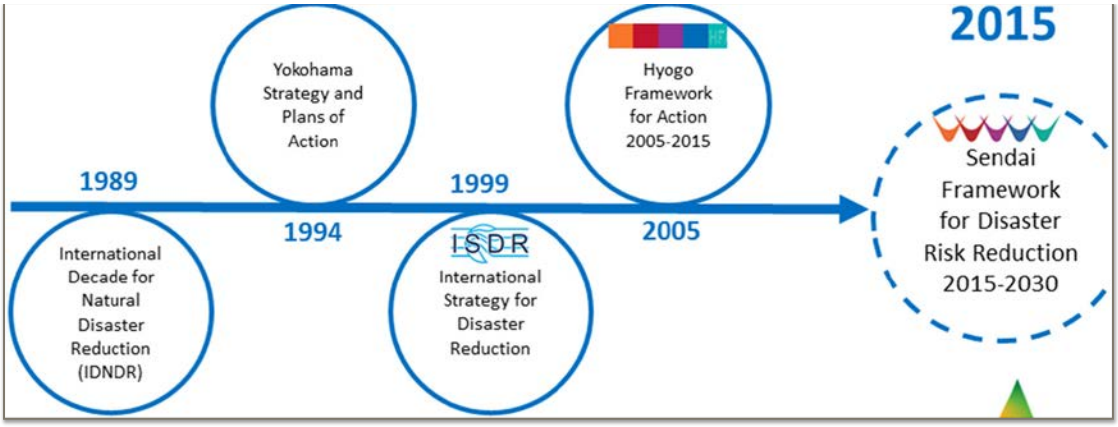

Figure 1: Policy development towards a disaster management agenda (UNISDR 2015).

3.1.2 International Decade for Natural Disaster Reduction (IDNDR) (1990-2000)

The International Decade for Natural Disaster Reduction was launched by the United Nations on 1 January 1990, following the adoption of Resolution 44/236 (22 December 1989). The Decade was intended to reduce, through concerted international action, especially in developing countries, loss of life, poverty damage and social and economic disruption caused by disasters (Housner, 1989:45; ISDR 2002: 5; Lechat, 1990; UNISDR, 2007; UNISDR 2012; Van Niekerk, 2006: 100). The Decade came to an end in 1999 and during the era of the IDNDR several lessons were learnt. One of the primary lessons learnt was that disaster reduction was in many cases implemented separately from other development concerns such as poverty reduction and food security (UNISDR, 1996: 5). In order to pursue the issue of integration of the principles of disaster risk reduction into development programmes, the Yokohama Strategy was established.

3.1.3 Yokohama Strategy (1994)

In 1994, the Yokohama Strategy and Plan of Action was established (UNISDR 2004). It considered that disaster prevention and preparedness should be integral aspects of development policy and planning at national, regional, bilateral, multilateral and international levels (UNISDR 1994:5). Specifically, the Yokohama strategy highlighted that during the formulation of subsequent global developmental policies there should be an emphasis on the integration between disaster risk reduction and relevant developmental issues (ex. food security). This integration was believed would contribute to the reduction of vulnerabilities to disasters in a more holistic fashion (UNISDR, 1994:14). The need for integration between disaster management policies and other developmental issues was highlighted by the Yokohama Strategy because up and till that time the potential benefits of disaster reduction for protecting developmental gains was limited and had not yet been successfully

communicated to all sectors of society, in particular, policy makers and the general public. The lack of integration between these policy areas was ascribed to various factors including lack of attention for the issue, insufficient political commitment and resource (human and financial) allocation for implementation activities at all levels (UNISDR 1994:7). This gap was suggested to be addressed through the creation of the ISDR which also seeks to integrate disaster risk reduction into broader context of sustainable development (UNISDR, 1999).

3.1.4 International Strategy for Disaster Reduction (ISDR) (1999)

The International Strategy for Disaster Reduction (ISDR) continued to promote awareness, assessment and management of risk as crucial aspects to proactive disaster risk reduction. The long-term goal of the ISDR was to enable communities to become resilient to disasters saving lives as well as social, economic, and environmental assets. The ISDR also prompted the integration of disaster risk reduction into the broader context of sustainable development and related environmental considerations. To this end, its purpose was to facilitate, in an inter-agency effort by governments and communities in disaster-prone areas in integrating the management of risk into their development policies, programmes and projects. The ISDR also challenged governments and related international organisations to consider disaster risk reduction as an integral component of development plans and poverty eradication programmes (Reddy, 2010:24).

On a practical level the ISDR has called for the integration of disaster risk reduction into agriculture and food security policy. The focus on the agriculture and food security sectors has been deemed necessary as some of the poorest and most vulnerable countries and communities depend largely on agriculture for their livelihood and food security (UNISDR, 1999). Policy integration has been operationalised through an ISDR task force focusing on drought and land use planning (Van Niekerk, 2005:61; Munzhelele, 2011: 26). To further solidify progress in DRM policy and associated policy integration efforts the second World Conference on DRR was to be held in Kobe, Hyogo, Japan in 2005. The conference concluded with the adoption of the Hyogo Framework for Action 2005–2015, which served as the main international policy document for disaster risk management for over a decade.

3.1.5 Hyogo Framework for Action 2005–2015

The HFA was the primary international policy document for disaster risk management for over a decade and was ratified by 168 countries (UNISDR, 2005). The HFA's had the overall aim of building the resilience of nations and communities to disasters. Additionally, during

the lifespan of the framework it was expected that there should be a 'substantial reduction of disaster losses, in lives and social, economic and environmental assets of communities and countries'. Crucially, in order to achieve its goals several priority action areas were identified.

The first priority that was formulated aimed to ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation. The second priority for action focused on identifying, assessing and monitoring disaster risks and enhancing early warning systems. The third priority encouraged the use of knowledge, innovation and education to build a culture of safety and resilience at all levels. The fourth priority action of the HFA was to reduce the underlying risk factors then lastly, the framework was to strengthen disaster preparedness for effective response at all levels. The rationale for the above priority actions was to ensure policy integration of DRR strategies into developmental agendas. Therefore, there was a need for a strong institutional basis to promote this integration as will be shown with the first priority action (UNISDR, 2005).

Priority action 1 (Institutionalizing disaster risk) encouraged policy integration through the creation of national institutional and legislative frameworks that support the creation and strengthening of national integrated disaster risk reduction mechanisms. In order to achieve this priority, platforms needed to be created for the facilitation of coordination across sectors as well as the integration of disaster risk reduction into development policies and planning at all levels of government (local, provincial and national). For instance, a global platform was established to share experience on DRR among UNISDR parties (Olowu 2010); and national platforms were also developed to track efforts in the implementation of DRR strategies made in each country. Priority action 4 (to reduce the underlying risk factors) was also mostly about integrating DRR with planning and other sectors. The sectors to be involved in DRR issues were not directly specified but the issue of integration with poverty reduction strategies were highlighted as an important factor (UNISDR 2005: 6-7; Yodmani, 2001:1).

Once the implementation period of the HFA lapsed in 2015, a new international disaster management policy had to be developed. To this end, the Sendai Framework for Disaster Risk Reduction was created.

3.1.6 Sendai Framework for Disaster Risk Reduction (2015-2030)

The Sendai Framework for disaster risk reduction of 2015-2030 followed the Hyogo Framework of Action. It was adopted at the Third United Nations World Conference on

Disaster Risk Reduction, held in Sendai, Miyagi, Japan, (UNISDR 2015). It focuses on various priority areas, which looks similar to those of the HFA. The reason for the similarity is mainly to strengthen and build on the original ideas or themes from preceding policies that promote disaster risk reduction (UNISDR, 2015). These priority areas are provided below:

The first priority action focuses on understanding disaster risk. The second priority focuses on strengthening disaster risk governance in order to manage disaster risk from the global, regional, and national up to local level. Investing in disaster risk reduction for resilience is another priority action of the Sendai Framework that should be done from the global to the local level in order to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation. The last priority action mainly focuses on enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction. The rationale for the above priority areas to the study is that, they encourage policy integration with issues that are relevant to DRR such as sustainable development, poverty eradication, agriculture and food and nutrition and others as appropriate in their policies, plans, programmes and processes (Carabine, 2015: 1).

Specifically, the first priority area 1 (Understanding disaster risk) directly seeks policy integration in the Framework. In this regard, priority action 1 talks about bringing different sectors together in which disasters happen which include the economic, social, health, and education and environmental sectors. This means that government departments in any of these fields will have to talk to each other and integrate their activities before, during and after disasters happen. The implication of this priority area within the African context including South Africa where agriculture is the main contributor to people's livelihoods and food security is that, the Sendai Framework in its priority action 1 left out the Agriculture sector which is greatly affected by disasters thereby making the issue of integration of DRR and food security policy areas difficult to achieve.

Section 27 (a) of the framework highlights the need for integration by stating that, to achieve the priority action 2 (Strengthening disaster risk governance to manage disaster risk) there is need to mainstream and integrate disaster risk reduction within and across all sectors and review and promote the coherence and further development, as appropriate, of national and local frameworks of laws, regulations and public policies. Under this priority action 2 in section 27(g) it also emphasizes the coordination of forums with relevant stakeholders when dealing with DRR and this can be done through establishment of platforms from national to local level as been highlighted in the Hyogo Framework for Action (see section 3.1.5). The Sendai framework suggest that policy integration can be achieved through inclusive policies and integration of disaster risk management approaches throughout different industries, in

this case the Agriculture and food security industry will be appropriate (UNISDR, 2015).

All the international disaster management policies mentioned above, places onus on signatory countries to take responsibility for developing disaster management legislations and policies that seek synergy between disaster management and other government sectors including Agriculture sector. What is noticeable from these international documents is that no direct mention is made of the need to integrate disaster risk policy with the food security sector. However, this integration is implied under the umbrella call towards integration between different developmental concerns, especially those involving the agriculture sector. As was already highlighted the focusing on integrated DRR with agriculture is crucial in the African context as agriculture is the mainstay of people's livelihood and food security on the continent. It should be noted that a negative effect of not highlighting the need for integration between DRM and food security policy outright in the policy document could be that governments can side step or not prioritise the issue of food security unlike the concepts of climate change that is directly discussed and emphasised in the Sendai Framework. This ambiguity therefore has to be eliminated on a national disaster management policy level.

South Africa has been a leading country to take up the call for improved disaster risk reduction policy (Van Niekerk, 2006). Consequently, it is necessary to elaborate on how disaster risk management policy emerged in South Africa, as it is the focus country of the study.

3.2 Historical emergence of Disaster Management in South Africa

After the democratic elections of 1994, the Constitution of the Republic of South Africa (1996) laid the foundation for an effective national policy on disaster management in a bid to make South Africa a safer place to live (Burger, 1999: 89). Subsequently, the South African cabinet approved the Inter-Ministerial Committee for Disaster Management in 1997. This committee was given the responsibility to develop disaster management legislation for South Africa. The first step towards a national policy for disaster management was taken with the launch of the Green Paper on Disaster Management in 1998, (Van der Waldt, et al., 2007:241). The Green Paper provides an opportunity to reflect on the current approaches to disaster management and risk reduction by all stakeholders. It provoked thinking on a future strategy or strategies that would be in keeping with the international trends, and more appropriate to current and future needs within the country, as well as the Southern African region (Reddy: 2010: 2; South Africa, 2006). It was followed by a White Paper on Disaster Management in 1999 (Van Niekerk, 2006). In early 2000, the Disaster Management Bill was made available for public debate and by September 2001 there were public hearings on the

Bill. The bill propagates for an integrated, coordinated and uniform approach to disaster management by all spheres of government (Uys, 2005:413). In order to realise this, the disaster management bill emphasised disaster management as a continuous and integrated multi-sectoral, multi-disciplinary process of planning and administration of relevant measures aimed at ensuring the prevention and reduction of the risk of disasters and at the same time mitigating the severity of the consequences of disasters. This was a dramatic departure away from the response orientation to disaster risk management that was the norm in South Africa since the 1940s. However, the need for effective disaster response was not eschewed by the new legislation, as it recognises the need for emergency preparedness and a state of readiness to deal with impending or current disasters or effects of disasters (Burger & Brynard 2001:17; Buys 2000; South African Yearbook 2002/3:323).

The Disaster Management Act 57 of 2002 was signed by President Thabo Mbeki and came into effect on 15 January 2003. The Disaster Management Act has a distinct disaster risk reduction focus, and places considerable emphasis on the development of adequate structures, planning and integrated and coordinated disaster management activities on all tiers of government (Van Niekerk, 2006:95; 2010:1; Visser & Van Niekerk, 2009:6). It therefore becomes crucial to examine the legislation to gain an understanding of specific legal and policy directives that call and facilitate the integration between related developmental policies of disaster management and food security. The discussion will focus on legal and policy directives of the Disaster Management Act and Framework as it pertains to the national tier of government. This focus is aligned with the selected research context of the study.

3.3 The Disaster Management Act No 57 of 2002/ National Disaster Management Frameworks of 2005

The South African Disaster Management Act (DMA) No 57 was promulgated in 2002 and was heralded as a new era for disaster risk management in South Africa (Pelling & Holloway, 2006:4; Van Niekerk, 2006:96; Visser & Van Niekerk, 2009:6). The DMA serves to provide for an integrated and coordinated disaster management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery. The Disaster Management Act establishes that the disaster management function will be undertaken by the South African public sector on all three tiers of government which includes national, provincial and the municipal spheres. The act also provides for line departments to have a role in disaster risk reduction by guiding, overseeing and advising on

issues related to disaster management in their area of expertise (ex, Department of Agriculture provides input relating to drought and food security). The coordination between various tiers of government and line departments are deemed necessary to ensure an effective holistic approach to disaster risk management and linked developmental activities (Hoogstad & Kruger, 2008:7; South Africa 2002; UN-ISDR, 2004a: 134; Van Niekerk, 2005:121; 2006;114). Visser & van Niekerk, (2009:6) support the above point as they suggested that, the successful and effective disaster risk management is based on the integration and co-ordination of all the role-players and their functionalities into a holistic system aimed at disaster risk reduction". Similarly, Reddy (2010:6) and Van der Waldt *et al*. (2007:245) argue that without institutional arrangements that are flexible, the principle of co-operative governance and policy integration to which the Constitution and the Disaster Management Act, 2002 (Act No 57 of 2002) refer, would become impossible to realise. To achieve the goal of co-operative disaster risk management as envisioned in the legislation there is a need to establish certain structures to drive integrated policy and governance process for disaster risk reduction.

It is crucial to note that not all structures established in the DMA support policy integration or corporative governance, therefore, this study will only elaborate on those structures that most explicitly promote the formulation of integrated government policy. Furthermore attention will only be on those structures at national government level as these are in line with the focus of the overall study. As a point of departure the National Disaster Management Centre and its role in promoting policy integration is discussed.

3.3.1 The National Disaster Management Centre

The National Disaster Management Centre (NDMC) is a structure that needs to be established in line with the DMA of 2002. The objective of the NDMC is to promote an integrated and coordinated system of disaster management by all spheres of government. The DMA 2002 gives responsibilities to the NDMC in section 15 to do everything possible in order to achieve its objective set out in section 9 of the DMA which is to promote an integrated and co-ordinated system of disaster management, with special emphasis on prevention and mitigation, by national, provincial and municipal organs of state, statutory functionaries, other role-players involved in disaster management and communities. In section 20 (1) (c) of the Act, the NDMC is compelled to support the integration of prevention and mitigation methodologies with development plans, programmes and initiatives of all levels of government that promote development (RSA, 2002). Section 19 (a) assigns another policy integration task to the NDMC to develop guidelines for the preparation and

regular review and updating, of disaster management plans and strategies by organs of state and other institutional role-players involved in disaster management (RSA, 2002:22).

The fact that the main function of the NDMC in Chapter 3 part 1 of the DMA is to ensure that DRM and DRR is integrated into developmental plans of other line departments, proves that there is a legal prerogative for them to ensure that there is integration between related developmental issues. Consequently, the NDMC is obliged to collaborate with the department of Agriculture, Fisheries and Forestry (DAFF) and to ensure that programmes launched by DAFF include DRR aspects thereof. This would mean there is a legal prerogative for the integration of DRR aspects to any food security programs that DAFF would have established.

In terms of section 4 of the Disaster Management Act, 2002 (Act No 57 of 2002), the National Disaster Management Centre (NDMC) is also responsible for establishing effective institutional arrangements for the development and approval of integrated disaster risk management policies. One way of achieving this is through intergovernmental structures. In this regard, the Disaster Management Act, 2002 (Act No 57 of 2002) calls for the establishment of an Intergovernmental Committee on Disaster Management (ICDM).

3.3.2 The Intergovernmental Committee on Disaster Risk Management

Chapter 2 of the Disaster Management Act of 2002 stipulates that the ICDM must be established by the President and should include representatives from all three spheres of government (South Africa, 2003:10; South Africa, 2005a:8; UN-ISDR, 2004a:103; UN-ISDR, 2004c:35). It must be chaired by the Cabinet member designated by the President to administer the Disaster Management Act, of 2002 (RSA, 2003).

The ICDM provides the political mechanism for the application of the principle of co-operative governance by bringing together political representatives from the three spheres of government, and from various government departments (South Africa, 2005a: 12; Van Niekerk, 2005:130). Apart from providing a political mechanism the DMA also gives the ICDM a legal obligation to work with other government departments which includes:

- Agriculture, Forestry & Fisheries
- Basic Education
- Cooperative Governance & Traditional Affairs
- Defence

- Energy
- Environmental Affairs
- Health
- Home Affairs
- Human Settlements
- Mineral
- International Relations & Cooperation
- Justice & Constitutional Development
- Economic Development
- Labour

Among the departments it can be noticed that, the department of Agriculture, Fisheries and Forestry is included and it encompasses the branch of food security and that this involvement and platform could encourage the interaction of DRR and food security and a possibility of policy integration if it is pursued.

Section 4 (a) (b) of the Act compels the ICDM to be accountable to Cabinet for ensuring that appropriate mechanisms and institutional arrangements are in place to give effect to co-operative governance and policy integration (as in Chapter 3 of the Constitution of South Africa, 1996) on issues relating to the coordination of disaster risk management (South Africa, 2003:10). The ICDM is also compelled to advise and make recommendations to Cabinet on matters relating to disaster risk management such as disaster risk management policies, plans, strategies, contingency plans and framework (South Africa, 2005a:13). Following the responsibilities given to ICDM by the DMA, in chapter 2, they address the issues of policy integration and corporative governance through the involvement of various government departments, which includes DAFF. In this case, the integration between the two policy areas of food security and disaster risk reduction will be possible as it will be a legal obligation for DAFF to consider DRR strategies in their developmental plans, policies and strategies.

Another structure outline in the DMA which ensures policy integration and cooperative governance for a successful disaster management function is the National Disaster Management Advisory Forum (RSA, 2002; Van Niekerk: 2006:106).

3.3.3 National Disaster Management Advisory Forum (NDMAF)

In section 5 of the Disaster Management Act, 2002, there is a call for the Minister responsible for the administration of the Disaster Management Act, 2002 (Act No 57 of 2002) to create a NDRMAF. The forum is a body in which national, provincial and local government and other disaster risk management role-players consult one another and co-ordinate their actions on any matters relating to disaster risk management (RSA, 2003:12; 2005a: 33; UN-ISDR, 2004c: 37). To streamline co-ordination, meetings of the NDRMAF must be preceded by a meeting between the Head of the NDMC, the Heads of Provincial Disaster risk Management Centres and a representative of the SALGA disaster risk management working group (RSA, 2005a: 44).The Head of the National Centre is the chairperson of the forum. Chapter 2 section 5 of the DMA 2002 provides that the forum consists of the Head of the National Centre, a senior representative of each national department whose Minister is a member of the ICDM, a senior representative of each provincial department whose MEC is a member of ICDRM, and municipal officials selected by the South African Local Government Association (SALGA). In addition, a broad range of stakeholders and role players are represented, including business, labour, professional and religious bodies, organised Agriculture, NGOs and CBOs. The forum makes recommendations concerning the NDMF to the ICDRM. Furthermore, the forum advises organs of State, statutory functionaries, non-governmental organisations and communities, or the private sector, on any matters relating to disaster risk management (Reddy, 2010: 44; RSA, 2003:13; UN-ISDR, 2004c:37). From all the functions of NDMAF presented in chapter 2 of DMA, the issue of policy integration and cooperative governance is mainly seen in the involvement of senior representatives from each national government department whose minister is a member of the ICDM. Therefore, the presence of DAFF, in the composition of the NDMAF will allow a mutual interaction between the two policy areas under study, which are (food security and disaster risk reduction).

From the information that has been provided above, it can be said that there is a legislative foundation for policy integration through the establishment of various institutional arrangements. Specifically, the National Disaster Management Centre and the National Disaster Management Advisory Forum plays a leading role in propagating for policy integration between different government departments and the policies that drive their activities. Apart from the DMA, another legislative mechanism was established to serve as a guiding document for the implementation of the disaster management function (including

policy integration) in South Africa. This document is the National Disaster Management Framework**.**

[1]Disaster management Amendment Act No 16 of 2015.

3.4 National Disaster Management Framework (NDMF)

Section 6 of the Disaster Management Act 57 of 2002 prescribes the development and implementation of a National Disaster Management Framework (NDMF).The aim of the NDMF is to provide uniform approaches in dealing with disaster risk management in South Africa. In accordance with this mandate, the NDRMF was gazetted in April 2005. At national level, the National Disaster Management Framework (NDMF) is the legal instrument specified by the Disaster Management Act, 2002 (Act No. 57 of 2002) to address the need for consistency across multiple-interest groups, by providing a coherent, transparent and inclusive policy on disaster risk management appropriate for the Republic as a whole (RSA, 2003:14; RSA, 2005a: 2-3; UN-SDR, 2004a: 103 Van Niekerk, 2005:131). Similarly, in order to achieve consistency in approach and uniformity in the application of disaster risk management by different government departments, the NDMF encourages policy integration and corporative governance in the application of DRR strategies in South Africa. The NDMF is made up of four Key Performance Areas (KPAs) and three Enablers (RSA 2005: 2). They are as follows:

- **Key Performance Area 1** - Integrated institutional capacity for disaster risk management
- **Key Performance Area 2** - Disaster risk assessment
- **Key Performance Area 3** - Disaster risk reduction
- **Key Performance Area 4** - Response and recovery (Luphindo, 2012: 2).

[2] -**Enabler 1**- Information management and communication

-**Enabler 2**-Education, training, public awareness and research

-**Enabler 3**-Funding arrangements for disaster risk management

As this study addresses the issue of policy integration and corporative governance, the key performance areas will be discussed with specific reference to their contribution mandating the need for policy integration between different government departments.

[1] A brief overview of the Disaster Management Amendment Act No 16 of 2015 reviewed no references to the integrated government and therefore, only the old version of the DMA No 57 of 2002 is discussed

[2] Enablers will not be discussed in this study, as they do not necessarily promote policy integration. Rather they support eventual policy integration efforts.

As a point of departure KPA 1, integrated institutional capacity for disaster risk management will be discussed.

3.4.1 Key performance area 1: Integrated institutional capacity for disaster risk management

KPA 1 focuses on the establishment of integrated institutional capacity within all three spheres of government for the effective implementation of disaster risk management policy and legislation (RSA, 2005: 4). This involves the development and adoption of integrated disaster risk management policy and the establishment of appropriate mechanisms and institutional arrangements to give effect to cooperative governance in accordance with section 4(3)(a) of the DMA of 2002. In doing this, the Act calls for the establishment of the Inter-governmental Committee on Disaster Management (ICDM) by the president which includes representatives or Cabinet members from various departments which includes the department of Agriculture and Land Affairs for the purpose of inclusion of relevant information from the department of Agriculture into the disaster management function. The involvement of the Department of Agriculture, Fisheries and Forestry in the ICDM present a better opportunity for policy integration especially when consultations and reviews of policies are done

KPA1 also focuses on the arrangements for integrated direction and implementation of disaster risk management policy. This entails the establishment of the National Disaster Management Centre. Basing on the DMA section 19 (a) and section 20 (1) (c) compel the NDMC to seek policy integration through developing guidelines for the preparation and regular review and updating of disaster management plans and strategies by organs of state and other institutional role-players involved in disaster management and supporting the integration of prevention and mitigation methodologies with development plans, programmes and initiatives respectively. Therefore, the NDMC and its head are seen as crucial entities for the efficient coordination and integrated planning and programming of disaster management with various government departments.

One platform that could promote policy integration in the disaster management discourse is by placing the NDMC in the office of the president and this has been advocated by a lot of scholars which includes UNDP-DMTP (1998:4), the World Bank & UN-ISDR (2007:75) and Van Riet & Diedericks (2009:17). These scholars argued that the location of a disaster-management Centre or office has major implications for the effective implementation of

disaster-management policies and horizontal connections across ministries or departments. However, the fact that the NDMC is located in a line Ministry in the Department of Cooperative Governance and not in the Presidency shows lack of commitment by government in disaster management issues and not being involved in the decision making hence undermining policy integration. The location of NDMC in the president's office would quicken the policy integration as most decisions agreed in that highest level are always implemented.

Lastly, KPA 1 also focuses on the arrangements for national, regional and international cooperative for disaster risk management. In doing this the NDMF gives effect Section 7(2)(f)(iii) of the DMA relating to the principle of co-operative governance and policy integration by cooperating with the regional and international organisations through mutual assistance agreements and partnerships. In this instance KPA 1 calls for cooperation within international organisations, including those focused on food security such as the Food and Agriculture Organisations (FAO), United Nations Development Programme (UNDP) and World Food Programme (WFP) in formulating holistic disaster risk management strategies and policies (Luphindo, 2012: 5-6).

3.4.2 Key performance area 2: Disaster Risk Assessment

The main objective of KPA 2 is to establish a uniform approach to assessing and monitoring disaster risks that will inform disaster risk management planning and disaster risk reduction undertaken by organs of state and other role players. The DMA Section 20, 33 and 47, underscore the importance of disaster risk assessment to guide national, provincial and municipal disaster risk reduction efforts, including disaster risk management planning. The rational for risk assessment is to examine the likelihood and outcomes of expected disaster events in the country. Its main focus is on sustainable development planning and identification of potential threats that can undermine a development's success and sustainability (RSA, 2005). Thus the rational for this KPA 2 is that if threats are identified, this will make it easier for the appropriate disaster risk reduction measures to be incorporated into the project design of government departments especially those working with food security prior to implementation. Based on the assumption of the study that disasters are hindering related development issues such as food security, the DMF stipulate that relevant national organs of state should execute systematic disaster risk assessments as an integral component of the planning phase for some development projects that affect socio-environmental sectors such as food security (RSA, 2005).

It should be noted that although the DMA and NDMF necessitates the need for multi-disciplinary and multi-sectoral stakeholder involvement in the disaster risk assessment process it often found that the process is hampered by a lack of involvement by line departments (Reddy, 2010:131). It can be argued that the lack of involvement in risk assessment can greatly hamper efforts towards integrated planning and policy development between the NDMC and other line departments such as DAFF (Reddy, 2010).

3.4.3 Key performance area 3: Disaster Risk Reduction

The main objective of KPA 3 is to ensure the alignment of disaster risk reduction programmes to integrated development plans developed through multi-stakeholder participation. The Act specifies in section 25, 38 and 53 that preparation and alignments of disaster management frameworks and plans for all spheres of government must be done including those of other key institutional partners which are NGOs, private sector and institutions of higher learning (RSA, 2005:84-85). In doing this, particular attention is given to the planning for and integration of the core disaster risk reduction principles of prevention and mitigation into ongoing programmes and initiatives. It is noted that, prevention and mitigation are central to achieving the goal of disaster risk reduction, in which vulnerabilities and disaster risks are reduced and sustainable development opportunities are strengthened (RSA, 2005:92). The main function of the proposed integration is to guide and ensure the development of disaster management plans across all spheres of government as well as other role players for coherent and uniform approach to disaster risk management. In the context of the study, KPA 3 brings out the central point which encourages integrated planning among all departments including DAFF in developmental issues that promotes a safe and food secure South Africa.

KPA 3 also calls for the creation of disaster management plans. Disaster management plans comprise of three levels and should be formulated by all spheres of government. The phasing approach ensures that each phase is thoroughly planned and the information gathered should be incorporated into developmental planning processes and projects before the next phase is initiated (Luphindo, 2012; South Africa 2005). Among these planning levels, Level 3 plan addresses the issue of policy integration whereby all disaster management plans formulated by relevant government institution (ex NDMC) should be designed and aligned with other priority developmental plans of National government. In other words, through their level 3 plan the NDMC should outline endeavours to integrate

their proposed DRR projects with other development initiatives including those of food security (RSA, 2005).

3.4.4 Key Performance Area 4

The DMA No 57 of 2002 requires an integrated and coordinated policy that focuses on rapid and effective response to disasters and post-disaster recovery and rehabilitation and KPA 4 of the NDMF tries to operationalise these efforts. The content of this KPA falls outside the ambit of this study. However a key aspect that has some relevance relates to the issue of assigning primary responsibilities to specific government departments in taking a leading role in managing disasters that are within the ambit of their expertise. For example, in case of riverine floods, the department of Water Affairs and Forestry could bear the primary responsibility. In case of drought and subsequent food security issues, the Department of Agriculture could be a primary agency in managing response (RSA, 2005: 118). This illustrates that the NDMF also delegate activities to other government departments for effective disaster response. This would however be dependent on effective policy integration between government departments before disaster impacts.

Both legislations (NDMF and DMA) do a good job of creating a legal base, institutional platform and practical guidance for integration. However, the question that is left to be found in the empirical study is whether the actual integration is done in practice. The most important lesson that can be learnt from the NDMF of 2005 and the DMA of 2002 is that an integrated approach in the form of a multidisciplinary/sectoral perspective improves effectiveness of disaster risk reduction interventions as a shared objective, saves time and is more economical. This, coupled with the reality that disasters have no boundaries and that disasters impact on all facets of the environment (social, political, economic, technological, physical, and the like) justifies the need for the various disciplines and sectors to adopt the team approach to promote effective disaster risk reduction (Reddy 2010: 94).

3.6 Conclusion

Chapter 3 presented the evolution of the concept of disasters as an ‘Act of God’ until the realisation of the need to prevent and reduce them among people around the 1980s. It also discussed how the concept of disaster risk management came into use in the field of disaster risk science. This chapter also discussed various policy developments established towards disaster risk management agenda. These policies included the International decade for natural disaster reduction (IDNDR) in 1989, the Yokohama strategy and plans of action

(YSPA) of 1994, International strategy for disaster reduction (ISDR) of 1999, Hyogo Framework (HFA) of 2005-2015 and finally the Sendai Framework for disaster risk reduction (SFDRR) of 2015-2030. The main idea of presenting these policy developments for disaster risk reduction in this chapter was to discuss how their priority actions advocated for corporative governance and policy integration between disaster risk reduction and developmental policies, including food security. It was found out that, the policy developments since 1989 have not yet developed a strong institutional base to promote policy integration and there is also lack of attention to the issue, insufficient political commitment as well as lack of resources.

Whilst the study discussed how disaster risk management was addressed globally, chapter 3 went on to show how the South African government proactively developed and responded to these global developments by establishing legislations that address disaster risk management. To this end the chapter gave a brief history of how disaster risk management was introduced into South Africa through the establishment of an Inter-ministerial Committee on disaster management in 1997. This was followed by the launch of the green and white paper in 1998 and 1999 consecutively until the actual signing of the Disaster Management Act in 2003 by President Thabo Mbeki. Chapter 3 also showed different structures that address the issue of policy integration And corporative governance in the disaster management Act of 2003, which includes the National Disaster Management Centre and the National Disaster Management Advisory Forum. Lastly this chapter focused on the National disaster management framework of 2005. The main themes that were mainly focused on were the four KPAs also looking at issues that give effect to corporative governance and policy integration. It was found out that the structures in the DMA and NDMF have provided a legal base in theory and practice for policy integration. However, the next chapter will provide information answers to whether policy integration is practiced on the ground.

CHAPTER 4

RESEARCH METHODOLOGY

4. Introduction

This chapter provides insight into how the research was carried out. Firstly, it will show how the literature of the study was gathered, including the main scholarly works that contributed to the study. It will also discuss sources of information used bearing in mind the authenticity of the information. Secondly, this chapter will describe the research design of the study. The qualitative research design selected to guide the research is discussed with specific consideration given to its advantages and disadvantages. Following this, the chapter will elaborate on the sampling methods that will be used in the study, which includes purposive and snow ball sampling. The reasons for using these types of sampling methods will be given and their appropriateness to the study will be provided. The discussion of the sampling methods is followed by a discussion on the tools used to collect data for the study. Specifically, attention will be given to semi-structured interviews as primary data source and document review as secondary data source. Advantages and disadvantages of these tools will be provided and measures to be taken to avoid possible disadvantages of each tool will also be provided. After collection of data, the chapter will discuss how the available data will be analysed. Consequently, the chapter elaborates on the importance of data analysis. Specifically, the chapter will describe how policy analysis serves as the guiding theory in the analysis of data from primary sources, which are interviews, and secondary sources, which are mainly policy documents that address food security, and disaster risk management from international and South African contexts. The chapter will also go on to give an indication of how data from interviews will be analysed using the written notes and audio recording gathered from the interviews and how it is going to be arranged. The measures for reliability and validity of data gathered is also discussed. Finally, the limitations and ethical considerations of the study will be discussed mainly concentrating on the issues of language barrier that affected the study and solutions to overcome these problems as well as proving how the rights of the respondents was protected during data collection.

The discussion to follow will try to illustrate various aspects of the research design and process followed in the study. As a point of departure the chapter will discuss the literature that was used in the study.

4.1 Literature review

A literature review is a summary of different types of sources that support the research study such as academic and professional journal articles, books and web-based resources (Rowley and Slack, 2004:31). According to McMillan and Schumacher (2001:108), a literature review is a critical review of old and contemporary sources of knowledge on a carefully defined topic and its purpose is to enable the reader to gain a holistic insight about a topic for further study. Consequently, the researcher used the literature study to investigate the integration of food security and disaster risk reduction policies to identify synergies and gaps. A thorough scrutiny of literature was used to review the history, origin and scope of the research problem in order to demonstrate familiarity with the most influential theories, definitions and the key concepts in the field being studied (Grinnell & Unrau, 2005:47). The literature review also investigated key themes of the study, with specific attention being given to the themes of policy integration, synergy and gaps. The researcher endeavoured to consult works by leading authors on the subject of policy integration between food security and disaster risk reduction. The main scholars that have contributed to the study were FAO, IFAD & WFP, Israel and Briones from a global perspective and Van Zyl who raised issues of the possibility of policy integration between the two fields and who described disasters as major threats to food security in South Africa.

South African policy documents were also consulted, including Government Gazettes, Disaster Management Act 57 of 2002, Disaster Management Framework of 2005, Food Security and Nutrition Policy of 2014, Integrated Food Security Strategy of 2003, and Zero Hunger Programme of 2013 to mention but a few. Most of materials used to conduct this research were obtained from the North-West University (NWU) (Potchefstroom Campus) Ferdinand Postma Library. The following databases were consulted to ascertain the availability of study material for the purpose of this research:

a) Catalogue of books: Ferdinand Postma Library NWU

b) Index of South African Periodicals

c) Internet searches (Politea, Journal of Public Administration, JSTOR, SA epublications, Google scholar and Sabinet legal).

d) Catalogue of theses and dissertations of South African Universities NFR: Nexus

Additional to the library material, several newspapers and international documents from organisations such as the FAO, UN, UNISDR (including the Hyogo Framework of Action,

Sendai framework for disaster risk reduction) were used in order to get an international perspective of the two concepts that were under investigation (disaster risk reduction and food security). After conducting a thorough literature review, an empirical study had to be carried out to test the synergy between theory and practice

4.2 Research design

Good research requires careful planning and execution (Gwimbi and Dirwai, 2003). This planning and execution is facilitated through research design. A research design can be regarded as a plan, which indicates how the researcher intends to conduct his or her study, and to show how all the major parts thereof interact (Tseole, 2013:141). It spells out the strategy the researcher plans to adopt to develop information that is accurate and interpretable. The research design creates the foundation of the entire research work (Rajasekar, 2006:22). Research design also refers to the issues involved in planning and executing a research project from identifying the problem through to reporting and publication of results (Kumar 2005). Three overarching research designs can be identified, namely, quantitative, qualitative and mixed-method research designs.

The study employed a qualitative research design. This type of design should be considered in situations where a detailed understanding of a process or experience is wanted, where more information is needed to determine the exact nature of the issues being investigated, or where the only information available is in non-numeric form (Bazeley, 2007:2). Thus, the study being qualitative in nature depends on the quality of the data collected rather than the quantity of information (Tseole, 2013:145). The design is ideally suited to addressing the topic since it requires the collection and use of comprehensive data that indicates the thoughts and feelings of research participants relating to the current status quo and future integration between food security and disaster risk reduction policy. The following section elaborates further on the nature of qualitative design.

4.2.1 Qualitative research

This approach is mainly used in social and behavioural sciences where organisations, groups and individuals are studied (Strauss & Corbin in Ghauri & Gronhaug, 2002: 87). The study will follow a qualitative research based on the identification, description, explanation and document review as a scientific inquiry. Qualitative research seek to understand, explain, explore, discover and clarify situations, feelings, perceptions, attitudes, values, beliefs and experiences of a group of people (Kumar, 2014:132). This type of research is

therefore aimed at discovering the underlying motives and desires, using in-depth interviews for the purpose.

Qualitative research is also flexible in terms of information gathering methods whereas quantitative research is more structured and rigid that the researcher is tied to follow a method prescribed and produce expected results that are reliable and can be validated (Kumar, 2014: 133). The study prefers qualitative research because of its flexibility in gathering information thereby giving the researcher the opportunity to gather as much information as possible to adequately answer all the research questions formulated for the study. Additionally, the researcher selected to apply a qualitative research design as it would create an environment for respondents to convey their own interpretations, presentation of situations, experiences, perceptions and conclusions. A qualitative research design is therefore ideally suited for gathering data that is needed for this research. The qualitative research design helped the researcher to find out how people (technocrats) feel or what they think about the possible integration of food security and disaster risk reduction policies in South Africa. It is important to note that in quantitative research, this distinguishing feature (of considering respondent views) is not seen because the participants' perceptions and interpretations do not occupy an important place in the study (Maxwell, 2012). Consequently, a quantitative design would not have been as appropriate as the qualitative design selected.

Qualitative research was done with a targeted population that was selected purposively. The target population was government officials (technocrats) from the Department of Agriculture, Fisheries and Forestry (DAFF) and the National Disaster Management Centre (NDMC) that are responsible for formulating policies for food security and disaster risk reduction in South Africa. Therefore, the study needs to further clarify on the sampling methods that were used to collect data.

4.2.2 Sampling

Barker (*In* De Vos *et al.,* 2012: 224) states that a sample is a selected small representative portion of the population. Researchers rarely survey the entire population for two reasons. Czarniawska (2004) cited that the cost is too high, and the population is dynamic in that the individuals making up the population may change over time. For these reasons most research studies are based on samples and not on an entire population. The main purpose when sampling is to ensure that a sample provides a faithful representation of the totality from which it is selected, and to know as precisely as possible the probability that a sample is reliable in this way (Panneerselvam, 2004).

According to Neville (2005), there are many sampling techniques that can be used when conducting research namely, stratified sampling, multi-staged sampling, simple random sampling, purposive sampling and systematic random sampling. The researcher employed purposive and snow ball sampling. The rational for using these samples is clarified below.

4.2.2.1 Purposive Sampling

According to Blaikie (2007: 205) and De Vos *et al.* (2012: 232), purposive sampling is performed when the sample population (representing the population's attributes best) is drawn according to the judgment of the researcher. Rubin & Babbie, (2005: 247) also agrees that purposive sampling can be called judgmental sampling because it is mainly based on the judgment of the researcher whereby the sample is composed of elements that contain the ideal set of characteristics and are most representative of the population that serve the purpose of the study best (Monette *et al.* 2005:148). Purposive sampling was used in this study whereby selection of people was done based on choosing people with relevant information on food security and disaster risk reduction policy integration at a National government level. Purposive sampling was deemed appropriate as only few technocrats within national government departments of the Department of Agriculture Forestry and Fisheries (DAFF) and National Disaster Management Centre (NDMC) in South Africa work on the overlapping issues of Food Security and Disaster Risk Reduction. A total of seven participants eventually formed part of the purposive sample. Since there were only a few technocrats that work on both issues there was a realisation that the initial sample may be too small. Furthermore, there was a realisation that some role-players that are involved in the creation of integrated disaster management and food security policy could be unknown to the researcher; therefore, a snowball sampling method was also selected to augment the initial sample size.

4.2.2.2 Snow ball Sampling

Snowball sampling is a technique employed in instance where there is a limited access to the appropriate participants of a study (Alston & Bowles, 2003:90). In this instance an individual that is known to be an expert on the research topic will be interviewed and they will be asked to suggest additional experts that the researcher is not aware of. Consequently from one interview, the research could gain access to any number of additional participants that could augment the information being collected. Within this study the process was applied repeatedly until enough data was gathered (Sarantakos, 2000: 153). This sampling

method was applicable to the study because the researcher could not possibly identify all experts on the issues based purely on the organograms of the different government departments consulted due to high staff turnovers in these departments. A total number of three respondents formed the part of snowball sample. To get information from the sampled population, various research tools were employed such as semi-structured interviews and document review.

4.2.3 Research tools and Data Collection

As noted by Goddard and Melville (2005:46) researchers need to apply research tools to capture or collect data that is relevant to the overall research questions. In the case of the study both secondary data and primary data was collected. In the case of the former a document review was used and in the case of the latter, semi structured interviews were used. As a point of departure the document review process is described.

4.2.3.1 Document Review

According to Blaikie (2004:185) and Gillham (2004:21), documents are a secondary data source and may comprise of procedure manuals, policy directives, regulations, guidelines and archival information. Documents provide a formal framework within which the researcher has to relate the problem of the study (Gillham, 2004:21). According to Scott, (1990:6) documents should be authentic, credible, representative and comprehensible therefore the study followed such criteria. Documents represent a specific version of realities constructed for specific purposes. They should be analysed to construct a version of events rather than using them as information containers (Flick, 2014: 357). The documents that were reviewed in this study include journals, policy frameworks, Acts, the constitution of South Africa and some academic articles and books related to the topic of the study. These documents were selected purposively in order to get relevant information for the study. After gathering all this data, it was analysed to see if the two concepts being assessed are being integrated or to identify the possibility of integration between these two policy domains (food security and disaster risk reduction).

4.2.3.2 Primary Data Collection: Semi-structured interviews

In qualitative research design, interviews are the most popular method of collecting data (Strydon *et al.* 2011: 342). According to DePoy and Gilson (2008: 108), primary data is information that the researcher collects in the field specifically for the project at hand. This

provides more reliable information as it is first-hand information collected from the target respondents. For the purpose of this study, semi-structured interviews were used as the preferred method of primary data collection.

Semi-structured interviews are guided; concentrated, focused, and open-ended communication events that are created by the investigator and the interviewee and occur outside the stream of everyday life (Crabtree & Miller, 1999:19; Richards & Morse, 2007:114). The study used semi-structured interviews in order to explore intensively and extensively the problem of the study and also to identify diversity and variety of key concepts that were being investigated (food security and disaster risk management policies). The questions are flexible and can be written in the form of an interview guide. The main strength of semi-structured interviews is that, there is freedom in terms of structure, contents, question wording and order; therefore, any question can be asked that is relevant to the situation (Kumar, 2014:177). Other types of interviews such as structured and unstructured were also considered in the selection of appropriate research tools. However, these interview types create certain problems for the interviewer, which disqualified their use in terms of this research project. Specifically, structured interviews restrict the measure of freedom the researcher has in probing answers that are provided by the respondent and in the unstructured interviews the conversation is directed by the respondent and not the researcher, therefore diverting the aim of the research (Thomas, 2011:163).

The researcher carried out one on one interviews with participants with the aim of providing more in-depth information about the topic. Whilst respondents were conveying their opinions the interviewer made detailed research notes of their responses. These interviews were carried out with four technocrats from the National Disaster Management Centre and other four technocrats from the Department of Agriculture, Forestry and Fisheries. The interview questions were aligned with the research questions as well as the theoretical chapters in the study. However, the questions were not too rigid in their formulation and questions were asked in such a way that they leave time for follow up questions (DiCicco-Bloom & Crabtree, 2006). Respondents were interviewed separately and the names recorded in the thesis are done so by the approval of the interviewees (Gomm, 2008:142). In addition, advantages and disadvantages of semi-structured interviews to this study are laid out below separately in order to tell the reader how successful the interviews were and the obstacles encountered as well as how the researcher solved the problems.

4.2.3.2.1 Advantages of interviews

The interviews offered the possibility to modify the line of inquiry as the researcher would easily follow up and probe interesting items coming up during the interviews. The researcher was also able to observe the non-verbal responses during the interview, which in their own right are important in bringing out possible changes to the meaning of some aspects being probed (Opdenakker, 2006).

4.2.3.2.2 Disadvantages of interviews

Conducting semi-structured interviews is time consuming, as the sessions vary in length. Any interview under 30 minutes might not come up with valuable data and yet excessive time might have been viewed as wasting business time for the interviewees (Opdenaker, 2006:2). An Interview requires careful preparation and this is time consuming, as the researcher has to make arrangements, secure the necessary permission and even confirming the arrangements. Some people could be unwilling to co-operate or unavailable for face-to-face interviews (only available telephonically or by email) making it difficult for the researcher to gather the data that is essential for the research.

In order to conquer all the problems that were faced during the interviews, the researcher managed to get the phone numbers and email addresses for some of the technocrats from the NDMC and DAFF and sent the interview questions via email and the respondents responded to the questions via email as well. This was done because most of them were not in their offices during the time when the interviews were being carried out.

Once primary data had been collected using the semi-structured interviews, the data needed to be analysed. The next section describes both the overall theoretical approach that subsumed the data analysis as well as the practical approach to data analysis.

4.2.4 Data analysis

4.2.4.1 Overall Theory guiding data analysis: Policy analysis

Public policy analysis is a concept that has been subjected to a variety of interpretations specifically influenced by the dramatic evolvement of government practices over a period of time (Weimer & Vining, 1989: 2). Through the efforts of academics and public practitioners, there has been a convergence in the definition of public policy analysis. According to Dunn (1981: 62), "public policy analysis is the activity of creating knowledge of and in the policy-making process". In other words, public policy analysis is a purposive cause of action on the

part of an actor or a set of actors in dealing with a problem or matter of concern (Anderson, 1997:3). Policy analysis is also a problem solving discipline that draws on social science methods, theories and substantive finding to solve practical problems. Dunn, (1989: 416) also defined public policy analysis as an applied social science that employs multitudes of methods of inquiry in the context of argumentation and public debate to establish whether a policy is implemented and to communicate the results to the implementers. Therefore, policy analysis is encouraged in most public entities because it is a political resource that should be managed proficiently (Agere & Mandaza, 1999:11). Quade (1989:45) outlined the significance of public policy analysis, as follows:

a) It helps the decision-maker to determine whether a policy has been implemented according to plan.

b) It helps in the identification of specific actions that went wrong and that hampered the successful implementation of a public policy.

c) It will also identify possible actions to rectify what went wrong during policy implementation.

Although, Quade 1989 conveyed the importance of policy analysis, Dunn, 2012 in his definition mentioned that communication of policy-relevant information is of critical significance in solving practical problems during policy analysis. In the case of this study, policy analysis is used to find gaps and synergies between the policies of food security and disaster risk management rather than looking at how policies are implemented according to plan.

MacRae & Wilde, (1985:7-12) have identified some key elements that are of critical significance in achieving the objectives of policy analysis. They include the analysis of the current policy to see if the original intention of decision makers by means of a policy was realised. They also include an analysis of new objectives necessary for policy implementation and this analysis should also include strategies or actions of the new policy. An analysis of new costs and resources required for the implementation of a new policy and finally the analysis of the new process that is applicable to implement the new policy would help the policy-maker to imagine the future (Dunn, 1981: 152).

Quade (1989:49) elaborates on these elements and divides them into the following specific stages:

a) Analysing the policy: analysing the objectives of the current policy and identifying the constraints;

b) Search: identifying, designing and screening the alternatives that could be put into place to eliminate the constraints;

c) Forecasting: predicting the future environment or operational context;

d) Modelling: building and using models to determine the impact of the new policy on the community; and

e) Synthesis: comparing and ranking the new objectives into a logical sequence.

When these stages are followed it will assist the policy-maker in the identification of problems and to devise proper implementation in order to rectify these problems. Kernaghan, Marson and Boris (2000:250-251) state that the ultimate objective of policy analysis is to enable the government to withstand current and future challenges of an increasingly complex and changing environment.

The statement by Kernaghan, Marson and Boris is especially relevant in the context of food security and disaster management policy in South Africa. The South African economy and ecological environment has been changing since 2015. Specifically, the South African Rand has been decreasing in value leading to price increases of basic foodstuffs. These increased food prices therefore provide a challenge to the overall food security of the country. Additionally, natural disasters such as droughts have impacted the whole of the country since 2015 further increasing the price of basic foodstuffs. Based on this intersectional nature of food security and disaster risk problems there is an increased need to conduct a policy analysis to determine the current state of policy integration between disaster risk reduction and food security. Such a policy analysis can give a clearer indication of possible gaps and synergies in these two policy domains.

4.2.4.2 Data analysis: Practical implementation of policy analysis in the study

According to Flick, (2014:370) and De Vos *et al*. (2007:333) qualitative data analysis is the interpretation and classification of material collected with the aim of making meaning of data and what is represented in it. The analysis of qualitative data can be oriented to various aims which are 1, to describe a phenomenon; 2, comparing several cases with the aim of identifying conditions on which differences are based and thereby explaining such differences; 3, to develop a theory of the phenomenon under study from the analysis of

empirical material. This study is mainly describing two variables in order to see synergies and gaps between them using policy analysis as a tool.

Data collected by the researcher by means of semi-structured interviews was audio recorded and written notes were taken after permission had been sought with the interviewees. All data gathered for the purpose of this study was analysed and was organised into categories or topics for the purpose of bringing order, structure and meaning to the mass of collected data (Babbie, 2007:1). Though there are various ways of bringing unstructured data to mean something, the study is going to use an organising system to prepare the data for analysis (Fourie, 2011). An organising system brings structure or order to a body of material that does not flow logically or arranges naturally to make analysis possible. Such a system can also help in the structure and presentation of the research report (Tesch, 1990: 139-140). In doing this, the study followed eight steps in developing and organising system for unstructured qualitative data, which were used to interpret the data, collected from semi-structured interviews and document review as proposed by Tesch (1990:142-143).

These eight steps are as follows:

a) Become familiar with the background

The researcher should use some of the very first data available, in this case from the first interview in order to become familiar with the data. This process was done through semi-structured interviews with various directorates from the department of Agriculture, Forestry and Fisheries as well as from the National Disaster Management Centre.

b) Distinguish between topics and content

Tesch (1990) stated that, the researcher has to go through the written or recorded data in search for topics and note them down. Under this section, the researcher listened through the various recordings of the interviews and noted the topics mentioned by the respondents which were relevant to the study.

c) Cluster similar topics

At this stage, the researcher should write all the given topics down on one page and group together those that are similar. If topics are encountered whose significance cannot be remembered it is important to refer back to the original data to determine what was said (Fourie, 2011). All the topics were then grouped together by using the notes made in the initial listening of the recordings.

d) Go back to the data

The researcher refers back now to the data and uses the list of topics as an organising system. New topics might be discovered and must then be added to the list.

e) Categorise and compare

Determine a descriptive word to suit the clustered topics and consider now the different groupings while trying to relate them to one another. All the groupings of the topics were then named with one heading that described all of the topics in that group. It was however found that some of the topics could fit under more than one heading.

f) Make final decisions about the abbreviation functioning as a code for each category and list them.

Review all of the data by adding the codes created. In the case of this study, coding was not done as the respondents were grouped and named per department (DAFF and NDMC).

g) Group the data according to categories

Here the researcher groups all of the relevant data under the specific categories and perform a preliminary analysis of the content under each category. The elements of policy analysis were used to organise the categories for the analysis. This is done by paying attention to things like commonalities in the content, uniqueness in content and confusion and contradiction in the content. After this is done the researcher must review the categories as part of the organising system and decide how useful they are to continue with.

h) If necessary, recode the data.

Details of findings were made and provided the summary explanations. In other words, data analysis assessed the significance of findings. Based on the findings, the researcher had to draw conclusions concerning the policy integration between disaster risk reduction and food security so as to confirm objectives used in this research project and lastly recommendations were made. Apart from the data gathered from interviews, a policy analysis was conducted from data gathered from document review as well.

The following section discusses how reliable and valuable the data collected was.

4.3 Reliability and validity

Validity and reliability are two aspects that should never be underestimated or neglected in a study, since failing to consider these aspects carefully could render a study's findings worthless (Struwig & Stead, 2001:130). Reliability is defined as to what degree results are consistent, accurate or stable, and validity on the other hand is defined again as to what degree one can rely on the theories and the concepts in a study (Struwig & Stead, 2001:130-143). In this study the researcher tried in all aspects to stay true to the qualitative research design in terms of techniques and methods. Also the researcher tried at all times to be as objective as possible and not to influence either the participants or the data to adhere to her own bias or prejudice. Moreover in an effort to ensure the validity and the reliability of the findings data was collected from various technocrats in one on one interviews in different offices so as to get independent ideas and thoughts from the respondents. This study also relied on a sound theoretical foundation from various credible and respected sources in the literature to further guide the study and ensure that findings are theoretically well based.

4.4 Limitations of the study

The researcher was unaware of all possible respondents that could be questioned, however, the researcher made use of the knowledge and networks available, such as the technocrats and academic supervisor who have experience in the field to overcome the problem and gain access to additional experts. Another limitation was the language barrier, but the use of English language was helpful during the interviews as well the help from colleagues from the African Centre for Disaster Studies.

4.5 Ethical considerations

Ethical approval for this study was acquired from the Research Ethics Regulatory Committee (RERC) of the North-West University, Potchefstroom campus. All respondents' participation was voluntary, suggesting that individuals were not compelled to participate in the research. Respondents were requested to complete consent documentation preceding their involvement in the study. A detailed description of the study and the purpose thereof was communicated to respondents before the study commenced as suggested by Henn et al. (2006:71) and respondents had the option to withdraw from the study at any given stage.

Withdrawal from the study did not require the respondent to complete the questionnaire or participate in any further activities related to the research.

Interview questions were accompanied by a cover letter, which specified the personal particulars of the researcher, purpose of the research and the duration of the study. The cover letter also provided the respondent with the methods that were used to ensure anonymity and confidentiality. In cases where the respondent provided any information, which could identify him/her, it was not made available to any persons who were not directly involved in the study, so as to guarantee confidentiality (Delport, 2005:170). This study did not require respondents to provide their personal particulars with regard to the interview. The researcher stored data appropriately and after completion of the study the questionnaires were entrusted to the North-West University, Potchefstroom, to be placed in safekeeping for a period of five years. After this period they will be destroyed according to the correct procedures prescribed by the North-West University. This study aimed to support the respondents of this study in a professional manner. Data collection occurred non-invasively and proceeded without disrupting the day-to-day activities of participants. After the recommendations were provided by this study they were disseminated and made available to be implemented by the National Disaster Management Centre and the department of Agriculture, Forestry and Fisheries in South Africa.

4.6 Conclusion

Chapter 4 elaborated on how study was carried out. Firstly it showed how the literature of the study was gathered and which leading scholarly works were consulted. This chapter also showed that most of the information, which includes journal, articles, books and dissertations in this study, were accessed from the library of North-West University, Potchefstroom campus. Secondly, this chapter went on to describe the research design of the study. It showed that, the study followed a qualitative research design to guide research into the two policy areas of disaster risk reduction and food security. Some advantages and disadvantages of qualitative research were also laid out in this chapter. Following this, the sampling methods that were employed in the study including purposive and snowball sampling were elaborated on. The rational for using these types of sampling methods was also described.

After the discussion of the sampling methods, the tools that were used to collect data for the study were given which includes semi-structured interviews as primary data and use of documents as a secondary source. Advantages and disadvantages were given and

measures that were taken to avoid disadvantaged of each tool were also provided. Policy analysis was also discussed as the overarching theory that guided the data analysis process. This was described as a method that will be used on analysing primary data from semi-structured interviews and secondary data gathered from legislations that address food security and disaster risk reduction from international and South African perspectives. This chapter described the importance of data analysis and further elaborated how data gathered from interviews was arranged into categories or topics that are relevant to research objectives making use of the written notes and audio recordings that were gathered from interview sessions. After data was gathered and put into categories, the researcher discussed how reliable and valid the data was and the limitations of the study. Ethical considerations were discussed to prove that no respondents' rights were violated. The next chapter will discuss and present the findings from the interviews and documents reviewed with links made to the theoretical principals established in chapter 2 and 3.

CHAPTER 5

ANALYSIS OF DATA AND INTERPRETATION

5. Introduction

The previous chapter focused on the methodology of the study, which involved the research design, tools used for data collection, the sample of the study and the ethical issues considered for data collection. This chapter will analyse the data gathered from semi-structured interviews and documents reviewed. The imperative of data analysis is to understand the various constitutive fundamentals of one's data through an inspection of the associations between concepts constructed to see whether there were any patterns or trends that could be identified or isolated to establish themes in the data. Data analysis could be understood as the process of bringing order, structure and meaning to the mass of collected data (DeVos et al., 2005:333; Mouton, 2001:108). The data was analysed according to the prescribed steps of data analysis, as described by De Vos et al. (2005:334-339) which are managing /or organising data in order to make sense of the whole data collection. It also involved reading of the transcripts of notes in their entirety several times, thereby immersing the researcher in the details, while at the same time trying to make sense of the interviews as a whole, before breaking them into parts. This process allowed the researcher to make minor editing changes in order to make the field notes applicable to the study objectives. Another step implemented during this process was to listen to audio-recorded information and write it down. This enabled the researcher to generate categories, themes and patterns. The themes designed and used during analysis were based on the research questions of the study and they are as follows: understanding of food security and disaster risk reduction; legislations in place that address food security and disaster risk reduction; integration between disaster risk reduction and food security; synergies and gaps that can be found between DRR and Food security policy areas and finally; recommendations by the technocrats and practical implementation. These themes will be discussed in the table below.

In table 1 below, a concise overview of the theoretical principles and guidelines is given to indicate how this chapter is structured and what indicators were used in the empirical phase of the study to test the identified themes from the literature.

5.1 Table 2.Theoretical principles and guidelines

Theoretical principle/guideline	Indicator of theoretical principle/guideline
Understanding of food security and disaster risk reduction	• Understanding of food security • Understanding of Disaster risk reduction
Legislations in place that address food security and disaster risk reduction	• Policies and programmes that address DRR • Policies and programmes that address food security
Integration between the disaster risk reduction and food security policies	• Integration between DRR and food security • Monitoring and evaluation tools for a successful integration
Synergies and gaps that can be found between DRR and Food security policy areas	• Synergies found between DRR and food security policies • Gaps found that are hindering successful integration of DRR and food security
Recommendations	• Recommendations put forward for the study • Recommendations put forward for future research.

Research data, 2016

The first issue to be addressed related to officials mutual understanding of the terms food security and disaster risk reduction.

5.2 Understanding of disaster risk reduction and food security

5.2.1 Food security

Respondents from DAFF defined food security as accessibility, availability, affordability and the safety of foodstuffs to all people at all times. They have also incorporated the concept of nutrition into their understanding of food security after the realisation that most people in informal rural and urban settlements are struggling to meet their nutrient requirements. The respondents' definition of food security is aligned with international understanding of the

concept (see section 2.2), which shows the four dimensions mentioned above and stress the issue of having food at all times. The respondents from DAFF identified lack of access as a contributing factor to food security apart from other dimensions of food security highlighted above (availability, affordability and safety). One respondent said that, *"as much as food is produced in large quantities, people are not able to access it due to different challenges such as lack of income, unemployment, disasters such as drought that are leading to an increase in food prices, and production deficits in staples"*

The respondents from NDMC were also able to conceptualise food security and its aspects, though they do not necessarily understand the in-depth dimensions. However, this was understandable as this is not their sole focus. This could point to the fact that the participants from NDMC have a general view and understanding of the concept of food security which in turn could help with the development of a coordinated policy on food security and DRR. On the other hand, it could also show that, if there is a very shallow understanding of the concept then there is need first to improve their understanding if integrated policy formulation is to be realised.

A respondent from NDMC also provided compelling evidence that the issue of disasters is a critical factor in the food security discourse and should be addressed with in-depth knowledge of risks that affect food security in South Africa (see table 3 in chapter 1). Therefore, the responses show that when addressing food security in South Africa, the issue of disaster risk reduction should be involved as it has great influence in the achievement of a food secure country.

5.2.2 Disaster risk reduction (DRR)

Most respondents from NDMC and DAFF defined DRR as ways of reducing risk of disasters through various instruments such as policies, measures and procedures after a clear understanding of what is at risk. They believed that DRR should be undertaken in a sustainable manner under the influence of government and non-governmental organisations. This is in line with the international definition of DRR, which regard DRR as a conceptual framework, which seeks to reduce disaster risks in a sustainable manner through the cooperation of multiple stakeholders (UNISDR, 2009).

From the analysis, it emerged that, respondents from DAFF are aware of the term DRR and its effects on food security. However, the terminologies still need to be revised, as DRR and DRM seem to be addressed as the same thing. This has complications for policy

development as DRM mostly focuses on addressing structural and disaster response issues. Subsequently policies would still not address the underlying drivers of risk, which would be the case if the prevailing terminology emphasised DRR. Hence agreeing on terminology would be of great importance. The understanding of terminology between DRR and DRM will also help in differentiating the two concepts especially for future policy interventions, which includes those of integrated DRR and food security.

Most respondents from DAFF have heard the term DRR from media platforms, awareness campaigns, National Disaster Management Forum (NDMAF) and from the Directorate of climate change and disaster management within DAFF. This shows that there are already some form of relationships that attempt to facilitate a shared understanding of DRR. This existing relationship would make policy development and integration easier as some key concepts of DRR are already familiar to DAFF.

5.3 Legislations in place that address food security and disaster risk reduction

5.3.1 Food security

Responding to the question which asked respondents to identify legislations that address food security, the respondents from DAFF identified legislations in the form of policies and programmes that address food security in South Africa. These include the Food Security and Nutrition policy (FSNP) of 2014, the Integrated Food Security Strategy (IFSS) of 2003 and the Zero Hunger Programme (ZHP) of 2005. Apart from these legislations, some respondents from DAFF added some other programmes, which include the Fetsa Tlala Programme, the School feeding Programme, Social grants etc. The study mainly focused on the responses related to FSNP, IFSS and ZHP, as they are the focus of the study though the brief overview will be given at the end on the miscellaneous section.

The respondents from DAFF mentioned that the Food Security and Nutrition Programme of 2014, was put in place in order to encourage buy-in from all government departments and non-governmental organizations involved in the food security sector to contribute to national food security. The participants alluded that, civil society has pushed to have their concerns integrated into the policy that has led to the review of the FSNP. However, the officials interviewed were not aware if the NDMC has also pushed the integration of DRR into the FSNP. One respondent from DAFF said that, *“it is the responsibility of other departments to approach them to have their issues included”.* Therefore, it should be noted that if the NDMC does not serve on any of DAFF structures or committees relating to policy formulation, it

would make it very difficult for them to know what strategies or policies are being developed. Should DAFF not have a structure that facilitates mass participation of other departments (such as the NDMC), this will obviously affect the inclusion of DRR in their policy.

The implication of these findings are that, the major challenge that was mentioned in the FSNP in section 2.5.3 was lack of safety nets and food emergency management systems to provide for all those who are unable to meet their immediate food needs or to mitigate the impact of natural and non-natural disasters on food security. Hence, if this challenge is not addressed in policy development then disasters will continue to be a threat to food security. Another finding alluded that some policy makers are not even aware of the need to involve DRR issues into the FSNP. This leads the study to come to the conclusion that failure to involve issues of DRR in the FSNP under review will further complicate the issue of food security in South Africa as well as undermining scholarly findings by Van Zyl (2014) and Becker, (2009:1) of integrating food security and disaster risk reduction (see section 2 in chapter 1).

Another Programme highlighted that addresses food security was the Zero Hunger Programme. The respondents from both DAFF and NDMC indicated that it was a Programme imported from Brazil with the intention of reducing hunger to zero in South Africa. One of the respondents from DAFF cited a significant problem associated with ZHP which was its failure to align with the prevailing socio-economic, environmental, and political context of South Africa. For this reason, it was stopped in 2012 and replaced with Fetsa Tlala Programme that took some principles of the ZHP especially that of maximising food production but suite it to the South African context (see section 2.5.2). Literature review shows that, the ZHP did not recognise DRR as an important concept to be included in its practices. It is of great significance to assume that it could be the reason it failed to achieve its objectives of reducing hunger to zero like it did in Brazil. The implication to these findings is that, policy makers should consider the environment in which they develop their policies, whilst also taking note of other developmental concerns (such as DRR) and the contribution it can make to their policy interventions.

The IFSS was identified as a more comprehensive strategy that has accommodated many food security issues that are being carried out by various government departments such as the social grants by the Social Services Department, the school feeding Programme by the Department of Education and most programmes undertaken by DAFF. The main problem cited by one of the respondents from DAFF was that the concept of food security was not understood well and hence the IFSS had to be reviewed again in 2012. The respondent

went on to say that, "*the problem with other sectors is that, when they do something small that involves food then they think that's food security and they will go as far as claiming funding from government thereby undermining DAFF's sole responsibility of dealing with food security".* Though respondents from DAFF believe and appreciate other departments' contribution to food security in the country, the fact that, they feel threatened by other departments' shows lack of cooperative governance, which usually has negative influence on policy development. Section three of the Constitution of the Republic of South Africa, 1996 (see section 3.3 and 3.3 of chapter 3) emphasises the issue of cooperative governance among different government departments to enhance collective ownership in addressing critical issues, which includes disaster risk reduction and food security.

The literature reviewed also shows that there is lack of a structured system that deals with food security disasters in the IFSS (see section 2.5.1 in chapter 2). However, the fact that the IFSS recognises the need for structures that involve DRR issues provide for an opportunity to lobby for a development of an integrated policy.

However, the overall area of concern found from all policies that addresses food security is that there is limited awareness or avenues by which government departments could give inputs during policy development. It was also found that respondents from NDMC did not know about most policies and programmes that address food security from DAFF. Apart from the legislations that address food security, questions were asked regarding the legislations that address disaster risk reduction.

5.3.2 Legislations that addresses disaster risk reduction

Most respondents from DAFF and NDMC highlighted the Disaster Management Act No 57 of 2003 and the National Disaster Management Framework of 2005. Most respondents are aware of the DMA and its demands, which include having structures within their sectors that address the issues of DRR (RSA, 2002). In response to this call by the DMA, the respondents from DAFF said that their department has established a directorate of climate change and disaster risk management in place to adhere to the legislative requirements. This was done in order to coordinate disaster risk in DAFF within the ambit of the Disaster Management Act. One of the respondents from DAFF explained that, "*this directorate was established to make sure that agricultural programmes would integrate DRR issues so that natural hazards will not undermine food security*". This statement points to the existence of structures that can be taken into consideration when developing policies that address DRR and food security.

Respondents from NDMC said that, the DMA encourages the integration of its practices with other government departments. Therefore, it created the National Disaster Management Advisory Forum (NDMAF), which meets every three months to discuss issues that are disaster related with other departments. This arrangement helps the NDMC to get reports of hazards and vulnerabilities that affect different departments. One of the respondents said that though there is this platform for departments to share their views and concerns, food security is not always on the agenda of the day as there are other issues as well that needs be discussed. Contrary to this, considering that food security is one of the key important issues in the Constitution of the Republic of South Africa, national development initiatives should be made to establish a more permanent sub-group on the NDMAF regarding food security. (See section 2.5 of chapter 2) (See section 2.1 of chapter 2). This would aid in formulating integrated policy.

The respondents from NDMC also identified the NDMF of 2005 as an operational framework that emphasises cooperative governance and policy integration between disaster risk reduction and food security through its four KPAs. One of the respondents noted that the second KPA focuses on assessment of hazards, and the respondent believes that if the various departments do their assessments including DAFF, then the main hazards identified will be dealt with via policy and practical interventions. In doing this, after identifying the underlying risks, then the NDMC should be involved to offer a review and advise them on how to reduce them. However, this is not usually the case, as the directorates seem to work in silos. This was also identified when reviewing the KPA 3 of the NDMF, which focuses on integrated planning.

KPA 3 clearly addresses the issue of policy integration whereby all disaster management plans should be designed and aligned with other plans of government initiatives (See section 3.4.3 in chapter 3). The area of concern raised by respondents from DAFF and NDMC on this KPA 3 was that the reason why the government is failing to reach a food secure and safe South Africa is because of lack of integrated planning resulting in duplication of tasks by many departments dealing with food security and disaster risk reduction. The analysis shows that developing an integrated policy that focuses on both DRR and food security could facilitate a better understanding of the two issues, pooling of resources (between departments), complimenting each other's projects, resulting in less duplication of work and collective ownership.

The respondents from NDMC also cited some other sectoral legislations which include DRR issues in their practices such as the Conservation of agricultural resources Act (No 43 of 1983), the National Water Act (No 36 of 1998) and Land reform programmes. The respondents suggested these examples because they believed that DRR issues are not limited to DMA and NDMF only but also in National Codes and Standards as it is a multi-sector issue.

5.4 Integration of disaster risk reduction and food security policy areas

All the respondents from DAFF believed that disasters and food security are related and that they should be integrated to achieve a food secure and safe nation. This is consistent with the opinion of various international organisations and scholars that also support this relationship (See section 2.1 in chapter 1). These respondents believe that integration of disaster risk reduction and food security policies will assure a future of agriculture production and access to nutritious food.

The respondents from NDMC agreed that there is a relationship between DRR and food security, however, out of three respondents, two believe that there is no need for integration of the two policy areas because their role in reducing disasters in South Africa is already contributing in achieving food security. The respondents also suggested that the DMA and NDMF need to talk only to some principles and concepts that are related to food security not integrating the entire food security policy area.

One of the respondents from NDMC also indicated that, the fact that DAFF already has a directorate which focuses on climate change and disaster management there is no need for additional integration activities that need to be initiated by NDMC as most DRR issues are being addressed by their internal directorate.

The above points were also supported by some of the respondents from DAFF who said that, "*there is no need for the actual integration of legislations and policies that address DRR and food security, instead, structures such as the Joint Drought Management and contingency plans will have to be established to deal with the prevailing situation*." However, the implication of this suggestion is that this will be a reactive move that only waits for a disaster to happen then act upon it. The literature review oppose this suggestion as it points out that the disaster response paradigm has long ago phased out (in the 1980s) and shifted to disaster risk reduction in a bid to address the underlying risk factors before they turn into a disaster (see section 3.1 in chapter 3).

Responding to whether the two policy areas are integrated or not, most respondents from DAFF and NDMC replied that these legislations do not explicitly highlight the role of the other policy areas in one's field in a specific section. Rather, the legislations usually provide a list of departments that can be involved in the implementation of their policies without putting a clear burden on a specific department (See section 2.5.1 and 2.5.2 in chapter 2). The absence of this specification could contribute to these two policy areas to work in silos and to only depend on meetings at the NDMAF in order to present their issues quarterly. A respondent from DAFF suggested that, it would be good if both departments and directorates will sit down and come up with an integrated plan before policies are developed to clearly specify roles and responsibilities of departments in DRR and food security.

Another respondent from DAFF said that, *policies are well planned at national level in terms of including the disaster management line department; however, the problem is on the implementation level where they misinterpret what is required by the policy*. The analysis shows that this misinterpretation is mainly caused by differences in procedures and language across spheres of governments. Therefore, based on the responses, it can be suggested that for proper integration, there should be agreement on technical language between all departments including DAFF and Disaster management from the national level down to the local level. Another issue identified during the interviews is that, policy makers are using the top-down approach when formulating policy because they want to avoid large amounts of data and views that are usually gathered from using bottom-up approach. This avoidance is causing misunderstandings in meanings of technical language and a misdiagnosis of the actual needs of the target groups. Consequently, policies that are developed are not properly integrated or comprehensive enough to address the actual needs of the country.

One of the respondents from DAFF said that when developing integrated policies, the impact and level of enforcement (if it's a legal binding or just a plan) of that policy or programme should be highlighted if it's internal (within the department) or external (outside the department). This means that, if its impact is external then all sector departments should be consulted before the policy is developed. In case of an integrated food security and DRR policy, it has been shown that such a policy will have an external impact therefore wide consultation should be considered when developing or reviewing it.

5.4.1 Monitoring

A question was asked to see if there are mechanisms in place that monitor the structures mentioned above for proper policy integration. The response from the participants from DAFF and NDMC was, *"currently, there are no monitoring mechanisms in place for the integration of the two policy areas (DRR and food security), however, monitoring mechanisms are only found in programmes and projects within specific departments".* Nevertheless, one of the respondents from DAFF said that considering the need for integration between DRR and food security, when designing monitoring systems, the first thing that should be done is to identify specific aspects that can be monitored which are critical to determine if policy integration has indeed taken place. Then these aspects should be constantly monitored to ensure integrated policy is up to date and relevant. Another respondent added that, an existing government model or a new model can be developed by both NDMC and DAFF to guide and monitor the integration process.

5.5 Synergies and gaps that can be found between DRR and Food security policy areas

5.5.1 Synergies

Most respondents from DAFF and NDMC believe that the two policy areas relate to each other especially in theory as they have identified synergies in the existing policy frameworks, programmes, DMA and scholarly work on these issues. The synergies cited by respondents included areas where disasters were cited as the main challenge to food security specifically in IFSS and FSNP (see section2.5.1 and 2.5.3 in chapter 2). This relationship was also proven by international legislations that address food security (see section 2.4.2; 2.4.3; 2.4.4 of chapter 2). The literature reviewed emphasised that disasters are a threat to food security and that there is need to put measures to prepare, prevent and reduce the impact of disasters on food security through formulation of integrated policies at every national level (see section 2.1 in chapter 2).

Legislations that address disaster risk reduction mainly talk of corporative governance and integrated planning with all development policies (including food security). DAFF therefore has a role in risk reduction and there is recognition of the relationship between food security and DRR. From an international perspective, the Hyogo framework recognised the need to involve DRR strategies in poverty reduction strategies (including food security strategies that

speak to reducing hunger). The current Sendai Framework also places onus on signatory countries to take responsibility for developing disaster management legislation and policies that seek synergy between disaster management and other government sectors such as Agriculture. It should be noted though this doesn't explicitly refer to food security, however agriculture and food security are usually linked policy concerns (see section 3.1.3; 3.1.4 in chapter 3).

However, they said that although there is a theoretical link this is not always the case in practice because for example, there is no standing committee on food security issues and it is handled as an ad hoc issue by the NDMC. DAFF does not necessarily include the NDMC on their planning committees meaning DRR never get represented in their policy. Overall, it emerged from the analysis that, though there are synergies between the legislations in theory, such relationship is not shown in practice thereby leaving the concept of policy integration a myth rather than a reality as will be shown below.

5.5.2 Gaps

Three of the respondents from both DAFF including NDMC said that they are not aware of anything that currently links the field of DRR and food security in practice because as far they are concerned, they work in silos. The respondents also said that even the legislations mention little of each other thereby making it difficult to integrate the two policy areas. This is consistent with the findings of literature reviewed that highlighted how these legislations that addresses DRR and food security work as separate entities in the South African context (See section 2.5.1; 2.5.2; 2.5.3; 3.4; 3.5)

Another respondent from NDMC said, "*There is a myth in government that says a particular mess in one government department must be dealt with in that specific department*." This general view is in contradiction with chapter 3 of the South African Constitution of 1996, which talks of cooperative governance among departments (RSA, 1996). In support of this, one respondent from DAFF said that there is lack of collective ownership within departments due to fear of losing power and positions if the two policy areas are integrated. Based on the analysis above, there is needed to train and educate policy makers on the need for integration between DRR and food security policies and the benefits thereof. This is based on the assumption that, if advantages of policy integration are known, then both parties will consider this in policy development.

It emerged from the findings that the issue of the location of the NDMC under the Department of Cooperative governance and Traditional Affairs is complicating the activity of policy integration. It was argued by one respondent from NDMC that*, it is difficult to get other departments to take seriously the importance of DRR and their activities if the NDMC is not located in the office of the presidency where major decisions take place and get done with.* This is consistent with literature reviewed that proposes the placement of the NDMC in the office of the presidency to make inputs into the developmental initiatives (for example those that address food security) to enable proper policy integration (See section 3.4.1) (Van Riet & Diedericks, 2009:17; World Bank & UN-ISDR, 2007:75).

Challenges to integration noted by almost all respondents are lack of cooperation between departments, turf protection whereby some directorates do not want to lose power in case there is a merger between departments. Additionally, lack of resources (human and financial) and time is another gap for integration that is presenting many complex challenges to the government which is trying to provide adequate service for communities. These challenges were also identified by scholars and international organisations which include Sayeed and Pillay (2011: 5); FAO, WFP& IFAD, (2006).

5.6 Recommendations

One respondent from NDMC said that when developing policies that address food security and DRR we must keep in mind that there is no “one size fit all” among the countries or provinces, because for example, what worked in Kwa-Zulu Natal (KZN) cannot work in North West Province (NWP). Therefore, policy makers must take into account (socio-economic, geographical, environmental, and land issue) of specific provinces they are dealing with when developing policies. Another respondent also shared similar sentiments when he gave an example of *“some areas that have water problems such as North West Province (NWP), there is need for different strategies to those of Western Cape where they receive plenty of rainfall throughout the year as compared to NWP*”. Therefore, policy makers should take into account the dynamics of the area (in terms of types of recurrent disasters in areas) when developing policies (See table 3 in chapter 1).

Two respondents from DAFF recommended that, there is need to consult each and every sector department that is involved in food security issues (as it is a cross cutting issue) when developing policies so that each department will be able to make some inputs before the policies or programmes are published. This will help with the integration of all concepts or factors that affect food security. For example, one respondent from DAFF said, “*When the*

Food Security and Nutrition Policy was published, many non-governmental organisations including civil society were against it claiming that there was lack of consultation by the policy makers when the policy was developed." This, therefore, resulted in the call to review the FSNP. Considering that the agreement was reached to review the policy, it is expected that policy makers responsible for the review of FSNP will integrate all outstanding issues including DRR. However, the findings did show that no consultation has so far been done with the NDMC with regard to the FSNP under review. This is therefore an area of concern that has to be addressed. Another example of a programme that lacked consultation was the Zero Hunger Programme, which appears not to be applicable to the South African context. It emerged from analysis that, wide consultation is necessary when developing policies and programmes that affect the whole country.

Another respondent from NDMC recommended that, policy makers need to ask the right questions in order to get the right answers with regard to the goals that need to be achieved in food security or disaster risk reduction and these should be achievable goals. One of the questions the respondent asked was *"What are the factors impacting food security in our country?*" He went on to say that, this question requires focused research that looks at the actual risks that need to be addressed in legislation that address DRR and food security. The answers to these questions will help policy makers to develop policy directives that address relevant risks. Therefore when policy makers understand the actual risks affecting food security (such as disasters), then they will develop policies in an integrated manner in order to address the underlying problem.

One respondent from NDMC said that government should from time to time have broader discussion with various departments to discuss an integrated approach in addressing disasters affecting food security in South Africa. The NDMC might also decide to formulate user-friendly laws that support the integration between DRR and food security policies.

Another point of significance raised by respondents from NDMC was the need for researchers to negotiate with the government, politicians and policy makers in convincing them of the need for policy integration. Hence, this can influence the legislations and policies developed. One respondent from the NDMC said that, policy makers should have a lot of access to research when developing policies and they should also fund students who will contribute to their field on a practical level through action-focused research. Therefore, technocrats will be given something more concrete to work with instead of just relying on the principles that have been used in the past (Stringer, 2013:1&8). This was also found in the literature reviewed (see section 4.6.1 of chapter 4) where governments were encouraged to

do policy analysis in order to analyse the objectives of the current policies and identifying their constraints thereby devising a proper plan to rectify the problems.

Another respondent from DAFF said that, some policy makers do not incorporate inputs from other government sectors resulting in developing shallow policies that do not address complex problems. Therefore, it should be recommended that it is a directorate or departmental duty to incorporate a wide array of ideas during the formulation of policies and this should also be the case moving forward with integrating DRR and food security policy.

Another recommendation put forward by respondents from DAFF was the need to use a bottom-up approach when developing policies. Such an approach would enable policy makers to engage with larger networks of experts and interest groups, which would lead to a more comprehensive and integrated DRR and food security policy.
Most respondents finished off by saying it is possible to integrate the two policy areas, but the need for action research will be of great significance to direct policy makers on how to go about the integration process.

5.7 Miscellaneous responses

This section was identified during the analysis process. It was recognised that some responses did not fit into pre-defined categories, but the responses given could still be of relevance to the outcome of the study.

One of the responses that emerged from respondents from DAFF were that of political intervention when developing policies. The respondents said that some of the policies made are political driven and they gave an example of the Zero Hunger Programme. They said that the adoption of the programme was politically driven. This was done without consultation of policy makers and without consideration of inter sectional issues such as DRR. It was also highlighted that the policy also came to an abrupt end due to political pressure. This response highlights that there is also a political dimension to policy formulation that has to be noted within the South African context. These political realities would have to be considered if policy integration is to occur between food security and DRR policy.

5.8 Conclusion

Chapter 5 started with an analysis on how the researcher went about identifying themes that were established in the study. The themes that were developed were based on the research questions and theoretical concepts identified during the literature review. In these themes were identified questions which were put to respondents from DAFF and the NDMC. Some of the key points that emerged included the following:

Relating to the understanding of food security and disaster risk reduction terminology the respondents from DAFF understood the term food security very well though respondents from the NDMC could not give the in-depth definition of the term. They (NDMC respondents) however show some basic knowledge of food security, which could be beneficial in future policy integration efforts as it is not totally unfamiliar concept to them. The term DRR was also familiar to both respondents from DAFF and NDMC, but with DAFF respondents showing a more depth of understanding of DRR than their NDMC counterparts showed on food security. This knowledge was attributed to the existence and work of a disaster risk management and climate change directorate within DAFF. Overall, the familiarity of both food security and DRR to all respondents has shown the possibility of policy integration between the two policy areas as there is a basic understanding of the two fields by both sets of officials.

The second theme created focused on the legislations in place that addresses food security and disaster risk reduction in South Africa. The legislations identified included IFSS, FSNP, and ZHP, DMA and NDMF and other structures that involve DRR issues. Through policy analysis, it was found out that, the IFSS and FSNP recognised the need to integrate DRR issues in their practices but they lacked the institutional base to address this head on in practice. It was also found out that the ZHP did not even recognise the need to involve DRR issues and the assumption is that it might be the reason it did not work in the South African context and was dropped in 2012. Within the DRR discourse, the respondents identified DMA and NDMF. It was found out that, these legislations mainly talk of cooperative governance between departments. However, cooperative governance has been identified as a broad concept that does not clearly put a burden for policy integration on DRR and food security thereby leaving the officials not accountable of the act of integration. The research also found out that most NDMC respondents are not aware of the policies and programmes that address food security in DAFF and this was due to the fact these departments do not

consult each other when developing policies. The main issue that has been found was that the policies and programmes from DAFF and NDMC talks little of each other in theory whilst work as separate entities on the ground or in silos in practice. Therefore, there is need to strengthen the relationship in theory and then bring it down in practice for better policy integration

The analysis also discussed if the DRR and food security policy areas are integrated. This was done through the use of policy analysis by way of highlighting synergies between the two discourses. It was found out that there is no integration between these policy areas. Though synergies that seek to integrate the two were found in theory, this was however done in isolation of the actual identification of roles and responsibilities of each policy area to be followed when pursuing policy integration. The other reason was that some of the respondents are not aware of the need to integrate the two policy areas though possible benefits were clearly laid out by the researcher during interviews. Therefore, it was realised that to achieve policy integration between the two policy areas there is need to concertise the officials from DAFF and NDMC to see the advantages.

During the policy analysis, gaps in policy integration were identified which include lack of resources in terms of human and monetary, departments are still working in silos, political intervention when developing policies, language barrier between spheres of government mainly caused by the use of the top-bottom approach when developing policies. In order to overcome or reduce these gaps recommendations were put forward by the study which include the need to practice the bottom-up approach when developing policies and programmes in order to address the actual needs of the targeted group, for government departments to practice integrated planning as suggested by NDMF (KPA3). Wide consultation when formulating policies could also help in developing policies that are comprehensive and that involve every input from every government department that is affected by the new policy. The following chapter will give the conclusions and recommendations of the whole study.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6. Introduction

This is the conclusive chapter of the study. It will allude to the main focus and findings of every chapter in the study starting from chapter 1 up to chapter 6. Chapter 1 gave the background of the study from an international perspective and South African perspective on the relationship between food security and disasters. The reason to focus on this was to show the history of disasters and their impact on food security, which underlies the need for policy integration between policies that address disaster risk reduction and food security. The main problem that was identified in chapter 1 was that these policy areas are working as separate entities and integration should be improved. In chapter 2, a literature review was conducted on food security policy to determine how the concept of disaster risk reduction is being integrated in the policy area. It was found out that the food security policy in theory identifies DRR as an important factor to be considered in its practices, but in practice it is silent on the actual roles and responsibilities and institutional mechanisms to address DRR issues in food security policy. Chapter 3 went on to review how the issue of DRR came into play from being viewed as “Acts of God” up to when policies were developed internationally and in South Africa to pursue the disaster risk management agenda of reducing disasters through prevention and mitigation. The findings from the literature reviewed indicated that although there is a positive risk reduction focus in disaster policy it often does not place enough emphasis on the role of DRR in other developmental policy areas. For instance, it was found that most legislation that address DRR mentions little of the need to involve food security issues in their practices though they recognize the negative impact disasters have on food security. Chapter 4 presented the methodology followed for the study, and how data was gathered to link together the theoretical concepts established in chapters 2 and 3 with practical experiences by government officials in chapter 5. Chapter 5 gave an analysis of all the findings and interpreted them through themes and categories that were derived from the research questions of the study. These themes were created in order to answer the research questions and to link theory and practical findings to the study.

Conclusions and recommendations established in these preceding chapters will be discussed in line with the research questions set out for the study. The purpose of this structure is to indicate that the research and subsequent findings are consistent with the questions formulated.

6.1 Conclusions of the research

The following conclusions serve to ratify the deductions formulated through the research findings by guiding closing arguments towards assessing policy integration between DRR and food security discourses.

6.2 Conclusion(s) related to research question 1

The following research conclusion(s) are made in terms of research question 1:

What does food security and disaster risk reduction entail?

6.2.1 Food security

The literature review indicated that the concept of food security has been a prominent concern for governments and international organisations since the 1970s. Since the 1970s various definitions and understanding of food security have been advanced, with each iteration highlighting different levels of complexity. Although, scholars and practitioners might have minor differences on aspects that should be included in food security definitions, a compromise between the various viewpoints have been established by means of the definition of FAO, (2002) which defines food security as "*a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*' (FAO, 2002). The South African concept of food security has adopted the FAO, 2002 definition as can be seen from the findings and the literature reviewed where technocrats argued that the presence of the four main dimensions of food security including nutrition at all times to all people reflects a food secure country.

Apart from the definition, the literature review revealed that food security is a multifaceted concept. It is comprised of dimensions such as availability, access, safety and affordability. In essence, all these concepts speak to the ability of a community to access foodstuffs to sustain themselves and their livelihoods. Noteworthy, is the contemporary dimension of nutrition that has been added as a crucial dimension of a food secure nation. The rational for adding the dimension of nutrition to the food security discourse is the realisation that what you have to eat (the actual nutrition value), is just as important as if you have something (quantity) to eat. Tsegay et al., (2014: 2) supports the focus on nutrition through a finding

that most poor communities in the rural and urban informal settlements in South Africa have to spend nearly half of their incomes on food but have to suffice with cheap expired and non-nutritious food, thereby creating a society that has “good access to bad food and bad access to good food”. Recent findings supported by the National Food Consumption Survey in 2005 and the SANHANES survey in 2013 indicated that nutrition has worsened and stunting rates had approximately risen to 26.5% and severe stunting to 9.5% over the period of 2005-12 in South Africa (Labadarios, 2008).

It also emerged from literature by Van Zyl (2014) and government officials from DAFF and NDMC (during interviews) that disasters and the management thereof should be critical factors in the food security discourse that needs to be addressed through policy integration. However, on a practical level both the literature and the interviews with officials indicated that DRR issues are often left out in the formulation of policies and mechanisms for food security management in South Africa, which leads to the two policy areas to work in parallel in practice.

6.2.2 Disaster risk reduction

The literature found out that the concept of disasters emerged from being “Acts of God” to disaster risk management or risk reduction in the 1980s. In order to pursue the disaster management agenda different policy developments were realised from 1989 to 2015 and terminologies were made part of disaster risk management practices. The terms that came into play in the disaster management discourse were disaster risk management and disaster risk reduction. DRM was defined *as “a systematic process of using administrative decisions, organisational and operational skills, and capacities to implement policies, strategies and coping capacities to lessen the impacts of a hazard event*” (UNISDR 2009). Whilst DRR was defined as “*a conceptual framework of elements that takes into account the possibilities for minimising vulnerabilities and disaster risks to avoid or limit the adverse impacts of hazards, within the broad context of sustainable development*” (UNISDR 2004:3). According to DMA No 57 of 2002, and the NDMF of 2005, the concept of DRR was introduced as an attempt to operationalize DRM by addressing the underlying factors that cause disasters in the first place. It emerged from the findings that these terms (DRR and DRM) are sometimes still used interchangeably within government sectors that involve DRR issues in their practices. Therefore the officials would often confuse the structures and policies they put in place as actually DRR projects, whilst these policies and structures actually only provide a risk management platform from which integrated DRR strategies can be formulated.

It also emerged from the international and South African legislations that address DRR that disaster risk reduction is in many cases implemented separately from other development concerns such as poverty reduction and food security (UNISDR, 1996: 5) and this is restricting the integration of the two policy areas under study (food security and DRR).

On a practical level, it was found that both technocrats from NDMC and DAFF are aware of the term DRR and the positive impact it may bring if it is integrated into development initiatives that seek to address food security. Both sets of respondents indicated that although there is an understanding of the concept and a partial relationship in theory, it does not necessarily mean that they work together in practice. As shown in data analysis chapter 5, policies and structures designed to promote an integrated approach to DRR often do not do enough to integrate food security in practical interventions.

6.3 Conclusion(s) related to research question (2)

The following research conclusion(s) are made in terms of research question 2:

Describe the relationship between food security and disaster risk reduction?

The research question mainly wanted to investigate the synergies that can be identified between DRR and food security internationally and in the South African context from both theoretical and in practical level. Chapter 1 of the study clearly discussed the relationship between disasters and food security in a table format (see section 1). The various disasters that have been identified and their impact on food security in different contexts (globally, Africa and South Africa) clearly show the need for the policy areas to work together in order to create a safer and food secure planet and South Africa.

6.3.1 Synergies in food security discourse

It emerged from theory and findings that the policy interventions that address DRR and food security both internationally and in South Africa, has very limited instances where both policy areas are discussed and integration between the areas emphasized. However, it was found that policies that address food security (see section2.4.4; 2.4.3; 2.4.4 of chapter 2) have made some efforts to encourage policy makers to integrate DRR strategies when developing food security plans. Specifically, international policies which include World Food Summit of 1996, MDGs of 2000 and the Global Strategic Framework for food and nutrition of 2015 argue that the inclusion of disaster risk reduction practice into food security projects will aid

in meeting transitory and emergency food requirements by encouraging recovery, rehabilitation and development. As a consequence humanity will be in a better position to provide for future food security needs and a capacity to satisfy future needs.

South African food security policies and programmes including the IFSS and FSNP, identified disasters as a threat to food security. Specifically the FSNP highlighted inadequate safety nets and food emergency management systems to provide for all those who are unable to meet their immediate food needs or to mitigate the impact of natural and non-natural disasters on food security as the major challenge that is threatening the food security discourse. The IFSS identified the lack of a structured system that deals with food security disasters as a major stumbling block for policy integration between food security and DRR. Although the FSNP and IFSS highlighted DRR as an important factor to food security, it has not been clearly followed up in practice due to poor implementation. A possible contributing factor found for this poor implementation was the fact that line departments for food security and DRR often work in silos, meaning no advice gets exchanged between departments on how to properly implement and operationalize policies within different departments. It can be concluded that, to current date attempts to address food security have not been comprehensive enough as issues such as disasters and their impact on food security, disaster preparedness and response for food security have not been well developed and this should be revised when formulating and reviewing policies.

6.3.2 Synergies in disaster risk reduction discourse

Synergies in legislations and literature that address DRR were also found specifically in international policies, which include the INDNR of 1989, YS of 1994, ISDR of 1999; HFA of 2005 and the Sendai Framework of 2015. These policies have placed onus on signatory countries to seek synergy between disaster management and other government sectors which include the Department of Agriculture in order to reduce the impact of disasters on food security. However, this does not put a clear enough burden on technocrats who formulate policies that address food security to consider DRR issues when developing policies because it is not legally binding or enforceable in any country.

Within the South African context, it emerged from the findings that, the DMA and NDMF call for cooperative governance when dealing with DRR issues among government departments. However, the call for cooperative governance is almost too broad in that it does not call for specific work on food security and DRR. Since no clear-cut legal reference to integrating food security and DRR loopholes can be said to exist in the legislation, there is no onus on a

government official to address food security specifically. Another concluding statement that can be put forward is that, these legislations should put a burden on technocrats to clearly lay out the roles and responsibility of DAFF if policy integration is to be realized.

6.4 Conclusion(s) related to research question (3)

The following research conclusion(s) are made in terms of research question 3:

What legislations or policies in South Africa address food security and disaster risk reduction?

6.4.1 Legislations that address food security

Under this research question, the study wanted to find out what legislations or policies in South Africa are addressing the two policy areas under investigation (food security and DRR).

Three major policies from DAFF were identified which includes the IFSS, FSNP and ZHP (see 2.5.1; 2.5.2; 2.5.3 in chapter 2). These legislations seek to improve food security in South Africa as per the constitutional mandate in section 27 and 28 of the South African Constitution, 1996. It was found through policy analysis that, though the country has sound policies and programs that address food security in place, however, the issue of DRR is still treated as a separate issue in the food security discourse. It can be argued that the IFSS and the FSNP have specifically highlighted the need to involve DRR in the food security discourse and have recognized it as an important risk, although these policies did not take the necessary next step, which is formulating and outlining strategies, defining roles and responsibilities, defining monitoring and evaluation mechanisms for seeing how DRR can be considered in food security. Therefore, it can be concluded that in the actual sense there is a theoretical understanding of the need for integration, but no clarity on practical steps to realize this goal.

This issue was also tested with respondents during interviews. It was discovered that most respondents from DAFF are aware of the policies and programs that address DRR in South Africa. Much of this knowledge was put down to the work of the directorate of climate change and disaster management that has been established within DAFF. However, it became clear that the directorate could foster close relationships with the NDMC, especially in inviting the NDMC to participate in policy formulation processes of DAFF. As one

respondent from DAFF argued that they (DAFF) have to consult the NDMC whenever they are developing policies and strategies so that they will be familiar with changes in the DRR discourse, and reflect it in their new food security policy. Therefore, it can be concluded that, for policy integration to take place, there should be wide consultation and involvement of each policy area in practice.

6.4.2 Legislations that addresses DRR

Literature reviewed the international disaster risk management policy developments from 1989 to 2015 (see figure 1). These policy developments have recognized the need to integrate DRR into developmental policies in order to reduce vulnerabilities on people in a holistic manner. The Yokohama Strategy, Hyogo Framework, and the Sendai framework have directly specified the need to involve DRR in poverty reduction strategies and in Agriculture through focusing on drought and land use planning. As far back as 1994, the Yokohama Strategy argued that policy integration between these policy areas was undermined by lack of attention for the issue by governments, insufficient political commitment and resource (human and financial) allocation for implementation activities at all levels (UNISDR 1994:7). A cursory reading of later policies, the HFA and Sendai, found that, there is still lacking an institutional base and structures that can aid the interaction of both policy (DRR and Food Security)in practice.

In South Africa, the literature review indicated that two major pieces of legislations that drive disaster risk reduction in South Africa are the DMA and NDMF. At their core these two pieces of legislation encourage cooperative governance among government departments as suggested by section 3 of the Constitution of the Republic of South Africa, 1996. Although the legislations talk to cooperative governance, they cannot enforce it as no enforcement mechanisms are included for government departments. This could mean departments can avoid the need to corporate, leading to policies that are not integrated. A clearer mandate should be placed and enforced for government departments' which have issues of mutual influence (such is the case with NDMC and DAFF). In addition, it can also be argued that the DMA and DMF do not have a specific section that addresses food security and this by its own can discredit its efforts in trying to integrate DRR strategies in development initiatives.

The NDMF and DMA shows commitment to policy integration through the establishment of the NDMAF which is a platform that gives all government departments (including DAFF) the opportunity to meet and discuss disaster related issues. It was found from interviews that the forum is used to discuss food security issues, but only once it's on the agenda of the day.

Thus, it is not a standing issue on the agenda, and therefore something that is not regularly under consideration by participants.

KPA3 of the NDMF also seeks to integrate the different policy areas through integrated planning. The main function of the proposed integration is to guide and ensure the development of disaster management plans across all spheres of government as well as other role players for coherent and uniform approach to disaster risk management. In doing this, duplication of works will be minimized as well as wastage of government resources. In practice, however it was found that in the case of food security and DRR government departments work in silos and they hardly plan together which makes it hard to integrate policies.

6.5 Conclusion(s) related to research question (4)

The following research conclusion(s) are made in terms of research question 4:

What are the gaps in integration of the current policies and legislation that can be identified in food security and disaster risk reduction?

Several gaps could be identified from the literature review and respondent interviews. One of the major gaps that stood out was that current policies mentioned food security or DRR but did not actually place a legal mandate on officials to address the issues in an integrated fashion. It was found in literature review that, most policies that address food security recognized the need to involve DRR issues in their practices but could not establish structures and institutions to operationalize what was written in the policy documents. The same situation was recognized when analysing and reviewing literature in the DRR discourse where most policies mention the need to reduce impacts of disasters on food security, without outlining practical strategies and tools to do so in practice.

Another gap identified through policy analysis relates to the current structures for cooperative governance in South Africa. Legislations that addresses DRR in South Africa emphasizes the issue of cooperative governance and place a responsibility on all government departments to have a structure that deals with disaster related issues. This mandate was followed by DAFF through the establishment of the Directorate of Climate Change and Disaster Management. Although DAFF has therefore complied with legislation by establishing such a structure, it became clear that the structure could improve its communication and consultation with the NDMC. The NDMC also has one structure that

promotes cooperative governance, in this instance a National Disaster Management Advisory Forum (NDMAF). It was found that this structure does not deal with food security as a standing issue of importance on its agenda, limiting opportunities to highlight and integrate issues of food security into DRR practice.. Therefore, it can be concluded that the NDMAF and the directorate of Climate change and disaster management structures function sub-optimally on this stage.

The whole notion of working in silos is another gap that has been found in interviews and in literature review. It emerged that the food security and DRR discourse operate as separate entities. This was evidenced through the complaints found when interviewing technocrats from DAFF which clearly shows that, though they recognize and appreciate the involvement of some government departments including NDMC, the issue that some departments that claim a budget on food security related issue, burdens them as they feel like that money should be allocated to them as it is their sole responsibility. Furthermore, some technocrats from NDMC also did not see the need to integrate the two policy areas completely as they suggest that if people are trained in their particular departments regarding disaster issues then they will be able to prevent the disasters on their own. Therefore it can be concluded that the issue of policy integration still needs significant buy-in from both sets of officials to become a reality.

Another gap identified through policy analysis was the lack of commitment, capacity and fear to lose power by policy makers. In terms of commitment, officials from the NDMC felt that other departments are less likely to be committed to integrating their policies with those of the NDMC due to the current placement of the NDMC in COGTA. It was suggested that commitment could be improved if the NDMC was located in the president's office. It can be argued that the current placement of the NDMC is delaying policy integration as this does not have a chance to be discussed on the highest level of decision making. The issue of turf protection is another gap that can hinder policy integration as officials could lose their positions or funding in case the integration process dissolve some important positions. Lastly, lack of human, financial, material, logistical resources was seen as a major hindrance of policy integration as departments felt they only had enough resources to deal with their primary tasks and not additional integrated tasks.

The approach to policy formulation was another gap that was found during interviews. In this instance it was indicated that some policies are established without the input of local level policy makers and communities thereby leading to the creation of policies that are not relevant to political, social, and economic environment of the target population. This lack of

consultation will hamper the implementation of any policy, even those that have been integrated.

Although DAFF and NDMC officials indicated an overall appreciation and theoretical understanding for the involvement of each other in their activities, there is need to integrate all these various issues into a single one that is designed to achieve the broad objective of a safer and food secure country.

6.6 The overall conclusion (s) of the study

It can be concluded that there is a general recognition for DRR and food security concepts to be integrated from both literature and the interviews with DAFF and NDMC officials. For instance, through policy analysis, it was found out that though the concept of food security is sometimes associated with disasters in the international and South African food security policy policies, these policies do not identify concrete strategies for practically addressing the disaster risk in the sector. Current legislations and literature that addresses DRR also shows the same tendency of acknowledging the impact of disasters on other developmental sectors such as food security, but it does not describe concrete enough measures to emphasise integration with food security policy. Although this current lack of practical integration is problematic, the recognition both in theory and by practitioners that these fields do have a bearing on each other, could serve as a basis for further integration endeavours. It was also apparent from the study that the legislative integration could be improved in practice through clarifying roles as responsibilities of different line departments involved in formulating the integrated policy.

The main gap that was found through policy analysis was that the DRR and food security discourses work in silos. The reasons for working in silos were due to fear of losing power by officials from both NDMC and DAFF, as well as a lack of commitment and cooperation by officials. Government departments in South Africa and even directorates within the same department work as separate entities though there are structures that allow interaction between them. One of the respondents cited turf protection as the major cause and the mentality that any government department should take care of their own problems. It was also found out that some policy makers do not even see the need for policy integration between DRR and food security policy areas as they believe this can just be solved by training people in their departments on issues that are disaster related.

Literature and legislations that were analysed have shown synergies among the fields of DRR and food security. This theoretical link is however not well supported in practice due to a lack of institutional mechanism, political commitment and resources to pursue what is established in theory. To overcome the gaps identified the following recommendations are made to improve policy integration efforts

6.7 Recommendation(s) related to research question (5)

The following research conclusion(s) are made in terms of research question 5:

What recommendations can be made for more effective food security and disaster risk reduction integration in policy and legislation?

Synergies and gaps between disaster risk reduction and food security were the main issues that were discussed in this study and it is in this context that the recommendations were put forward for effective policy integration between the two policy areas that were under investigation. The recommendations are as follows:

6.7.1 Recommendations for the study

- Wide consultation is needed when developing policies that affect multiple sectors. As the policy areas under investigation are of great importance to the well-being of the country as stated in the Constitution of South Africa 1996, this means that all aspects that address DRR and food security should be made known to both the NDMC and DAFF before policies are developed for proper integration.
- To facilitate more integrated policy, it is recommended that government departments have more regular and comprehensive discussions on integrating food security and DRR policy. These discussions can for instance be facilitated by establishing a sub-forum on food security within NDMAF.
- Focused research should be conducted to find practical solutions to impediments to effective policy integration. This will help policy makers to have a greater understanding of integration problems as well as possible ways to solve the problem.
- It can also be recommended for governments to do policy analysis so that they can analyse the current policies in order to identify their constraints and this will help them to devise plans for rectifying the problems. In the case of this study, policy analysis was used to identify gaps and synergies between DRR and food security thereby deducing that policy integration might solve the underlying factors troubling South Africa. In doing

this, the NDMC and DAFF should have (a) dedicated person(s) to perform policy analysis. This approach brings legislative compliance and policy analysis together to provide decision makers with options to improve, expand, scale down or cancel a programme or a policy.

- Any integrated policy dealing with food security and DRR should also include clear monitoring and evaluation mechanisms. The reason for this is that within the study it was observed that legislation in South Africa is often well formulated, but poorly implemented.
- A policy implementation framework should also be formulated to aid the implementation of the integrated policy. This framework should place specific emphasis on the roles and responsibilities of various departments that have a stake in the successful implementation of the plan.

6.7.2 Recommendations for further research

- While investigating the two policy areas of DRR and food security, most respondents noted the effect of climate change as a major setback that needs to be considered when addressing food security in South Africa. Some researchers have tackled this area but it can be recommended that some future studies can look at the possible integration among food security, climate change and disaster risk reduction policies in South Africa.
- Based on this study further research could focus on formulating a model to guide policy integration.
- Research should also be conducted on how to improve political buy-in for policy integration process and how to overcome staff fears of loss of power or funding if policies are integrated.
- Research can also be done on how to optimize cooperative governance structures between the two departments in order to break down the tendency to work in silos.

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ANNEXURES

Semi-structured interview schedule: NWU-Master's study

Title: An assessment of the integration of food security and disaster risk reduction policies: The case in South Africa

Introduction

The researcher is a student at the University of North West (Potchefstroom campus) and currently pursuing studies for an MSc in Geography and Environmental Management. I am carrying out a research on the integration of food security and disaster risk reduction policies in South Africa. The purpose of the Semi-Structured Interview Schedule is to gather information from people involved in policy making in the department of food security and disaster risk management in South Africa (technocrats) to find if the policy areas of food security and disaster risk reduction are integrated or not. Kindly take note that the information obtained will be used only for research purposes and no names or any identifying data regarding the participant will be revealed. Participation is voluntary. Your co-operation and assistance is greatly appreciated.

The following are the Interview questions for the National Disaster Management Centre, which have research questions as their main subheadings.

a) What does food security and disaster risk reduction entail?

1. What do you understand by the term disaster risk reduction?
2. Have you heard of the term food security? If yes, can you define it?
3. What are the challenges for effective disaster risk reduction which are caused by poor planning in order to achieve food security in South Africa?

b) What legislation or policies in South Africa address food security and disaster risk reduction?

4. Can you identify legislations that address disaster risk reduction in South Africa?
5. Do these legislations integrate with the policies that address food security in South Africa?
6. If yes, would you please highlight policies that highlight this integration?
7. What support structures are in place in these legislations that are put to reinforce activities that address food security?

8. What monitoring and evaluation mechanisms are in place for a successful integration between food security and disaster risk reduction policies?

c) Describe the relationship between food security and disaster risk reduction?

9. Do disaster risk reduction policies talk to food security policies?
10. With disasters such as drought and floods keep on hindering the success of food security, do your DMA and NDMF address the food security situation in South Africa? 11. If yes, can you please explain which section explicitly discuss the issue of food security and the responsibilities?

d) What are the gaps in integration of the current policies and legislation that can be identified in food security and disaster risk reduction?

12. Are there any gaps that can be identified in terms of integration between the policy areas that address food security and disaster risk reduction? How do you think it can be addressed?

e) What recommendations can be made for more effective food security and disaster risk reduction integration in policy and legislation?

13. In your view, is policy integration possible between disaster risk reduction and food security policies? What do you suggest are the benefits or disadvantages might be?
14. As you work at the highest sphere of government, in the National Disaster Management Centre, what recommendations can you give to other policy makers when making policies that addresses disaster risk reduction with regard to the issue of food security in South Africa?

Thank you all!

Semi-structured interview schedule: NWU-Master's study

Title: An assessment of the integration of food security and disaster risk reduction policies: The case in South Africa

Introduction

The researcher is a student at the University of North West (Potchefstroom campus) and currently pursuing studies for an MSc in Geography and Environmental Management. I am carrying out a research on the integration of food security and disaster risk reduction policies in South Africa. The purpose of the Semi-Structured Interview Schedule is to gather information from people involved in policy making in the department of food security and disaster risk management in South Africa (technocrats) to find if the policy areas of food security and disaster risk reduction are integrated or not. Kindly take note that the information obtained will be used only for research purposes and no names or any identifying data regarding the participant will be revealed. Participation is voluntary. Your co-operation and assistance is greatly appreciated.

The following are the Interview questions for the Department of Agriculture, Forestry and Fisheries that have subheadings of the research questions of the study.

What does food security and disaster risk reduction entail?

1. What do you understand by the term food security?

2. Have you heard of the term disaster risk reduction? Can you define it?

3. What are the challenges of food security in South Africa**?**

What legislation or policies in South Africa address food security and disaster risk reduction?

4. Can you please identify policies, programmes and project that address food security in South Africa?

5. Do these policies and programmes integrate with disaster risk reduction policies?
6. Which food security policies and programmes highlight this integration?
7. What is the main purpose of the directorate of Climate Change and Disaster Management under DAFF?

Describe the relationship between food security and disaster risk reduction?

8. Does food security policies and programmes relate to disaster risk reduction activities?
9. With the existence of drought and floods in South Africa that are affecting the food security status, is it possible to integrate disaster risk reduction strategies in your activities to reduce the impact, or there some other plans in your field?
10. What support structures are in place to reinforce what have been written in the food security policy documents in terms of integrating disaster risk reduction activities during implementation stage?

What are the gaps in integration of the current policies and legislation that can be identified in food security and disaster risk reduction?

11. Are there any gaps that can be identified in terms of integration between the policy areas that address food security and disaster risk reduction?

What recommendations can be made for more effective food security and disaster risk reduction integration in policy and legislation?

12. In your view, is policy integration possible between disaster risk reduction and food security policies? What do you suggest the benefits or disadvantages are?
13. As you work at the highest sphere of government, what recommendation can you give to other policy makers when making policies that addresses food security with regard to issues of disaster risk reduction in South Africa?

Thank you all!